

Friends with Benefits: Patronage Politics and Distributive Strategies in China*

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Abstract

How does politics affect the distribution of public resources in authoritarian regimes? We argue that in systems where informal patronage networks coexist with strong career incentives, aspiring politicians want to use public resources to aid the careers of their clients, but are constrained by potential sanctions from competing patrons. We test the distributive consequences of this tradeoff using data on fiscal transfers and political leadership from Chinese cities along with a new method to identify patronage ties. We find that cities with leaders connected to the incumbent provincial secretary receive about 4 to 7 percent more transfers than those without. Favoritism varies markedly with political cycles, the future value of the clients, and, most importantly, the relative power of the competing governor. Analyses of both official statistics and satellite data further show that connected cities spend more on infrastructure, partly due to the additional inflow of transfers.

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“Politics is about who gets what, when, how.” —Harold Laswell

“A party without factions inside is associated with all sorts of strange things. (党内无派，千奇百怪)”—Mao Zedong

1 Introduction

The role of politics in allocating public resources is one of the central topics in political economy. A vast body of theoretical and empirical literature has been devoted to understanding how political actors in democratic systems strategically allocate goods and services in order to increase electoral support.¹ Much less is known, however, about how public resources are distributed in authoritarian regimes, where the incentives for winning elections are either weak or absent.² What kinds of distributive patterns should we expect to see under those systems, and what are the political incentives that account for those patterns? These questions are not only theoretically important but also of practical significance: By the end of 2014, there were still more people living under authoritarian regimes than under democratic governments ([The Economist 2015](#)). In particular, “full” authoritarian regimes, wherein no meaningful electoral competition exists, account for over 37% of the world’s population. As in democracies, the welfare of the population in autocracies depends to a large extent on the goods and services provided by their governments. Understanding how public resources are distributed in such systems thus can have profound implications for assessing the quality of governance and designing effective policy interventions.

In this paper we advance a new theory of elite incentives under authoritarian regimes and test its distributive consequences using city-level data from China. We argue that in authoritarian regimes where power originates from informal patronage networks, politi-

¹This literature is extensive. See [Evans \(2011\)](#) for a review of studies on pork-barrel politics in the U.S Congress. [Berry, Burden and Howell \(2010\)](#), among others, discuss the role of executive leadership in distribution. [Golden and Min \(2013\)](#) provide a review of studies on distributive politics in electoral democracies other than the United States.

²This gap of knowledge is also noted by [Golden and Min \(2013\)](#). In their review of studies on distributive politics outside the United States, they find over 150 studies on distributive politics in democracies, but only 3 on autocracies. There is, however, a growing body of literature on the distributive roles played by nominally democratic institutions in competitive authoritarian regimes. See, for example, [Blaydes \(2010\)](#).

cians are faced with two competing imperatives. On the one hand, the first priority for anyone who aspires to power under such a system is to build a strong, dedicated clientele that can be readily mobilized to support his³ political agenda. This imperative, which we call “power base building”, motivates politicians to devote scarce public resources to nurturing loyal and strong clients whose service directly contributes to securing the patron’s power and influence. When multiple patronage networks exist in a system, however, a politician also needs to maintain collaborative, or at least non-antagonistic relationships with other potential competitors, who have the ability to impose sanctions if their demands are not met. This second imperative, which we call “horizontal coalition building”, compels politicians to channel more distributive favors to their peers. When the total amount of resources available for distribution is largely fixed, there is an inevitable trade-off between these two imperatives. We expect shrewd politicians to maintain a delicate balance between the two competing demands, and to carefully adjust the amount of resources allocated to each based on their assessment of its relative salience in the political environment.

We place this general theory in the context of China. We highlight that in a system where patronage politics coexists with strong performance-oriented career incentives, an important function of the distributive favors is to improve clients’ substantive policy performance, which in turn affects their career prospects. We generate specific hypotheses regarding how, when, and to whom distributive favors will be granted and test them using a new dataset on regional patronage networks and city-level fiscal transfers in China between 2001 and 2009. Fiscal transfers are crucial resources that affect local government performance, and their distribution is heavily influenced by provincial authorities. Our empirical investigation begins by asking how changes in city leaders’ patronage ties to the incumbent provincial leaders affect the amount of transfer a city receives. While the secrecy of authoritarian politics often makes it difficult to discern political alignments among the elite, we overcome this challenge by working with a new biographical database and employing a novel strategy that infers patron-client relations from past promotions.

³Hereafter, we use the masculine pronoun to refer to a politician when there is no ambiguity, since the majority of the politicians in our study are male.

We identify the causal effects of patronage ties on transfers by exploiting the constant reshuffling of officials at both the provincial and the city levels, which frequently makes or breaks a city’s connection with the province through the leadership. Our baseline estimates suggest that, all else equal, a city with political leaders who are clients of the incumbent provincial secretary (i.e., the *de facto* political leader of a province), receives on average 4 to 7 percent more transfers than a city without. This difference amounts to an annual premium of 151 to 236 million yuan (24 to 38 million dollars) for a city with an average level of transfers in our sample.

We also investigate how changes in key parameters of the political environment alter the relative weights a patron places on these two competing imperatives. We focus on three sets of parameters: (1) the political cycle (2) the future value of the clients, and, most importantly, (3) the relative power of the competing patron (i.e., the governor). Consistent with our theory, we find that favoritism to the provincial secretary’s clients is more intense in years when such transfers can make a greater impact on their careers and among the group of clients who are eligible for promotions to politically more valuable positions. We also find that favoritism increases with the seniority and status of the incumbent secretary, but decreases when the governor is powerful.

Finally, we examine the fiscal and policy consequences of patronage ties through distributive favoritism. Using both government statistics and satellite data on nighttime brightness, we find that cities with leaders connected to the provincial secretary outspend those without on infrastructure by a sizable margin, and cities also became much brighter at night during the period when connected leaders have been in power. This result suggests that at least a portion of the political favors have translated into concrete projects that may have improved public welfare. In addition, we show that additional transfers received by connected cities mediate some but not all of the effects of connections on the outcomes.

Our study contributes to several strands of literature. First and foremost, we contribute to the literature on distributive politics in nondemocratic regimes. Most existing studies on this topic tend to focus on regime-level motivations, such as the need to co-

opt potential opposition or appease contentious regions (Ishiyama 2010; Treisman 1996). Others highlight political leaders' generic preferences based on traditionalistic identities such as ethnicity, tribal affiliation, or hometown origin (Do, Nguyen and Tran 2013; Franck and Rainer 2012; Hodler and Raschky 2014). By contrast, we study the role of individual politicians' *strategic* considerations in shaping distributive outcomes. We show that ambitious political actors can deploy public resources as a tactical instrument in order to build up power bases and form horizontal coalitions.⁴ Moreover, distributive priorities are often adjusted dynamically in response to the shifting power balance in the political environment.

By showing how politicians in nondemocratic systems use their distributive authority to cultivate and maintain relationships both with their subordinates and peers, our study also relates to the burgeoning literature on intra-elite dynamics in authoritarian regimes in two ways. First, we go beyond the conventional focus of the literature on macro-level outcomes, such as the development of formal institutions (Brownlee 2007; Gandhi 2008) and regime durability (Albertus and Menaldo 2012; Magaloni 2008), to examine the micro-level distributive consequences of elite interactions. Second, we provide a more general characterization of the political imperatives faced by authoritarian elites. The distinction between power base building and horizontal coalition building can be used not only to analyze the relationship between the dictator and his ruling coalitions, which is at the center of the current literature (Haber 2006; Svobik 2012), but also to characterize behaviors of a larger group of potential power-seekers in those systems.

Finally, our analysis of the fiscal and economic consequences of patronage ties also sheds light on an on-going debate in Chinese politics regarding the relative importance of political connections versus administrative performance in selecting Chinese officials (Jia, Kudamatsu and Seim 2015; Landry, Lü and Duan 2015; Li and Zhou 2005; Shih, Adolph and Liu 2012). While most existing studies tend to assume that these two dimensions are independent of each other, we provide evidence that they are intimately connected

⁴To our knowledge, Shih (2004) is the only study that has looked at the distributive implications of factions. But we are the first to highlight the competing incentives involved and to empirically test a wide range of hypotheses about how distributive patterns may vary with strategic parameters in the environment.

through, among other things, a distributive mechanism. Patrons who care about the careers of their clients can provide them with additional resources to enhance their performance, thereby making them more attractive candidates for future promotions.

The rest of the paper proceeds as follows. The next section discusses the distributive implications of the two competing imperatives faced by politicians in nondemocratic systems and places them in the context of China. We pay special attention to how patronage politics plays out in a system with strong career incentives and derive testable hypotheses. We then briefly describe the institutional background and introduce the data, measurement, and empirical strategy used in this study. We present three sets of empirical results: the baseline estimates, interactions with key strategic parameters, and the effects of connections on fiscal spending and development. We address two alternative explanations before offering the conclusion.

2 Competing Imperatives and Distributive Strategies in Nondemocratic Systems

What kinds of political considerations do authoritarian politicians have in allocating public resources? In this section we first offer a theoretical framework that highlights the two competing imperatives faced by politicians: (1) cultivating a strong and dedicated power base, and (2) building horizontal coalitions with other competing patrons in the system. We then place this tradeoff in the context of contemporary China and derive testable hypotheses.

2.1 Power Base Building vs. Horizontal Coalition Building

Authoritarian politics, like its democratic counterpart, is a team game.⁵ No authoritarian politician can effectively govern, let alone compete for high office, without assistance from a group of loyal followers. Since open political organizing is not allowed and there

⁵As Mahathir Mohamad has famously noted: “Contrary to the usual belief that I am a dictator, I actually work as a team”, see “Malaysia Unrest: ‘We Are Prepared to Handle It’ ”, *New York Times*, <http://www.nytimes.com/1998/09/23/news/23iht-qanda.t.html>

is usually no meaningful differentiation in terms of policy or ideology among the elites, followers are typically brought together via informal patronage networks, wherein instrumental benefits are promised in exchange for services. Such networks are a key source of political power in nondemocratic systems (Willerton 1992). Across different institutional settings, patronage networks are found to perform a wide range of important political tasks for their patrons, such as maintaining political stability (Arriola 2009), collecting information, attacking political rivals (Gao 2000), implementing policies (Shih 2008), and preserving the patrons' influence and legacy in the event of his retirement.⁶

To the extent that a strong, dedicated patronage network is a valuable asset for politicians in authoritarian systems, building such a network is nonetheless an expensive investment. Given the fundamentally instrumental nature of these relationships, securing clients' exclusive loyalty requires patrons to offer clients tangible benefits, both as a reward for their services and as a means to increase the cost of defection. This implies a straightforward distributive logic: when allocating resources, politicians will favor those who belong to their own patronage networks. The specific form that favoritism takes, however, may vary according to the institutional context. In some cases, clients may demand pecuniary returns that directly improve their private consumption. In other cases, clients may require resources to extend their own power and patronage. Moreover, in hierarchical systems with established channels of internal mobility, resources may also be used to help clients climb political ladders.

Although cultivating a power base is a key priority for politicians in authoritarian regimes, it is not the sole imperative they face. In most patronage-ridden systems, multiple patronage networks exist, all feeding on the same pool of political and economic resources. Patrons thus must also take into account their relationship with leaders from other patronage networks when crafting distributive strategies. Although pleasing their peers, who may be potential competitors for clients, offices, and resources, often does not contribute directly to a politician's personal power, maintaining a relatively harmonious

⁶For example, Li Peng insisted on putting his protégé, Luo Gan into the Standing Committee to take charge of internal security matters in order to ensure that the Party's resolution on the Tiananmen incident would not be altered (Nathan and Gilley 2003).

relationship with colleagues is sometimes in a politician's interest. This is especially the case when those peers control key resources that can be leveraged to carry out the politician's own agenda or have the ability to impose substantial political costs on the politician if he fails to cooperate. The need to buy off other significant power holders implies a different distributive logic from the first: Instead of concentrating resources on their own factional allies, politicians will try to cater more to the demands of their potential competitors. The goal of this strategy is not to maximize personal power, but rather to neutralize potential threats from one's equals by demonstrating a willingness to respect and cooperate with the existing power equilibrium.

When the total size of the state coffer available for distribution is fixed, there is an inevitable tradeoff between these two imperatives: A politician who takes a larger share for his own faction may benefit from having a stronger clientele, but at the same time also faces graver risk from more dissatisfied peers. Conversely, catering too much to peers' interests may alienate core supporters and undermine the politician's ability to carry out his own agenda in the future. In practice, shrewd politicians would usually try to balance these two priorities based on their relative salience in the environment. When they are confident about their power vis-à-vis their peers', they may find threats from the peers less worrisome and concentrate the bulk of the resources on power base building. By contrast, when the competing patrons wield sufficient amount of power to make sanctions non-negligible, politicians may be pressed to pay greater attention to the demands of their peers.

2.2 Patronage Politics with Chinese Characteristics: The Role of Career Incentives

We now place this general theory in the context of contemporary China. We argue that the dynamics of patronage politics in China reflect the key tradeoff discussed above. However, the specific practice of patron-client exchange is shaped by China's unique institutional environment—most importantly the presence of strong career incentives under a performance-oriented selection system.

Patronage politics has deep roots in the Chinese political culture that can be traced back to the Imperial times (Kracke 1953) and the Republican era (Nathan 1976). This tradition has only been reinforced with the advent of Chinese Communist Party (CCP) and the establishment a powerful, all-encompassing state, which became the natural habitat for patron-client relations. A long-standing tradition of research on elite politics in China has documented how factions, defined as informal networks of clientelistic ties between leaders and followers, serve as the primary organizational means by which political leaders exercise power and exert influence (Dittmer 1978; Huang 2000; Nathan 1973). Dittmer (1978), in particular, notes that the strength of politicians' informal power bases is a crucial determinant of their ability to survive amidst power struggles. Leaders at all levels have been found to actively exploit their formal political and economic prerogatives to recruit followers and build up their informal bases (Hillman 2014; Huang 2000)

Meanwhile, the current Chinese system also provides incentives for horizontal coalition building. Emerging from the traumatic experience of strongman politics under Mao, the political leadership in the reform-era has made a series of efforts to strengthen and institutionalize the norm and practice of collective leadership. It is widely noted that nowadays even the most senior political leaders must frequently make compromises and concessions to other elite members in exchange for their support on political and policy issues (Nathan and Gilley 2003). At the the lower-level, moreover, power is often deliberately fragmented in order to prevent any single leader from dominating a locality. Peer evaluations, for example, are solicited and often taken seriously in assessing a candidate's suitability for promotion (Hillman 2014, 106-107). These constraints on individual power tend to encourage at least some degree of collegiality within the system.

