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ABSTRACT

We argue that inter-jurisdictional competition in a regionally decentralized authoritarian regime distorts local politicians' incentives in resource allocation among firms from their own city and a competing city. We develop a tournament model of project selection that captures the driving forces of local protectionism. The model robustly predicts that the joint presence of regional spillover and the incentive for political competition leads to biased resource allocations against the competing regions. Combining several unique data sets, we test our model predictions in the context of government procurement allocation and firms' equity investment across Chinese cities. We find that, first, when local politicians are in more intensive political competition, they allocate less government procurement contracts to firms in the competing city; second, local firms, especially local SOEs, internalize the local politicians' career concerns and invest less in the competing cities. Our paper provides a political economy explanation for inefficient local protectionism in an autocracy incentivized by tournament-style political competition.

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1 Introduction

Competition is a central and ubiquitous concept of economic analysis. While market competition between firms typically raises the welfare of consumers, whether competition between political parties has similarly virtuous consequences remains largely underexplored, especially on the effect of political competition in an autocratic regime.[1] In electoral contexts, voters often compare the performance in their jurisdictions with those in neighboring districts to assess the ability of incumbent politicians, forcing them into a de facto yardstick competition (Besley and Case, 1995). The seminal work of Besley et al. (2010) demonstrates both theoretically and empirically that political competition may induce pro-growth economic policies, because swing voters—who are not committed to one party and whose voting decision is based on parties' economic policy choices—only start to gain electoral influence when political competition is sufficiently intense.

Our paper follows this line of inquiry and pays special attention to the *economic* consequences of politicians' policy choices under *autocracy*, with China as the leading example. Xu (2011) argues that the institutional foundation underlying the successful Chinese economic reform can be referred to as regionally decentralized authoritarianism (RDA), which is characterized by a high centralization of political powers and a high decentralization of administrative and economic powers, with the incentives of the local politicians provided via promotion tournaments (Li and Zhou, 2005). Under the RDA, local politicians are incentivized by inter-jurisdictional competition; in order to maximize their chances of career promotion, local government leaders compete against one another in spurring total investment and boosting the growth of the local economy (Yu et al., 2016; Xu, 2011). The key difference between the RDA and democracy lies in the objective of the tournament participants. Unlike local politicians in a democratic regime who mainly respond to voters' welfare, politicians in an autocratic regime respond to the upper-level governments' objective. Compared to democracy, how political competition affects local policies can be more complicated under autocracy. On the positive side, the central government can provide local leaders with strong career incentives, which are considered a key driver of China's economic growth over the last thirty years (Li and Zhou, 2005; Maskin et al., 2000; Blanchard and Shleifer, 2001). On the negative side, because the economic development of each region is connected due to regional spillovers and externalities, tournament-style political competition may lead to socially inefficient resource allocation. The existing literature mostly focuses on the effect of political competition on *local* policies and economic performance and has yet accounted for the economic consequences of *tournament-style* political competition, which affects the *interactions* among different regions. This paper aims to fill this gap.

[1] See Besley et al. (2010) for a detailed review of studies of political competition in democratic regimes.

Specifically, we address the following questions. First, how does tournament-style political competition affect local politicians' incentives in their economic policies regarding firms from competing regions? Second, to the extent that firms internalize local politicians' career incentives, how would political competition influence their investment decisions and shape the landscape of internal economic integration in a country?

We first develop a model in which local politicians compete with each other for promotion in a tournament by selecting projects of varying returns. The model captures the driving forces of tournament-style political competition that can result in *local protectionism*, and predicts that the *joint* presence of regional spillover and political competition leads to resource allocations inefficiently biased against the competing regions. Our model also yields testable predictions regarding how the politicians' career incentives and their political network impact inter-jurisdictional resource allocations. We show that, for each pair of competing cities, the inter-city allocation of projects or resources are lower when the politicians are engaged in more fierce political competition, are higher when politicians of the city pairs share political connections, and are lower when the politicians are closer to the end of their term. Moreover, our model generates a sharp prediction that the effect of political competition on resource allocation should be affected in opposite directions by the local politicians' political connections and by how close they are to the end of their term.

