

# Making Bureaucracy Work: Patronage Networks, Performance Incentives, and Economic Development in China

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**Abstract:** Patron–client networks are widely found in governments of transitional societies and are often seen as an impediment to effective governance. This article advances an alternative view that emphasizes their enabling effects. I argue that patron–client relations can be used to improve government performance by resolving principal–agent problems within political hierarchies. *I substantiate this claim by examining how patronage networks shape economic performance of local governments in China. Using an original city–level panel data set between 2000 and 2011, and a new method that identifies patronage ties based on past promotions, I show that city leaders with informal ties to the incumbent provincial leaders deliver significantly faster economic growth than those without. I conduct additional analyses to rule out several important alternative explanations and provide evidence on the incentive-enhancing mechanism. These findings highlight the importance of informal institutions for bureaucratic management and authoritarian governance.*

**Replication Materials:** The data, code, and any additional materials required to replicate all analyses in this article are available on the *American Journal of Political Science* Dataverse within the Harvard Dataverse Network, at: <https://doi.org/10.7910/DVN/XZ0IZE>.

Throughout history, patron–client networks have played important roles in organizing political life in many systems (Eisenstadt and Roniger 1984; Scott 1972; Theobald 1992). These informal, hierarchical ties of reciprocal benefits have not only governed the relationship between the state and society (Kitschelt and Wilkinson 2007; Stokes et al. 2013) but also functioned as a key institution for regulating interactions among political elites. Patronage was one of the key methods by which premodern political regimes, such as tribes, monarchies, and empires, allocated public offices (Grindle 2012; Kettering 1986; Wolf 1966),

and it continues to influence the operation of governments in many modern societies, shaping the patterns of elite selection and the direction of public policies (Arriola 2009; Gallo and Lewis 2012; Geddes 1994; Nathan 1973; Willerton 1992).

The existing research on patronage networks holds a generally negative view about their impact on government performance. Studies from various political settings have argued that these private networks tend to undermine a government’s ability to fulfill its public functions by breeding corruption (Rose-Ackerman 1999), distorting political incentives (Geddes 1994), and subverting

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formal accountability mechanisms (Stokes 2005). The negative assessment of the effect of political patronage also figures prominently in comparative analyses of states' successes and failures in promoting development, especially as an explanation for the poor economic performance of many developing countries (Goldsmith 1999; Ilkhamov 2007; Zon 2001). Outside of academia, a central theme of the civil service reform advocated by international donors similarly emphasizes replacing traditional, patronage-based administrations with a modern government bureaucracy that features meritocratic principles and rule-based management (United Nations Development Programme 2004).

This article advances an alternative view about the role of patron–client networks in political organizations. Instead of viewing them as inherently backward or counterproductive traits, I argue that patron–client networks can help *improve* the performance of government bureaucracies.<sup>1</sup> More specifically, I argue that the capacity of patron–client relations to coordinate actions in the absence of formal, third-party enforcement enables them to offer an important, albeit informal, solution to the thorny principal–agent problem that commonly occurs within government hierarchies. By fostering mutual trust and raising the value of long-term cooperation, these relations help to align the interests between government agents and their principals, and discourage short-term, opportunistic behaviors. When formal incentive schemes are weak or incomplete, these personal ties can serve as an alternative mechanism for principals to mobilize agents to accomplish important but challenging governing tasks.

I place this argument in the context of China. The Chinese case is especially interesting because of the coexistence of impressive government performance and pervasive political patronage under the Chinese Communist Party (CCP). While there is little doubt that the state, especially the local administrations, has played an instrumental role in China's rapid economic takeoff, informal networks and personal connections remain an integral part of the political system even up to this day. According to Pye (1995, 39), for example, the Chinese bureaucracy features a personalistic authority structure governed by "human relationships that extend from the 'leading figure to his deputies.'" Recent quantitative studies also confirm that patron–client relations are an important factor in shaping the career trajectories of government officials (Oppen, Nee, and Brehm 2015; Shih, Adolph,

and Liu 2012). As in the general literature, most existing research on Chinese politics views these informal relations as a flaw of the system (e.g., Shih, Adolph, and Liu 2012) and explains China's success by its merit-based selection institutions (Bell 2015; Li and Zhou 2005; Xu 2011). **Instead, my argument suggests that these informal elements actually serve as an important tool for incentivizing performance of lower-level officials, especially when good performance entails costs and uncertainties that cannot be fully captured by the formal, institutional arrangements.**

Empirically, I analyze an original panel data set for city-level administrations in China between 2000 and 2011. Although the secrecy of authoritarian politics makes it difficult to discern political alignments among the elites, **I overcome this challenge by working with a new biographical database and a novel strategy that infers patron–client relations from past promotions.** Exploiting variations in connections between cities and provinces induced by the constant reshuffling of officials at both levels, I estimate how patronage connections with higher-level leaders affect city-level economic performance with a series of fixed effects models. Consistent with my argument, I find that city leaders who have informal ties to the incumbent provincial secretary, the *de facto* leader of a province, **tend to deliver significantly better economic performance than those whose patrons have either retired or left the province.** The average performance premium of connected agents is estimated to be about 0.38 percentage points in annual GDP growth, which translates into about 275 million yuan (~42 million U.S. dollars) in extra wealth created each year for a city with an average-sized economy. I take special care to address several important alternative explanations, including clients' greater propensity to falsify data, distributive favoritism, and heterogeneity in personal or career backgrounds. While all three are plausible explanations for the observed performance premium, **the empirical results suggest that they are not the main causal channels through which connection affects performance.**

I then conduct a number of extension analyses to corroborate the main findings and to shed light on the incentive-enhancing role of informal connections. To begin with, I examine how clients' performance premium varies with the prospect of future cooperation and their patrons' own preferences. My analysis suggests that performance premium is the greatest when neither the client nor the patron is too old to be eligible for future promotions, and that the premium tends to be larger when patrons possess a more encompassing interest but declines as they become more corrupt. To provide more direct evidence on how connections shape officials'

<sup>1</sup>In this article, I use the word *bureaucracy* to broadly refer to government organizations staffed by unelected (appointed) officials. For a related definition, see "bureaucracy," *Merriam-Webster*, <https://goo.gl/ZpFiMR>.

incentives, I also analyze several other data sources, including a new data set on government policy priorities. I find that connected city leaders do indeed place greater emphasis on development-related issues in articulating their policy plans, as well as exert a higher level of effort on other important governing tasks, such as revenue collection and legislation.

