

Bureaucratic Control, Information Management, and Governmental Responsiveness^{*}

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Abstract

We model an organizational structure where a superior and a subordinate jointly determine the observable performance; additionally, the superior cares about his reputation among the audience outside the organization, and decides the subordinate's career prospects. The structure resembles the relationship between a popularity-seeking authoritarian ruler and his local agents, or between an elected politician and his appointed bureaucrats. We show that the superior can strategically postpone promoting the subordinate to shift blame and enhance his own reputation. In other words, the superior can use bureaucratic control as a tool of information manipulation. Our analysis also demonstrates that the strategic use of promotion for reputation concerns leads to inefficiencies, including decreasing governmental responsiveness. We provide supportive evidence using data on the turnover of provincial officials in China, an authoritarian state well known for its centralized bureaucratic control and massive effort of information management.

Key Words: Bureaucratic control; signaling; governmental responsiveness; authoritarian government.

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1. Introduction

Politicians strive to improve their public support in many political contexts. Unsurprisingly, politicians do so in democracies because public support channels into electoral votes. Even in authoritarian regimes, rulers care about their popularity because they live under the shadow of mass political unrest and electoral defeat.¹ Given a certain level of observable performance, politicians may strategically claim credit for themselves and shift blame to others in order to gain public support. Of the two strategies, shifting blame is more frequently deployed due to “negativity bias” (e.g., Nielsen and Moynihan 2017).

Despite the seemingly unambiguous incentive to shift blame, how politicians can effectively do so is less obvious. For instance, in an authoritarian regime with multiple levels of government, the central government may shift blame to local government in the presence of undesirable governance outcomes (Cai 2008; Li 2006). Although this blame-shifting from central to local government may sometimes work, over time citizens will grow more sophisticated and stop simply accepting such propaganda. Since they know that the central government decides local government officials’ career prospects, they do not expect the latter to defend themselves when the central government blames them for poor performance; this in turn hinders the credibility of the central government’s propaganda.² Given these constraints, how can a ruler more effectively shift blame? Furthermore, how will the blame shift affect governmental responsiveness?

We study an organizational structure in which observable performance reflects joint types of the superior and subordinate, in which the superior cares about his reputation among the audience outside the organization and determines the subordinate’s career prospects. This structure resembles the relationship between a popularity-minded authoritarian ruler and his appointed local agent, or between an elected politician and his appointed bureaucrat. Citizens outside the government form the audience.³ The superior’s reputation is the public’s *perception* of his ability to deliver good performance. Citizens measure ability based on desirable attributes, such as

¹ Geddes, Wright, and Frantz’s (2014) data set shows that uprisings, rebellions and election defeats jointly account for 51% of the 223 post-World War II dictatorial regime collapses.

² For instance, Chinese local officials will risk their career prospects if openly blaming the central government for poor implementation of popular policies by informing the public that the policies are “unfunded mandates” (Li 2016, p.115).

³ Alternatively, one could think of the organization as a multi-level government, where the mid-tier official makes the promotion decision of a lower-ranking official, while caring about his or her reputation in the eyes of a high-ranking official. In this case, the high-ranking official is the audience.

competence and non-corruptness, among others. Our model highlights a novel role of promotion and lack thereof: promotion as a signal of the promoter's type. Moreover, our analysis identifies three kinds of inefficiency brought by the promoter's strategic use of promotion to build up his own reputation.

Specifically, we assume there are a central ruler, a local bureaucrat, and a representative citizen. Our model assumes asymmetric information between the state (ruler and bureaucrat) and citizens. The citizens observe only the revealed governance outcomes, but not knowing the exact types of the principal (central ruler) and its agents (local bureaucrat). Since local governance depends on joint types of central and local governments, it is difficult for citizens to identify what role each government has played when local governance is mediocre; in other words, the citizen knows that either the central or the local government is bad, but does not know which one it is.⁴ In particular, when citizens cannot distinguish between a good principal and bad agent versus a bad principal and good agent, the principal may manipulate promotion decisions to signal his type to the citizens, even if he does not deserve it. To do this, bad principals mimic what good principals do, i.e. they do not promote the agent. Consequently, good agents are denied deserved promotions by bad principals. In the simple model, we assume that types are fixed, and that the ruler only uses promotion as a signaling tool to build his own reputation. In the extended model, we relax this assumption and allow types to be "chosen" based on the individual's talent, which adds a moral hazard problem before the signaling problem: a competent promoter has fewer incentives to respond in a timely manner to citizens' demands because of having bureaucratic control as a reputation manipulation tool in the future.

Our formal model generates the following testable predictions: a strong ruler always promotes bureaucrats to powerful positions in an efficient way, namely, promoting the strong and leaving the weak. A weak ruler is likely to prevent deserved promotions to mimic a strong ruler when reputation concerns are significant and when the efficiency benefits from promotion are small. Consequently, when local government performance sends a mixed signal (e.g. when citizens

⁴ Existing studies has recognized the difficulty of citizens in inferring types of multiple governments based on jointly determined governance outcomes. For instance, Birney (2014) argues that Chinese citizens have difficulty in inferring the corruptness of local officials when observing local non-implementation of the village election law. It is because the non-implementation can be due to either corrupt local officials or mandates from irresponsible high-ranking officials.

cannot distinguish a team of good ruler and bad bureaucrat from a team of bad ruler and good bureaucrat) promotion is a “bad” signal for ruler's type because a strong ruler would never promote a weak bureaucrat. Therefore, citizens feel less positively toward the ruler once promotion is observed.

We test these predictions using an original dataset of subnational leader turnovers in China, an authoritarian regime with which the authors are familiar. Additionally, we use China because it fits the domain of our model quite well: a centralized personnel control system managed by the ruling party and an economically decentralized system with local performance determined by both central and local governments (e.g., Birney 2014; Xu 2011). Lastly, the Chinese central government cares heavily about its own reputation, as poor reputation may lead to increased demands for regime-level political changes (Li 2004, 2011); by contrast, local officials care more about evaluations from their superiors than from the general public, since the former directly decide their career. Although we test our theory on China, we expect our theory to speak more generally to governments with appointed officials in both democracies and non-democracies.

Specifically, we make use of a recent World Value Survey (WVS) taking place in China from November 2012 to January 2013, during which period two top provincial leaders were promoted. Our difference-in-differences (DiD) estimation reveals that citizens in the promotion provinces were more likely to reduce their trust in the central government after the promotion date than those in non-promotion provinces did, which is consistent with the prediction above. Notably, the empirical pattern remains valid after taking into consideration the possible influence of two well-studied determinants of Chinese local bureaucrats' promotion chances, namely competence and network with higher-ranking officials.

Our analysis makes several contributions to the literature. First, our study speaks to the burgeoning literature on information management in dictatorships. Although politicians in democratic governments also manage information to enhance their image, citizens in authoritarian regimes face low transparency and media freedom, which makes them more susceptible to governmental information management. An authoritarian ruler may improve his reputation and gain public support through actual performance improvement, information manipulation, or both (Chen and Xu 2017; Guriev and Treisman 2015). Accordingly, some resilient authoritarian rulers, like the Communist Party of China (CPC), are dedicated to sustaining good economic performance

when they can while spending substantial financial resources on information manipulation to convince the ruled of their various desirable attributes (e.g., Gilley 2008; Shambaugh 2007). Researchers have identified various information management tools rulers can use to enhance their reputation, such as signaling their strength through propaganda (Huang 2015), concealing the information about economic (under)performance (Hollyer, Rosendorff, and Vreeland 2015), or censoring the media (Lorentzen 2014). We contribute to this strand of the literature by studying a specific information manipulation technique in politically centralized dictatorships: how the central government maintains a good reputation by strategically promoting or demoting local agents.

Second, our work contributes to the literature on strategic promotions. In particular, it is directly related to Holmstrom's seminal paper on career concerns (Holmstrom 1999), in which promotion solves the agent's moral hazard problems by providing higher wages. Egorov and Sonin (2011) study the purpose of promotion as political survival. Consequently, capability sometimes gives way to loyalty, at the cost of efficiency. Another objective of strategic promotion is to prevent poaching. Waldman (1984), followed up on by DeVaro and Waldman (2012), argues that in corporate environments, firms are more reluctant to promote workers if they anticipate poaching from competitors because promotions send a positive signal of the worker's quality. Our paper is closest to Waldman (1984) since we both consider the signaling role of promotions; instead of promotion as a signal for the *promotee*, this paper considers promotion as a signal for *promoter*.

Third, our study speaks to two strands of the literature on political institutions that consider strategic interactions among players. The first is on the important role that various authoritarian institutions, such as regime-sanctioned parties and legislatures, play in authoritarian survival. Possible channels include preventing elite splits (Geddes 2003), credibly committing to power sharing among elites (Magaloni 2008), and effectively co-opting the would-be oppositions (Gandhi and Przeworski 2006, 2007) and ideologically like-minded social segments (Svolik 2012). We underscore how an often-overlooked institutional design feature can strengthen dictatorial rule in a specific way. The central government – but less so the local government -- must maintain its good reputation to hold off demands for political change and to sustain authoritarian rule (Li 2004). Along these lines, we propose that a centralized personnel control system can facilitate dictatorial rule by providing a chance for the central government to maintain a good reputation, sometimes at

the expense of ruining the reputation of the local government. The second is on the various tools to increase governmental responsiveness and accountability, including media coverage (Snyder and Strömberg 2010), increased transparency (Alt and Lassen 2006; Berliner 2014; Bordignon and Minelli 2001), and separation of power (Persson, Roland, and Tabellini 1997). This paper argues that a unilateral signaling tool available to the principal dampens his responsiveness and accountability because he can send signals to shift blame. Blame shifting is more effective when the principal knows the agents well because he can determine when to send the signal. Consequently, intra-governmental transparency (or effective monitoring) may reduce responsiveness of the superior.