We then empirically test the model's predictions regarding the relationship between city leaders' competition and the inter-jurisdictional allocation of resources in the context of Chinese cities, focusing on city governments' procurement allocations and firms' equity investment across cities.[2] As the largest emerging economy, China is a particularly important country to study. Because government procurement is often used by local governments to support firms' development, firms from another city whose local leader is in fierce competition with the procuring city will have, ceteris paribus, a lower probability of winning the procurement contract. We find that when mayors in a city pair are closer in their promotion probability—which indicates that they are engaged in more intense political competition—they allocate less government procurement contracts to firms in the competing city. Interestingly, we find that firms, especially local SOEs, would internalize the local politicians' career concerns and invest less in the competing cities. Both findings are consistent with inefficient local protectionism and are robust to a set of alternative specifications. Our empirical findings also corroborate the model predictions that political network based on factional ties, working experience, or personal connections reduces the distortionary bias in the resource allocation, and the distortion is more severe when the local politicians approach the end of their terms and thus have more imminent career concerns. Our analysis points to the

[2]In China, there are four hierarchical city levels: provincial, deputy provincial, prefectural, and county. Our sample excludes all county-level cities.

inefficient inter-jurisdictional resource allocation in the form of local protectionism as an unintended consequence of the tournament-style political competition under autocracy.

Our theoretical and empirical findings altogether accentuate the potential downside of the tournament-style political competition in an autocracy. We underline a key mechanism through which political competition affects local policies towards firms in other regions: Local officials are disincentivized to support the growth of firms from a competitor's region because they are assessed by the upper level government on their *relative* economic performance in a promotion tournament. In the absence of regional spillover or promotion incentive, each city should treat firms from everywhere equally and conduct business with those of the highest quality. However, doing business with firms from other regions generates short-run economic benefits to that region, which in turn increases the promotion probability of the competing politician. As such, career-concerned local leaders may distort resource allocation against firms from the competing city. This results in local protectionism, where local firms are favorably treated at the cost of efficiency. Further, firms may seek protection from the local government due to the lack of adequate formal market-supporting institutions and take into account the local officials' preferences in their investment decisions. As a result, they tend to invest less in cities whose local leaders are in more intense political competition against leaders of their home city, which can again lead to social inefficiency.

Related Literature. This paper is naturally linked to the study of local protectionism and internal barrier in China. It is well known that various forms of non-tariff barriers may exist within a country and local governments' influence over the local regulatory apparatus enables them to impose significant non-tariff barriers to discourage non-local firms, goods, and/or investment from entering the local markets. Young (2000) provides examples of such non-tariff barriers in the Chinese context. Despite its prevalence and high social costs, empirical evidence on local protectionism has been mixed. In the early 2000s, China had substantial policy-induced migration costs (Poncet, 2006; Cai et al., 2008) and internal trade costs (Young, 2000; Poncet, 2005). Tombe and Zhu (2019) quantify the magnitude and consequences of trade and migration costs with a general equilibrium model of trade and migration, and find that the costs were high in 2000 but declined afterwards. Bai and Liu (2019), on the contrary, document rising local protectionism and study the impact on exports and exporting firms. Barwick et al. (2021) quantify the local protectionism in the automobile market. All of the papers focus on cross-provincial protectionism; they take local protectionism as the starting point and examine its influences on market outcomes. Our paper complements this strand of literature and provides a political economy explanation for

the prevalent and persistent local protectionism within the provincial border.[3] We argue that political competition among local leaders creates *policy* barriers for firms from competing cities, which discourage investment flows between cities. We also provide the first systematic empirical evidence for China's local protectionism in resource allocation initiated by both governments and firms, from a unique angle of government procurement contract allocation and firms' equity investment.