By demonstrating that patron–client relations can help generate strong incentives for promoting economic growth in the world’s largest developing country, this study contributes to a large literature on the relationship between states’ organizational characteristics and governance outcomes. The general view of this literature is that effective governance requires the presence of certain strong, well-functioning political and bureaucratic institutions. The influential literature on the developmental state, for example, argues that a merit-based, Weberian-style bureaucracy is the key institutional prerequisite for successful state-led development (e.g., Evans and Rauch 1999; Rauch and Evans 2000; Woo-Cumings 1999). In contrast to this view, my analysis suggests that momentum for development can also be created in a less-than-ideal institutional environment where personal connections remain an influential aspect of politics. This perspective echoes a growing, but still scattered, literature that argues certain informal or traditionalistic practices can serve as second-best arrangements for stimulating growth in weakly institutionalized settings. Schneider (1992), for example, argues that the dense patronage networks in the Brazilian bureaucracy contributed to the country’s rapid industrial development in the 1970s and 1980s by facilitating coordination among different agencies. The literature on “patrimonial developmental states” in Africa provides several in-depth case studies to demonstrate that when the leadership is committed to promoting development, rapid economic growth is possible even under a patrimonial political structure (Khan and Sundaram 2000). Most recently, Ang (2016) documents a number of unorthodox practices adopted in the Chinese bureaucracy to promote growth, including de facto profit sharing among government agencies. These findings, along with my own, serve as a cautionary note against the tendency to posit an overly simplistic dichotomy between “good” and “bad” institutions in analyzing complex political systems, and call for a more careful and nuanced assessment of the relationship between informal institutions and government performance.<sup>2</sup>

This study also speaks to a burgeoning literature on the sources of durability in authoritarian regimes. Existing studies on authoritarian survival tend to focus primarily on *formal*, semi-democratic institutions, such as parties, legislatures, and elections (Blaydes 2010; Boix and Svobik 2013; Brownlee 2007; Gandhi 2008), but have paid relatively limited attention to *informal* institutions, which presumably play a much more important role than formal rules in nondemocratic regimes (Helmke and Levitsky 2004). This study provides new evidence on how informal institutions enable the Chinese regime to effectively pursue key economic and policy goals that are central to its popularity. Although the growth-promoting impact of patronage networks may be specific to the regime’s distinct, performance-based mode of legitimation (Yang and Zhao 2015), the general finding about the regime-strengthening effects of informal institutions is relevant for understanding the sources of resilience in other autocracies, where similar networks have been found to help regimes accomplish other key tasks, such as repression (Hassan 2017), voter mobilization (Magaloni 2006), or territorial control (Easter 2000).

Moreover, this study sheds light on the long-standing literature on political selection in the Chinese politics. Scholars have fiercely debated whether promotions in Chinese system are based on objective performance or political connections (Chen and Kung 2016; Keller 2016; Li and Zhou 2005; Oppen, Nee, and Brehm 2015; Shih, Adolph, and Liu 2012; Yao and Zhang 2015). Recently, there have been efforts to advance this debate by theorizing ways in which performance-based selection and political patronage can coexist. Landry, Lü, and Duan (2017), for example, argue that the relative importance of patronage and performance for promotion may vary across different administrative levels. In another important work, Jia, Kudamatsu, and Seim (2015) argue that patronage ties may facilitate meritocratic selection by giving senior leaders greater confidence in the loyalty of their subordinates, and they show that there exists a complementary relationship between political connection and performance in predicting provincial-level promotions. These studies, however, still implicitly treat performance and connections as two distinct dimensions that are largely independent from each other. In this study, I suggest a new perspective to reconcile this ongoing debate—namely, performance itself may be partly endogenous to political connections: Patron–client ties can be used by political principals to mobilize agents to accomplish challenging development and policy tasks, and successful accomplishment of these tasks will likely make the agents more attractive candidates even when only objective merits are being considered. Therefore, in addition to any direct

<sup>2</sup>More generally, an emerging formal theory literature has started to argue for the positive role of factions in political organizations (e.g., Dewan and Squintani 2016).

effects it has on promotion, patronage could also have a more subtle way to influence political selection that works through, rather than against, the formally meritocratic institutions.

## Patron–Client Relations and Principal–Agent Problems in Government Hierarchies

The central theoretical claim that I advance in this article is that informal institutions such as patron–client relations can play a critical role in improving the performance of government bureaucracies. This claim is based on the premise that a major challenge to government performance lies in the conflicts among actors *within* its hierarchies. It has been well recognized by a large body of political science and economics research that in hierarchical organizations, lower-level agents' objectives are not always in line with those of their principals (Downs 1967), and the presence of information asymmetry gives agents the opportunity to pursue actions that maximize their own interests—often at the expense of the performance of the organization as a whole (Alchian and Demsetz 1972; Brehm and Gates 1994).<sup>3</sup> To induce efforts from the agents, principals often have to “purchase” them by promising agents rewards for good performance. Such promises, however, are not always credible because the principal may be tempted to renege on the reward after the agents have provided the services (Breton and Wintrobe 1982, 48), and the anticipation of such defections may further discourage the agents from exerting efforts in the first place.

An extensive body of research has investigated possible solutions to this principal–agent problem.<sup>4</sup> A key insight from this literature is that a cooperative equilibrium is more likely to emerge if the principals and agents share similar interests and preferences—a result often known as the “ally principle” (Bendor, Glazer, and Hammond 2001; Epstein and O'Halloran 1999). While empirical applications of this principle in advanced democracies typically focus on affinities based on ideological distance or party labels, I argue that in a setting where overt ideological differentiation is limited and partisan competition is absent, informal, patron–client relations offer another im-

portant tool for political principals to align the interests of their agents. These relations represent, in essence, a form of voluntary, reciprocal exchange between two individuals with unequal status, whereby the individual of higher status (i.e., the patron) provides concrete benefits, such as resources and protection, to the individual of lower status (i.e., the client) in exchange for the latter's services in the forms of skills, support, or general assistance (Scott 1972). The exchange usually encompasses a variety of goods and services and lasts for an extended period of time. Most notably, cooperation in patron–client relations is enforced not by any third-party adjudicator but through the shared interest in maintaining a valuable long-term relationship. As a result, these relations have been widely used for organizing activities that are not formally supported or even sanctioned by existing legal or social institutions (Eisenstadt and Roniger 1984).

While the existing political science research on patronage networks has focused mainly on their negative consequences, such as corruption (Rose-Ackerman 1999) and vote buying (Stokes 2005), I argue these networks can also be used to advance more benevolent goals. Both the early literature on organization theory and the more recent economics literature on relational contracts, for example, have held a largely neutral view on the role of informal groups, seeing them as a useful mechanism to sustain compliance and effectiveness in hierarchically structured organizations (e.g., Baker, Gibbons, and Murphy 2002; Barnard 1968). In particular, in a setting where (1) the agents are responsible for carrying out socially beneficial tasks for which they are not fully compensated and (2) the higher-level principals have a more encompassing interest than the lower-level agents, the principals may use patron–client relations to make agents better internalize the former's (relatively more benevolent) goals and preferences. Repeated, personalized interactions, along with the diffuse nature of these relationships, help to extend actors' time horizons and foster a sense of mutual trust essential for cooperation to arise. Even though shirking is not always detectable, agents may be less willing to do so if they view efforts as not only a means to meet formal bureaucratic obligations but also an investment in an ongoing personal relationship with their superiors that will bring future gains. When the formal superior–subordinate relations overlap with patron–client ties, in other words, the informal, particularistic benefits from personal connections can help reinforce the formal chains of command within a government bureaucracy and induce agents to exert a higher level of effort on public services than they would otherwise do.

<sup>3</sup>For a review of this literature in political science, see Miller (2005).

<sup>4</sup>For example, the literature on bureaucratic control/delegation in American politics has also studied various tactics that political principals can use to influence bureaucratic behavior (e.g., Calvert, McCubbins, and Weingast 1989; Epstein and O'Halloran 1999).