Fourth, this paper sheds new light on salient patterns revealed in studies on Chinese public opinion and cadre management that have not been jointly investigated. Many China scholars have found different levels of trust in each level of government; specifically, the central government gains more political trust than the local government does (see Li 2016 for a recent and detailed review). Notably, researchers have noticed how government structure and the central government's strategic information manipulation may have contributed to the trust gap and have sustained the CPC's rule (Cai 2010). Lianjiang Li (2016) attributes the trust gap to the Chinese multi-level principal-agent system and the central government's propaganda machine that shifts the blame to local governments while claiming credit for itself. Wenfang Tang (2016, p.164) also admits that the central government has frequently employed scapegoating to blame local governments and maintain higher-level political support for the central government. We formalize this idea of information manipulation and show that strategic promotion of local agents is one possible mechanism, though not necessarily the only one, for maintaining high political trust in the central government. However, our theory also differs from that of Li (2016) and Tang (2016) in the sense that we discuss information manipulation in places with mediocre rather than poor performance. To our knowledge, we are the first to investigate the effect of promotion of subnational officials on citizens' evaluation of the central government.

Moreover, among empirical studies on Chinese bureaucratic control and personnel management, some find that performance measures, such as economic growth in a local official's jurisdiction, matter for promotion (Li and Zhou 2005), while others argue that personal networks and factions play a crucial role (Shih, Adolph, and Liu 2012). Recent efforts try to reconcile the

seemingly conflictual empirical findings by showing that economic growth matters more for promotion at lower levels of governments than at higher levels (Landry, Lü, and Duan 2017). Our paper does not try to comprehensively examine the determinants of officials' promotion in China. Instead, our model shows that the governmental structure in China gives rise to the possibility of promotion as a tool of information management. The strategic use of promotion for reputation concerns of a superior (e.g., the central government) may in turn influence his promotion decisions and thus mitigate the often-studied association between observed performance (and networks) and promotion chances.

2. A Simple Model

2.1 Environment

Consider a game of incomplete information with three players: a central ruler (r) of competence type θ_r , a local bureaucrat (b) of competence type θ_b , and a representative citizen.⁵ Competence type can be high or low, $\theta_i \in \{h, l\}$, $h > l$, and is fixed in the simple model.⁶ Competence types are known within the regime (both the ruler and the bureaucrat know their own and each other's types), but remain unknown to the citizen. The ruler and the bureaucrat deliver types as performance. Then the ruler determines whether to promote the bureaucrat or not. Higher types are preferred for promotion. The payoff from the promotion is discussed in more detail below.

The citizen cares about his ruler's competence, of which he holds some prior belief. His job is to infer the ruler's type from two signals: performance and promotion decision. The ruler then receives a payoff which is proportional to his expected type.

Formally, the timing of the game is as follows:

1. Nature draws the central ruler's type $\theta_r \in \{h, l\}$ and the local bureaucrat's type $\theta_b \in \{h, l\}$ from the same pool that $\Pr(\theta_i = h) = \mu, i = r, b$. Both the ruler and the bureaucrat observe their own and each other's type. The citizen observes neither, but holds correct prior belief that the ruler is of high type with probability μ .

⁵ We use leader, superior, central government and principal interchangeably to refer to the central ruler. Meanwhile, subordinate, local official, and agent all refer to the local bureaucrat.

⁶ We relax this assumption in the extended model.

2. Local performance is delivered (non-strategically) as the sum of types: $X = \theta_r + \theta_b$.
3. The citizen observes performance X , and updates his beliefs about the central ruler's type.
4. The ruler decides whether to promote the bureaucrat. The ruler chooses promotion probability $p(\theta_r, \theta_b) \in [0,1]$, which is jointly determined by the types of ruler and bureaucrat.
5. The citizen observes the promotion outcome $P(\theta_r, \theta_b) \in \{0,1\}$, and updates his belief about the ruler again.
6. Payoffs are assigned. For the ruler, the payoff is jointly determined by the gains from promotion and the gains from reputation. The details of payoff are discussed below.

Next, we explain the key elements in the model.

Types. We interpret types as the qualities that the citizen prefers the ruling authority to have. Standard interpretation in the literature includes competence (Guriev and Treisman 2015), non-corruptness, and vision.⁷ We assume type information is common knowledge to the ruler and the bureaucrat, but not to the citizen. This is because frequent interactions of the ruler and the bureaucrat through meetings, external events, etc. usually generate rich information about types; the citizen, as an outsider, does not have these interactions and thus often has limited information.⁸

Local Performance. We assume that local governance performance is the joint product of the central ruler and local bureaucrat's types. This assumption reflects the fact that both central policies and local execution affect governance outcomes. However, one should be cautious to interpret types as efforts, because in the simple model types are fixed. In the full model, we relax the assumption and allow players to choose types, which makes the effort interpretation appropriate.

We assume that performance is the sum of types. Given the binary types, local performance takes three values $\{2l, h + l, 2h\}$, denoted as $\{L, M, H\}$ respectively. When local performance is Low, the citizen immediately infers that $\theta_r = \theta_b = l$. Similarly, the citizen infers that $\theta_r = \theta_b = h$ after High performance. The signal is jammed only when performance is Mediocre, because the citizen does not know who contributes h and who contributes l . Thus $\Pr(\theta_r = h | X = M) = \frac{1}{2}$. The

⁷ We suppress potentially multi-dimensional competence to a one-dimensional parameter θ for convenience of discussions. Assuming θ to be a vector of multiple attributes does not change the results qualitatively.

⁸ Sometimes such interactions within the bureaucracy also fails to perfectly reveal the type information, and we deal with that in Section 3.3 below.

citizen needs the additional signal from promotion to make inferences. The inference process and timing are shown in Figure 1.

[Figure 1 is inserted here]

Promotion. Promotion has two roles in the model: it facilitates the ruler's job and provides information about the bureaucrat's type. By promoting a local bureaucrat to a more powerful office, the central ruler gains additional helping hands. It is straightforward to see that high type bureaucrats are more preferred in this regard because low-type bureaucrats may not fit in the higher office, thus doing more harm than good. Also, the ruler receives praise for having a keen eye for talent⁹. However, promotion also creates a local power vacuum because the central ruler is responsible for finding a proper replacement. In this case, promoting a good bureaucrat makes it harder to find an equally competent successor. For the ruler, the (net) gains from promotion need to balance both considerations. In the simple model and extended models, we assume that the first consideration dominates.¹⁰ That is, if we denote the net gains from promotion for the ruler as $g(\theta_b)$, we assume $g' > 0, g(h) > 0 > g(l)$. In particular, the second part of the inequality suggests that an ignorant bureaucrat placed at high office can be detrimental.

We assume that the ruler chooses a promotion probability $p(\theta_r, \theta_b) \in [0,1]$, to accommodate both pure and mixed strategy equilibrium. The citizen does not observe p , but instead the realization of the promotion decision, $P \in \{0,1\}$, which is binary and $P = 1$ with probability p , $P = 0$ with probability $(1-p)$. Consequently, the citizen updates beliefs about the ruler's reputation, i.e. the expected type of the ruler, as $\mathbb{E}_c(\theta_r|X, P)$. Some justifications about modeling reputation are seen below.

Reputation. We assume a non-strategic citizen who infers the type of the central ruler and provides public support accordingly. The role of a non-strategic citizen in evaluating the ruler is common in the literature, both in theoretical works (Gehlbach and Simpsen 2015; Little 2015) and

⁹ The praises can be regarded as another form of reputation (on the ruler's ability to discover other's talents). In this paper we interpret reputation as the perceived quality of individual attributes (competence, non-corruptness, etc.). Therefore, we aggregate the praises into the net gains of promotion, $g(\theta_b)$, introduced next.

¹⁰ We consider an alternative possibility that the local power vacuum is a bigger concern for the central ruler in the Appendix.

empirical investigations (e.g., Li 2004). Unlike the existing literature, we do not focus on the survival of the ruler (Edmond 2013). Instead, we interpret the ruler's preference toward being perceived as a higher type as his reputation concern.¹¹

Payoff. In the simply model, the only active player is the ruler. We assume that the ruler's payoff is the weighted average of gains from local performance, promotion and reputation. In particular:

$$U_r(\theta_r) = (1 - \alpha - \beta)X(\theta_r, \theta_b) + \alpha p(\theta_r, \theta_b)g(\theta_b) + \beta E_c(\theta_r|X, P)$$

The first term corresponds to gains from local performance. The proportion is fixed because both the ruler and bureaucrat simply deliver their types. The second term corresponds to the ruler's expected efficiency gains from promotion if the ruler chooses a promotion probability $p(\theta_r, \theta_b)$ to promote a bureaucrat of type θ_b . The third term corresponds to ruler's reputation gains, which is proportional to the ruler's perceived type in the eyes of the citizen, after observing performance X and promotion outcome P . α and β are the weights assigned to each term. We normalize the total weights to one.

As discussed above, when the signal is clear, i.e. $X = H$ or $X = L$, citizen perfectly learns ruler's type and there is no incentive for the ruler to manipulate promotion. Rulers base the decision purely on promotion gains, $g(\theta_b)$. Therefore, promotion is efficient and based purely on merits, which means $p(\theta_r, \theta_b) = 1$ if and only if $\theta_b = h$; $p(\theta_r, \theta_b) = 0$ if and only if $\theta_b = l$. In other words, bureaucrats get the promotions they deserve.

The interesting case is when the signal is jammed, i.e. $X = M$. From now on we only consider this case. There are two scenarios. First, a high type ruler could be paired with a low type bureaucrat, ignoring the performance term in the payoff function.¹² Then, the strong ruler faces the following (revised) maximization problem:

$$\max_{p(h,l)} \tilde{U}_r(h) = \alpha p(h,l)g(l) + \beta E_c(\theta_r|X = M, P)$$

Second, a low type ruler could be paired with a high type bureaucrat. Similarly, the weak ruler faces the following problem:

¹¹ In a parallel stream of literature in economic theory, the reputation of a product/firm is also defined by the customer's belief of the type of the product/firm. See Board and Meyer-ter-Vehn (2013) for example.