Moreover, a key institutional feature of the Chinese system is the presence of strong career incentives supplied by a set of performance-oriented selection institutions (Xu 2011). Chinese officials typically have few career opportunities outside the bureaucracy, and administrative performance is one of the key criteria (at least nominally) for internal promotion. Nathan and Gilley (2003), for example, note that "no matter how strong a candidate's factional backing, he cannot be promoted without a record of administrative

achievement.” Hillman (2014) expresses similar views, observing the selection process at the local level. This unique selection system shapes the goals and incentives of both the patrons and the clients and has important implications for the specific content of patron-client exchange being practiced: When advancement to a higher-level office is the ultimate path to power, prestige, and rents, clients’ loyalty to the patron is often contingent on the latter’s ability to fulfill their career ambitions. At the same time, the political influence of patrons is likely to depend not only on their own advancement, but also on their ability to place trusted clients in key positions. These considerations give patrons strong incentives to use their power and resources to help clients advance their careers. When substantive performance is the key currency for advancement, a large portion of the distributive favors will be directed toward inflating the clients’ budgets and helping them deliver impressive achievements.

2.3 Hypotheses

We derive several hypotheses about how patronage politics shapes the distributive dynamics in China based on the preceding discussion. We leave the formal derivation, which is based on a career-concern model, to Section A of the Online Appendix but only state the intuitive results here. To begin with, since patronage networks are a crucial source of power in the system, we expect aspiring politicians to spend a significant amount of resource they control on cultivating their own networks as long as the threat from the competitor is not too overwhelming. This implies the following:

Hypothesis 1. *As long as the competing patrons are not too powerful, a politician will maintain a biased distribution of resources in favor of his own clients over non-clients, all else equal.*

The interaction between patronage considerations and career incentives leads to additional predictions about when and to whom distributive favors will be granted. For one thing, we expect a politician with finite resources to strategically choose the timing of the distribution in order to maximize its impact on clients’ careers. Moreover, to the extent that such favors resemble a form of investment, patrons will also take into account

the future value of their clients in deciding how much to allocate. We may expect, for example, more distributive favors to be granted to clients who are younger and politically more promising than to those who are about to retire or face dimmer career prospects, as investments in the former are likely to yield higher political returns in the future. By extension, a politician may also discriminate more against younger and more promising non-clients (or clients of the rival patrons') when they are in direct competition with his preferred candidates in promotion contests. This leads to two additional hypotheses.

Hypothesis 2. *Distribution will be more biased toward clients when such bias can have a greater impact on their career prospects.*

Hypothesis 3. *The disparity in distribution between clients and non-clients will be larger when a politician expects to receive greater benefits from his clients' future careers.*

Finally, we expect politicians to adjust their distributive strategies in response to the strength of their potential competitors.

Hypothesis 4. *The degree of favoritism will decrease as the power of the competing patrons increases.*

3 Background

3.1 Patronage Politics in Chinese Provinces: Actors and Incentives

While the practice of patronage politics permeates all layers of the Chinese system, our empirical investigation focuses on the interactions between the provincial and the city levels. Figure 1 provides a stylized depiction of the Chinese administrative hierarchy and the segment we are focusing on. We begin with the key patron of interest, the provincial secretary, who is head of the provincial party organ and the *de facto* ruler of the province. The provincial secretary's predominant authority over major political, policy, and personnel matters within a province gives him ample resources with which

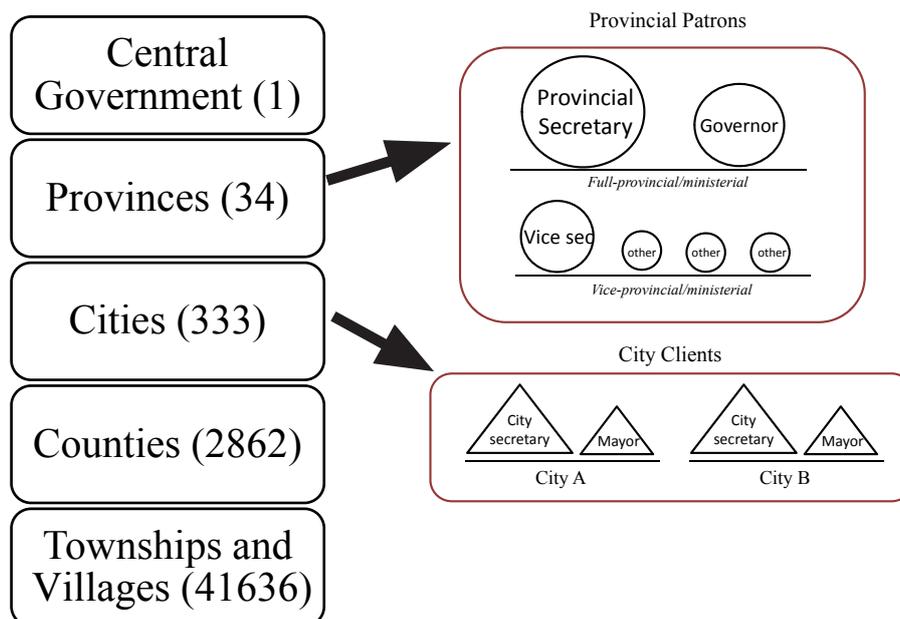
to recruit and reward followers. At the same time, given the importance of this position as a stepping stone for more powerful national leadership positions (Li 2008), provincial secretaries also face the pressing need of building strong power bases to support their future quests for higher office.⁷

For the competing patron, we focus on the governor, who is the head of the provincial government and often the second most influential patron in the province. From the secretary's perspective, the governor and his faction are the most important competitors for the finite number of offices and resources available for distribution. As such, the secretary typically has an incentive to curtail the governor's influence. Undermining the governor, however, is not without risk. Anecdotes suggest that governors who do not get along with their senior colleagues may use their control of the executive branch to deliberately obstruct the secretary's initiatives. When the conflict between the two intensifies and becomes public, it will also hurt the secretary more as it is his responsibility to maintain unity within the leadership. In cases where the governor enjoys a stronger political background than his secretary, of course, the secretary will have an even greater incentive for making concessions.

Among the pool of potential clients who occupy lower-level positions in the province, the most important ones are city secretaries and mayors. City leaders help provincial patrons extend control over the cities in which they serve. In return, they expect patrons to assist and endorse their career advancement. Under the current system, provincial patrons do not have the authority to directly reward city leaders with promotions to the next level, which is often at the rank of vice-provincial (*fushengji*) (Landry 2008, 50). Although they may be consulted and sometimes even asked to nominate suitable candidates, it is the Politburo and its Standing Committee that make the ultimate decisions. In evaluating candidates, the top leadership is likely to consider a range of factors. Substantive performance in city leadership positions is likely to receive considerable attention, as it is usually the only aspect of performance that allows some comparability

⁷The core members of former general secretary Jiang Zemin's faction (the well-known "Shanghai Gang"), for example, consist primarily of those who worked under Jiang when he was serving as the party secretary of Shanghai in the 1980s.

Figure 1: Provincial Politics in China: A Sketch



across candidates with otherwise heterogeneous backgrounds. This arrangement gives a patron incentives to improve his clients' performance (and undermine their competitors') by strategically allocating key policy resources across cities. It is to one such resource that we now turn.

3.2 Fiscal Transfers at the Sub-Provincial Level

Fiscal transfers are one of the most important policy resources in contemporary China. Under the current fiscal system, which has been in place since 1994, the center claims the lion's share of the fiscal revenue ($\sim 50\%$), but delegates most ($>70\%$) spending responsibilities to local governments. The gap between revenue and expenditure at the local level is filled by fiscal transfers, which are estimated to account for about half the local expenditure (Shen, Jin and Zou 2012). Fiscal transfers not only cover the daily operating expenses of local governments, but also fund various policy programs and development projects that are directly connected to the economic and policy performance of local officials.

Transfers to city governments can come either from the province or directly from central ministries. While there is no systematic information regarding the exact breakdown

between the two sources, some researchers note that the provincial authority is usually responsible for dispensing the bulk of the funds. Our own calculation based on data from [Ministry of Finance \(2007\)](#) also confirms this observation: At least between 2001 and 2006, transfers from the province made up on average 71% of the total transfers received by cities. Provincial transfers fall into one of three categories: earmarked transfers, general-purpose transfers, and tax returns, each accounting for roughly 30% of the total amount. While earmarked transfers are typically regarded as the most discretionary of the three, the allocation of general-purpose transfers and tax-returns are also subject to significant political influence at the sub-provincial level. The formulas for calculating these two types of transfers vary greatly across localities, and are frequently subject to re-negotiations between the provinces and the cities ([Zhang 2006](#)).⁸ In light of these irregularities, we use total transfers as our dependent variable for most of the analyses below. Robustness checks using only earmarked transfers can be found in the Online Appendix.

In addition to transfers from the province, cities can sometimes apply for earmarked funds directly from central ministries. Even for this type of transfer, the provincial authority still wields some influence. The paperwork for applications, for example, typically goes through the province before it can be submitted to the ministries ([Hillman 2014](#), 128-129). This gives provincial leaders the opportunity to selectively filter applications in advance. In some cases, the province must agree to contribute a fraction of the funds (*caizheng peitao zijin*) as a precondition for applications to be approved. In other cases, provincial leaders may even mobilize their own personal networks at the center to either facilitate or obstruct the approval process, depending on their political interests.

As the most senior leader in the province, the provincial secretary typically enjoys the greatest influence over the distribution of transfers. This influence can be exerted both *ex ante* at provincial standing committee meetings where budgetary matters are deliberated and decided on, and *ex post* during the actual allocation process. In most

⁸Following [Levitt and Snyder \(1995\)](#) we calculate the coefficients of variations for all three types of transfers and they all fall within the range of 0.7 to 1. The irregular nature of general-purpose transfers and tax returns contrasts with the largely fixed and stable arrangements between the center and the province.

cases, the secretary will exploit this advantage to benefit his loyal clients. In face of a sufficiently powerful governor, however, the secretary may also try to appease his colleague by allocating more toward the governor's followers, or even delegating the distributive authority to the governor altogether. The balance of power between the two figures is thus a key predictor of the distributive outcome that will emerge.

4 Data and Empirical Strategy

4.1 Data on Fiscal Transfers

The data on fiscal transfers are collected from *Public Finance Statistical Materials of Prefectures, Cities, and Counties* (*quanguo dishixian caizheng tongji ziliao*) from 2001 to 2009. This source is compiled by the Ministry of Finance and contains extensive information about government budgetary revenues and expenditures for all sub-national entities. For the analyses below, we use the portion of data from all prefecture and sub-provincial level units, but exclude those in ethnic minority regions (*zizhi qu*) or centrally administered municipalities (*zhixia shi*) as they tend to receive more direct transfers from the center. The resulting panel contains observations for 279 localities for 9 years.

4.2 A New Biographical Database for Chinese Leaders

The data on political leaders are drawn from the China Political Elite Database (CPED), which is a newly constructed database containing extensive biographical information about key municipal, provincial, and national leaders in China since 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 (detailed in the Online Appendix). We matched each city-year spell in the panel dataset with a city secretary and a mayor. In cases where multiple leaders held the same post within a given spell, the person with the longest tenure is chosen.

4.3 Measuring Patron-Client Relations

Measuring informal relations in authoritarian regimes has always been a challenge for empirical researchers. In studies of Chinese politics, the most commonly used approach in measuring informal connections is based on overlaps between work or school experiences, as well as shared hometown. A key limitation of this overlap-based approach, however, is that shared experiences only suggest acquaintance but cannot capture the nature or the actual quality of the relationship. In this study, we exploit our knowledge of some key institutional features of the personnel appointment system in China to propose a more precise measure. Our measure identifies patron-client relations by linking lower-level officials with the provincial leaders who were in power when those officials were first promoted to key city leadership positions. More specifically, we define a city leader C as a client of a provincial leader P if and only if the following condition is met:

- C was *first* promoted to a prefecture-level city leadership position (as city secretary or mayor) from *within* the province when P was serving as *either* the provincial secretary or the governor.

Focusing on first promotion to city leadership allows us to reliably measure strong political connections for two reasons. First, city leadership positions are highly valuable positions within the Chinese system. In addition to the political power and ample rent-seeking opportunities that these positions typically accord, experience as a city leader is also a key political credential required for promotion to many higher level offices.⁹ Second, the authority to appoint prefecture-level city leaders lies with the province. The provincial secretary typically has the greatest influence over these appointments, but other leaders, the governor in particular, may also be able to place a few of their clients into these posts (Tan 2006). Among officials who are promoted to city leadership for the first time, therefore, we should expect the majority of them to have strong ties to at least one of the

⁹There are approximately 40,000 positions in China that are of the same rank as city leaders (prefecture/bureau-level), but only about 660 city leadership positions. However, 5 out of the 7 current Politburo Standing Committee (PSC) members and 12 out of the 18 Politburo (PB) members served as city leaders earlier in their careers.

two leading provincial patrons.¹⁰ Even if they do not, we can assume that the two leaders have taken at least a neutral stance toward their advancement, as no veto was made after all. The effect of connection we are estimating here is thus the intention to treat (ITT). We discuss in greater detail several other parameters of our measure and conduct a validity test. The validity test shows that those who have experienced a promotion to city leadership under a provincial leader are much more likely to be promoted *again* when that provincial leader rises to the Politburo (See Section C of the Online Appendix).

4.4 Identification Strategy

Our baseline is a fixed effects model with the following specification:

$$\begin{aligned}
 \text{Log Fiscal Transfer}_{i,p,t+1} &= \delta^S \text{Connections to Provincial Secretary}_{ipt} \\
 &+ \delta^G \text{Connections to Governor}_{ipt} \\
 &+ \mathbf{X}_{ipt}\boldsymbol{\beta} + \eta_i + \gamma_{pt} + \epsilon_{ipt},
 \end{aligned} \tag{1}$$

where i , p , and t index city, province, and year respectively. We use *Log fiscal transfer* in the next fiscal year ($t + 1$) as our dependent variable, as transfers are usually determined as part of the annual budget produced in the previous year. The two key independent variables, *Connections to provincial secretary* and *Connections to governor*, are the number of city leaders connected to the provincial secretary and the governor, respectively. Since there are two primary leaders in a city (city secretary and mayor), the value for each independent variable ranges from 0 to 2. The city fixed effects η_i capture the time-invariant heterogeneity in the levels of transfers across cities, while the year fixed effects γ_{pt} are allowed to vary arbitrarily by provinces to absorb any province-specific economic or political shocks on transfers, such as those induced by changes in the provincial leadership or the central government's regional policies.

¹⁰It should be noted that since the governor only has secondary authority over personnel appointment, there is greater measurement error in our measure for the governor's clients than for the secretary's. This implies that the estimated effect of ties with the governor may suffer an attenuation bias that pulls the coefficients toward 0.

\mathbf{X} is a vector of controls for time-varying political and economic conditions in a city and the career backgrounds of the two city leaders. We include, among other things, a pair of dummy variables, *City secretary's first year* and *Mayor's first year*, to control for any effects associated with an official's first years in city leadership.¹¹ We also control for city leader's connections with members of the Politburo or its Standing Committee (PB/PSC). Moreover, since those promoted by the incumbents tend to be younger and have relatively shorter tenures as city leaders, we also include each city leader's *Age* and *Tenure length* to account for the potential influence of more recent promotions.