## Patronage Networks and Performance Incentives in China

Patron–client relations have long been an integral part of Chinese politics, with their historical roots dating back to the imperial time.<sup>5</sup> This practice was only reinforced with the advent of the CCP and the establishment of a powerful, all-encompassing state that became the natural habitat for particularistic relations. In a system that emphasizes political unity and selfless devotion while forbidding any open political competition, informal networks provide a key mechanism for elites to articulate interests, pursue personal ambitions, and organize collective undertakings (Dittmer 1978; Nathan 1973).<sup>6</sup> Whereas the formal authority relations in the Chinese bureaucracy may be “brief and expediential” (Dittmer 1978, 29), informal alliances cultivated within the formal organizations are often more durable and can serve as one’s real base of power. Patron–client ties are colloquially referred to as “lines (*xian*)” by government insiders;<sup>7</sup> they typically entail a set of tacit, but mutually understood, obligations: For the clients, the basic expectation is that they will demonstrate extra responsiveness to their patrons’ interests and demands. In return, the patron has a responsibility to properly reward loyal clients by providing them with personal endorsement for promotions and protection against career uncertainties, such as political attacks or disciplinary sanctions.<sup>8</sup>

Although the importance of informal networks in the Chinese government is widely acknowledged, the existing literature on China’s political economy has paid surprisingly little attention to their substantive impacts on the regime’s performance in economic and policy realms. To date, the prevailing political explanation for China’s rapid economic growth emphasizes the regime’s use of an institutionalized, performance-based

promotion system to generate incentives for local government agents. According to this view, informal factions and cliques represent the more corrupt and pathological aspects of the system and pose a threat to the proper functioning of the meritocratic institutions (e.g., Bell 2015; Nathan 2003; Xu 2011). Contrary to this perspective, I argue that there are several ways by which patron–client ties can enhance, rather than weaken, the performance incentives of government agents.

First, patronage ties can strengthen agents’ performance incentives by increasing the credibility of rewards from their principals. Although a number of empirical studies have investigated whether performance can have a de facto impact on officials’ career prospects, it is worth noting that the Chinese bureaucracy has no universal policy that directly links economic growth with political promotions (Su et al. 2012). The official evaluation guidelines from the Central Organization Department emphasize a range of personal qualities aside from substantive performance,<sup>9</sup> and higher-level decision makers often enjoy considerable discretion over how to interpret and use the evaluation results in the promotion process (Heberer and Trappel 2013; Yu, Cai, and Gao 2016). To make matters worse, an influential literature has argued that in authoritarian regimes, leaders often face a trade off between loyalty and competence in political selection (e.g., Egorov and Sonin 2011). A principal may thus be hesitant to promote highly competent agents if he or she fears that they may become a threat to his or her own authority in the future, and this could in turn discourage agents from exerting an optimal level of effort in the first place. The presence of personal connections between principals and agents helps mitigate this commitment problem to some extent. As argued by Jia, Kudamatsu, and Seim (2015), for example, patronage ties can make senior leaders more willing to promote competent candidates by increasing their confidence in the loyalty of the promoted. In addition to that, reputational considerations also give patrons an incentive to honor their promises: If a patron repeatedly fails to reward hardworking followers without due excuse, he or she may develop a reputation for being weak (*ruoshi*) or disloyal (*bujiang yiqi*), which could significantly hamper his or her ability to recruit or even retain clients in the future.<sup>10</sup> All these imply that agents with connections to the higher-level leadership may in

<sup>5</sup>Although the imperial Chinese bureaucracy is best known for using a meritocratic civil service exam system to recruit talent, patron–client relations also played an important role in political selection. The sponsorship system (*baojuzhi*), for example, allowed senior officials to personally recommend individuals they knew for suitable government posts (Kracke 1953). Another important institution that built on patron–client ties was the retainer system (*menke*, later known as *mufu*), which enabled scholar officials trained in Confucian classics to recruit individuals with practical knowledge and carry out effective administration (Folsom 1968). These institutions worked alongside the examination system as important alternative paths for elite advancement.

<sup>6</sup>Relatedly, research has examined how informal interpersonal ties shape interactions between the state and society (e.g., Oi 1992; Walder 1988).

<sup>7</sup>Personal interviews, GX1403, SH1502, SX1603, ZJ1501, ZJ1601.

<sup>8</sup>Personal interviews, JS1602, SH1502, SX1603.

<sup>9</sup>The official guidelines from the Central Organization Department emphasize five main criteria: morality (*de*), competence (*neng*), diligence (*qin*), accomplishments (*ji*), and probity (*lian*).

<sup>10</sup>Personal interviews, GX1401, JS1602, JS1603, SX1604, ZJ1505, ZJ1508.

fact have stronger incentives to perform because there is a greater chance that their good performance will be valued.

Relatedly, patrons' ability to offer extra-institutional protection also matters for clients' incentives. Like many other transitional/authoritarian systems, the formal structure of the Chinese government contains many rules and regulations that are designed to prioritize stability and political control over economic efficiency.<sup>11</sup> To promote development, local officials often have to find ways to circumvent these inefficient constraints and undertake actions that fall outside of the officially sanctioned domains (Ang 2016). These violations, however, may jeopardize one's career if they are exposed at critical moments and taken seriously by higher-level officials.<sup>12</sup> Additionally, rapid growth itself may also increase the likelihood of various types of hazards, including mass protests (due to land expropriation), safety incidents, and corruption investigations, which can negatively affect career prospects of local officials.<sup>13</sup> In such an environment, having trusted patrons who are willing to condone their mistakes and defend them from critics at high-level meetings enables lower-level agents to experiment with bold policy reforms and to pursue ambitious projects that they may otherwise find too risky to undertake (for examples, see Appendix D in the supporting information (SI)).<sup>14</sup>

Moreover, patronage ties can sometimes generate direct pressure on clients to perform when their patrons demand good performance for political or policy reasons. To maintain a long-term relationship with their patrons, clients constantly need to demonstrate their worthiness and loyalty through various means. These include not only attending to patrons' private interests, but also helping them to achieve important political and policy goals.<sup>15</sup> When a leader lays out a development strategy or

a policy agenda, for example, his or her clients are usually expected to be the most active ones in executing it. If they can produce good results, it helps reinforce the leader's authority and puts pressure on other officials to follow suit.<sup>16</sup> From the clients' perspective, delivering good performance is an important way to credibly signal their personal loyalty to the patron. If they do not respond to their patron's calls with sufficient enthusiasm or perform poorly on tasks that their patron values, they may be seen as lacking gratitude or sense of responsibility, and negative perceptions as such may cost them the trust of their patron and lead to the loss of valuable benefits in the future.<sup>17</sup>

Historically, patron-client relations have been used as a key instrument of mobilization by CCP elites to achieve various political and policy tasks. Depending on a patron's own goals and preferences, however, the outcome could be either detrimental or beneficial to societal welfare. Mao Zedong, for example, used a group of personal loyalists to carry out several political campaigns with disastrous economic consequences, such as the Great Leap Forward (Yang, Xu, and Tao 2014) and the Cultural Revolution (MacFarquhar and Schoenhals 2006). As the regime's basis of legitimacy shifted toward economic performance in the reform era (Yang and Zhao 2015), there was evidence that these networks were being redirected toward achieving more welfare-improving goals, such as incentivizing policy reforms and development initiatives.<sup>18</sup> In a well-known example, Deng Xiaoping relied on two of his loyal protégés, Wan Li and Zhao Ziyang, to spearhead agriculture reforms in key provinces during the late 1970s when the overall political climate was still against economic liberalization (Cai and Treisman 2006). So far, however, there is little systematic evidence on how political connections affect local governments' economic performance. I provide the first empirical test on this key relationship in the pages that follow.

<sup>11</sup>For instance, according to the World Bank's 2015 Ease of Doing Business Survey, which is a cross-country survey on procedural complexity for starting new businesses, China ranked 84 out of 189 countries; it ranked especially low in two subcategories—(1) getting approval for a new business (127th) and (2) getting construction permits (177th)—both involving interactions with the bureaucracy. See <https://goo.gl/DJoik5>.