¹² This is without loss of generality because they just deliver their types. In other words, there are no choices to make.

$$\max_{p(l,h)} \tilde{U}_r(l) = \alpha p(l,h)g(h) + \beta \mathbb{E}_c(\theta_r | X = M, P)$$

2.2 Analysis

Our solution concept is Perfect Bayesian Equilibrium. To analyze the ruler's promotion decision, we first look at the citizen's beliefs after mediocre performance, $X = M$. Regardless of μ , $\Pr(\theta_r = h | X = M) = \frac{1}{2}$. Next, the ruler makes his promotion decision ($p(h, l)$ for strong ruler, $p(l, h)$ for weak ruler) and collects promotion gains. The citizen makes a conjecture about the strategy of the ruler, $\hat{p}(h, l)$ and $\hat{p}(l, h)$, then uses the conjecture to update his beliefs about the ruler after seeing the promotion outcome. In equilibrium, the strong (weak) ruler should maximize his payoff given the strategy that a weak (strong) leader would have chosen and the citizen's conjectures. In the meantime, citizen's conjectures should be correct, i.e. coinciding with the ruler's strategy.

Formally, given the citizen's conjecture, denote the belief that the ruler is strong after seeing promotion $P = 1$ as q_P , and that after non-promotion $P = 0$ as q_{NP} ,

$$q_P := \Pr(\theta_r = h | X = M, P = 1) = \frac{\frac{1}{2} \hat{p}(h, l)}{\frac{1}{2} \hat{p}(h, l) + \frac{1}{2} \hat{p}(l, h)} = \frac{\hat{p}(h, l)}{\hat{p}(h, l) + \hat{p}(l, h)}$$

$$q_{NP} := \Pr(\theta_r = h | X = M, P = 0) = \frac{1 - \hat{p}(h, l)}{2 - \hat{p}(h, l) - \hat{p}(l, h)}$$

In equilibrium, we require:

$$\hat{p}(h, l) = \operatorname{argmax}_{p(h,l)} \alpha p(h, l)g(l) + \beta \mathbb{E}_c[\theta_r | X = M, P(h, l)]$$

and

$$\hat{p}(l, h) = \operatorname{argmax}_{p(l,h)} \alpha p(l, h)g(h) + \beta \mathbb{E}_c[\theta_r | X = M, P(l, h)]$$

We also make off-equilibrium path belief assumption to be consistent with the perfect information case. In particular, if $\hat{p}(h, l) = \hat{p}(l, h) = 1$, the citizen assigns any deviation to non-promotion probability one of being strong; if $\hat{p}(h, l) = \hat{p}(l, h) = 0$, the citizen assigns any deviation to promotion probability one of being weak.

Intuitively, in face of mediocre performance, promotion harms the strong ruler ($g(l) < 0$) and benefits the weak ruler ($g(h) > 0$). Therefore, without reputation concerns, the weak ruler

promotes, while the strong one does not. However, since citizens interpret non-promotion as a signal of strength, the weak ruler may have incentives to mimic the strong one by not promoting a well-deserved bureaucrat. Anticipating this, the citizen should downgrade his belief of a strong ruler upon observing promotion. The adjustment process ends when the weak ruler is indifferent between promotion and non-promotion (i.e., does not want to mimic the strong ruler any further), and the citizen's conjecture is correct. On the other hand, a strong ruler has no incentive to feign weakness by promoting undeserving bureaucrats, because it is not beneficial in terms of promotion or reputation gains. We summarize the above intuition in the following proposition.

Proposition 1. *In equilibrium, when local performance is mediocre, the strong ruler never promotes. The weak ruler promotes in the following manner:*

he never promotes when $\frac{\alpha g(h)}{\beta(h-1)} \leq \frac{1}{2}$.

he promotes with probability $2 - \frac{\beta(h-1)}{\alpha g(h)}$ when $\frac{1}{2} < \frac{\alpha g(h)}{\beta(h-1)} < 1$;

he always promotes when $\frac{\alpha g(h)}{\beta(h-1)} \geq 1$.

As a result, the reputation of the ruler always decreases after promotion (see Appendix for the proof).

Therefore, in equilibrium, there may be insufficient promotions due to the ruler's reputation concerns. This is consistent with the “bad reputation” literature (e.g., Ely and Välimäki 2003; Pei 2015) in which players manipulate decisions when they are concerned about their reputation. It also provides a new driving force to explain insufficient promotions, in addition to the incentivization or networks arguments (see Ting 2003).

Proposition 1 generates several interesting comparative statics. Recall that manipulation is more severe when the weak ruler is more likely to decline promotion. This occurs when the ruler places more weights on reputation than promotion gains ($\frac{\beta}{\alpha}$ is larger). It makes intuitive sense: when reputation concerns are intrinsically more important, the incentive to manipulate promotion is higher, resulting in increased manipulations. If we interpret β as a measure of the extent to

which politicians care about their reputation among citizens, then Proposition 1 suggests that the manipulation is more severe in democracies due to electoral pressure.¹³ Manipulation is also more severe when the performance of the weak officer is worse (l is lower). That is, when the outside option of revealing true type is less attractive, the ruler tends to hide weakness more.

The above two comparative statics are straightforward. The comparative statics of a high type h are less so. On one hand, higher h triggers larger promotion gains $g(h)$, thus incentivizing promotion; on the other hand, high h indicates higher reputation gains, which discourage promotion. If $g(h)$ is concave, which suggests diminishing marginal returns to officer quality, then higher h induces less promotion because reputation gains dominate promotion gains. If $g(h)$ is convex, which suggests that high-quality officers can exponentially improve governance, then the promotion probability is U-shaped in h : it decreases first because reputation gains dominate, and increases later because the increasing return from governance becomes significant.

Thus far we have only discussed the role of promotion (and lack thereof) as a signaling tool. In theory, promotion and demotion are two sides of the same coin. One could expect a bad ruler to mimic the demotion pattern of a good one, i.e., if demotions are allowed, the incompetent ruler may demote his competent agents out of reputation concerns. Therefore, we do not discuss demotion separately. Instead, we proceed to discussing an alternative to demotions, namely pseudo promotions, which can be even more prevalent in the political context.¹⁴ Pseudo promotion refers to the tactic of replacing an unsatisfactory local official by transferring him to an idle but privileged position at the same or sometimes higher level. For instance, an authoritarian ruler often deems demotion undesirable because it significantly disincentivizes agents from performing well (Cai 2014). Some autocracies, like China, have a long tradition of avoiding demotion of local officials unless there is a catastrophic event (Landry 2008; Mei and Pearson 2014). Pseudo promotion is so commonly deployed in China that a Chinese phrase was even invented to describe the very situation: *Mingsheng anjiang* ("promote to demote"). Moreover, there is evidence that the public is familiar with the tactic and understands its implications.¹⁵ Pseudo promotion thus gives the ruler

¹³ Authoritarian rulers usually have alternative strategies to stay in office, such as using repression, which makes reputation less important.

¹⁴ In economics, there is also a large body of literature arguing that firing is costly in firms, thus making pseudo promotions an attractive alternative (e.g., Hopenhayn and Rogerson 1993).

¹⁵ Yizi Chen's (2013) memoir suggests that students and young intellectuals proposed moving old leaders to a consultative organization to accelerate China's market reform.

an opportunity to select a new local official. In the Appendix, we employ the same techniques as in the simple model to show that pseudo promotions are “good” signals for promoters and their reputation increases after citizens observe promotion outcomes. Additionally, in pseudo promotions, a bad ruler mimics a good one, which leads to over-promotion and bureaucratic redundancy.

3. Extended Model: Active Ruler and Bureaucrat

3.1 Environment

In this section, we discuss an extended model, where we allow both the ruler and the bureaucrat to actively choose efforts in delivering local performance. The ruler and the bureaucrat enter the game with some talents given by Nature. Talents can be h (high/strong) or l (low/weak). We model effort choice as a privilege of the strong officer. Strong officers can choose to exert high effort (work) or low effort (shirk), but weak officers can only choose low effort. Choosing high effort comes with a cost $c > 0$ while choosing low effort is costless. We assume the ruler chooses effort first, the bureaucrat second.¹⁶ Once effort is chosen, it becomes the officer's types and is fixed thereafter. Then we play the game as in the simple model.

Formally, the revised timing is as follows:

1. Nature draws the central ruler's talent $\tau_r \in \{h, l\}$ and the local bureaucrat's talent $\tau_b \in \{h, l\}$ from the same pool. Talent is common knowledge for ruler and bureaucrat but not for citizen. The citizen holds prior belief μ that an officer is of high talent. The two draws of talent are independent.
2. The central ruler chooses effort, which then becomes his type $\theta_r \in \{\tau_r, l\}$. This is observed by the local bureaucrat but not the citizen.
3. The local bureaucrat chooses effort, which then becomes his type $\theta_b \in \{\tau_b, l\}$. This is observed by ruler but not the citizen.
4. Local performance is delivered as the sum of types: $X = \theta_r + \theta_b$.
5. The citizen observes performance X , and updates his beliefs about the central ruler.

¹⁶ Apart from effort choice, another key assumption we make is that the choices are sequential with the ruler choosing before the bureaucrat. This makes sense because local bureaucrats often need to follow central policies or guidelines from above.

6. The ruler decides whether to promote the bureaucrat. The promotion probability $p(\theta_r, \theta_b) \in [0,1]$ is jointly determined by the types of ruler and bureaucrat¹⁷.
7. The citizen observes the promotion outcome $P(\theta_r, \theta_b) \in \{0,1\}$, and updates his beliefs about the ruler again.
8. Payoffs are assigned.