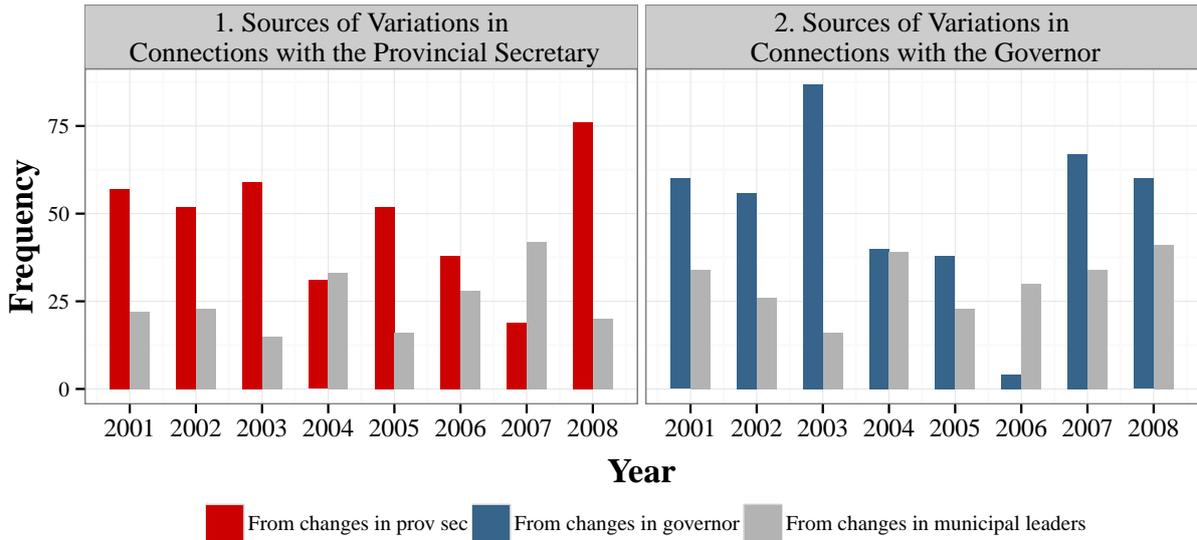
The variations for identification in our models come from two sources: First, holding the identities of the city leaders constant, the connectedness of a city to the provincial leadership can change as a result of leadership change at the provincial level. When an old provincial secretary was replaced by a new one, for example, all cities that were previously connected to the old secretary will see their connections drop from a positive number to 0 as the new secretary is not connected to anyone upon his arrival. The second source of variations comes from turnovers of city leaders while the provincial leaders remain the same. If an unconnected city leader is replaced by a connected one, the city's connectedness will increase. Compared to the first, the second source of variation is more likely to raise concerns about endogeneity, since provincial leaders can move city leaders to localities with high or low transfers for reasons unrelated to patronage. We conduct several robustness checks and use an instrumental variables approach to address this endogeneity problem.

Figure 2 shows the frequencies for both types of variations and their changes over time. There are a total of 636 incidences of changes in cities' connection status with the provincial secretary. The majority of these incidences (357) are due to changes of the secretaries. The breakdown is similar for the governors (a total of 631 changes, of which 348 are due to changes of the governors). We are able to separately estimate the effects of the two leaders (i.e., δ^S vs. δ^G) because both are rotated regularly across provinces and their terms never overlap entirely. Figure 3 groups city-year observations by the number

¹¹This is because, with a few exceptions of cross-regional appointments, all city leaders are mechanically connected to the incumbent provincial leaders in the very first year of their appointment.

and type of provincial leaders the city leaders are connected to (i.e., to both the secretary and the governor, to neither, or to only one of them). While the majority of the city-year observations are either connected to both or to neither, about one quarter to one third of the observations are connected to only one of the two leaders.

Figure 2: Sources of Variations



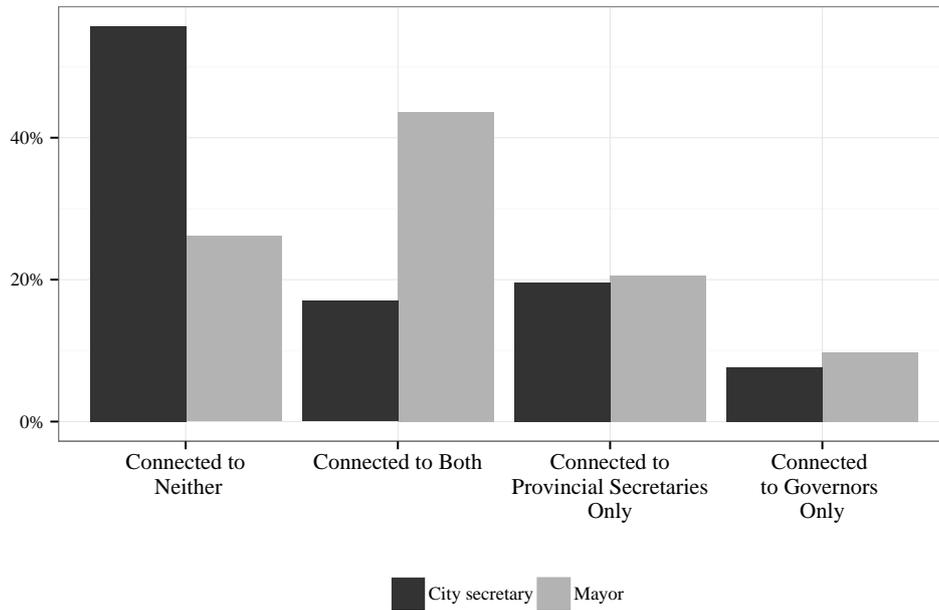
5 Results

5.1 Baseline Results

Table 1 presents the baseline results on the effects of patronage ties on the distribution of fiscal transfers. We begin with a parsimonious model with only the two connection variables, the first-year controls, and year and city fixed effects. Models 2 and 3 add province-year interactions and city-level time linear time trends to account for province-specific shocks and city-specific secular trends, respectively. Models 4 through 6 incrementally add three sets of controls: (1) the political and (2) economic characteristics of the cities, and (3) the demographic and career backgrounds of the city leaders.

The results from the baseline regressions show a clear picture of asymmetric influence. Consistent with the first hypothesis and our knowledge about provincial politics

Figure 3: Distribution of Key Independent Variable



in China, the provincial secretary appears to have much stronger influence over the allocation of fiscal transfers than the governor. The coefficient estimates for the effect of connections with the incumbent secretary are positive and statistically significant in all models, whereas the estimates for connections with the governor are effectively 0. Focusing on Model 6, the results suggest that all else equal a city receives about 4.2% more in transfers if it is led by one client of the provincial secretary, and 6.5% more if led by two. Since the amount of transfer received by an average city in our sample is about 3.5 billion yuan (560.1 million dollars) per year, the coefficient estimates translate into a premium of about 150.8 million yuan (24.1 million dollars) per year for one connection and 236.3 million yuan (\$37.8 million dollars) per year for two.

Table 1: Baseline Results

	DV: Log Fiscal Transfer Next Year (10,000 yuan)					
	(1)	(2)	(3)	(4)	(5)	(6)
Connections with Prov Sec						
# of connections w/ prov sec=1	0.026* (0.013)	0.050*** (0.016)	0.039*** (0.015)	0.050*** (0.016)	0.047*** (0.014)	0.042*** (0.016)
# of connections w/ prov sec=2	0.043*** (0.015)	0.061*** (0.022)	0.051*** (0.018)	0.060*** (0.022)	0.060*** (0.018)	0.065*** (0.021)
Connections with Governor						
# of connections w/ governor=1	-0.025** (0.012)	0.001 (0.013)	-0.023** (0.011)	0.001 (0.013)	-0.010 (0.011)	-0.015 (0.012)
# of connections w/ governor=2	-0.060*** (0.017)	-0.003 (0.022)	-0.005 (0.018)	-0.003 (0.022)	-0.018 (0.018)	-0.018 (0.019)
City secretary's first year	-0.008 (0.020)	-0.011 (0.014)	0.011 (0.010)	-0.012 (0.014)	0.003 (0.013)	0.012 (0.015)
Mayor's first year	0.030*** (0.011)	0.005 (0.008)	-0.003 (0.008)	0.005 (0.008)	0.001 (0.008)	-0.008 (0.010)
Year FE	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓
Province X Year FE		✓	✓	✓	✓	✓
City linear trends			✓			
City political controls				✓	✓	✓
City economic controls					✓	✓
City leader controls						✓
Adjusted R ²	0.96	0.98	0.99	0.98	0.98	0.98
Number of Cities	279	279	279	279	279	279
Observations	2484	2484	2484	2484	2466	2288

Note: This table presents the effects of patronage ties with provincial leaders on fiscal transfers. The dependent variable is the log of fiscal transfer in the next fiscal year. The two main independent variables are the total number of city leaders who are clients of the incumbent provincial secretary and the governor, respectively. City political controls include indicators for whether the city is the hometown of (1) any incumbent PSC/PB leader, (2) the incumbent provincial secretary, and (3) the incumbent governor. City economic controls include *Log GDP*, *GDP growth rates*, *Log population*, *Log fiscal revenue*, *Log expenditure*, *Fiscal revenue per capita*, and *Population density*. City leader controls include two binary indicators for whether either of the city leaders is (1) a client of incumbent PSC/PB members or (2) a vice-provincial level leader, as well as the following variables for both the city secretary and the mayor: *Age*, *Age²*, *Tenure length*, *Age at first city leadership position*, *Ethnicity*, *Gender*, *Attended college before 30*, and *Work experience in the Youth league*.

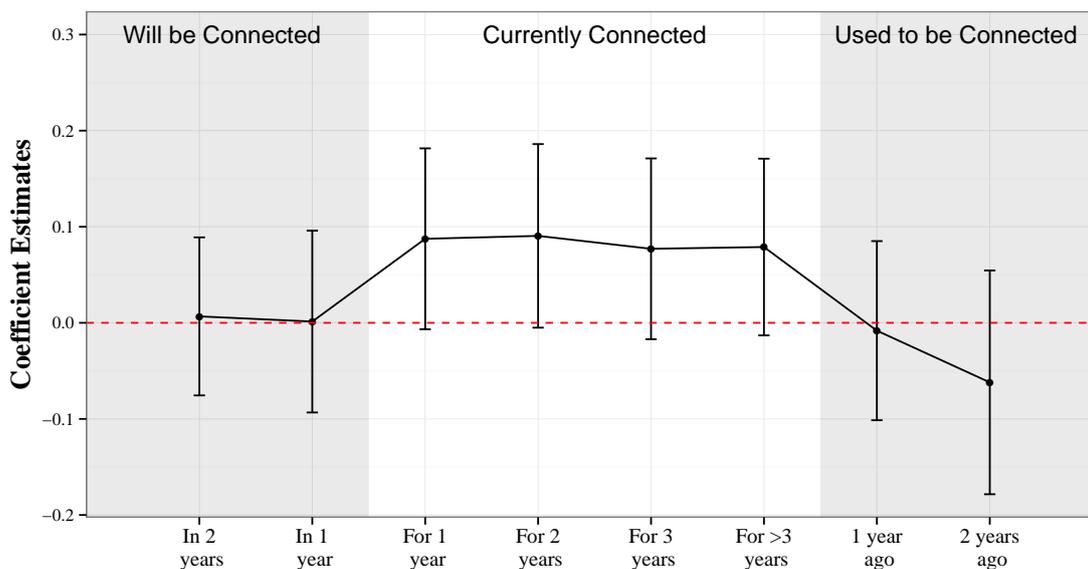
Robust standard errors clustered at the city level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

We then investigate whether the results are driven by any unobserved trends in cities that simultaneously affect both the probability of a city becoming connected and the amount of transfer it receives. To do so, we 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. The whole set of dummies encompasses connection

statuses ranging from two years before forming a connection to two years after losing one. The results, reported in Figure 4, show that neither pre-trends nor post-trends are likely to be driving the results: Cities that will soon become connected to the secretary do not see their transfers increase until the connection is actually in place, and cities that have just lost their connections see their transfers quickly deteriorate to the level of the reference group.¹²

Figure 4: The Dynamic Effects of Connections on Log Fiscal Transfers



Note: This figure illustrates the dynamic effects of patronage ties for cities before, during, and after being connected to the incumbent secretary. Each dot indicates the coefficient estimate and the vertical bars show the 90% confidence intervals.

We also conduct a series of additional robustness checks on the baseline results, which are detailed in Section D of the Online Appendix. To briefly summarize, we find that the baseline results are robust to using alternative formulations of the dependent variables, various sub-samples, and different estimation strategies. Additionally, we do not find the premium changing significantly over a client’s tenure. A placebo test that manipulates the timing of the dependent variable further shows that the estimated effects are strongest when we set the dependent variable at $t + 1$.

¹²The reference group consists of cities that are at least three years either before gaining a connection or after losing a connection.

5.2 Interactions with Key Strategic Parameters

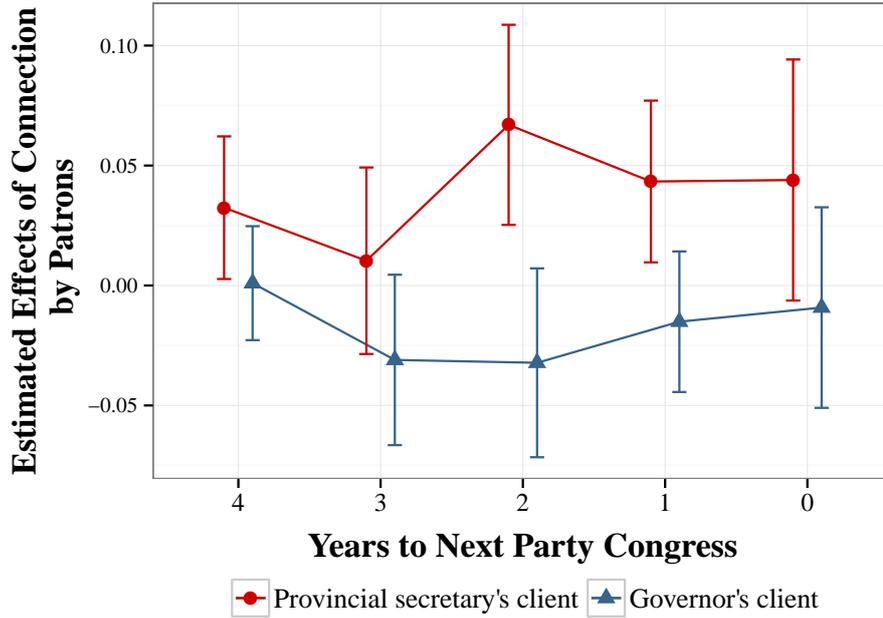
Our baseline results confirm the main hypothesis by showing that the provincial secretary, as the more senior leader of the two, maintains a discernible bias in favor of his clients in distributing fiscal transfers. In this section, we evaluate how such favoritism varies with changes of key parameters in the political environment by interacting the connection variables with a series of client- and patron-level covariates. For ease of presentation, we transform the connection variables into binary indicators ($\text{connected}=1$) and use them as our main independent variables for all the interaction analyses below.