<sup>12</sup>When an official is being considered for promotion, his or her rivals and competitors may try to actively block the advancement by reporting the official's malfeasance or wrongdoings to higher-level officials. Personal interviews, JS1602, JS1603.

<sup>13</sup>Personal interview, ZJ1501.

<sup>14</sup>This is, of course, not to deny that such protection may have the perverse consequence of encouraging corruption. Patron's preferences are therefore crucial in determining the effect of patronage. This issue is discussed in greater detail in subsection "Effect Heterogeneity".

<sup>15</sup>Personal interviews, GX1402, JS1602, JS1603, SH1501, ZJ1601.

<sup>16</sup>Personal interviews, JS1602, ZJ1601, SX1603. Similar dynamics have also been documented by Walder (1988, 149) in the context of Chinese factories.

<sup>17</sup>Personal interviews, GX1401, GX1403, JS1602, ZJ1507, ZJ1508. Consistent with this, I also show in Appendix G in the SI that for city leaders, economic performance delivered under one's patron is more strongly correlated with career outcomes than performance delivered under a nonpatron.

<sup>18</sup>This article measures government performance primarily by economic outcomes because growth is one of the main policy priorities for the regime during the reform era. However, as a general tool of mobilization, patronage ties can also be used to enhance agents' performance incentives in other policy areas. In Jiang (2016), I provide an example of how political connections facilitated the implementation of a major pollution control campaign in 2007.

## Empirical Design

### The Subnational Context

My empirical analysis focuses on interactions between provinces and cities. The main patron of interest here is the provincial party secretary, who is the head of the provincial party committee and de facto leader of a province. To effectively govern, a provincial secretary needs support from lower-level officials, who control important administrative and financial resources in China's highly decentralized system. For clients, I focus on officials serving in city leadership positions—that is, the city party secretary and the mayor, who are the first and second most powerful figures in a city, respectively.<sup>19</sup> City leaders are appointed mainly by the provincial authority under the current *one-level-down* personnel management system.<sup>20</sup> They enjoy considerable de facto power over policymaking and resource allocation within their own jurisdictions, and their incentives can have direct implications for the pace of local development (Landry 2008). Whereas a motivated, hardworking city leader can use such power to push for bold economic reforms or major development projects, one who is less committed to promoting growth may adopt more conservative policy options and leave the government's capacity underutilized. Based on the preceding discussion on the incentive-enhancing role of patronage, my main hypothesis is that, *all else being equal, city leaders with informal connections with the provincial secretary will have stronger performance incentives and in turn achieve more rapid economic growth than those without such connections.*

It is important to clarify that, as discussed above, a key condition for patronage ties to improve societal welfare is that the patrons' preferences are more aligned with public interests than are the clients'. In this particular case, I am assuming that provincial secretaries have a more encompassing interest in promoting socioeconomic development than their city-level subordinates. This assumption is likely to hold for two reasons. First, there

<sup>19</sup>City party secretaries and mayors may be viewed as politicians rather than bureaucrats. This distinction between politician and bureaucrat, however, is often not so clear-cut in the Chinese context due to the absence of elections. In this article, I focus on the more "bureaucratic" face of these officials, investigating their roles as agents in a regional bureaucracy and their interactions with their provincial superiors (for studies adopting similar terminology, see Huang 2002; Landry, Lü, and Duan 2017). The logic of patronage-based mobilization discussed here can also be readily extended to the relationship between provincial secretaries and leaders of more specialized bureaus or departments.

<sup>20</sup>Under this system, most officials at a given administrative level are appointed by authority at the level immediately above (Landry 2008).

is evidence that the public attributes credit for performance asymmetrically across different levels of government; the higher level typically receives more legitimacy gains from good performance than the lower level (Lü 2014). While political legitimacy is ultimately a concern of the national leadership (Yang and Zhao 2015), provincial leaders, by virtue of their closeness to the central leaders, are much more likely to internalize this preference than lower-level officials.<sup>21</sup> Second, the assignment of punishment in the system also follows a highly asymmetric pattern. Higher-level political leaders are usually far less likely than their local subordinates to suffer politically from hazards caused by rapid growth (e.g., protests, accidents, corruption investigations).<sup>22</sup> In the later part of the analysis, I also directly examine how the performance premium varies with patrons' governing preferences.

## Data

**Economic Performance.** The main indicators I use to measure city leaders' economic performance are the overall and sector-specific GDP growth rates, which are collected from the *Statistical Yearbooks on Regional Economy* (*quyu tongji nianjian*) from 2000 to 2011. Although the official growth statistics are by no means free of problems (Wallace 2014), they are still the best available data to offer a consistent measure of economic performance over both time and space. To address the problem of data manipulation, I also collect alternative growth indicators that are less susceptible to official manipulation, including railway freight, power consumption, and satellite-based nighttime brightness (Henderson, Storeygard, and Weil 2012). The main sample includes all prefecture-level and subprovincial units in mainland China, except for districts under centrally administered municipalities (*zhixia shi*) and prefectures in Tibet.<sup>23</sup> The resulting panel includes observations from 326 cities for 12 years.

**Political Leadership.** The data on provincial and city-level leaders are drawn from the China Political Elite Database (CPED), a newly constructed database containing extensive biographical information for over 4,000 key

<sup>21</sup>After all, many provincial leaders are themselves clients of national leaders. We would expect patronage ties to also play a role in aligning incentives between central patrons and provincial clients.

<sup>22</sup>My calculation suggests that the probability of a full-provincial leader receiving any form of disciplinary sanctions is 85% lower than that of city-level leaders. Results are available upon request.

<sup>23</sup>The exclusion of Tibet is due to both its special sociopolitical conditions and the lack of many key economic and political covariates at the city level.

municipal, provincial, and national leaders in China since the late 1990s. For each leader, the database provides standardized information about the time, place, organization, and rank of *every* job assignment listed in his or her curriculum vitae, which is collected from government websites, yearbooks, and other trustworthy Internet sources (see Appendix A in the SI). I match each city-year spell in the panel data set with a city secretary and a mayor. In cases where multiple leaders held the same post within a given spell, the person with the latest entry date is chosen.

### Measuring Patronage Ties at the Subnational Level

Measuring informal relations in authoritarian regimes has always been a challenge for empirical researchers. In the study of Chinese politics, the most commonly used approach thus far is to identify ties based on shared work and school experiences or home origins (Jia, Kudamatsu, and Seim 2015; Shih, Adolph, and Liu 2012). While shared experiences/attributes are certainly an important precondition for the development of interpersonal ties, a potential problem with this approach is that shared experiences/attributes alone only indicate acquaintance but do not fully reflect the actual quality of the relationship. Two individuals working in the same organization are just as likely to be competitors as they are to be friends. Moreover, a practical difficulty in applying this method to the subnational context is that provincial patrons are typically appointed from outside the province and hence have few prior ties with city leaders, who usually spend most of their career working within the province.<sup>24</sup>

In light of these difficulties, this study proposes a new and more precise measure of patron–client ties at the subnational level by exploiting additional information about China’s personnel appointment system. In particular, I note that provincial secretaries typically have an overwhelming influence over the selection of officials within provinces. Although promotions are formally decided by the provincial standing committee in a collective fashion,<sup>25</sup> in practice, provincial secretaries’ opinions are usually what matter the most.<sup>26</sup> Organizationally, provincial secretaries are also regarded as the “person of first respon-

sibility” (*diyì zeren rén*) by the higher authority when it comes to provincial-level personnel issues.<sup>27</sup>

My measurement strategy is thus to identify patron–client relations by linking lower-level officials to provincial secretaries who were in power when those officials were first promoted to key city leadership positions. I focus on city leadership positions because they are highly valuable posts within the Chinese system in terms of both power and upward potential. For example, 17 out of the 25 Politburo members of the 18th Central Committee had experience as city leaders earlier in their careers. Given their value and importance, it is reasonable to expect that among officials who are promoted to these posts for the first time, many will have close relations with their provincial secretaries. Even if some of them are not, we can at least assume that the party secretaries have taken a neutral stance toward their advancement, and the presence of measurement error is likely to attenuate the results toward zero.