Payoffs. With the new structure, we specify ruler's and bureaucrat's payoffs as follows:

$$U_r(\tau_r, \theta_r) = (1 - \alpha - \beta)X(\theta_r, \theta_b) + \alpha p(\theta_r, \theta_b)g(\theta_b) + \beta E_c(\theta_r | X, P) - c\mathbb{I}(\theta_r = h)$$

$$U_b(\tau_b, \theta_b) = (1 - \gamma)X(\theta_r, \theta_b) + \gamma P(\theta_r, \theta_b)w - c\mathbb{I}(\theta_b = h)$$

The ruler's payoff differs from that in the simple model only by the cost of effort. We model the bureaucrat's payoff as a weighted-average (with weight γ) of local performance and wage increase (w) upon promotion. We leave out reputation concern for the bureaucrat to emphasize that reputation building is a more important task for the central ruler.¹⁸

There are two additional assumptions we make in the full model. The first is that moral hazard only applies to high talent individuals. The assumption highlights the fact that moral hazard is less of an issue for less capable individuals because their efforts contribute little to the eventual outcome. It also simplifies the analysis. The rules of type formation are illustrated in Table 1.

[Table 1 is inserted here]

The second assumption is that ruler chooses effort before the bureaucrat. This reflects the fact that central policies are usually established before local execution, and the fact that local bureaucrats can often infer the ruler's efforts from policy details. The assumption is especially reasonable in authoritarian regimes, where local bureaucrats often have to govern under the restrictions of central instructions.

3.2 Analysis

¹⁷ To be precise, the promotion probability is jointly determined by the types of the ruler and bureaucrat, both of which are functions of each individual's talent and consequent effort choices.

¹⁸ An alternate way to interpret the set-up is to assume that reputation concern does exist for bureaucrat, but with a small weight that can be essentially ignored.

We use backward induction. When the types are formed, ruler and bureaucrat play the same game as in the simple model. In the type-forming stage, the bureaucrat trades off the benefit of shirking with the decrease in performance and promotion opportunities. The ruler trades off the benefit of shirking with the decrease in performance and reputation loss, but may recover some of his reputation by manipulating promotions. In particular, we are interested in finding equilibria where the ruler does shirk because of the manipulation option later.

We first set up a benchmark with only the moral hazard problem of effort choice where no strategic promotion takes place. The intuition of the strategic interaction is as follows: when reputation can no longer be manipulated (types are revealed after chosen), the ruler's signaling tool to hide weakness is no longer effective. Thus, when cost of exerting effort is low, a talented ruler should always work hard. For the bureaucrat who has no access to promotion decisions, his only consideration is the cost of effort. We therefore have the following proposition.

Proposition 2. *In the non-signaling benchmark, when the cost of effort is not too high, high talent individuals always work. That is, there exists $\tilde{c} > 0$ such that $\theta_i = h$ whenever $\tau_i = h$, and $c \leq \tilde{c}$; $i \in \{r, b\}$ (see Appendix for the proof).*

Now consider what happens when types are not revealed after they are chosen, and the ruler can manipulate promotion to fake reputation. The existence of signal jamming explained in the simple model provides an opportunity for the weak ruler to earn a better reputation than he otherwise deserves. However, it also provides a talented ruler with incentives to shirk and choose to behave like a weak ruler and exploit the reputation gains from manipulating promotion. In this case, the ruler's signaling tool has negative externality on the moral hazard problem and induces shirking from the ruler. The following proposition constructs precisely such an equilibrium: the strong ruler chooses to shirk in the hope that he can manipulate promotion to maintain a decent reputation later.

Proposition 3. *When cost of effort is neither too large nor too small, there exists a top-shirking equilibrium where the ruler shirks when he observes a talented local bureaucrat, and cheats the*

citizen by not promoting the high-performing bureaucrat. Formally, when $c \in [\underline{c}, \bar{c}]$, where $\bar{c} \leq \tilde{c}$, there exists an equilibrium where $\theta_b = h$ but $\theta_r = l$ when $\tau_r = \tau_b = h$. (see Appendix for the proof).

Proposition 3 speaks to the negative externality of promotion as a signaling tool for central ruler. When the bureaucrat chooses his level of effort, he plays a simple career concern game similar to Holmstrom (1999) in which the incentive of choosing costly effort is two-fold: the immediate benefit in higher output (better local performance) and the long-term higher promotion probabilities.¹⁹ When the ruler has the promotion tool, on the one hand, he can incentivize higher effort from the bureaucrat while doing less himself and manipulating promotions to maintain his reputation. By selecting low effort, the ruler effectively pushes the bureaucrat to exert effort while saving some costs of effort himself. The downside of his reputation risk is then mitigated by not promoting the high-performing bureaucrat.

There are several interesting implications of this “active shirking of the ruler”. First, the phenomenon takes place only when both the ruler and the bureaucrat are of high types: if the ruler is of low type, then he does not have a choice; and if the ruler is of high type but the bureaucrat is of low type, shirking from the top destroys his reputation completely by fully revealing the types. Second, the cost of effort must be mild: if the cost is too high, shirking is always the best choice; if the cost is too low, working and grabbing full reputation gains is always the best choice.

3.3 Transparency of type information

Suppose now that the type information can also be private. In particular, we focus on the case where there is asymmetric information between the ruler and bureaucrat: the bureaucrat can perfectly observe the type of the ruler, but not vice versa.²⁰ Formally, the ruler has probability $v \in [0,1]$ of knowing the bureaucrat’s type before choosing his effort level. With probability $1 - v$, bureaucrat's type is private information.

¹⁹ Chinese local officials indeed exert efforts in promoting local economic growth to enhance their promotion chance (Li and Zhou 2005; Jia 2017).

²⁰ One justification of such asymmetry is that it is easier for the bureaucrat to identify the type of the ruler through meetings (where the ruler talks most of the time) or policy documents. But it is hard for the ruler to validate the types of the bureaucrat before he observes the local performances.

With such asymmetry of information, we revisit Proposition 3. In Proposition 3, the incentive for the ruler to shirk comes from the ability to manipulate promotion when the bureaucrat is high type and exerts effort. In all other cases, the ruler either cannot shirk or chooses not to shirk. If the ruler does not know the bureaucrat's type, he has fewer incentives to shirk. That is, if the information regarding the bureaucrat's type is less transparent, the ruler's manipulation tool is less effective, decreasing the ruler's incentive to shirk. In this sense, intra-governmental transparency (or effective monitoring) reduces the responsiveness of the superior, which can be bad for social welfare.

To put it formally we have the following corollary.

Corollary 1. *When the ruler does not know the bureaucrat's talent for sure, the more uncertain the ruler is, the less likely that he shirks. In particular, the ruler never shirks when the bureaucrat completely hides his talent, $v = 0$, when the prior belief is not too high, $\mu < \bar{\mu}$ (see Appendix for the proof).*

Corollary 1 generates another prediction: intra-government opacity, namely a ruler with limited access to detailed information about his agents, could reduce shirking. In particular, the moral hazard problem may be completely mitigated when the ruler has no information about the bureaucrat. On the other hand, institutions that enable a ruler to collect detailed information about his agents, such as the Organization Department within the CPC, will increase intra-governmental transparency and make shirking more likely.

4. Empirical Evidence

In this section, we provide some empirical evidence for the theory. To restate, our theory has two major empirical implications: a ruler's reputation declines after promoting a bureaucrat with mediocre observable performance (Proposition 1), and the ruler reduces effort when the bureaucrat is talented and the effort cost is medium (Propositions 3). While lacking proper data to examine the latter proposition (since both effort and talent are difficult to measure), we focus on testing the former one using data from China.

As a preview of the results, using the 2012 World Value Survey (WVS) administrated in China

during a narrow three-month window in coincidence with promotion of two top provincial leaders, we find that citizens in the promotion provinces (which happened to have mediocre governance) were more likely to reduce their trust in the central government after observing the promotion than those in non-promotion provinces did.

As described below, the limited data may render the evidence more suggestive than conclusive. With that said, the evidence lends reasonably strong support to our theory. First, the empirical pattern, novel to studies on bureaucratic control and public opinions in China, fits well with our theory. Second, the empirical finding remains robust after considering two influential theses regarding determinants of promotion of Chinese local officials, namely the competence and the network theses. Third, as shown in the placebo tests, we find support for political trust in the central government, as predicted by our theory, but not for political trust in other political institutions, about which our theory does not have explicit predictions. The last two increase our confidence that the empirical pattern is unlikely completely driven by some channels other than what our theory has suggested.

4.1 Data and measures

In the case of Chinese provincial leaders' promotion, the promoter is the Chinese central government and the subordinates are top provincial leaders, either party secretaries or governors. To test these reputation predictions more rigorously, we searched for feasible data among often used and publicly available social surveys.²¹ Our target survey should meet two criteria: (1) it has appropriate measures of the central government's reputation, and (2) there are promotions of provincial leaders during the survey period.

The WVS 2012 data in China met the requirements. The survey interviewed 2274 individuals in China between November 16, 2012, and January 21, 2013.²² During the survey period, promotions of provincial leaders occurred in Shanxi and Guangxi on December 18, 2012, but not

²¹ We searched among recent waves of the Asian Barometer Survey (ABS), the Chinese General Social Survey (CGSS) and the World Value Survey (WVS).

²² In the original survey, there were 24 interviews conducted before or on November 15, 2012. There were turnovers of provincial leaders in several provinces on November 15, 2012, immediately after the CPC's 18th National Congress. But there were only two out of the 24 interviews conducted in the provinces with turnovers, so the sample is not big enough to employ DiD. We were concerned that these observations may contaminate the DiD estimation of the effect of promotion happening on December 18, so we dropped them.

in any other provinces.²³ More specifically, the Governor of Shanxi, Wang Jun, was promoted to Party Secretary of Inner Mongolia, while the Party Secretary of Guangxi, Guo Shengkun, was promoted to Party Secretary of the Ministry of Public Security (and was appointed as the Minister of Public Security on December 28, 2012).²⁴ 62 interviews were conducted before December 18, 2012, and around 211 after that date in these two provinces with promotions; there were 1244 and 757 interviews conducted before and after that date, respectively, in the other provinces. (Figure A in the Appendix shows the timing of the surveys by province.) It is also worth noting that the regional GDP growth rates of Shanxi and Guangxi ranked as 20th and 18th out of the 31 provincial units in 2012, which fits our definition of mediocre performance.²⁵

As the promotion announcement date was not known to the public in advance, the fact that there were surveys conducted on both sides of such date provides an opportunity to employ a difference-in-differences (DiD) strategy to estimate the reputation effect of real promotions (reputation dampening).