5.2.1 Interaction with Political Cycles

We begin by evaluating Hypothesis 2, which states that a politician will allocate more favorably to his clients when such favoritism is more effective at influencing their careers. To test this claim, we look at how favoritism varies with political cycles. In China, the cycle corresponds with the Party Congress, which convenes every 5 years. Previous studies have found that lower-level officials strategically increase fiscal spending in the middle of the cycle so that major achievements can be completed right before the Party's Congress when most promotions are made (Guo 2009). Following the same logic, we should expect favoritism in the distribution of transfers to follow a similar cycle, as the patrons also want to maximize the impact of their aids on clients' careers. We estimate a model where the two indicators of connection are interacted with the number of years left to the next Party congress.¹³ The results, displayed in Figure 5, show that there is relatively little disparity between the fiscal transfers received by the provincial secretary's and the governor's clients at the beginning of the cycle. However, this disparity increases markedly when the Party Congress is only 2 years away and persists afterwards. This pattern is thus consistent with our prediction that favoritism will be more intense in times when it will matter more for clients' careers.

¹³Our sample period covers two Party Congresses, 2002 and 2007.

Figure 5: Changing Effects of Connections over Political Cycle



Note: This figure illustrates how the effects of patronage ties on fiscal transfers change over the political cycle. Each dot/triangle indicates the marginal effect of connection to a given provincial leader on transfers and the vertical bars show the 90% confidence intervals.

5.2.2 Interaction with Future Value of Clients

The third hypothesis from our theory predicts that a politician’s discrimination between his clients and their competitors is greater when he expects higher returns from the clients’ future careers. To test this hypothesis, we focus on two client-level attributes. The first one is age eligibility. The mandatory retirement system in China requires officials to be below a certain age in order to be eligible for promotion to key party and government positions at the next level. Clients who will exceed that ceiling by the next round of turnover will have to retire or be transferred to honorary legislative positions and are therefore of little future value to the patron. In light of this, we create variables for both the secretary and the governor denoting the percentage of their clients in a city who will still be *below* the age ceiling by the next Party Congress.¹⁴ We set the ceiling at 58 for the analysis in the text, but report results using different ceiling values in Table A.9 of

¹⁴This variable takes three possible values: 0 if neither of the city leaders is a client or both/all clients in that city are above the age ceiling (0%), 1 if both city leaders are clients and one of them is above the ceiling (50%), and 2 if 100% of the clients in a city are above the ceiling (1 of 1 or 2 of 2).

the Online Appendix.¹⁵

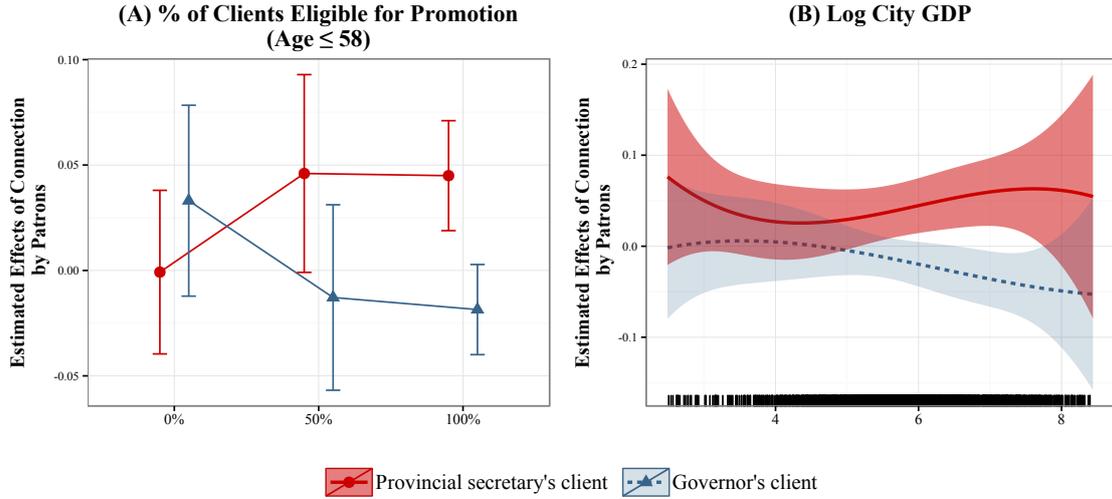
The second attribute we focus on is the economic significance of the city in which the client serves. While there are still debates about whether economic growth per se contributes to political advancement, it is relatively unambiguous that officials in cities with larger economies enjoy a greater chance of promotion (Bo 2002). We thus interact our key connection indicators with a 3rd order polynomial of *Log City GDP* to allow the effects of connection to vary flexibly with the city’s economic scale.

The results from the client-level analysis are presented in Figure 6. The left panel presents results for age eligibility. We find that cities headed by clients of the provincial secretary receive significantly more transfers ($\sim 6\%$) than both the unconnected cities (the reference group) and those headed by clients of the governor’s, as long as *at least one* of the secretary’s clients will stay below the age ceiling by the next Party Congress. The premium, however, completely disappears if none of the secretary’s clients will be eligible for meaningful promotions by that time. By contrast, cities with older clients of the governor’s appear to be significantly less penalized than those with younger ones. Cities where 100% of the governor’s clients are above the age ceiling receive about 5% more transfers than those where 0% are.

The right panel displays the results from the interaction with log city GDP. The pattern is similar: While the provincial secretary does not seem to discriminate significantly in small cities, favoritism to his own clients (and bias against the governor’s clients) becomes much more pronounced in cities with above median-sized economies, as leaders in those larger cities are more likely to be candidates for politically valuable positions. Both sets of results suggest that strategic manipulation is more intense when the perceived future return from a client’s promotion is higher.

¹⁵The choice is based on both expert opinion (Kou and Tsai 2014) and empirical patterns from the data: When we calculate the average rates of promotion for different age cohorts, the sharpest decline in promotion probability happens between the ages of 57 and 58.

Figure 6: How Favoritism Changes with Clients' Future Value



Note: This figure illustrates how the effect of patronage ties on fiscal transfer varies by the future value of the clients. Each dot/triangle indicates the marginal effect of connection to a given provincial leader on transfers and the vertical bars show the 90% confidence intervals.

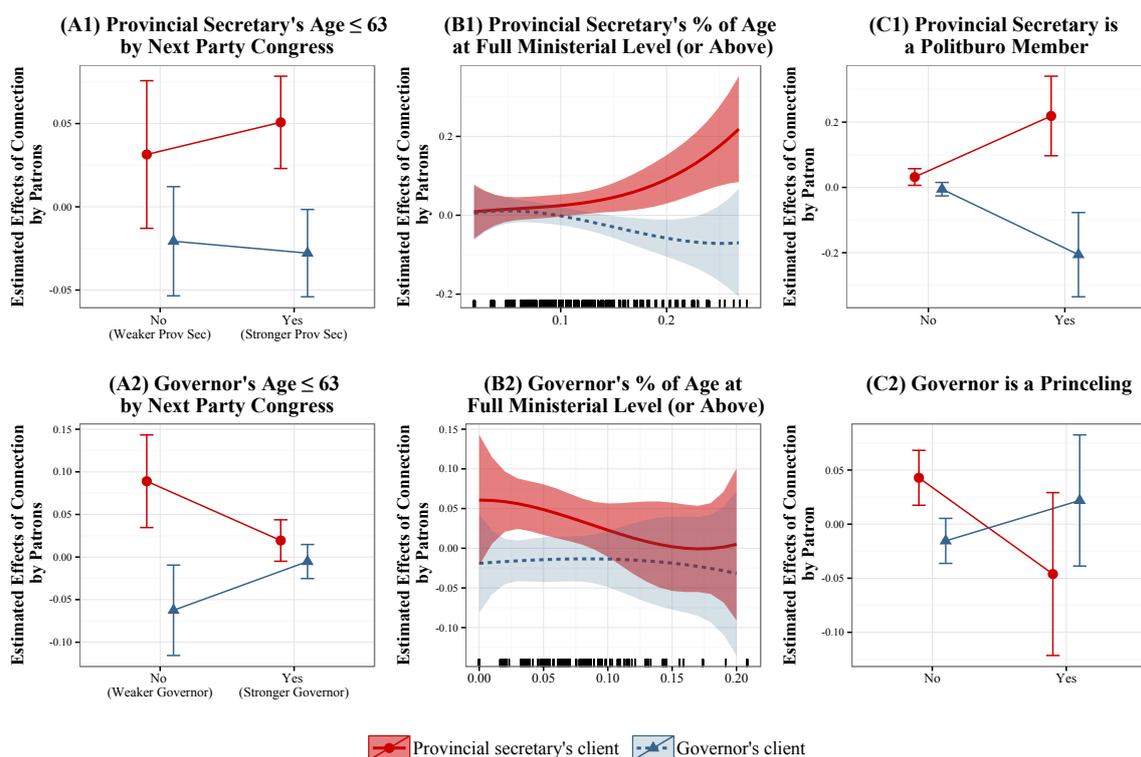
5.2.3 Interaction with Competitor's Relative Power

Finally, we explore whether favoritism decreases with the relative power of the competing patron, as suggested by Hypothesis 4. We use three pairs of indicators to measure relative power between the secretary and the governor. The first pair are indicators of the patrons' eligibility for promotion, defined in the same way as above. We use 63 by the next Party Congress as the working age ceiling in the text, but also report results from other cutoffs in the Online Appendix. The second variable is the fraction of age a patron has spent at the full-ministerial level or above. In the Chinese context, experience at the full-ministerial level is closely related to one's political seniority and prospect for promotion (Kou and Tsai 2014). The third set of indicators contains different measures of political power for the two leaders. For the provincial secretary, we use an indicator for whether he is a sitting Politburo member. For the governor, we could not use the same measure as no governors have ever held concurrent seats in the Politburo. Instead, we measure whether he is a "princeling", defined as *the son or the son-in-law of a politician who has served at the deputy national level (fuguo ji) or above*.¹⁶

¹⁶We find four governors in our sample who satisfy this definition: Bo Xilai, Hong Hu, Meng Xuenong, and Xi Jinping. There is no female provincial leader who satisfies similar criteria.

Figure 7 presents the results from the patron-level interactions. The first column displays the results from interacting connections with patrons' eligibility for promotion. Interestingly we find that the intensity of favoritism by the provincial secretary does not diminish much as he himself approaches the age ceiling (A1), suggesting that clients might remain valuable to the patron even in his retirement. By contrast, the secretary's distributive strategy appears to be significantly impacted by the governor's promotion eligibility: When the governor is expected to be out of power by the next Party Congress, the difference in allocations between the secretary's and the governor's clients is as large as 20%. When the governor is still eligible for promotion, however, the threat of future sanction becomes much more credible, and the secretary displays a significantly smaller bias in distributing transfers (A2).

Figure 7: How Favoritism Changes with the Power Balance between the Provincial Secretary and the Governor



Note: This figure illustrates how the effect of patronage ties on fiscal transfers varies with the power balance between the provincial secretary and the governor. Each dot/triangle indicates the marginal effect of connection to a given provincial leader on transfers and the vertical bars/shaded areas show the 90% confidence intervals. The first row varies the provincial secretary's attributes, and the second row varies the governor's.

The middle column of Figure 7 shows how the distributive patterns change as the

relative political seniority of the two leaders change. Panel B1 displays the results when we vary the seniority of the secretary while fixing that of the governor's at the mean. We see that as the secretary becomes more senior, he is able to allocate more transfers to his own clients at the expense of the governor's. Panel B2 shows the reverse: Holding the seniority of the secretary constant, increasing the governor's experience at full-ministerial level from the minimum (0%) to the maximum (20%) reduces the advantage enjoyed by the secretary's clients from about 6% to virtually 0.

Finally, the right column presents results from the third set of measures. Panel C1 shows that the provincial secretary's bias is significantly larger when he is a sitting member of the Politburo and thus much more senior than the governor. Panel C2 shows the opposite pattern for the governor's princeling status: the provincial secretary significantly reduces favoritism to his own clients by a margin of 8.9% when the governor comes from a prominent political family.

Taken together, these interaction results are consistent with our fourth hypothesis that distributive outcomes depend on the power balance between the patron and his peer. While a stronger provincial secretary often cuts a larger share of the pie for his own faction, a stronger governor increases the need for coalition building and reduces the premium received by the secretary's clients.

6 Fiscal and Economic Consequences of Distributive Favoritism

The results presented above have shown that clients of the provincial secretary are systematically favored in the allocation of fiscal transfers, and degree of favoritism varies markedly with timing, the future value of the clients, and the power balance between the secretary and the governor. Our theory also builds on the premise that, in a system with strong, performance-oriented career incentives, distributive favors are directed primarily toward improving clients' career prospects by enhancing their policy performance. To test the validity of this claim, we assess the effects of patronage ties on changes in substantive

policy outcomes in this section.

We begin by looking at how patronage ties affect the spending patterns of city governments. We collect data on both the *Total fiscal expenditure* and outlays in six specific policy areas: *Infrastructure, Education, Social security, Agriculture, Administration, and Law and police*.¹⁷ Figure 8 reports the coefficient estimates (scaled by the standard deviation of the dependent variable) from regressing changes in logged spending on the connection indicators using the baseline specification (Model 6 of Table 1).¹⁸ For each dependent variable, we also calculate the percentage of total effects mediated by fiscal transfers following [Baron and Kenny \(1986\)](#). The first column (from the left) shows that connection with the incumbent secretary increases total expenditure in the next year by about 20% of the standard deviation (SD), and 81% of the effect is mediated by the increase in fiscal transfers. Turning to specific items, we find that the effect of connection is largest on infrastructure investments (*jiben jianshe zhichu*) (+20% of the SD). Compared to other types of spending, infrastructure investments tend to produce more tangible results, such as roads, bridges, or buildings, which can be readily used to showcase performance and impress high-level decision makers. It therefore comes as no surprise that patrons who care about improving their clients' career prospects would concentrate favoritism on this area. Interestingly, we also find that only part of the total effect of connection (16%) on infrastructure is mediated by the increase in fiscal transfers alone and that connected cities in fact spend weakly less than unconnected ones on all other items. This suggests that patronage ties may entail both wealth and income effects that are not captured by changes in fiscal transfers: Provincial secretaries may possess other means and resources to help their clients,¹⁹ and clients may also adjust their spending portfolios in response to changes in both budgetary constraints and political support from above.

¹⁷Due to a major overhaul of the accounting system in 2007, we are only able to obtain consistent spending data up to 2006. The sample for itemized spending is thus only half the size of the original sample.

¹⁸For original (unstandardized) numerical results, see Table A.11 in the Online Appendix.

¹⁹Our interview with several retired city leaders and officials in local finance bureaus suggests that transfers might serve as a signal of political support from the province, which allows cities to attract more resources from other sources, such as private and foreign investments, or secure more favorable borrowing terms from banks.