More formally, I define a city leader *C* as a client of a provincial leader *P* if and only if the following condition is met:

**Definition 1.** *C* was first promoted to a city leadership position (as city secretary or mayor) from within the province when *P* was serving as the provincial secretary of that province.

In Appendix B in the SI, I provide several validation tests to show that there is indeed a strong correlation between the identified patrons and clients in terms of future career outcomes, and that my measure yields much more precise estimates of this correlation than the overlap-based alternative.

It is worth noting that this measurement strategy focuses only on whether a promotion relationship is present but remains largely agnostic about why an official was selected to become a city leader in the first place. The process of prior selection is in itself an interesting issue that deserves future exploration,<sup>28</sup> but it is less important for the study here because, regardless of what selection criteria are being used, all city leaders have to go through the same selection process in order to be observed in the sample. A priori, there is little reason to believe why those selected by the incumbent provincial secretaries would be of a systematically different type than those

<sup>24</sup>For example, only about 1% of the city-year observations in the sample record a positive birthplace connection between city secretaries and their provincial secretaries; the same figure for mayor–provincial secretary birthplace connection is 0.94%.

<sup>25</sup>For vice-provincial-level appointments, they also have to be approved by the Central Organization Department.

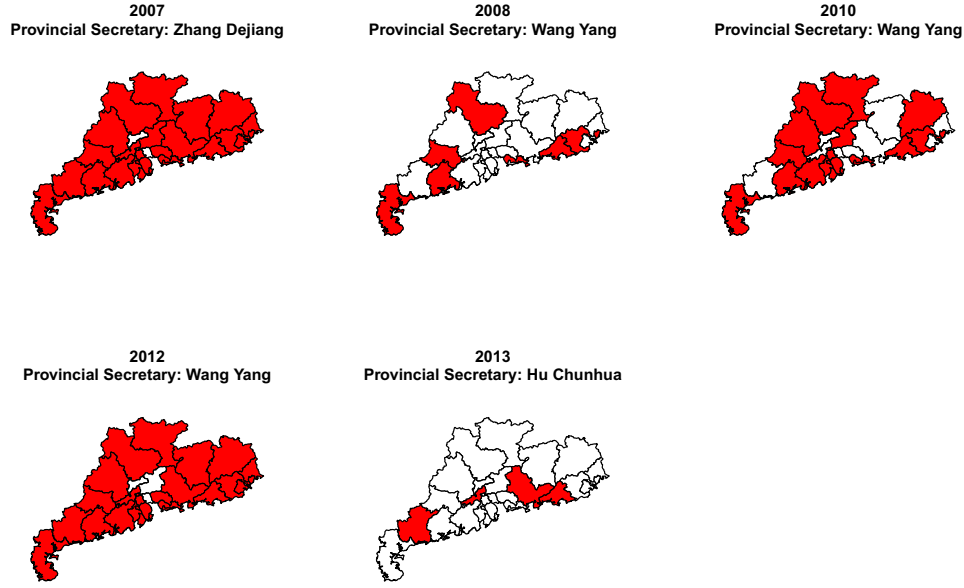
<sup>26</sup>I acknowledge that other provincial leaders, especially the governors, may also have some influence over personnel issues. Later, I

address this possibility by modifying the measure to include promotions under governors (see Table A.3 in the SI).

<sup>27</sup>Personal interview, SH1601, JS1602.

<sup>28</sup>My fieldwork suggests that a number of considerations may be at play, including the potential client’s personality, ability, social skill, and network position in the local elite community.



**FIGURE 1 Variation in Connection Status: Guangdong Province, 2007–13**

*Note:* This figure illustrates the over-time change in political alignments in Guangdong province. Cities governed by leaders connected to the incumbent provincial secretary are marked in red.

selected by their predecessors. I do acknowledge, however, that because connected leaders tend to be more recently appointed, certain selection bias may arise if the high-performing (low-performing) leaders have a tendency to leave the sample more quickly (slowly). The subsection “Heterogeneous Backgrounds” discusses several tests that specifically address this issue.

My measurement strategy also implicitly assumes that the identities of the patron are fixed for each individual *city leader* for the period he or she is observed in the sample. However, there are considerable variations in the connectedness of each *city* over time; the variations are introduced by the frequent rotation of cadres at both the city and provincial levels. When an old provincial secretary is replaced by a new one from the outside, for example, all cities previously connected to the old secretary will lose their connections. Similarly, a city gains a connection if a new city leader is appointed by the incumbent provincial leader to replace a previously unconnected one.

Figure 1 illustrates these two sets of dynamics by plotting the shifts in political alignment in Guangdong province between 2007 and 2013. At the beginning of 2007, Guangdong was governed by Zhang Dejiang, a senior politician who had been in that position since 2002. By the fifth year of his term, Zhang had cultivated a quite extensive network in the province, with his appointees occupying leadership positions in virtually all cities (marked in red). In December, a leadership turnover took place, and cities that were previously connected became

unconnected as Zhang was replaced by the new party secretary, Wang Yang. By the end of 2008, only a few of the cities were able to reestablish a connection through the new appointments Wang made during his first year in office. The number of connected cities grew steadily throughout Wang’s tenure, reaching 19 by the end of 2012. In December 2012, another provincial turnover took place, and there was again a major reshuffle of political connections.

### Baseline Specification

The main estimation framework is a fixed effects model with the following specification:

$$\text{Growth}_{i,p,t+2} = \delta \text{Connected to Prov Sec}_{ipt} + \mathbf{X}_{ipt}\boldsymbol{\beta} + \eta_i + \gamma_{pt} + \epsilon_{ipt}, \quad (1)$$

where  $i$ ,  $p$ , and  $t$  index city, province, and year, respectively. The dependent variable is economic performance measured by GDP growth. I set the dependent variable at  $t + 2$  to allow for some time lapse for local officials’ effort to translate into substantive change in economic outcomes.<sup>29</sup> The key independent variable, *Connected to provincial secretary*, is a binary indicator that takes the

<sup>29</sup>The timing choice for the dependent variable is based on several considerations. First, interviews with local officials suggest that it usually takes at least 1.5 to 2 years for development policies to produce meaningful changes in economic figures (GX1403, SX1512). Consistent with this, a prominent real estate developer once

TABLE 1 Baseline Results

	Growth at $t + 2$ (Last Year = 100)					
	(1) Overall	(2) Overall	(3) Overall	(4) Agriculture	(5) Manufacturing	(6) Service
Connected to provincial secretary	0.389* (0.191)	0.749** (0.199)	0.382** (0.126)	0.009 (0.207)	0.740* (0.315)	0.210 (0.153)
City and province-year FE	✓	✓	✓	✓	✓	✓
City economic controls		✓	✓	✓	✓	✓
City leader controls			✓	✓	✓	✓
Adjusted R <sup>2</sup>	0.45	0.48	0.51	0.25	0.36	0.40
Number of cities	326	326	326	326	326	326
Observations	3,907	3,891	3,693	3,691	3,691	3,691

Note: This table presents the effects of patronage ties to provincial secretaries on economic growth. The dependent variables are overall and sector-specific GDP growth rates at  $t + 2$ . City economic controls include *Net Transfer*( $t + 1$ ) and the following pairs of variables evaluated at both the city secretary's and the mayor's predecessors' final year of service: *GDP Growth*, *Log GDP*, *Log Population*, and *Log Investment*. City leader controls include the following variables (for both the city secretary and the mayor): *Age*, *Education*, *Gender*, and dummies for having served for less than 1 year, between 1 and 3 years, and between 3 and 5 years (with more than 5 years being the reference group) in one's current position. Robust standard errors clustered at city level are reported in parentheses. FE = fixed effects.