Before proceeding to the estimations, it is worth discussing potential measurement error in our dependent variable, namely the trust in the national government, especially because China is an authoritarian regime and citizens may fear reporting their true political preferences. Although it is possible that respondents intentionally hide their anti-government attitudes and report high support for the government, we do not believe that this possibility poses a serious threat to the analysis. First, we care about within-country variation in public support for the government rather than its absolute levels for cross-national comparisons. If citizens in the same country are exposed to similar political fears, the variation in their responses to the question will still capture the true

²³ A couple of provinces, such as Inner Mongolia, Jilin, Fujian and Sichuan, had promotions of provincial leaders on November 15, 2012. In our estimation, because these provinces did not experience turnovers during the survey time (November 16, 2012 to January 21, 2013), the difference between these provinces and other provinces experiencing no turnover on November 15, 2012 will be captured by province fixed effects, and thus will not affect our estimation.

²⁴ The promotion of Guo Shengkun is less clear to the public as that of Wang Jun because the former's promotion was not recognized until December 24, 2012 when he participated in a meeting as the new Party Secretary of the Ministry of Public Security. We respond to this problem in two ways: first, as all interviews conducted in Guangxi Province were in January 2013 (Appendix Figure A), re-coding the treatment date for Guangxi Province to December 24, 2012 does not change the result; second, as shown below, we report an additional set of results with Guangxi excluded from the sample, and the result does not change.

²⁵ It is widely accepted that GDP growth is one of the most important indicators of performance of Chinese local officials in the reform era (e.g., Li and Zhou 2015). The growth data is from the National Bureau of Statistics of China, <http://data.stats.gov.cn/easyquery.htm?cn=E0103> (May 2017).

variation in political support (Geddes and Zaller, 1989). Second, as shown in previous observational and experimental studies, although political fear in China can affect respondents' answers to politically sensitive questions, like those about political trust, its magnitude is too small to undermine the "validity" of the measurement (Shi 2001, p. 407; Tang 2016, p. 150).

4.2 Model

We employ a DiD with province and week fixed effects:

$$y_{i,p,t} = \gamma_p + \lambda_t + \beta(\text{Promotion}_p \times \text{Post}_t) + X_{i,p,t}\delta + \varepsilon_{i,p,t}$$

The dependent variable ($y_{i,p,t}$) is the individual i 's trust in the national government from province p and interviewed in week t . The values range from 1 ("Not at all") to 4 ("Very much"). Figure 2 shows the distribution of the dependent variable. γ and λ denote the province and week fixed effects, respectively, which capture time-invariant province effects and common time trends.²⁶ *Promotion* takes the value of 1 if an individual is from a province where promotion happened during the time of the survey and is 0 otherwise; *Post* takes the value of 1 if an individual takes the survey after the promotion date (December 18, 2012) and is set to 0 otherwise. The *Promotion* and *Post* variables per se are dropped because of their collinearity with the week and province dummies.

β , the coefficient of interest, is the estimator for the DiD effect of the treatment on the treated. It captures the idea that promotion decision of the central government leads citizens to downgrade its reputation and is expected to be negative. By conducting such test, we assume that citizens in each province update their beliefs about the central government's type (i.e., θ_r) based only on promotion outcomes of their provincial officials, but not based on similar information from other provinces.²⁷ One may concern that citizens may acquire additional information from neighboring provinces to update their beliefs about the central government, which violates the assumption

²⁶ Excluding week fixed effect and including only the treatment time dummy has yielded qualitatively the same findings.

²⁷ This assumption is consistent with our model that considers only a central government and a local government, which does not allow citizens to infer the central government's type by observing governance performance in other regions.

above. However, the Chinese central government may have different policies for different provinces, causing its perceived type to vary across regions. Accordingly, as θ_r varies across provinces, the information from other provinces becomes less helpful for citizens to infer the central government's type in their home province.

$X_{i,p,t}$ is a set of individual-level controls, including age, gender, education, income, party membership, residence in an urban area, daily news consumption, and general social trust, which have generally been controlled for in previous studies of political trust in China (e.g., Li 2004, 2011). Including the individual-level controls helps to control for confounding trends and to reduce the variance of ε_{ipt} , which may reduce the standard errors of the estimate of β . For the same reason, we will also report estimation results after controlling for six variables measuring trust in domestic political institutions, namely trust in the civil service, trust in the army, trust in the police, trust in the courts, trust in political parties and trust in the legislatures.²⁸

[Figure 2 is inserted here.]

Additionally, we consider two influential narratives about the determinants of officials' promotion in China. One narrative argues that an official's promotion chances are mainly determined by his capabilities while another argues that the chance is largely determined by networks with superior officials. We are less concerned with the former because if true, there is no obvious reason to expect trust in the central government to decline, as stated in Proposition 1. But the network narrative indeed poses a challenge: If the narrative is valid and citizens indeed update their beliefs about the central government's quality after observing promotions, intuitively, promoting well-connected officials will decrease the central government's reputation, which generates an observationally equivalent prediction. Specifically, immediately after Wang Jun's promotion, Li Xiaopeng, the son of the former Premier Li Peng, was appointed as the acting Governor of Shanxi. We are concerned that citizens may view the promotion of Wang Jun as making room for the promotion of Li Xiaopeng, and downgrade the central government's reputation because of the perceived role of connections in Li's promotion. To mitigate these

²⁸ However, we prefer the estimation results without controlling for those trust variables because they may be affected by the treatment; thus, including them may introduce post-treatment bias.

concerns, we control for the respondents' perceived importance of networks in determining success to ensure that our findings are not completely driven by the network narrative.²⁹

Finally, the usual parallel trend assumption for DiD estimation applies here. Specifically, we assume that treated provinces would have followed similar trends in national government trust to the control provinces in the absence of the promotion, after demeaning the trust in national government within each province and across provinces in each week during the survey window (by controlling for province and week dummies). This assumption is plausible in our case where the promotion announcement date is unexpected and the time window under consideration—around two months—is narrow. We provide additional evidence for this assumption in the robustness section.

4.3 Results

Table 2 summarizes the major findings. Because treatment is assigned at the province level, standard errors are clustered by province to avoid potential correlation of errors within provinces.³⁰ We report three sets of results estimated using different samples: (1) the full sample, (2) a subsample after excluding one of the two treated provinces, Guangxi, and (3) a sub-sample keeping only the four weeks during which the treated provinces have observations.³¹ The DiD estimations are found statistically significant across all the models. In our preferred estimation, model 2 of Table 2, promotion decreases individual's trust in the central government by 0.266 points on a one to four scale. Given that the mean trust in central government is around 3.325, among individuals with the mean level of political trust, promotions decrease trust in central government by around 8 percent.

²⁹ Interestingly, we did find that the promotions significantly increase people's perception of the importance of networks. Thus, the network narrative has been supported. But because the reputation-decreasing effect of promotion still exists after controlling for the perceived importance of network, our findings cannot be accounted for by the network narrative.

³⁰ Due to the relatively small number of province clusters (i.e., 24 or fewer), we implement standard error clustering by using the *partial* function in *ivreg2* of Stata (to partial out week and province dummies first). More details can be found at <http://www.repec.org/bocode/i/ivreg2.html>.

³¹ We exclude Guangxi because all respondents there were interviewed after the treatment date (see Appendix Figure A). Although keeping Guangxi will help estimate the time trend, we want to ensure that the finding is not completely driven by Guangxi observations. Similarly, keeping observations interviewed during weeks when no interviews are taken in treated provinces will help estimate the time trend, but we want to ensure that they are not driving the main findings.

[Table 2 is inserted here.]

4.4 Robustness checks

We conducted two robustness checks. First, we show that there is no significant difference between the promotion and non-promotion provinces before the treatment date (December 18, 2012), which lends some support to the parallel trend assumption. Second, we show that the DiD estimated effect of promotion on trust in the central government does not apply to trust in other political institutions. The null effect on other political trust variables increases our confidence that the estimated effect is driven by the promotion outcomes and the updating mechanism that our theory has proposed.

Insignificant difference between provinces with and without promotions before the treatment.

Parallel trends are a key identification assumption in DiD models. This assumption cannot be tested directly. Similar to previous studies (e.g., Bechtel and Hainmueller 2011), we probe the plausibility of this assumption with a falsification test that estimates a placebo DiD regression for the pre-treatment period. If the falsification DiD estimate is not significant, the parallel-trend assumption holds in the pre-treatment period; thus, it will be more plausible to assume that the treated and control units approximately follow parallel trends for the post-treatment period, especially given the short time window under investigation in this study.

Previously, we used all pre-promotion dates as a single pre-treatment period due to the short period of the survey time window. To test the parallel-trend assumption for the pre-treatment period, we use a subsample of two weeks before the treatment date during which the treated provinces have observations and treat the two weeks as two periods. Then, we fake a treatment date exactly in the middle of the two weeks and estimate the placebo DiD regression. As shown in Table 3, the DiD estimate is statistically insignificant with or without individual-level controls, which supports the parallel trends assumption during the pre-treatment period.

[Table 3 is inserted here.]