One lingering concern, however, is whether the allocated funds have indeed been used as reported. One possibility is that transfers may simply be pocketed by officials for private consumption and changes in expenditure are nothing but results of accounting fraud.²⁰ To address this concern, we use the DMSP-OLS nighttime brightness data as an alternative measure to assess the spending outcomes. Nighttime brightness captured by satellites has been shown to be a good indicator for development in contexts where official statistics are absent or unreliable (Henderson, Storeygard and Weil 2012). In the last column we report the results of using growth in logged nighttime brightness per capita at $t + 2$ as the alternative dependent variable. The additional one-year gap is intended to capture the usual time lapse between the spending and completion of infrastructure projects. Consistent with the finding that connected cities spend more on infrastructure investments, we find that in 2 years' time connected cities also saw faster growth in nighttime brightness per capita (by 0.025 on a log scale, or 8.9% of the standard deviation), probably as a result of the newly completed infrastructure projects.²¹ Again, it is noteworthy that the share of effect mediated by transfers alone is quite small, suggesting that there are other mechanisms through which connections affect outcomes.

7 Alternative Explanations

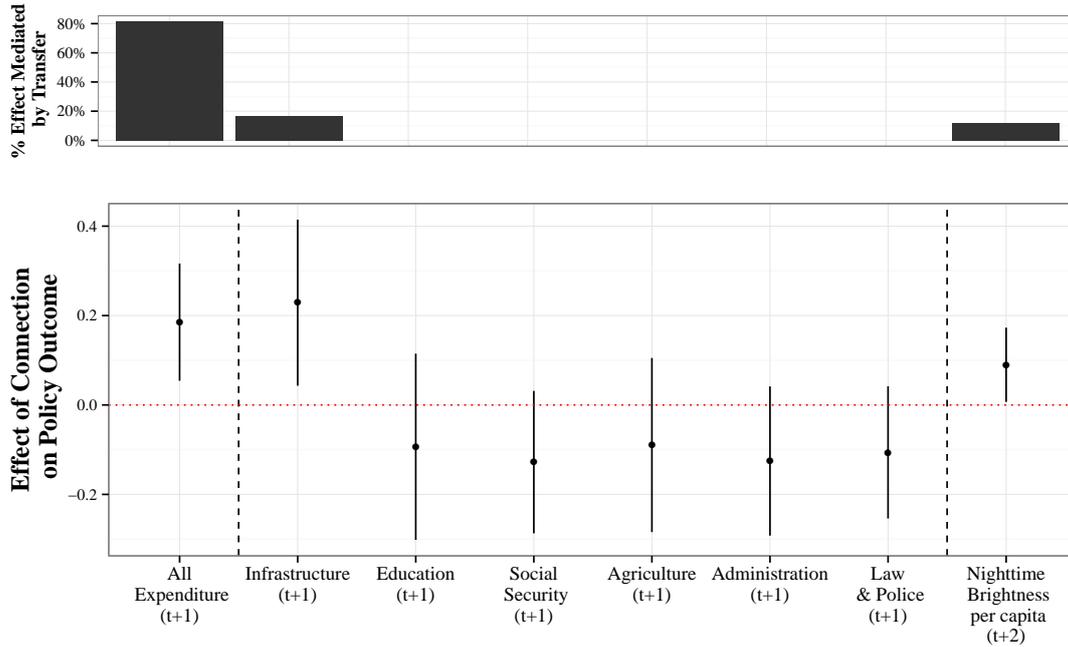
In this section, we discuss several additional tests that we have conducted to address potential alternative explanations. In the interest of space, we only present a brief summary of the findings but leave the numerical results to Section F of the Online Appendix.

The first alternative explanation is that provincial secretaries may have preferences for cities rather than for clients. A provincial secretary may deem some cities as inherently important for economic or political reasons, motivating him to both supply those cities with additional funds and to have them governed by trusted allies. This may also

²⁰There has been increasing attention on the issue of data manipulation by the Chinese government, see, for example, Wallace (2014).

²¹We recognize that it is entirely possible that the leading city leaders might still be able to reap some private benefits from infrastructure investments by, for example, subcontracting transfer-sponsored projects to their business friends or even family members (For examples, see Hillman (2014, Chapter 5).) Yet this is qualitatively different from outright embezzlement, as tangible public goods still need to be delivered, albeit inefficiently.

Figure 8: From Connection to Spending and Performance



Note: The bottom diagram shows the effects of connection with the provincial secretary on spending patterns (at $t + 1$) and nighttime brightness (at $t + 2$). The dependent variables are changes in logged spending/brightness from the previous year. Each dot indicates a point estimate of the marginal effect (scaled by the standard deviation of the dependent variable) and the vertical bars show the 90% confidence intervals. The top diagram reports the percentage of the effects mediated by fiscal transfers at $t + 1$. We omit items whose main effects are negative. The (unstandardized) numerical results can be found in the Online Appendix.

produce a positive association between connection and transfers, but does not necessarily imply patronage-motivated distribution. We evaluate this possibility by adopting an instrumental variables approach (IV). Specifically, we instrument a city’s connection to the secretary at year t with a binary indicator for whether either of the city leaders was above the age of 55 at $t - 2$. This instrument exploits an informal personnel rule in the Chinese bureaucracy, which stipulates that city leaders typically cannot stay in their positions beyond the age of 57.²² This rule implies that cities with aging leaders are more likely to become (or remain) connected to the provincial secretary after the aging leaders’ mandatory departure, as the provincial secretary often takes advantage of the

²²We learned this rule from interviews with retired officials and personnel in several provincial and city organization departments. This practice is dictated by the Party’s policy on rejuvenation of cadres (*lingdao ganbu nianqinghua*), but is also intended to keep a relatively high turnover rate on those valuable city leadership posts. This is confirmed by the data: A mere 6 percent of the city leaders manage to serve beyond the age of 57 and 3 percent beyond the age of 58.

newly vacated offices to reward his own clients.²³ In theory, the timing at which a city leader turns 55 should be unrelated to any intrinsic preferences a secretary may have for cities. Therefore, if city-based preferences are the main cause for additional transfers, cities that become connected in such a way should *not* receive significantly more than they previously had. The IV results, however, contradict this expectation: The estimated effects from the two-stage least square procedure are not only statistically significant but also four to six times larger than the OLS benchmark, suggesting a 20-30% increase in transfers following an increase in connection induced by mandatory departure. This finding supports our claim that the additional transfers received by connected cities are patronage investments directed toward clients, rather than policy tools that target cities.

We also evaluate whether those promoted by the incumbent provincial secretary receive more transfers simply because they are of higher ability. In addition to the two key ability controls that we include in the baseline, *Attended college before 30* and *Age at first city leadership position*, we further include a host of additional covariates on political, professional, and educational credentials to account for the potential difference in ability. Most of the controls, however, are not statistically significant and our main results remain virtually unchanged, suggesting that favoritism cannot be simply explained by difference in competence.

8 Conclusion

How does politics affect the distribution of public resources in authoritarian regimes? In this article, we highlight the tradeoff between two competing political imperatives that are commonly faced by aspiring elites in nondemocratic systems: power base building and horizontal coalition building. We empirically evaluate the distributive implications of this tradeoff using data from Chinese cities. We find that provincial secretaries systematically favor cities led by their clients in the allocation of fiscal transfers, implying that the imperative for power base building is likely to be more salient in general. The degree of

²³Although the increase in connection is for *both* provincial incumbents, we interpret the effect of such increase to be primarily from the provincial secretary, as connections with the governor have been found to have virtually no effect, if not weakly negative effect, on transfers.

favoritism varies markedly with the timing of the political cycle, the future value of the clients, and, most importantly, the relative power of the governor, which directly affects the importance of coalition building. Moreover, analyses based on both official fiscal statistics and independently gathered satellite data suggest that patronage ties have a positive effect on infrastructure investments, partially via an increase in transfers.

Although focusing on China, our theory and main empirical findings are relevant for understanding distributive dynamics in a broader context, as patron-client relations and factionalism are hardly something unique to the Chinese system. Students of authoritarian politics in other parts of the world have found similar phenomena of patronage politics to exist in Africa (Arriola 2009), Latin America (Grindle 1977), and the former Soviet bloc (Willerton 1992). Political elites in those systems may face a similar tradeoff between building power bases and catering to the interests of other power holders in distributing resources, even though the goal of distribution may not necessarily be to improve policy performance. Moreover, similar distributive strategies may also arise in electoral democracies with strong traditions of intra-party patronage. Persico, Pueblita and Silverman (2011), for example, develop a theoretical model for factional politics in democracies. Their model predicts that when the viability a faction depends the electoral fortune of the junior faction member, other members of the faction would coordinate among themselves to bring about public projects that would help the junior member win elections. This form of career-oriented distribution is not too different from what we observe in the Chinese setting. Empirically, scholars have also noted that leaders of party factions in Japan and Italy frequently manipulate the allocation of political resources to aid their own protégés (Bettcher 2005; Ike 1972). In a more recent study, Brollo and Nannicini (2012) find that Brazilian presidents also use their distributive power to favor co-partisan mayors and punish those from rival parties in razor-edge elections. It would not be unreasonable to speculate that personal favors and informal patronage are also part of what is going on under the guise of partisan labels.

Our finding that political patronage might have enhanced (at least partially) public goods provision in a system with strong career incentives goes against the conventional

wisdom, which typically associates such practices with corruption, private benefits, and economic decay. Why does informal political competition in China play by the rules set by the formal institutions, rather than bypassing them altogether as usually happens elsewhere? While a complete answer to this question is beyond the scope of this paper, we speculate that it has to do with both the quality of the formal selection institutions that the CCP has managed to put in place and a long-standing political culture that emphasizes performance as the basis of legitimacy (Zhao 2009). At the very least, our findings call for a more nuanced understanding of the interplay between formal and informal political institutions (Helmke and Levitsky 2004), and advance an optimistic view that the informal dimension may be reigned in by strong, carefully designed formal institutions.

However, we must remain cautious in assessing the overall welfare effects of patronage politics in China. Although increase in public spending on infrastructure may improve the welfare of a given city, the same resources might have been used more efficiently elsewhere. More importantly, when connected leaders adjust their spending portfolios to focus on more visible infrastructure projects, they may overlook, or even deliberately undercut, spending in less visible areas that are crucial to public welfare. Future research on the welfare implications of patronage politics needs to take these issues into account.

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Online Appendix (Not for Publication)

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A A Formalization of the Distributive Game

In this section, we formalize the foregoing discussions in a simple model that combines elements of career concern (Holmström 1999) with tournament-style competition (Lazear and Rosen 1981). This model allows us to make specific predictions about the distributive patterns in systems where patronage considerations are shaped by strong career incentives. Our model features two players, a patron P who allocates a certain amount of resources (normalized to one) between two lower-level candidates—client c and non-client n —and a central decision maker R who chooses between c and n for a promotion. c and n differ both in terms of their latent ability θ and their value to the patron. We assume that θ_c and θ_n are drawn independently from a standard normal distribution. We also assume the patron derives positive utility $\beta > 0$ from the promotion of c but 0 from n . β can be interpreted broadly as the current value of all future services and benefits that the client may offer to the patron after she is promoted. R , on the other hand, is politically neutral between the two candidates and wishes to promote the official with the highest latent ability, but only observes an output q that partially reflects θ . The output function is

$$q_i = \lambda t_i + \theta_i, \quad (2)$$

where t_i is the amount of transfer official $i \in \{c, n\}$ receives from the patron,²⁴ and $\lambda > 0$ is a measure of the effectiveness of such a transfer in affecting the output.²⁵ We impose the condition that no waste is possible, i.e., $t_c + t_n = 1$. The fact that the output depends on both t and θ gives the patron the incentive to manipulate the transfer scheme in favor of his client. At the equilibrium, R will form beliefs about the degree of favoritism, denoted by \tilde{t}_i . Upon observing output q_i , R will update his belief about the ability of candidate i with

$$\mathbb{E}(\theta_i | q_i) = \frac{1}{2} (q_i - \lambda \tilde{t}_i) \quad (3)$$

²⁴In the standard career concern model, t is usually interpreted as the effort by the agent himself. We provide a new interpretation of this parameter.

²⁵Here we assume that the effect of transfer is deterministic for simplicity. The main results are unchanged when we introduce an additive noise, that is, $q_i = \lambda(t_i + \epsilon_i) + \theta_i$ (as long as ϵ_i 's are i.i.d.).

The ruler who cares about maximizing the expected ability of the promoted candidate will promote candidate c if and only if

$$\mathbb{E}(\theta_c|q_c) > \mathbb{E}(\theta_n|q_n) \quad (4)$$

$$\Rightarrow q_c - q_n > \lambda(\tilde{t}_c - \tilde{t}_n), \quad (5)$$

that is, if the observed difference in output between the two candidates exceeds the difference anticipated by R 's equilibrium beliefs. Given this decision rule by R , the patron's objective function becomes

$$\max_{t_c, t_n} \Pr(q_c - q_n > \lambda(\tilde{t}_c - \tilde{t}_n)) \beta - \alpha d(t_c), \text{ s.t.} \quad (6)$$

$$t_c + t_n = 1. \quad (7)$$

The primary cost of any given allocation scheme $\{t_c, t_n\}$ comes from the patron's peer, who places a competing claim on the same pool of resources. The peer imposes punishment $\alpha d(t_c)$ on the patron where t_c is the amount of transfer given to the patron's client. $d(t_c)$ is a generic convex cost function that satisfies $d'(t_c) > 0$ and $d''(t_c) > 0$. We assume that the cost function is sufficiently convex so that an interior solution exists. $\alpha > 0$ is a scalar that captures the relative power of the peer versus the patron. A larger value for α implies a stronger competitor, as it is associated with more severe punishment at all value of t_c .

Substituting the constraints for t_n , the first-order condition with respect to t_c is:²⁶

$$\sqrt{2}\lambda\beta\phi\left(\sqrt{2}\lambda\left(t_c^* - \tilde{t}_c\right)\right) - \alpha d'(t_c^*) = 0. \quad (8)$$

Since at the equilibrium the belief must be consistent, we need $t_c^* = \tilde{t}_c$. Substituting it into equation 8 yields

$$\sqrt{2}\lambda\beta\phi(0) = \alpha d'(t_c^*). \quad (9)$$

Proposition 1 (Baseline Favoritism). *Under the assumption that an interior solution*

²⁶Note that $q_c - q_n > \lambda(\tilde{t}_c - \tilde{t}_n) \Rightarrow \theta_c + \lambda t_c - \theta_n - \lambda t_n > \lambda(\tilde{t}_c - \tilde{t}_n) \Rightarrow \theta_n - \theta_c < \lambda(t_c - \tilde{t}_c - t_n + \tilde{t}_n)$.

exists, when the relative power of the peer α is not too large, the amount of optimal transfer satisfies: $t_c^* > \frac{1}{2} > t_n^*$. More specifically, the upper bound of α that satisfies the inequality is $\frac{\sqrt{2}\lambda\beta\phi(0)}{d'(\frac{1}{2})}$.