\* $p < .05$ , \*\* $p < .01$  (two-tailed test).

value of 1 if either the city secretary or the mayor is connected to the provincial secretary according to the aforementioned definition. The city fixed effects  $\eta_i$  capture the time-invariant heterogeneity across cities, and the year fixed effects  $\gamma_{pt}$  are allowed to vary arbitrarily by province in order to absorb any province-specific economic or political shocks, such as those induced by changes in the provincial leadership or the central government's regional policies.

$X$  is a vector of time-varying economic and leadership covariates. For economic covariates, I include the levels of *Log GDP*, *GDP Growth*, *Log Population*, and *Log Fixed Asset Investment*, all measured in the final years of the city secretary's and the mayor's predecessors' terms, to account for the possibility that connected officials may be systematically assigned to cities that differ from unconnected ones in key socioeconomic conditions. I also control for *Net Transfer*, which is the difference between fiscal expenditure and revenue at  $t + 1$ , to account for the possibility that connected city leaders might receive disproportionately larger fiscal resources from the higher level that could help them to achieve fast economic growth without much effort. For leadership covariates, I include a set of standard demographics, such as *Age*, *Gender*, and *College Education*, for both the city secretary and the mayor. Because those promoted by

the incumbents tend to have relatively shorter tenures as city leaders, I also include controls for city leaders' tenure length in more extensive specifications.

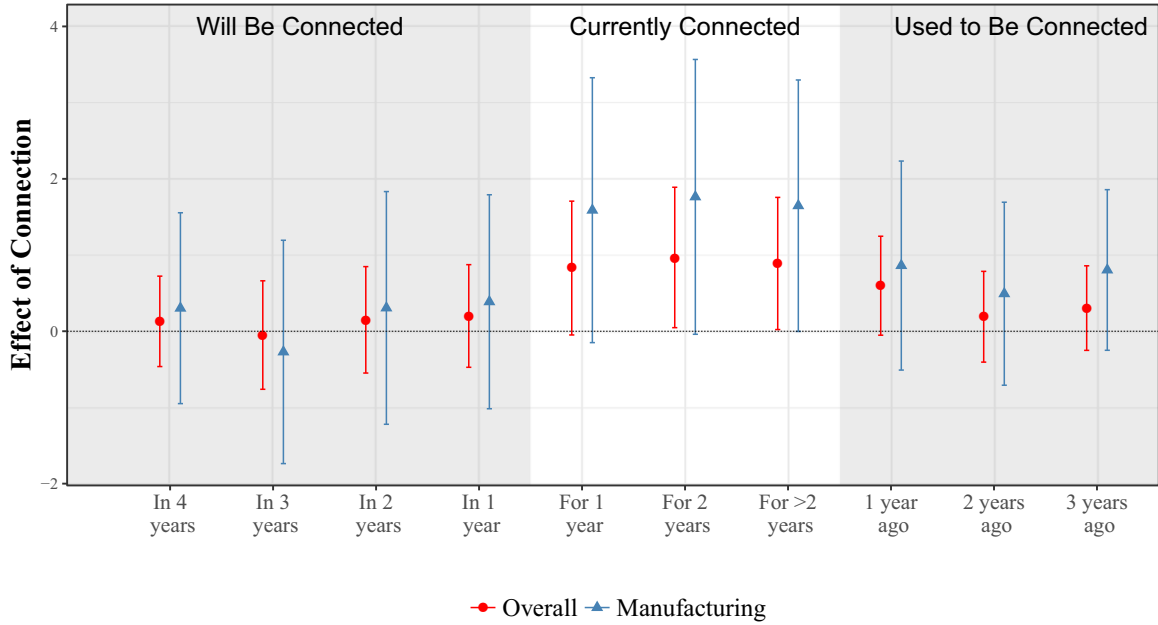
## Main Results

### Baseline

Table 1 presents the baseline results on the effect of political connection on economic performance. Models 1–3 use growth in overall GDP as the dependent variable. I begin with the most parsimonious model that includes only the connection indicator and the three sets of fixed effects, and then incrementally add the economic and career controls in the next two models. The results from the first three models consistently show that political connection with the incumbent provincial secretary has a large, positive, and statistically significant effect on local economic growth. Focusing on Model 3, the coefficient estimate suggests that, all else equal, the growth rates in connected cities are about 0.38 percentage points (or 10% of a standard deviation) higher than in unconnected cities. To provide a more substantive interpretation of the effect size, note that the average GDP for a city in the sample is about 70.6 billion yuan (10.8 billion U.S. dollars). The coefficient estimate thus translates into an additional 275 million yuan (41.8 million U.S. dollars) of wealth created in a connected city every year.

Models 4–6 further explore the effect of connection on growth for the three main economic sectors—agriculture, manufacturing, and service. I find that cities with connected leaders tend to develop more rapidly in all

admitted that his company had a competitive advantage in bidding for local development projects because it could manage to complete major projects in 18 months, implying that the average duration is probably longer than that (Forsythe 2015). Results from different lag/lead specifications are provided in Table A.9 of the SI.

**FIGURE 2 Dynamic Effects of Connection on Growth**

*Note:* This figure shows the dynamic effects of connection to the provincial secretary on both overall and industrial growth. Each circle indicates a point estimate, and the vertical bars are the 95% confidence intervals.

three sectors, but the premium is largest and most significant in the manufacturing sector, where the connected on average outperforms the unconnected by a margin of 0.74 percentage points. This result is not entirely surprising given that manufacturing has been the primary engine of growth for the Chinese economy throughout the reform era, and that local authorities' active support and guidance are often crucial for the competitiveness of local industrial firms (Oi 1995).

### Testing the Parallel Trends Assumption

A central assumption for the validity of fixed effects analyses is the assumption of parallel trends—that is, connected and unconnected cities must be otherwise comparable in their counterfactual states. This assumption might be violated if, for example, patrons systematically appoint clients to localities that already exhibit trends of fast growth as a way to help their clients claim credit. To investigate whether the parallel trends assumption holds, I adopt a more flexible specification that includes a number of dummies for whether a city will be, is currently, or used to be connected to the incumbent secretary.

$$\text{Growth}_{i,p,t+2} = \sum_{\tau=-4}^{+3} \delta_{\tau}^S \text{Connected to Prov Sec}_{ip(t+\tau)} + \mathbf{X}_{ipt} \boldsymbol{\beta} + \eta_i + \gamma_{pt} + \epsilon_{ipt}, \quad (2)$$

where  $\text{Connected to Prov Sec}_{ip(t+\tau)}$  is a set of dummies for whether city  $i$  is connected to the provincial secretary at time  $t + \tau$ . The whole set of dummies encompasses connection statuses ranging from 4 years before forming a connection to 3 years after losing one. Figure 2 displays the dynamic effects of political connections on both overall and manufacturing growth. The pattern suggests that the performance premium does not seem to exist until a connected leader is actually appointed and deteriorates notably as soon as the connected leader leaves office. This provides reassuring evidence that strategic appointment to fast-growing cities is not what drives the observed performance difference.