Insignificant effect on trust in other political institutions. Our theory does not explicitly speak to the impact of promotion on citizen’s trust in other political institutions and thus does not necessarily predict null effects of promotion on other political trust variables. However, if we indeed find insignificant effects of promotion on other political trust variables, we will have more confidence that the reported findings are not driven by some time-varying factors that affect general political trust, which could also violate the parallel trend assumption of DiD estimation.³² Additionally, if we find no similar effects of promotion on trust in other political institutions, we will have more confidence that the effect is working through our proposed mechanism, rather than affecting general political trust, of which the trust in central government is one component. As shown in Table 4, the DiD estimates are statistically insignificant across all eight columns. Thus, they do not reveal similar effects of promotion on trust in either domestic political institutions or international political institutions.

[Table 4 is inserted here.]

5. Conclusion

We have shown that promotion can be used as an information management tool by popularity-seeking rulers to manipulate reputation. We demonstrated the intuition with our formal model and our empirical results confirmed that sophisticated citizens understand rulers’ strategies, and adjust their evaluations accordingly.

Our theory also predicts that strategic promotion may result in declining governmental responsiveness and may provide room for the ruler to implement undesirable social policies. Surprisingly, intra-governmental transparency (effective monitoring) within the hierarchy has a negative impact on the ruler’s responsiveness. Due to space and data limits, we do not test these predictions in this paper and will leave them for future research.

We note that our formalization focuses on promotion decisions as the only signaling tool that the ruler possesses. In the real life, there are, of course, other channels for the ruler to signal strength and to hide weakness, such as employing the strength-signaling propaganda (Huang 2015),

³² For instance, one may be concerned that people with some anti-government characters are somehow interviewed later. If true, we would expect the DiD estimator to yield similarly significant findings on the trust in other political institutions.

strategically censoring the media (Lorentzen 2014), or flexing muscles in diplomatic disputes. In this paper, we highlight the existence of one of these channels, and point to the decrease of government responsiveness as a problem common to all of these channels.

Beyond the authoritarian context, our theory could be applied to all organizations that share such structure. For instance, the theory may advance our understanding of the relationship between an elected politician and his appointed bureaucrats in democracies and how the former shifts blame to the latter by delaying deserved promotions, or in a corporation where mid-tier officers delay promotions to claim credit in front of his boss.

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Figures.

Figure 1. Inference Process of Citizens

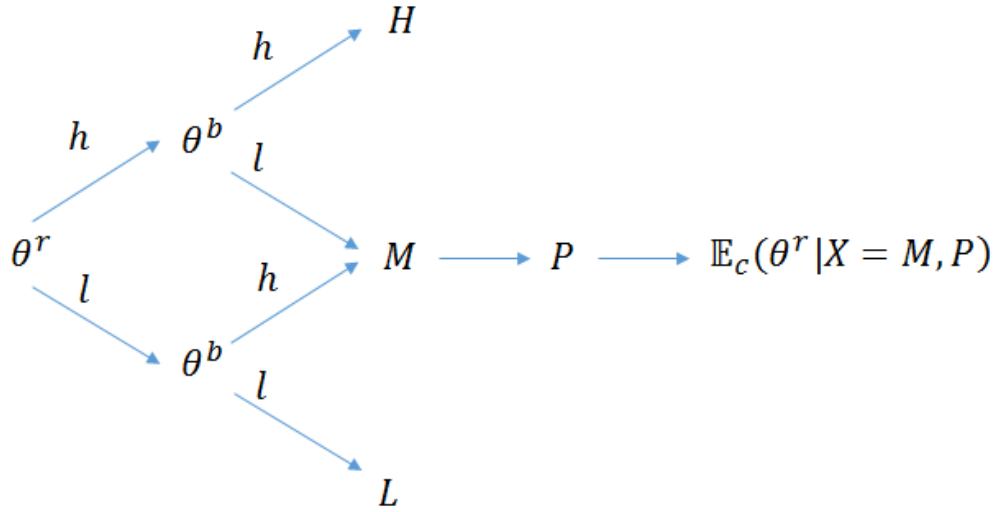
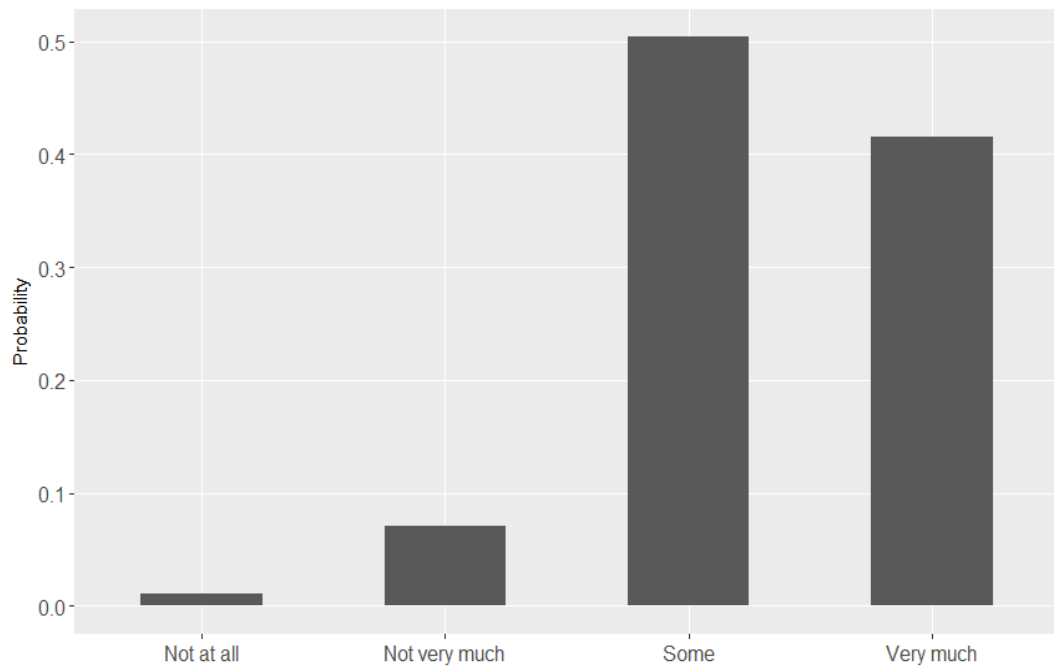


Figure 2. Trust in the Chinese National Government, WVS 2012



Tables.

Table 1. Type Formation for Ruler (Promoter) and Bureaucrat (Promotee)

Talent (for both r and b)	Effort (Yes or No)	Type formed
High	Yes	High
High	No	Low
Low	Yes	Low
Low	No	Low

Table 2. Diff-in-Diffs Estimation: Promotion and Promoter's Reputation

VARIABLES	Full sample			Excluding Guangxi			Four weeks only		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Promotion \times Post (β)	-0.267*** (0.062)	-0.266*** (0.071)	-0.267*** (0.037)	-0.268*** (0.063)	-0.265*** (0.078)	-0.268*** (0.037)	-0.322*** (0.067)	-0.431*** (0.099)	-0.256*** (0.062)
Dependent variable mean	3.324	3.325	3.312	3.334	3.336	3.323	3.297	3.305	3.291
Individual-level controls		yes	yes		yes	yes		yes	yes
Trust in domestic inst.			yes			yes			yes
Week fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Province fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	2,072	1,639	1,460	1,910	1,510	1,358	1,230	965	849
R-squared	0.002	0.034	0.630	0.002	0.037	0.644	0.003	0.060	0.622

Note: Dependent variable is trust in the national government; individual-level controls include age, gender, education, income, party membership, residence in an urban area, daily news consumption, general social trust, and perceived importance of networks; trust in domestic institutions include six variables that measure trust in the civil service, trust in the army, trust in the police, trust in the courts, trust in political parties and trust in the legislatures, respectively; robust standard errors in parentheses are clustered at the province level; R-squared is computed after the week dummies and province dummies are partialled out; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3. Falsification Test: Support for the Parallel Trend Assumption

VARIABLES	Two pre-treatment weeks only	
	(1)	(2)
Promotion × Last pre-treatment week	-0.138 (0.150)	0.094 (0.233)
Mean of dependent variable	3.336	3.328
Individual-level controls		yes
Week fixed effects	yes	yes
Province fixed effects	yes	yes
Observations	666	521
R-squared	0.001	0.103

Note: Dependent variable is trust in the national government; individual-level controls include age, gender, education, income, party membership, residence in an urban area, daily news consumption, general social trust, and perceived importance of networks; robust standard errors in parentheses are clustered at the province level; R-squared is computed after the week dummies and province dummies are partialled out; *** p<0.01, ** p<0.05, * p<0.1.

Table 4 Placebo Test: Null Effect on Trust in Other Political Institution^a

VARIABLES	Domestic political institutions						International institutions	
	Civil			Political			APEC	UN
	service	Army	Police	Courts	parties	Legislature		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Promotion × Post (β)	0.003 (0.112)	-0.114 (0.087)	0.255 (0.169)	0.163 (0.113)	-0.013 (0.078)	-0.035 (0.082)	0.132 (0.193)	0.035 (0.118)
Individual-level controls	yes	yes	yes	yes	yes	yes	yes	yes
Province fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Week fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	1,538	1,623	1,626	1,593	1,582	1,611	667	863
R-squared	0.039	0.028	0.025	0.024	0.039	0.051	0.015	0.022

Note: Dependent variable is trust in the national government; individual-level controls include age, gender, education, income, party membership, residence in an urban area, daily news consumption, general social trust, and perceived importance of networks; robust standard errors in parentheses are clustered at the province level; R-squared is computed after the week dummies and province dummies are partialled out; *** p<0.01, ** p<0.05, * p<0.1.

^a The reported results are estimated using the full sample. Excluding Guangxi yields similar results.