Proof. Given the argument in the text, the proof is straightforward. From equation 9 we know that

$$t_c^* = d'^{-1} \left(\frac{\sqrt{2}\lambda\beta\phi(0)}{\alpha} \right). \quad (10)$$

□

To satisfy $t_c^* > \frac{1}{2}$ therefore requires

$$d'^{-1} \left(\frac{\sqrt{2}\lambda\beta\phi(0)}{\alpha} \right) > \frac{1}{2} \quad (11)$$

which implies $\alpha < \frac{\sqrt{2}\lambda\beta\phi(0)}{d'(\frac{1}{2})}$ since the inverse of an increasing function $d'(\cdot)$ is still increasing.

Proposition 2 (Comparative Statics). *The equilibrium transfer to client t_c^* is increasing in λ and β , but decreasing in α ($\frac{\partial t_c^*}{\partial \lambda} > 0$, $\frac{\partial t_c^*}{\partial \beta} > 0$ and $\frac{\partial t_c^*}{\partial \alpha} < 0$). Conversely, the equilibrium transfer to non-client t_n^* is decreasing in λ and β , but increasing in α ($\frac{\partial t_n^*}{\partial \lambda} < 0$, $\frac{\partial t_n^*}{\partial \beta} < 0$ and $\frac{\partial t_n^*}{\partial \alpha} > 0$).*

Proof. We apply implicit function theorem. Let $\mathcal{L} = \sqrt{2}\lambda\beta\phi(0) - \alpha d'(t_c^*) = 0$. Since we have assumed sufficient convexity of the cost function $d(\cdot)$ for existence of interior solution, it follows that $\frac{\partial \mathcal{L}}{\partial t_c^*} < 0$. We only need to examine the partial derivatives with respect to λ , β and α . Note that

$$\frac{\partial \mathcal{L}}{\partial \lambda} = \sqrt{2}\beta\phi(0) > 0 \quad (12)$$

$$\frac{\partial \mathcal{L}}{\partial \beta} = \sqrt{2}\lambda\phi(0) > 0 \quad (13)$$

$$\frac{\partial \mathcal{L}}{\partial \alpha} = -d'(t_c^*) < 0 \quad (14)$$

□

It follows that $\frac{\partial t_c^*}{\partial \lambda} > 0$, $\frac{\partial t_c^*}{\partial \beta} > 0$ and $\frac{\partial t_c^*}{\partial \alpha} < 0$. Using the no-waste constraint yields $\frac{\partial t_n^*}{\partial \lambda} < 0$, $\frac{\partial t_n^*}{\partial \beta} < 0$ and $\frac{\partial t_n^*}{\partial \alpha} > 0$.

The intuition underlying the results is no different from the standard career concern model: Because the ruler only observes the final output, he must make inferences about each candidate’s ability based on (1) the observed output q , (2) his prior belief about the distribution of θ , and (3) the anticipated equilibrium transfer from the patron. Although at equilibrium the ruler will perfectly anticipate the amount of transfer to each candidate and subtract it from the observed output, his posterior belief about a candidate’s ability is always increasing in output *given* his belief. This gives the patron the incentive to increase assistance to his client in order to help her outperform the non-client by a margin that exceeds the ruler’s expectation. The only thing that prevents him from allocating all the resources to the client is the cost imposed by the competing peer. Proposition 1 thus states that as long as the peer’s power to sanction (measured by α) is below a certain upper bound, the patron will give a greater share of the pie to his own client. Proposition 2 makes further predictions about how such favoritism will change when the marginal benefit of doing so increases with efficacy of intervention λ and the benefit the patron derives from his client’s promotion β , or when the marginal cost increases with the power of the peer α . The testable implications are summarized below:

B Details of the CPED Database

To reconstruct the patronage networks at sub-national level, we need to identify the intersection between provincial and city leaders at critical moments of the latter’s career (i.e., first appointment to city leadership positions). This requires fine-grained biographical information on political leaders at multiple levels, which is not currently available in the field of Chinese politics. The highest quality database so far is the Central Committee Database constructed by Shih, Shan and Liu (2010), which also takes a similar holistic approach in coding information in the official biographies. Yet its sole focus on Central Committee members makes it unsuitable for our purpose here. We therefore construct

our own database, the CPED, which extends coverage to local political leaders in China at multiple administrative layers since late 1990s. We provide a brief description of the content of the database and how it was constructed in this section.

The Chinese Political Elite Database (CPED) is a comprehensive biographical database of Chinese political leaders from multiple levels. Currently it contains extensive and systematically coded information of career information for all *civilian* leaders who belong to one of the following categories:

- City secretaries and Mayors since January 1, 2000.
- Members of the provincial standing committee since January 1, 2000.
- Provincial secretaries and governors since January 1, 1995.
- Politburo members since the 14th Party Congress (convened in Oct 1992)

To construct the database, we first develop a list of officials serving in those relevant positions. The name list for sub-national leaders are based compiled from government websites, provincial and city yearbooks, and other authoritative internet sources. We also cross-check the name list several times with the actual records in the CVs after the completion of the database.

We then collect the detailed career information of leaders from the list using the following sources:

- Baidu Encyclopedia (*baidu baike*) www.baik.com
- News of the Chinese Communist Party of China (*zhongguo gongchandang xinwenwang*) <http://cpc.people.com.cn/GB/64162/index.html>
- The Database on Local Party and Government Leaders (*difang dangzheng lingdao renwu shujuku*) <http://district.ce.cn/zt/rwk/>
- Kou, Chien-wen. 2008. *Zhongguo Zhengzhi Jingying Shuju Ku*: National Chengchi University.

- Central Organization Department and Party History Research Center of CCP Central Committee. 2004. *Zhongguo Gongchandang Lijie Zhongyang Weiyuan Daxidian, 1921-2003 (The Dictionary of Past and Present CCP Central Committee Members)*. Beijing: Party History Publisher.
- Provincial Yearbooks for relevant years and provinces.

A “raw” CV from these sources contains the basic demographic information of the official and the past appointments that he/she has served, in a fairly standard fashion. Figure A.1 is an example of a entry of Mr. Sun Yongchun, a formerly city secretary in Shandong but now a member of the provincial standing committee in Guizhou, on Baidu encyclopedia.

Figure A.1: Official Biography from Baidu Encyclopedia

孙永春

锁定

孙永春，男，汉族，1957年5月生，山东寿光人。1976年7月加入中国共产党，1976年12月参加工作。中央党校在职研究生学历，工商管理硕士学位。现任中共贵州省委常委、省委组织部部长、省委党校校长（兼）。

中文名	孙永春	职业	中共贵州省委常委、组织部部长
国籍	中华人民共和国	信仰	共产主义
出生地	山东寿光	入党日期	1976年7月6日
出生日期	1957年6月12日	参加工作日期	1976年12月18日

目录

- 1 人物履历
- 2 担任职务

1 人物履历

1974.06——1976.12，山东省**垦利县**西宋乡大三合村团支部书记，党支部书记，公社团委副书记；

1976.12——1978.03，山东省**垦利县**委工作队组长；

1978.03——1978.10，山东省**垦利县**西宋公社团委书记；

1978.10——1980.06，共青团山东省**垦利县**委干事；

1980.06——1984.08，共青团山东省委干事，副科级干事；

1984.08——1987.09，共青团山东省委组织部副部长（其间：1984.10—1987.07在**曲阜师范大学**函授中文系大专班学习）；

1987.09——1992.09，共青团山东省委常委、组织部部长（其间：1989.10—1991.04挂职任**博兴县**委副书记，1989.09—1992.07在中央党校函授本科**经济管理**专业学习）；

1992.09——1997.12，共青团山东省副书记、省青年联合会副主席（其间：1995.03—1995.07在中央党校进修班学习；1995.09—1997.12在山东省委党校在职研究生班**经济管理**专业学习）；

1997.12——2001.01，山东省**德州**市委副书记；

2001.01——2001.02，山东省**德州**市委副书记、代市长；

2001.02——2006.03，山东省**德州**市委副书记、市长；

2006.03——2006.10，山东省**烟台**市委副书记、市长；

2006.10——2007.01，山东省**烟台**市委书记；

2007.01——2011.04，山东省**烟台**市委书记、市人大常委会主任；

2011.04——，**贵州**省委常委、省委组织部部长、省委党校校长（兼）。



贵州省委常委、组织部部长孙永春

While such information is easily accessible through human eyes, they are unstandardized and therefore unsuitable for automated analysis at a larger scale. To address this problem, a team of research assistants (RAs) are hired to transcribe the raw CV to an excel file. The primary task for the RAs is to decompose and reorganize the career entries in the CV in a way that is friendly to systematic, computer-based analysis. Among other things, RAs are required to record the time, place, main organization associated with job and the administrative ranks according to the coding manual. To standardize the content of input across RAs in face of the vast heterogeneity in our subjects' political careers, we maintain a bank of area, job and school codes, which is continuously updated as new areas and organizations arise during the data collection process. Along the process, we also merge effectively identical jobs and areas that for historical reasons have somewhat different nomenclature, based on consultation with expert opinions.²⁷

After compiling a full set of standardized CV in excel files, we import them into a SQL database. The final output from the database, shown in Figure A.2, contains two separate tables on the official's time-invariant attributes and time-varying career information.

²⁷For example some prefectures are later converted to cities, with the suffix of the name changed from *diqu* to *shi*. We use the same underlying code for the same territorial unit before and after the conversion.

Figure A.2: Standardized CV as Exported from the SQL database

(a) Basic Demographic Information

Name	Sex	Ethnicity	Date of Birth	Hometown: province	Hometown: city	Hometown: county	Highest education	Time of party enrollment
姓名	性别	民族	出生日期 (YYMM-DD)	籍贯省	籍贯市	籍贯县/区	最高学历	入党时间
孙永春	男	汉族	6/12/1957	山东省	潍坊市	寿光市	硕士	7/1/1976

(b) Career Information

Name	Starting time	End time	Province ID	Province name	City ID	City name	County name	Lv1 Job ID	Lv1 Job name	Lv2 Job name	Lv3 Job name	Exact Job	Rank	Key post	Education
姓名	起始时间 (YYYY-MM-DD)	终止时间 (YYYY-MM-DD)	一级关键词编码	地方一级关键词	二级关键词编码	地方二级关键词	地方三级关键词	职务一级关键词编码	职务一级关键词	职务二级关键词	职务三级关键词	具体职务	级别	标志位	学历
孙永春	6/1/1974	12/1/1976	370000	山东省	370500	东营市	垦利县	9637	西宋乡	大三合村		团支部书记	小于副处	无	高中
孙永春	12/1/1976	3/1/1978	370000	山东省	370500	东营市	垦利县	1343	党委工作队			组长	小于副处	无	高中
孙永春	3/1/1978	10/1/1978	370000	山东省	370500	东营市	垦利县	9637	西宋乡			团委书记	小于副处	无	高中
孙永春	10/1/1978	6/1/1980	370000	山东省	370500	东营市	垦利县	1300	党委常委会/政治局			干事	小于副处	无	高中
孙永春	6/1/1980	8/1/1984	370000	山东省				4600	共青团委			干事	小于副处	无	高中
孙永春	8/1/1984	9/1/1987	370000	山东省				4602	组织部 (共青团)			副部长	副处	无	高中
孙永春	10/1/1984	7/1/1987	370000	山东省	370800	济宁市	曲阜市	80243	曲阜师范大学	函授中文系	大专班	学员	副处	学校	专科
孙永春	9/1/1987	10/1/1989	370000	山东省				4600	共青团委			常委/组织	正处	无	专科
孙永春	9/1/1989	7/1/1992	840000	中央				80001	中央党校	函授本科	经济管理专业	学员	正处	学校	本科
孙永春	10/1/1989	4/1/1991	370000	山东省	371600	滨州市	博兴县	1300	党委常委会/政治局			副书记	正处	无	本科
孙永春	4/1/1991	9/1/1992	370000	山东省				4600	共青团委			常委/组织	副厅	无	本科
孙永春	9/1/1992	12/1/1997	370000	山东省				4600	共青团委			副书记	副厅	无	本科
孙永春	9/1/1995	12/1/1997	370000	山东省				80248	山东省委党校	研究生班	经济管理专业	学员	副厅	学校	硕士
孙永春	12/1/1997	1/1/2001	370000	山东省	371400	德州市		1300	党委常委会/政治局			副书记	副厅	市委副书记	硕士
孙永春	1/1/2001	3/1/2006	370000	山东省	371400	德州市		2600	政府/国务院 (综合)			市长	正厅	市长	硕士
孙永春	3/1/2006	10/1/2006	370000	山东省	370600	烟台市		2600	政府/国务院 (综合)			市长	正厅	市长	硕士
孙永春	10/1/2006	4/1/2011	370000	山东省	370600	烟台市		1300	党委常委会/政治局			书记/主任	正厅	市委书记	硕士
孙永春	4/1/2011	5/1/2013	520000	贵州省				1302	组织部 (党委)			常委/组织	副部	省组织部长	硕士

C Measuring Patronage Ties from Past Promotions

C.1 Discussion on Additional Parameters

Several other parameters of the measurement also deserve some discussion. First, we only count a city leader as a client of the incumbent provincial leaders if she is promoted within the province. This is because transfer across provinces usually have to be approved by the Central Organization Department, and it is hard to find out who are really behind those transfers. Second, we exclude appointments to city leadership above the prefecture-level. This includes promotions to sub-provincial level cities, provincial capitals and a handful of other cities where the city leader held concurrent vice-provincial positions in the provincial government, party standing committee or (in some rare cases) the legislatures. As indicated in the text, the authority to appoint vice-provincial level positions lies formally with the Politburo and its Standing Committee, although the provincial secretary does have influence on the nomination. To be conservative, we exclude those higher-level appointments as well. Third, we focus on the *first* appointments to city leadership positions but not subsequent ones. This is because the movement from any other prefecture-level positions to city leadership posts is the most unambiguous act of promotion that serves as a major boost for both the officials' real power and his career prospect. The nature of subsequent appointments, however, is usually context-specific and therefore difficult to ascertain. Moving from a mayor to a city secretary, for example, can be regarded as promotion, lateral transfer or masked demotions depending on the expected career prospect of the person and the relative attractiveness of two cities, which are often observable to the researchers. Table A.2 shows how the estimated effects vary when we alter some of the parameters discussed here.

C.2 A Validity Test Using Promotions As the Dependent Variable

We assess the validity of our measurement by examining how this measure is correlated with probability of subsequent probability of promotion for a city leader when her patron rises to a national leadership position. Our dependent variable here is the promotion outcome for city leaders. Promotion is defined in two ways: The broad definition considers all promotions that involve an increase in the formal administrative rank from prefecture/bureau level to vice-provincial level. This includes both appointments to active party/government duties but also honorary retirements to legislative bodies, most often as the vice-chairman of the provincial People’s Congress or the Political Consultative Conference. In the narrow definition, we focus only on the “true prizes”, which only include promotions to vice governors, members the provincial standing committee, and vice-ministerial positions in central ministries and party departments.