### Robustness

I conduct a series of robustness checks on the baseline results, of which the details are provided in Appendix C in the SI. To briefly summarize, I find that the baseline results are robust to various modifications of the coding strategies for patronage ties (Table A.3 in the SI), alternative estimation strategies that take into account serial correlation (Table A.4), exclusion of cities of certain special political status (Table A.5), and different specifications for the tenure length controls (Table A.6). Moreover, I show that a city's prior growth trends in key socioeconomic indicators are not strong predictors of its

TABLE 2 Effects of Connection on Data Falsification

	Growth Difference between GDP and ... $t + 2$ (Last Year = 100)			
	(1) Freight	(2) Power	(3) Brightness	(4) $\frac{\text{Freight} + \text{Power} + \text{Brightness}}{3}$
Connected to provincial secretary	−0.055 (0.053)	0.012 (0.067)	0.013 (0.028)	−0.011 (0.052)
City and province-year FE	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓
Adjusted R <sup>2</sup>	0.12	0.04	0.78	0.34
Number of cities	284	284	326	284
Observations	3,144	3,107	3,693	3,077

Note: This table presents the effects of patronage ties to provincial secretaries on the difference between reported GDP growth and the growth rates of alternative economic indicators. The specification is based on column 3 of Table 1. The dependent variable is standardized (with mean = 0 and SD = 1) to facilitate interpretation. Robust standard errors clustered at city level are reported in parentheses. FE = fixed effects.

\*p < .05, \*\* p < .01 (two-tailed test).

subsequent connection status (Table A.7), and that the size of the performance premium for connected city leaders does not vary significantly with their predecessors' modes of exit (Table A.8).

## Alternative Explanations

### Data Falsification

I conducted additional analyses to address three alternative explanations to the observed performance premium. First, one natural concern with using government statistics is that the data may have been manipulated for political purposes. One may argue, for example, that political connections will embolden clients to fabricate growth figures when they know that such practices are less likely to be punished. To address this possibility, I follow the procedure proposed by Wallace (2014) to construct several variables capturing the difference in growth rates between reported GDP and alternative indicators of economic performance—*Railway Freight*, *Power Consumption*, and *Nighttime Brightness*. These three indicators have been shown to be correlated with actual economic performance but less plagued by problems of political manipulation (Henderson, Storeygard, and Weil 2012; Wallace 2014). Table 2 reports results from regressions using these growth differences as the dependent variables. Reassuringly, regardless of which alternative indicator is used as the benchmark, there is no evidence that the growth disparity between official GDP and these indicators is significantly larger in connected cities, suggesting that greater propensity to falsify data is not a chief explanation for the observed performance premium.

## Distributive Favoritism

A second plausible explanation for the performance premium is that connected officials may do better simply because they receive greater material resources or policy favors from the higher-level governments. In addition to controlling for the volume of net fiscal transfer throughout the analysis,<sup>30</sup> I also collect additional data on a number of other important instruments that the provincial governments have at their disposal to affect local economic growth. These include tangible resources such as bank loans and land quotas, as well as less tangible policy favors such as the approval of both national- and provincial-level special economic zones (SEZs). Table 3 displays the regression results using these distributive outcomes as dependent variables. We can see that connection status is not significantly correlated with the allocation of either tangible resources or intangible policy support.<sup>31</sup>

## Heterogeneous Backgrounds

A third possibility is that those who are connected to the provincial secretary may be systematically different from the unconnected in certain key characteristics that are correlated with their ability to promote growth. As

<sup>30</sup>Separate analysis shows that political connections do have a positive and statistically significant impact on the allocation of fiscal transfer. But even when we assume that transfer is a purely distributive favor, which it clearly is not, it mediates no more than 15% of the performance premium.

<sup>31</sup>We also do not find connections having significant effects on distributive favoritism at  $t + 2$  (Table A.10 in the SI).



**TABLE 3 Effects of Connection on Distribution of Government-Controlled Resources**

	Tangible Resource ( $t + 1$ )		Policy Support ( $t + 1$ )	
	(1) Log Loan	(2) Log Land Quota	(3) National SEZ	(4) Provincial SEZ
Connected to prov sec	−0.001 (0.016)	−0.008 (0.047)	0.012 (0.021)	0.005 (0.005)
City and province-year FE	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓
Adjusted R <sup>2</sup>	0.98	0.83	0.45	0.01
DV period	2004–2013	2003–2011	2000–2006	2000–2006
Number of cities	284	325	326	326
Observations	2,801	2,816	2,071	2,071

*Note:* This table demonstrates that patronage ties do not significantly affect the distribution of several key productive resources controlled by the government, including land, bank loans, and approval for special economic zones. The main specification is based on column 3 of Table 1. Robust standard errors clustered at city level are reported in parentheses. SEZ = special economic zone; FE = fixed effects.

\* $p < .05$ , \*\*  $p < .01$  (two-tailed test).

discussed above, although there is little prior reason to believe that those promoted by the current leaders would be qualitatively different from those promoted by the predecessors, systematic bias may still arise if connected and unconnected leaders exit the sample at different rates. For instance, if the more competent city leaders are more likely to leave the sample quickly (e.g., due to promotion to other posts), then a comparison of performance between the recently appointed connected leaders and the unconnected ones may lead us to overstate the effect of patronage ties because the difference could also be driven by the latter group's lower-than-average competence, which prevented them from leaving the sample in the first place. I address this issue in several ways. First, I examine the empirical association between economic performance and city leaders' tenure length. Reassuringly, the results show rather weak and small correlations for both city secretaries and mayors, suggesting that better performance does not necessarily lead to faster sample attrition (Table A.11 in the SI). Second, I use an expanded set of education and career covariates in the regression to capture the potential heterogeneity in leader competence. The inclusion of these additional controls does not seem to significantly alter the main coefficient of interest (Table A.12). Third, I separately estimate the performance premium for provinces where the former provincial secretaries left office due to mandatory retirement (which is a more exogenous cause of departure) and those where the secretaries' departure happened before the retirement age, and find statistically significant results in both cases (Table A.13). Finally, I examine the performance for connected and unconnected city leaders whose promotion

time was relatively close. I show that connected leaders perform significantly better even compared to unconnected ones who are promoted just a few months before them (Table A.14).

## Extensions

### Effect Heterogeneity

How does the effect of connections vary across different groups of officials? The theoretical discussion suggests two important corollaries. First, to the extent that shared expectation of long-term exchanges is the key to sustain cooperation between patrons and clients, the estimated performance premium is likely to depend on the prospect that the reciprocal exchange will continue in the future. To test this implication, I focus on age, which is a crucial determinant of career prospects for Chinese officials. I break the connection indicator into several subgroups based on the age profiles of the clients and the patrons. I find that the performance premium declines substantially as clients become ineligible for promotion (Table A.15, column 1). As for the patron, reaching the age ceiling also imposes a toll on clients' performance, but the magnitude is somewhat smaller (Table A.15, column 2). One explanation could be that some senior provincial secretaries may possess certain political capital (e.g., personal networks, special knowledge) that will remain valuable to their clients even after the patrons have formally left office.