Appendix

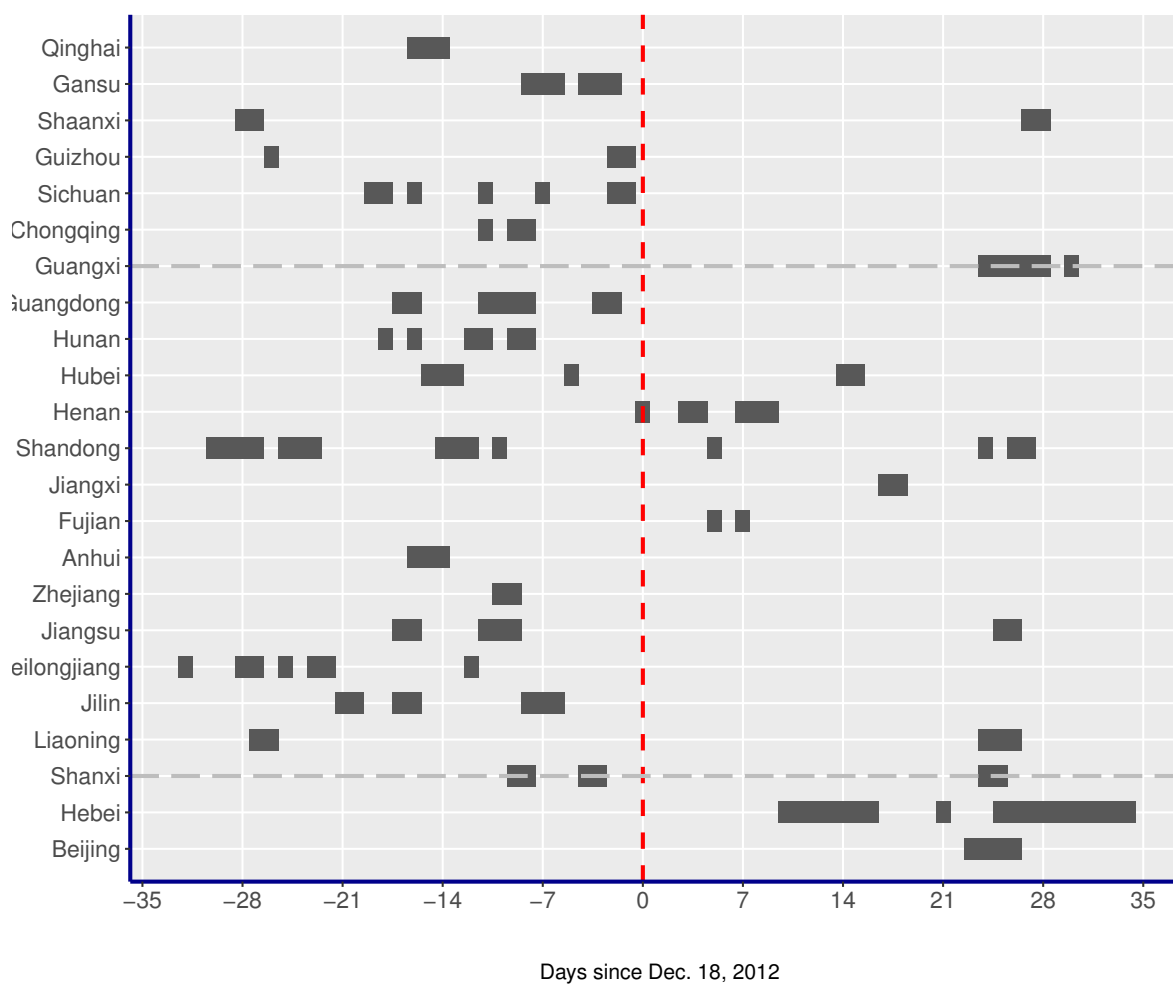
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A Tables and Figures

A.1 Survey Time in Chinese Provinces

Figure A: Survey Time in Chinese Provinces



Note: This figure describes the World Value Survey (WVS) interview time in each province during the two-month window in late 2012 and early 2013. Negative values indicate that the interviews were conducted before December 18, 2012 while positive numbers refer to interviews conducted after such date.

A.2 Summary Statistics

Table A: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent variable					
Trust in national government	2,072	3.324	0.652	1	4
Key independent variables					
Post-promotion	2,274	0.426	0.495	0	1
Promotion province	2,274	0.120	0.325	0	1
Promotion province \times Post-promotion	2,274	0.093	0.290	0	1
Control variables					
Age	2,274	43.885	14.970	18	75
Female	2,274	0.509	0.500	0	1
Education	2,274	5.347	2.372	1	9
Income	2,033	4.409	1.844	1	10
Party membership	2,271	0.081	0.273	0	1
Urban residence	2,274	0.551	0.498	0	1
Daily news consumption	2,090	0.728	0.445	0	1
General social trust	2,175	0.646	0.478	0	1
Network importance	2,098	3.696	2.383	1	10
Trust in civil service	1,911	2.961	0.685	1	4
Trust in army	2,052	3.288	0.637	1	4
Trust in police	2,051	2.904	0.741	1	4
Trust in courts	2,003	3.017	0.716	1	4
Trust in political parties	1,981	3.147	0.720	1	4
Trust in legislature	2,013	3.184	0.688	1	4

B Proofs

B.1 Proof of Proposition 1

Proof. Rearranging the terms to get:

$$\begin{aligned}\max_{p(h,l)} \tilde{U}_r(h) &= (\alpha g(l) + \beta [q_P h + (1 - q_P)l - q_{NP} h - (1 - q_{NP})l]) p(h,l) + \text{constant} \\ &= (\alpha g(l) + \beta (q_P - q_{NP})(h - l)) p(h,l) + \text{constant}\end{aligned}$$

and

$$\max_{p(l,h)} \tilde{U}_r(l) = (\alpha g(h) + \beta (q_P - q_{NP})(h - l)) p(l,h) + \text{constant}$$

Now suppose $q_P \geq q_{NP}$. Then $p(l,h) = 1$, the weak always promotes. Then to maintain $q_P \geq q_{NP}$ in equilibrium, it has to be that $p(l,h) = p(h,l) = 1$. However, it is easy to see that the strong ruler has profitable deviation to $p(h,l) = 0$ because by our assumption of off-equilibrium path belief, now $q_{NP} = 1$. Contradiction.

Therefore $q_P < q_{NP}$. Then from the strong ruler's problem, $p(h,l) = 0$. For the weak ruler, there are three cases:

1. $\alpha g(h) + \beta (q_P - q_{NP})(h - l) > 0$. Then $p(l,h) = 1$. In equilibrium the citizen has the correct conjecture, therefore $q_P = 0$, $q_{NP} = 1$. Such equilibrium exists if and only if $\frac{\alpha g(h)}{\beta(h-l)} \geq 1$.

2. $\alpha g(h) + \beta (q_P - q_{NP})(h - l) = 0$. In equilibrium, $q_P = \frac{\hat{p}(h,l)}{\hat{p}(h,l) + \hat{p}(l,h)} = 0$, $q_{NP} = \frac{1 - \hat{p}(h,l)}{2 - \hat{p}(h,l) - \hat{p}(l,h)} = \frac{1}{2 - p(l,h)}$. To plug back, $p(l,h) = 2 - \frac{\beta(h-l)}{\alpha g(h)}$. This equilibrium exists if and only if $\frac{1}{2} < \frac{\alpha g(h)}{\beta(h-l)} < 1$.

3. $\alpha g(h) + \beta (q_P - q_{NP})(h - l) < 0$. In this case we have a pooling equilibrium where $p(l,h) = p(h,l) = 0$. Consequently and based on our off-equilibrium path assumption, $q_P = 0$, $q_{NP} = \frac{1}{2}$. Such equilibrium exists if and only if $\frac{\alpha g(h)}{\beta(h-l)} \leq \frac{1}{2}$.

Lastly, $q_P < q_{NP}$ means that the reputation of the ruler always decreases after promotion. \square

B.2 Proof of Proposition 2

Proof. To achieve the result we require the following.

1. When $\tau^r = l$, $\tau^b = l$, no choice to make.
2. When $\tau^r = h$, $\tau^b = l$, $(1 - \alpha - \beta)(h + l) + \beta l - c \geq 2(1 - \alpha - \beta)l + \beta l$
3. When $\tau^r = l$, $\tau^b = h$, $(1 - \gamma)(h + l) + \gamma w - c \geq 2(1 - \gamma)l$
4. When $\tau^r = h$, $\tau^b = h$, since ruler moves first. We use backward induction. Given $\tau^r = h$, we require bureaucrat to choose high effort, that is: $2(1 - \gamma)h + \gamma w - c \geq (1 - \gamma)(h + l)$. Then it is bureaucrat's dominant strategy to choose to work. Next we turn to the ruler. For the ruler to work, we require: $(1 - \alpha - \beta)(h + h) + \alpha g(h) + \beta h - c \geq (1 - \alpha - \beta)(l + h) + \alpha g(h) + \beta l$.

To combine the inequalities above, we have: $c \leq \tilde{c} = \min\{(1 - \alpha - \beta)(h - l), (1 - \gamma)(h - l) + \gamma w\}$ \square

B.3 Proof of Proposition 3

Proof. There are four cases to consider.

1. $\tau^r = l, \tau^b = l$

This is the simplest case. There is no effort choice for ruler or bureaucrat. Type is perfectly learned. No promotion is made. Denote the payoff function as $U_i(\tau^i, \theta^i)$, $i \in \{r, b\}$, the payoffs are:

$$U_r(l, l) = 2(1 - \alpha - \beta)l + \beta l = (2 - 2\alpha - \beta)l$$

$$U_b(l, l) = 2(1 - \gamma)l$$

2. $\tau^r = h, \tau^b = l$

Then the ruler needs to decide whether to exert effort or not. Again denote citizen's conjecture as q_P and q_{NP} .