Our key independent variable, *PSC/PB patron*, is an indicator that takes the value of 1 if the subject has a patron (defined by our measure) who is currently a sitting member of the Politburo and its Standing Committee and 0 otherwise. We estimate a Cox proportional hazard model with the following specification:

$$h_{ig}^{\text{promotion}}(t) = h_{0g}(t) \exp(\gamma \text{PSC/PB patron}_i + \mathbf{X}_i \boldsymbol{\beta}),$$

where i and g index the individual and the risk strata, respectively. In all models, we stratify on the city and post (city secretary vs. mayor) of the subject in the first year of all his observations²⁸ to account for potential heterogeneity in career trajectories for officials across those strata.²⁹

Table A.1 presents the results from Cox regressions. The first two models use the broad definition of promotion and the last two the narrow definition. For each version

²⁸This is artificially set to be either 2000 or the first year where she serves as city leader after 2000.

²⁹It is easy to see that when log hazard rate is considered this approach is close to a fixed-effects model in linear regression.

of the dependent variable, we first run a model with only the binary indicator then a fully-specified model with a set of key demographic controls. The results suggest that our measure of patronage ties are strongly correlated with subsequent promotions: Those with ties to a sitting PSC/PB member according to our measure enjoys a 37% increase in the odds of a generic promotion and a 68% of a “true-prize” promotion than those without, conditional on a set of common covariates on career attributes. These findings lend strong support to the validity of our measure.

Table A.1: Effect of Patronage Ties on Future Promotion

	All Promotions		True Prize	
	(1)	(2)	(3)	(4)
Patron is now in PSC/PB	1.343** (0.187)	1.352* (0.228)	1.638*** (0.287)	1.675** (0.349)
Starting Age \geq 58		0.337** (0.156)		0.120** (0.108)
Female		2.214*** (0.552)		2.081*** (0.575)
Attended to college before 30		1.367*** (0.166)		1.649*** (0.232)
Ethnic minority		1.056 (0.272)		1.176 (0.365)
Youth league experience		1.825*** (0.339)		2.261*** (0.469)
Year dummies	✓	✓	✓	✓
Proportional hazard test (p-value)	0.533	0.998	0.735	0.998
Number of promotions	626	626	401	401
Number of individuals	1424	1424	1424	1424
Observations	9409	9409	10120	10120

Note: This table reports exponentiated coefficients (odds ratio) from Cox proportional hazard methods. All models stratified by (1) the first city where the individual was appointed as a city leader after 2000 and (2) the type appointment (mayor vs. city secretary).

Robust standard errors clustered at the city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

C.3 Permuting Definitions of Connection

In Table A.2 we present the results from using several different permutations of the original connection measure. In each model, we alter some parameters discussed the preceding sections and show how the estimated results change. The first column displays the results from the original measure as the benchmark. The second column we include in our

definition of promotion the movement from mayor to city secretary. In the third column we include promotion to vice-provincial city leadership positions, which the provincial secretary might also have some ability to influence, although not the authority to determine. Finally, the fourth column excludes from our original measure those who were appointed to city leadership positions without a simultaneous increase in administrative rank.³⁰ The estimated coefficients are consistently significant across all measures and appear to strongest in the original formulation.

³⁰In other words, this version requires a formal “promotion” to city leadership positions in order for the appointed to be considered as the client of the incumbent provincial leaders. For example, someone who moves from the deputy head of a provincial government bureau or a vice-mayor to a city mayor will be considered as having ties with the provincial secretary and the governor, but someone who moves from the head of a provincial government bureau to the same destination position will not, as this movement does not involve a change in the formal administrative rank.

Table A.2: Robustness Check: Varying the Definitions of Connection

	DV: Log Fiscal Transfer Next Year (10,000 yuan)			
	(1)	(2)	(3)	(4)
	Baseline	Include mayor to city secretary	Include to vice- provincial	Exclude no change in rank
Connections with Prov Sec				
# of connections w/ prov sec=1	0.042*** (0.016)	0.045*** (0.015)	0.037** (0.017)	0.026** (0.012)
# of connections w/ prov sec=2	0.065*** (0.021)	0.058*** (0.018)	0.063*** (0.023)	0.020 (0.017)
Connections with Governor				
# of connections w/ governor=1	-0.015 (0.012)	-0.010 (0.013)	-0.016 (0.013)	-0.026** (0.012)
# of connections w/ governor=2	-0.018 (0.019)	-0.007 (0.016)	-0.020 (0.020)	-0.030 (0.022)
City secretary's first year	0.012 (0.015)	0.013 (0.015)	0.012 (0.015)	0.015 (0.015)
Mayor's first year	-0.008 (0.010)	-0.009 (0.010)	-0.007 (0.010)	-0.006 (0.011)
Year FE	✓	✓	✓	✓
City FE	✓	✓	✓	✓
Province X Year FE	✓	✓	✓	✓
City political controls	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓
Adjusted R ²	0.98	0.98	0.98	0.98
Number of Cities	279	279	279	279
Observations	2288	2288	2288	2288

Note: This table presents the robustness checks of the baseline results. The specification is based on Model 6 in Table 1.

Robust standard errors clustered at the city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

D Robustness Checks of the Main Results

D.1 Using Alternative Dependent Variables

In this section we provide the rationales and results from a series of robustness check on the baseline results. To begin with, Tables A.3 through A.5 show the results from the same baseline specification (as in Table 1) but with three alternative dependent variables: *Log fiscal transfer per capita* and *Share of transfer in a province* and *Log earmarked transfer*.

Table A.3: Robustness Check: Using Log Transfer Per capita as Alternative Dependent Variable

	DV: Log Fiscal Transfer Per capita Next Year (yuan)					
	(1)	(2)	(3)	(4)	(5)	(6)
Connections with Prov Sec						
# of connections w/ prov sec=1	0.021 (0.013)	0.050*** (0.017)	0.037** (0.015)	0.049*** (0.017)	0.046*** (0.015)	0.045*** (0.017)
# of connections w/ prov sec=2	0.039*** (0.015)	0.066*** (0.023)	0.049*** (0.019)	0.066*** (0.023)	0.065*** (0.019)	0.075*** (0.023)
Connections with Governor						
# of connections w/ governor=1	-0.024* (0.014)	0.004 (0.014)	-0.021 (0.013)	0.004 (0.014)	-0.010 (0.012)	-0.020 (0.013)
# of connections w/ governor=2	-0.054*** (0.017)	0.003 (0.023)	0.004 (0.020)	0.003 (0.023)	-0.013 (0.020)	-0.015 (0.022)
City secretary's first year	0.001 (0.028)	-0.001 (0.024)	0.014 (0.023)	-0.001 (0.024)	0.015 (0.022)	0.032 (0.025)
Mayor's first year	0.033*** (0.013)	0.010 (0.011)	0.004 (0.011)	0.010 (0.011)	0.006 (0.011)	0.000 (0.012)
Year FE	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓
Province X Year FE		✓	✓	✓	✓	✓
City linear trends			✓			
City political controls				✓	✓	✓
City economic controls					✓	✓
City leader controls						✓
Adjusted R ²	0.94	0.96	0.98	0.96	0.97	0.97
Number of Cities	279	279	279	279	279	279
Observations	2484	2484	2484	2484	2466	2288

Note: This table presents the robustness checks of the baseline results. All specifications are based on Table 1.

Robust standard errors clustered at the city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.4: Robustness Check: Using Share of Transfer in a Province as the Dependent Variable

	DV: Share of Fiscal Transfer in a Province					
	(1)	(2)	(3)	(4)	(5)	(6)
Connections with Prov Sec						
# of connections w/ prov sec=1	0.003*** (0.001)	0.004** (0.002)	0.003** (0.001)	0.004** (0.002)	0.004*** (0.001)	0.003** (0.001)
# of connections w/ prov sec=2	0.003*** (0.001)	0.005** (0.002)	0.003** (0.002)	0.005** (0.002)	0.005** (0.002)	0.005** (0.002)
Connections with Governor						
# of connections w/ governor=1	0.001 (0.001)	0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)	0.000 (0.001)	-0.001 (0.001)
# of connections w/ governor=2	0.001 (0.001)	0.002 (0.002)	0.000 (0.002)	0.002 (0.002)	0.000 (0.001)	-0.000 (0.002)
City secretary's first year	-0.002* (0.001)	-0.003** (0.001)	-0.001 (0.001)	-0.003** (0.001)	-0.002 (0.001)	-0.001 (0.001)
Mayor's first year	0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.002* (0.001)
Year FE	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓
Province X Year FE		✓	✓	✓	✓	✓
City linear trends			✓			
City political controls				✓	✓	✓
City economic controls					✓	✓
City leader controls						✓
Adjusted R ²	0.96	0.95	0.98	0.95	0.96	0.97
Number of Cities	279	279	279	279	279	279
Observations	2484	2484	2484	2484	2466	2288

Note: This table presents the robustness checks of the baseline results. All specifications are based on Table 1.

Robust standard errors clustered at the city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.5: Robustness Check: Using Log Earmarked Transfer as the Dependent Variable

	DV: Log Earmarked Transfer Next Year (yuan)					
	(1)	(2)	(3)	(4)	(5)	(6)
Connections with Prov Sec						
# of connections w/ prov sec=1	0.036 (0.024)	0.048** (0.021)	0.057** (0.023)	0.048** (0.021)	0.046** (0.019)	0.054** (0.023)
# of connections w/ prov sec=2	0.058** (0.025)	0.057** (0.027)	0.071** (0.030)	0.057** (0.027)	0.053** (0.025)	0.080** (0.031)
Connections with Governor						
# of connections w/ governor=1	-0.022 (0.022)	-0.011 (0.016)	-0.032* (0.019)	-0.011 (0.016)	-0.019 (0.015)	-0.017 (0.017)
# of connections w/ governor=2	-0.018 (0.027)	0.010 (0.027)	0.011 (0.029)	0.010 (0.027)	-0.003 (0.024)	0.004 (0.027)
City secretary's first year	-0.043 (0.034)	-0.044** (0.022)	-0.029 (0.024)	-0.045** (0.021)	-0.039* (0.022)	-0.032 (0.026)
Mayor's first year	0.016 (0.019)	0.020 (0.013)	0.016 (0.014)	0.019 (0.014)	0.020 (0.014)	0.014 (0.018)
Year FE	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓
Province X Year FE		✓	✓	✓	✓	✓
City linear trends			✓			
City political controls				✓	✓	✓
City economic controls					✓	✓
City leader controls						✓
Adjusted R ²	0.92	0.96	0.97	0.96	0.97	0.97
Number of Cities	279	279	279	279	279	279
Observations	2484	2484	2484	2484	2466	2288

Note: This table presents the robustness checks of the baseline results. All specifications are based on Table 1.

Robust standard errors clustered at the city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

D.2 Changing Sub-samples and Estimation Strategies

We also test the robustness of the results by varying the sample size and estimation strategies. The results are presented in Table A.6. All models here are based on the specification of Model 6 in Table 1. In Model 1 we include minority regions which are excluded in our baseline analysis. Because there was a major change in the fiscal accounting system in 2007, there is concern that the way fiscal transfer is calculated might have been changed. To ensure that our results are driven by comparison between pre-and post-2007 periods, in Model 2 we rerun the analysis with only observations between 2000

and 2006. In Model 3, we exclude sub-provincial level cities (*fushengji chengshi*, previously known as *jihua danlie shi*), which have some fiscal autonomy vis-à-vis the province. In Model 4, we use a different estimation strategy recommended by Bertrand, Duflo and Mullainathan (2004) to address the problem of serial correlation. More specifically, we identify a total of 1038 spells for all unique combinations of city secretary \times mayor \times provincial secretary \times governor, collapse our dependent and independent variables by these spell and then re-run the regression on the collapsed dataset.³¹ In Model 5, we address the concern of city leaders' endogenous movements among cities by excluding all the observations with any city leaders who have served in more than 1 cities. Throughout all models, we see that the key coefficients of interests (connections with the incumbent provincial secretary) are consistently positive and significant.

³¹Note that there's no city secretary-mayor pair that has served in two or more different cities, so different city spells are subsumed under these combinations. For continuous variables that change values within a spell, we use the spell average for the collapsed data. For discrete variables, we use the value at the beginning of a spell.

Table A.6: Robustness Check: Varying Samples and Estimation Strategies

	DV: Log Fiscal Transfer in the Next Year (10,000 yuan)				
	(1) Include Minority	(2) Eastern region only	(3) Prefecture- level cities only	(4) Collapse by lead- ership spell	(5) Exclude Movers
Connections with Prov Sec					
# of connections w/ prov sec=1	0.028* (0.016)	0.095*** (0.026)	0.040** (0.016)	0.040** (0.019)	0.053** (0.022)
# of connections w/ prov sec=2	0.047** (0.021)	0.109*** (0.037)	0.066*** (0.023)	0.056** (0.024)	0.060** (0.030)
Connections with Governor					
# of connections w/ governor=1	-0.009 (0.012)	-0.052* (0.026)	-0.015 (0.013)	-0.012 (0.015)	-0.024 (0.017)
# of connections w/ governor=2	-0.015 (0.018)	-0.093** (0.041)	-0.016 (0.020)	0.001 (0.019)	-0.028 (0.022)
City secretary's first year	0.014 (0.013)	-0.003 (0.027)	0.009 (0.015)	-0.001 (0.024)	0.010 (0.018)
Mayor's first year	-0.011 (0.010)	-0.007 (0.017)	-0.003 (0.010)	-0.021 (0.018)	-0.010 (0.012)
Year FE	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓
Province X Year FE	✓	✓	✓	✓	✓
City political controls	✓	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓	✓
Adjusted R ²	0.98	0.98	0.98	0.98	0.98
Number of Cities	331	84	264	279	263
Observations	2685	712	2155	1538	1553

Note: This table presents the robustness checks of the baseline results. The specification is based on Model 6 in Table 1.

Robust standard errors clustered at the city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

D.3 Investigating Whether Effects Change with Tenure Length

One potential objection associated with our particular measure of patronage ties is that because city leaders who are connected to the incumbent provincial secretaries tend to be promoted more recently, the difference may capture the effect of incentives or effort for someone who just arrived at their positions. We included a pair of controls for the city secretary's and mayor's first years in the baseline model. Here we address this issue more thoroughly by interacting patronage affiliation with the clients' total tenure length. More

specifically, we create two variables *Tenure length for prov sec's clients* and *Tenure length for governor's clients* by calculating the total tenure length of the respective clients in a given city (if any). When a city is unconnected to any of the leaders, the corresponding variable takes an arbitrary value of 0.³² When both city leaders are connected to one leader, however, we try three different ways to calculate the corresponding tenure length: the maximum, the minimum and the average.

The results are displayed in Table A.7. We also display the coefficients from two main variables of tenure length for city secretaries and mayors, respectively. Overall, we find *no* evidence that the allocation of fiscal transfer changes with tenure length of the clients, for either leaders and any method that we use to calculate the length. Moreover, the coefficient estimates on the generic tenure length for city leaders are also small and insignificant. These results suggest that observed allocated difference between the connected and unconnected (with the provincial secretary) cannot be explained by incentives associated with leadership tenures.

³²Note that which arbitrary value to choose will not affect the coefficient estimate on the variables for clients' tenure length, which are the key quantities of interests. It does, however, affect the coefficients on the main connection variables as well as their substantive meaning. When the arbitrary tenure length is set x , for example, the coefficient for the main connection variable must be interpreted as the difference in transfers between a connected city leader who has tenure length of x versus an *average* unconnected city leader.