Another important corollary that follows from the theory is that the economic impact of patronage networks

**TABLE 4 Effects of Connections on Policy Priorities**

	% of Work Report Topics ( $t + 1$ )			
	(1) Development	(2) Welfare	(3) Culture	(4) Administration
Connected to provincial secretary	0.002* (0.001)	−0.003 (0.002)	−0.000 (0.001)	−0.001 (0.001)
City and province-year FE	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓
Adjusted R <sup>2</sup>	0.49	0.23	0.14	0.33
Number of cities	315	315	315	315
Observations	2,455	2,455	2,455	2,455

*Note:* This table shows that patronage ties make local governments more development oriented in stated policy priorities. The main specification is based on column 3 of Table 1. The sample starts in 2004 because the missing rate in government reports is too high for the earlier period. FE = fixed effects.

\* $p < .05$ , \*\* $p < .01$  (two-tailed test).

will depend on whether patrons have an encompassing interest in promoting growth. I use two proxies to capture a provincial secretary's governing preference. First, I use a similar measure to gauge a provincial secretary's relationship with the national leadership, specifically the general secretary. The encompassing interest, if ever present, is likely to be the strongest for the national leaders, who tend to reap most of the political credit from good performance and have much to lose if the regime collapses. As a result, I expect that provincial leaders with personal connections to the paramount national leaders will internalize such preferences better than those without. Second, I also measure the opposite incentive by focusing on corruption. It is plausible that for some provincial secretaries, the priority is to enrich themselves through corrupt dealings rather than to promote growth. This implies that the performance premium may be lower for clients of corrupt patrons. I run regressions where the two preference proxies are interacted with the main connection indicator. The results show that the performance premium increases substantially when the patrons are connected to the general secretaries and that there is a sizable drop in clients' performance premium if the provincial patrons are themselves corrupt (Table A.16 in the SI). These patterns suggest that preferences of the patron are indeed a key determinant of the economic impact of patronage ties.

affect other observed behaviors of local officials. First, I examine the effect of connections on local governments' policy priorities. To do so, I make use of information from the texts of local Government Work Reports (GWRs). GWRs are comprehensive policy documents issued by local governments annually to summarize accomplishments in the previous year and to lay out work plans for the next. In a recent study, Jiang, Meng, and Zhang (2016) use topic modeling techniques to extract 20 topics (i.e., clusters of words) from the entire body of GWR texts and estimate each topic's proportion in each GWR document (see Appendix F in the SI for details). Based on a careful reading of their estimated topics, I further classify them into four major policy themes—Development, Welfare, Culture, and Administration—and estimate how connections affect the proportion of each theme in city-level GWRs. The results are reported in Table 4. We can see that the emphasis on development-related topics is significantly higher in cities governed by connected agents, suggesting that connections indeed make officials consciously prioritize development in their policy agenda. In addition to policy rhetoric, I also examine several other outcomes that proxy city leaders' governing effort, such as growth in fiscal revenue collection and the number of policies and laws issued, and find consistent evidence that effort level is higher for connected officials (Table A.17).

## Concluding Remarks

### Effect on Policy Priorities and Efforts

To further shed light on the incentive-enhancing mechanism of connections, I also investigate how patronage ties

China's development over the past several decades has been widely attributed to the system's ability to "get the incentives right" for local officials (Montinola, Qian, and

Weingast 1996), yet the presence of high-powered incentives is inherently puzzling in light of a government bureaucracy ridden with patron–client networks. This article argues that informal institutions such as patron–client relations can actually make positive contributions to the effectiveness of the Chinese government by mitigating the conflicts of interest between the political principals and agents. Focusing on subnational administrations, my empirical analysis demonstrates that patronage ties with incumbent provincial leaders significantly improve the economic performance of city-level officials. Additional analyses further suggest that this improvement in performance is most consistent with a story of patron–client ties providing additional incentives for local leaders to exert efforts on challenging economic development tasks.

Findings from this study have implications for our understanding of the institutional causes of China’s development. The predominant narrative on China’s economic success to date focuses on its formal, merit-based institutions, such as interjurisdictional tournaments and the cadre evaluation system (e.g., Li and Zhou 2005; Xu 2011). While I by no means intend to suggest that these institutions are irrelevant or unimportant, the goal of this study is to highlight that the Chinese bureaucracy also contains an alternative set of arrangements to incentivize performance that works alongside the more institutionalized practices. To the extent that these informal arrangements are important for officials’ incentives but are often less visible than the formal institutions, ignoring them may lead researchers to *overestimate* the degree to which formal institutions can shape officials’ behaviors.

More broadly, arguments advanced in this study are also relevant for understanding the dynamics of economic development outside China. Scholars have noted that historically, many significant episodes of state-led development took place under state administrations where patronage networks have a non-negligible influence. For instance, a recent study by Ha and Kang (2011) shows that even in South Korea—the closest real-world approximation of a meritocratic bureaucracy—political discretion, personal loyalty, and regional ties were influential factors in determining bureaucratic recruitment and promotion during the years of its economic takeoff. While the coexistence of strong patronage elements and administrative effectiveness may seem puzzling from the perspective of a standard institution-based account of development, it is fully consistent with this study’s view that strong patron–client ties can serve as an organizational tool for states to accomplish challenging economic and policy tasks.

It should be made clear, however, that my findings do not suggest that patron–client networks inside the government are *always* or *unconditionally* good for economic

development. To the extent that patronage ties are also a hotbed for corruption and various other illegitimate activities, the short-term economic gains may, in the long run, be overshadowed by the less observable efficiency loss caused by endemic corruption. More importantly, as discussed above, one crucial political prerequisite for patronage networks to have beneficial social consequences is the existence of some degree of alignment between patrons’ survival imperatives and the interests of the public. In the case of China, the presence of performance-based legitimacy is a fundamental mechanism that ensures this alignment. In other countries, domestic political competition and external foreign threats might serve similar functions (e.g., Doner, Ritchie, and Slater 2005). However, the situation would be very different if political survival does not require the elites to maintain broad societal support through the delivery of concrete economic or policy achievements. Although patronage networks may still be useful for patrons to stay in power in those cases, the services that they provide may not necessarily improve the welfare of the society at large.

Caveats aside, findings from this study nonetheless underscore the general importance of informal ties to smooth operation of political systems. In *Making Democracy Work*, Putnam (1994) argues that social capital, which refers to “trust, norms and networks” among citizens, is key to the performance of democratic institutions. My analysis suggests that social capital among the political elites can also be a valuable asset for the proper functioning of regional bureaucracies in a large, multilayered autocratic regime. Dense, closely knit networks provide the very organizational basis for elites to align interests, coordinate actions, and accomplish collective undertakings critical to the regime’s survival. Instead of regarding them as merely a source of inefficiency or corruption, therefore, future researchers should pay greater attention to the enabling effects of these networks in studying both persistence and changes of nondemocratic systems.

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## Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**Appendix A:** Details of the CPED Database

**Appendix B:** Validating the Promotion-Based Measure

**Appendix C:** Additional Information and Robustness Checks

**Appendix D:** Qualitative Examples on Development and Risk-Taking in China

**Appendix E:** Details on Extension Analyses

**Appendix F:** Themes and Topics from Government Work Report

**Appendix G:** Particularistic Reward for Performance from the Patron