We look for the case where the ruler now chooses $\theta^r = h$. If ruler does exert effort, he gets:

$$U_r(h, l) = (1 - \alpha - \beta)(h + l) + \beta(q_{NP}h + (1 - q_{NP})l) - c$$

We require:

$$(1 - \alpha - \beta)(h + l) + \beta(q_{NP}h + (1 - q_{NP})l) - c \geq (2 - 2\alpha - \beta)l$$

That is,

$$c \leq (1 - \alpha - \beta + \beta q_{NP})(h - l)$$

3. $\tau^r = l, \tau^b = h$

Here we require the talented bureaucrat exert effort. That is,

$$U_b(h, h) = (1 - \gamma)(h + l) + \gamma \widehat{p}(l, h)w - c \geq 2(1 - \gamma)l$$

That is,

$$c \leq (1 - \gamma)(h - l) + \gamma \widehat{p}(l, h)w$$

And in this case the ruler's payoff is:

$$(1 - \alpha - \beta)(h + l) + \beta(q_{NP}h + (1 - q_{NP})l)$$

because in equilibrium the weak ruler is indifferent between mimicking the strong ruler or not.

4. $\tau^r = h, \tau^b = h$

Here we require the talented ruler shirks and talented bureaucrat exert effort. We divide the analysis into two parts.

First, we show the conditions under which $\theta^b = h$ after $\theta^r = l$. We require the same condition as in 2.2.3:

$$c \leq (1 - \gamma)(h - l) + \gamma \widehat{p}(l, h)w$$

Next, we calculate ruler's payoff if $\theta^b = h$ and $\theta^r = h$. It is straightforward to see that if the ruler exerts efforts, the bureaucrat will exert efforts because $(1 - \gamma)(h + h) + \gamma - c > (1 - \gamma)(h - l) + \gamma \hat{p}(l, h)w - c$. Then, we can compare ruler's payoff between working and shirking, and we require that ruler prefers to shirk:

$$U_r(l, h) = (1 - \alpha - \beta)(h + l) + \beta(q_{NP}h + (1 - q_{NP})l) \geq (1 - \alpha - \beta)(h + h) + \beta h - c = U_r(h, h)$$

That is,

$$c \geq (1 - \alpha - \beta q_{NP})(h - l)$$

So now let's recap: when the citizen sees a mediocre performance $X = M$, he knows there are the following possibilities: 1. With probability $\mu(1 - \mu)$, a high talent ruler who works and a low talent bureaucrat. In this case we shall see no promotion; 2. With probability $\mu(1 - \mu)$, a low talent ruler and a high talent bureaucrat who works. In this case ruler promotes with probability $p(l, h)$; 3. With probability μ^2 , a high talent ruler who shirks and a high talent bureaucrat who works. In this case ruler also promotes with probability $p(l, h)$.

We want to construct an equilibrium where all the following conditions hold at the same time.

$$c \leq (1 - \alpha - \beta + \beta q_{NP})(h - l)$$

$$c \leq (1 - \gamma)(h - l) + \gamma \hat{p}(l, h)w$$

$$c \geq (1 - \alpha - \beta q_{NP})(h - l)$$

$$\hat{p}(h, l) = \arg \max_{p(h, l)} \alpha p(h, l)g(l) + \beta(p(h, l)[q_P h + (1 - q_P)l] + [1 - p(h, l)][q_{NP}h + (1 - q_{NP})l])$$

$$\hat{p}(l, h) = \arg \max_{p(l, h)} \alpha p(l, h)g(h) + \beta(p(l, h)[q_P h + (1 - q_P)l] + [1 - p(l, h)][q_{NP}h + (1 - q_{NP})l])$$

$$q_P := \frac{\hat{p}(h, l)\mu(1 - \mu)}{\hat{p}(h, l)\mu(1 - \mu) + \hat{p}(l, h)[\mu(1 - \mu) + \mu^2]} = \frac{\hat{p}(h, l)(1 - \mu)}{\hat{p}(h, l)(1 - \mu) + \hat{p}(l, h)}$$

$$q_{NP} := \frac{[1 - \hat{p}(h, l)]\mu(1 - \mu)}{[1 - \hat{p}(h, l)]\mu(1 - \mu) + [1 - \hat{p}(l, h)][\mu(1 - \mu) + \mu^2]} = \frac{[1 - \hat{p}(h, l)](1 - \mu)}{[1 - \hat{p}(h, l)](1 - \mu) + [1 - \hat{p}(l, h)]}$$

$$p(l, h) = \hat{p}(l, h) \in (0, 1)$$

$$p(h, l) = \hat{p}(h, l) = 0$$

Similar with the simple model, the solution of the equilibrium boils down to solving

$$\alpha g(h) + \beta (q_P - q_{NP})(h-l) = 0$$

That is,

$$p(l, h) = 2 - \mu - (1 - \mu) \frac{\beta (h-l)}{\alpha g(h)}$$

In the meantime, from

$$c \leq (1 - \alpha - \beta + \beta q_{NP})(h-l)$$

$$c \leq (1 - \gamma)(h-l) + \gamma \widehat{p}(l, h)w$$

we know that denote $\bar{c} = \min\{(1 - \alpha - \beta + \beta q_{NP})(h-l), (1 - \gamma)(h-l) + \gamma \widehat{p}(l, h)w\}$, $\bar{c} \leq \tilde{c} = \min\{(1 - \alpha - \beta)(h-l), (1 - \gamma)(h-l) + \gamma w\}$. \square

B.4 Proof of Corollary 1

Proof. We only need to look at the case where information is hidden and the ruler has high talents. There are two cases.

If the bureaucrat's talent is seen, then everything is the same as in the original equilibrium.

If the bureaucrat's talent is hidden, the condition for the ruler to shirk is:

$$\mu U_r(l, h) + (1 - \mu) U_r(l, l) \geq \mu U_r(h, h) + (1 - \mu) U_r(h, l)$$

Comparing with the shirking condition in original equilibrium:

$$U_r(l, h) \geq U_r(h, h)$$

Since $U_r(l, l) \leq U_r(h, l)$ (Case 2 in the proof of Proposition 3), the condition is harder to satisfy than in the original equilibrium. In particular, when $U_r(l, l) < U_r(h, l)$ and $\mu = 0$, the inequality is reversed: the ruler never shirks. By continuity there exists $\underline{\mu}$ such that the ruler never shirks whenever $\mu \leq \underline{\mu}$. \square

C Pseudo Promotions and Bureaucratic Redundancy

Here we consider an alternate set-up. In the simple model we assume $g(h) > 0 > g(l)$, which corresponds to promotions where the role at a higher office is more important, or fits only for strong individuals. But sometimes the higher office may not necessarily be more powerful, nor difficult to harness. We argue that it is possible for some promotions that $g(l) > 0 > g(h)$. We refer the promotions satisfying this condition “pseudo promotions”, while we refer the promotions in the simple model as “real promotions”. Below we explain where the name comes from.

Pseudo promotion is created for the purpose of allocating those promoted officers without offering them real power. The reason behind such design is for replacement of local bureaucrat: if the local office is vital and a weak bureaucrat is sitting on it, the ruler has incentive to replace him, even with reasonable costs. However, demotion is often unusual and too costly in such centralized regime. Consequently, the ruler can pseudo promote the bureaucrat to some idle position with fancy titles, thus leaving the local office an opportunity to select a new one.¹ It is straightforward that in this case only pseudo promoting weak bureaucrats achieves the purpose ($g(l) > g(h)$). Pseudo promoting strong bureaucrat only brings additional local uncertainty because the local successor may not be high type ($0 > g(h)$). Using the same solution techniques as in the simple model, we have the following corollary.

Corollary. *For pseudo promotions, in equilibrium, the strong ruler always promotes after mediocre local performance. And the reputation of the ruler always weakly increases after promotion.*

Proof. Rearranging the terms to get:

$$\begin{aligned} \max_{p(h,l)} \tilde{U}_r(h) &= (\alpha g(l) + \beta [q_P h + (1 - q_P)l - q_{NP} h - (1 - q_{NP})l]) p(h,l) + \text{constant} \\ &= (\alpha g(l) + \beta (q_P - q_{NP})(h - l)) p(h,l) + \text{constant} \end{aligned}$$

and

$$\max_{p(l,h)} \tilde{U}_r(l) = (\alpha g(h) + \beta (q_P - q_{NP})(h - l)) p(l,h) + \text{constant}$$

Now suppose $q_P \leq q_{NP}$. Then $p(l,h) = 0$, the weak never promotes. Then to maintain $q_P \leq q_{NP}$ in equilibrium, it has to be that $p(l,h) = p(h,l) = 0$. However, it is easy to see that the strong ruler has profitable deviation to $p(h,l) = 1$ because by our assumption of off-equilibrium path belief, now $q_P = 1$. Contradiction.

Therefore $q_P > q_{NP}$, which means that the reputation of the ruler always increases after pseudo promotion. \square

The over-promotion under pseudo promotions sheds new light on explaining redundancy: it is a price to pay for the flexibility of personnel control. Given that demotions are hard, the superior officer sets aside idle positions at insignificant departments to accommodate the replaced local

¹A similar motive applies to the teacher selection in public schools of the United States. Principals of schools send out the bad teachers, i.e. the lemons, in the hope for better replacement, because sacking teachers are very costly. See *The Economist*. 2014. “Dance of the lemons”, March 5th, <http://www.economist.com/news/united-states/21599005-reformers-want-make-it-easier-sack-bad-teachers-dance-lemons> (August 15 2017).

officials. Once the local officials are pseudo promoted, the superior officer is able to find potentially capable newcomers to fill in the position. Such strategic redundancy provision predicts that redundancy is not necessary an indicator of system failure. Instead, it could be a promising sign of effective replacement. For instance, we predict that redundancy could be positively correlated with local economic performance, especially when the local performance is vital to the regime. Our predictions is in stark contrast with conventional views that staff redundancy is an outcome of patronage (Ang 2016) or a tool used by local government to bargain over fiscal resources with upper-level government (Guo 2008).

The strategic roles of bureaucratic redundancy is understudied in existing literature, except for Ting (2003), who discusses redundancy as a strategic design for the principal to overcome conflict of interests with the agents. This paper adds to the literature by emphasizing redundancy as a byproduct of effective signaling in strategic promotions. That is, redundancy itself may be a good signal of competence.

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