Table A.7: Interacting Connection with Clients' Service Tenure

	DV: Log Fiscal Transfer Next Year (10,000 yuan)					
	(1) Maximum tenure	(2) Maximum tenure	(3) Minimum tenure	(4) Minimum tenure	(5) Average tenure	(6) Average tenure
Prov sec's client \times tenure length	0.000 (0.004)	-0.006 (0.010)	-0.006 (0.005)	0.008 (0.013)	-0.003 (0.005)	0.006 (0.013)
Prov sec's client \times tenure length ²		0.001 (0.002)		-0.003 (0.003)		-0.002 (0.002)
Governor's client \times tenure length	-0.001 (0.006)	0.008 (0.017)	0.005 (0.006)	-0.007 (0.019)	0.002 (0.007)	-0.000 (0.019)
Governor's client \times tenure length ²		-0.002 (0.004)		0.003 (0.004)		0.000 (0.004)
Connection with prov sec (1=yes)	0.041** (0.017)	0.046** (0.020)	0.055*** (0.020)	0.045** (0.022)	0.048** (0.020)	0.042* (0.022)
Connection with governor (1=yes)	-0.014 (0.015)	-0.021 (0.020)	-0.025 (0.016)	-0.017 (0.021)	-0.019 (0.017)	-0.017 (0.021)
City secretary: Tenure length	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)
Mayor: Tenure length	0.004 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)
Year FE	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓
Province X Year FE	✓	✓	✓	✓	✓	✓
City political controls	✓	✓	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓	✓	✓
Adjusted R ²	0.98	0.98	0.98	0.98	0.98	0.98
Number of Cities	279	279	279	279	279	279
Observations	2288	2288	2288	2288	2288	2288

Note: This table presents the robustness checks on whether the the premium received by provincial secretary's clients change with the clients' tenure as city leaders. The specification is based on Model 6 in Table 1. *City secretary's tenure* and *Mayor's tenure* are continuous variables that count the number of years since the first appointment to city leadership positions (city secretary or mayor) for the respective leaders. *Tenure length for prov sec's clients* and *Tenure length for governor's clients* equal 0 if no city leader if connected, the value of tenure length for the connected leader if only one is connected, and the maximum, minimum and average of the two leaders' tenures if both a connected (implemented in Models 1 through 3).

Robust standard errors clustered at the city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

D.4 Manipulating the Timing of the Dependent Variable (A Placebo)

Finally, Table A.8 presents the results from a placebo test where we manipulate the timing of the dependent variable. In models 1 through 4, we use fiscal transfer at $t - 1$, t , $t + 1$ and $t + 2$ as the dependent variable. We find that the coefficient estimates are largest at our baseline $t + 1$, suggesting that the timing of the effect is very specific to year following a change in cities' connectedness. Most notably, the coefficient estimates

drop to virtually zero when we use the amount of fiscal transfer in the previous year as the dependent variable.

Table A.8: Placebo Tests On Timing

	DV: Log Fiscal Transfer (10,000 yuan)			
	(1) T-1	(2) T	(3) T+1	(4) T+2
Connections with Prov Sec				
# of connections w/ prov sec=1	-0.002 (0.011)	0.012 (0.011)	0.042*** (0.016)	0.023 (0.015)
# of connections w/ prov sec=2	-0.003 (0.015)	0.025* (0.014)	0.065*** (0.021)	0.020 (0.020)
Connections with Governor				
# of connections w/ governor=1	0.001 (0.011)	-0.005 (0.009)	-0.015 (0.012)	0.002 (0.013)
# of connections w/ governor=2	-0.008 (0.018)	-0.019 (0.016)	-0.018 (0.019)	-0.005 (0.020)
City secretary's first year	-0.011 (0.013)	-0.001 (0.010)	0.012 (0.015)	0.009 (0.016)
Mayor's first year	-0.002 (0.009)	-0.005 (0.007)	-0.008 (0.010)	0.000 (0.011)
Year FE	✓	✓	✓	✓
City FE	✓	✓	✓	✓
Province X Year FE	✓	✓	✓	✓
City political controls	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓
Adjusted R ²	0.98	0.99	0.98	0.98
Number of cities	279	279	279	279
Observations	2419	2372	2288	2164

Note: This table presents the results a placebo test where different timing of the dependent variable is used. The specification is based on Model 6 in Table 1. From model 1 through 4, the dependent variables are the log of fiscal transfer at $t - 1$, t , $t + 1$ and $t + 2$, respectively.

Robust standard errors clustered at the city-level are reported in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

E Additional Numerical Results

E.1 Results for Key Interactions

Tables A.9 and A.10 display results from varying the maximum eligible ages for promotion. We test the age limits from 55 to from 60 for city clients and from age 60 to 65 for

provincial patrons. The results are consistent with those presented in the text as long as the limit is set within a reasonable interval.

E.2 Results for Spending Patterns and Policy Performance

Table A.11: From Connection to Policy Performance

	All Outlays ($t + 1$)	Outlays by Item ($t + 1$)						DMSP-OLS ($t + 2$)
	(1) All	(2) Infrastructure	(3) Education	(4) Social Security	(5) Agriculture	(6) Administration	(7) Law and Police	(8) Nighttime Brightness
Connection with prov sec (1=yes)	0.019** (0.008)	0.153** (0.076)	-0.029 (0.039)	-0.067 (0.050)	-0.034 (0.045)	-0.032 (0.026)	-0.033 (0.028)	0.025* (0.014)
% effects mediated by transfer	81.51	16.69	< 0	< 0	< 0	< 0	< 0	11.68
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓	✓	✓
Province X Year FE	✓	✓	✓	✓	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓	✓	✓	✓	✓
City political controls	✓	✓	✓	✓	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓	✓	✓	✓	✓
Adjusted R ²	0.53	0.35	0.70	0.38	0.58	0.68	0.74	0.73
Number of Cities	279	249	270	274	270	274	274	279
Observations	2288	1218	1156	1427	1156	1428	1428	2288

Note: This table presents the numerical results of connections to the incumbent provincial secretary on spending items and nighttime brightness. The specification is based on Model 6 in Table 1. Figure 8 in text plots the coefficients scaled by the standard deviation of the dependent variable.

Robust standard errors clustered at city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.9: Varying Promotion-Eligible Age for Clients

	DV: Log Fiscal Transfer in the Next Year (10,000 yuan)					
	(1) Age Limit=55	(2) Age Limit=56	(3) Age Limit=57	(4) Age Limit=58	(5) Age Limit=59	(6) Age Limit=60
% Prov sec's clients above age limit by next PC (reference=0%)						
50%	-0.005 (0.013)	0.002 (0.014)	-0.008 (0.018)	0.005 (0.026)	-0.010 (0.021)	-0.003 (0.026)
100%	0.002 (0.022)	-0.030* (0.018)	-0.046*** (0.018)	-0.047** (0.022)	-0.033 (0.029)	-0.037 (0.038)
% Governor's clients above age limit by next PC (reference=0%)						
50%	-0.010 (0.018)	-0.012 (0.020)	-0.006 (0.021)	0.005 (0.025)	-0.009 (0.030)	-0.024 (0.032)
100%	-0.005 (0.022)	0.015 (0.020)	0.007 (0.024)	0.048* (0.028)	0.043 (0.031)	0.022 (0.047)
Connection with prov sec (1=yes)	0.048*** (0.014)	0.054*** (0.016)	0.053*** (0.015)	0.052*** (0.015)	0.051*** (0.015)	0.050*** (0.015)
Connection with governor (1=yes)	-0.008 (0.013)	-0.012 (0.013)	-0.011 (0.013)	-0.012 (0.013)	-0.011 (0.012)	-0.010 (0.012)
Year FE	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓
Province X Year FE	✓	✓	✓	✓	✓	✓
City political controls	✓	✓	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓	✓	✓
Adjusted R ²	0.98	0.98	0.98	0.98	0.98	0.98
Number of cities	279	279	279	279	279	279
Observations	2288	2288	2288	2288	2288	2288

Note: This table presents the results from varying the maximum age eligible for promotion. The specification is based on Model 6 in Table 1. The dependent variable is *log fiscal transfer in the next year*. The two key variables to be interacted with are *Prov secretary's client above age ceiling* and *Governor's client above age ceiling*.

Robust standard errors clustered at city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

Table A.10: Varying Promotion-Eligible Age for Patrons

	DV: Log Fiscal Transfer in the Next Year (10,000 yuan)					
	(1) Age Limit=60	(2) Age Limit=61	(3) Age Limit=62	(4) Age Limit=63	(5) Age Limit=64	(6) Age Limit=65
Prov Sec above age limit by next PC	0.101*** (0.033)	0.062 (0.038)	0.125** (0.050)	0.057 (0.043)	-0.045 (0.028)	-0.005 (0.044)
Prov Sec above age limit by next PC × Connection with prov sec (1=yes)	-0.035 (0.033)	-0.035 (0.029)	-0.019 (0.028)	-0.019 (0.029)	0.016 (0.033)	0.001 (0.038)
Prov Sec above age limit by next PC × Connection with governor (1=yes)	0.005 (0.024)	0.028 (0.021)	0.002 (0.021)	0.007 (0.020)	0.006 (0.020)	0.004 (0.024)
Governor above age limit by next PC	0.122* (0.064)	0.066 (0.065)	0.054 (0.053)	-0.034 (0.065)	-0.137 (0.096)	0.083** (0.040)
Governor above age limit by next PC × Connection with prov sec (1=yes)	0.031 (0.030)	0.036 (0.028)	0.070** (0.031)	0.070** (0.034)	-0.031 (0.025)	-0.020 (0.030)
Governor above age limit by next PC × Connection with governor (1=yes)	-0.047** (0.024)	-0.040* (0.023)	-0.047* (0.028)	-0.057* (0.033)	0.011 (0.027)	0.005 (0.031)
Connection with governor (1=yes)	0.008 (0.025)	-0.015 (0.018)	-0.005 (0.016)	-0.008 (0.015)	-0.018 (0.015)	-0.017 (0.014)
Connection with prov sec (1=yes)	0.047 (0.029)	0.042** (0.020)	0.022 (0.017)	0.026* (0.016)	0.048*** (0.017)	0.046*** (0.016)
Year FE	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓
Province X Year FE	✓	✓	✓	✓	✓	✓
City political controls	✓	✓	✓	✓	✓	✓
City economic controls	✓	✓	✓	✓	✓	✓
City leader controls	✓	✓	✓	✓	✓	✓
Adjusted R ²	0.98	0.98	0.98	0.98	0.98	0.98
Number of cities	279	279	279	279	279	279
Observations	2288	2288	2288	2288	2288	2288

Note: This table presents the results from varying the maximum age eligible for promotion. The specification is based on Model 6 in Table 1. The dependent variable is *log fiscal transfer in the next year*. The two key variables to be interacted with are *Prov secretary's client above age ceiling* and *Governor's client above age ceiling*.

Robust standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

F Testing for Alternative Explanations

F.1 City vs. Clients

Table A.12: Instrumental Variables Results

	OLS		IV: 2SLS			
	(1) FE	(2) +Controls	(3) IV	(4) IV	(5) IV	(6) IV
Connected to prov sec at t	0.052*** (0.016)	0.050*** (0.014)	0.285** (0.132)	0.294*** (0.113)	0.289*** (0.111)	0.215** (0.094)
First-stage F statistics			11.74	12.40	12.77	14.74
Year FE	✓	✓	✓	✓	✓	✓
City FE	✓	✓	✓	✓	✓	✓
Province X Year FE	✓	✓	✓	✓	✓	✓
City political controls ($t - 2$)		✓		✓	✓	✓
City economic controls ($t - 2$)		✓			✓	✓
City leader controls ($t - 2$)		✓				✓
Number of cities	278	278	278	278	278	278
Observations	1740	1740	1740	1740	1740	1740

Note: This table presents the results of an instrumental variables analysis using the two-stage least square procedure. The dependent variable is *Log fiscal transfer at $t+1$* for all models. Models 1 and 2 are the OLS benchmark. Models 3 through 5 display the results from the IV estimation. A city's connection with the provincial secretary at t is instrumented by a binary indicator for whether that city had a city leader above the age of 55 at $t - 2$. We include in all models indicators for city leaders' first year in tenure. City political controls include three indicators for whether the city is the hometown of (1) any incumbent PSC/PB leader, (2) the incumbent provincial secretary, and (3) the incumbent governor. City economic controls include *Log GDP*, *GDP growth rates*, *Log population*, *Log fiscal revenue*, *Log expenditure*, *Fiscal revenue per capita*, and *Population density*. City leader controls include two binary indicators for whether either of the city leaders is (1) a client of incumbent PSC/PB members or (2) a vice-provincial level leader, as well as the following variables for both the city secretary and the mayor): *Age at first city leadership position*, *Ethnicity*, *Gender*, *Attended college before 30*, and *Work experience in the Youth league*.

Robust standard errors clustered at city-level are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)

F.2 Competence

Table A.13: Assessing the Relationship Between Observed Competence and Transfer

	DV: Log Fiscal Transfer Next Year (10,000 yuan)		
	(1)	(2)	(3)
Connection with prov sec (1=yes)	0.040*** (0.016)	0.041*** (0.016)	0.045*** (0.017)
Connection with governor (1=yes)	-0.015 (0.013)	-0.017 (0.013)	-0.027* (0.015)
City secretary has graduate degree (1=yes)	-0.019 (0.013)	-0.019 (0.013)	-0.025 (0.018)
Mayor has graduate degree (1=yes)	0.009 (0.012)	0.008 (0.012)	-0.009 (0.015)
City secretary: Cross-city appointments (vice-bureau or above)	0.008 (0.009)	0.009 (0.010)	0.005 (0.012)
Mayor: Cross-city appointments (vice-bureau or above)	0.012* (0.007)	0.013 (0.008)	0.007 (0.009)
City secretary: Provincial government career		-0.005 (0.012)	0.009 (0.015)
Mayor: Provincial government career		0.002 (0.011)	0.004 (0.013)
City secretary: Central government career		-0.014 (0.021)	-0.000 (0.026)
Mayor: Central government career		0.021 (0.025)	0.029 (0.033)
City secretary: Finance/development/tax career		0.017 (0.017)	0.027 (0.019)
Mayor: Finance/development/tax career		0.002 (0.016)	0.001 (0.017)
City secretary: Enterprise career		0.008 (0.015)	0.010 (0.016)
Mayor: Enterprise career		-0.002 (0.014)	0.008 (0.017)
City secretary: Age joining the Party			0.000 (0.002)
Mayor: Age joining the Party			-0.002 (0.002)
Year FE	✓	✓	✓
City FE	✓	✓	✓
Province X Year FE	✓	✓	✓
City political controls	✓	✓	✓
City economic controls	✓	✓	✓
City leader controls	✓	✓	✓
Adjusted R ²	0.98	0.98	0.98
Number of Cities	279	279	269
Observations	2288	2288	1787

Note: This table presents the results from including a range of measures for observed competence. The specification is based on Model 6 in Table 1.

Robust standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test)