This paper is also related to the literature on government-market interactions. Politicians make tradeoffs between advantages in political competition and social welfare. Grossman and Helpman (1994) yield clear predictions for trade protection provided by the government to special-interest groups who make political contributions to the government. Goldberg and Maggi (1999) estimate the model of Grossman and Helpman (1994) and find that the government's valuation of welfare relative to contributions is surprisingly high. Our study extends the literature on government-firm interactions in two dimensions. First, consistent with the findings in the literature, we find that local governments have the incentive to provide preferential treatment to local firms for political competition incentives at the cost of social welfare, but through a different mechanism. As previously noted, local politicians' career concerns lead to local protectionism because they are reluctant to do business with firms from competing regions for fear of boosting political competitors' promotion prospects. Second, our paper enriches the understanding of how political factors affect firm dynamics in China. Existing literature documents that firms significantly increase their "perk spending" after political turnovers (Fang et al., 2022), and that firms co-move with connected political leaders across cities (Shi et al., 2021). Because the Chinese local leaders have a larger capacity to influence the local economy and react strategically to their political rivals than their counterparts in a democratic regime (Zhou, 2019), Chinese firms are more likely to internalize, at least partially, the local politicians' preferences in their investment decisions. Indeed, we find evidence that politicians' career incentives in a tournament-style political competition also distort firms' decisions.

Our paper contributes to the political economy literature on China in several dimensions. First, we contribute to the literature on the political competition and promotion incentives of local officials in China. There is a vast empirical literature—e.g., Li and Zhou (2005), Chen et al. (2005), Xu (2011), Choi (2012), Maskin et al. (2000), among others—that document the link between promotion of a local government official and the economic performance of the city under his/her administration. Thus, local leaders are likely to engage in regional tournament competition in which relative performance is a critical determinant of their

[3]Our study is related to but differs substantially from Liu et al. (2022), which use a 2014 judicial independence reform that removed local governments' control over local courts' financial and personnel decisions in China to show that judicial independence can reduce local protectionism and foster cross-regional economic integration.

promotions. We build on this strand of literature by investigating the hitherto understudied *negative* consequences of such relative performance competition for political promotion. More broadly, we shed light on the welfare implications of competition in bureaucracies (political and otherwise). It is worthwhile to compare the tournament competition among local leaders in China with Western style yardstick competition as studied in Besley and Case (1995) and the ensuing literature. In both cases, competition involves the assessment of relative performance, though in different ways. In this sense, our paper extends the understanding of the effect of political competition in more generalized settings.

The existing evidence on the role of factional ties in China's political system is mixed. Jia et al. (2015), for example, report a complementary effect of connections and performance in determining provincial leaders' promotions, while Fisman et al. (2020) document a novel "connection punishment" phenomenon: Personal connections with higher-level leaders result in a lower promotion probability. Instead of looking at the role of factional ties in the promotion process, our paper investigates the effect of factional affinities between local leaders on their choices in the promotion tournament. Based on the extant evidence that social network may promote cooperation (Apicella et al., 2012; Rand et al., 2011; Hanaki et al., 2007), it is expected that factional ties may mitigate political competition and facilitate cooperation between local leaders from the same faction. Our model and empirical findings confirm the intuition. In addition, we empirically corroborate our theoretical prediction that the effect of political competition on resource allocation should be affected by tenure and political connections in the opposite directions.

Last, our study is related to the extensive literature that uses spatial econometric models to study strategic interactions.[4] Spatial models study *local* policy response to policy choices of spatial or economic neighborhoods, while we focus on policies and resource allocations towards firms in competing cities. Our unit of analysis is a city pair, and, for each pair of cities, we study how economic linkages between them (measured by allocation of procurement contracts or firm equity investment) are affected by the level of competition between the local leaders of the two cities.

The remainder of the paper is organized as follows. Section 2 describes the institutional background of local leaders' career incentives and the government-business relationship in China which motivates our model and empirical design. Section 3 presents a simple tournament model to delineate city leaders' decision-making processes with regard to inter-jurisdiction resource allocation, and derives testable hypotheses to guide our empirical analysis. Section 4 describes the data and the main variables. Section 5 presents our pri-

[4]Examples include Case et al. (1993); Brueckner (1998); Bordignon et al. (2003); Fredriksson et al. (2004); Baicker (2005); Devereux et al. (2007); Caldeira (2012); Revelli and Tovmo (2007); Zheng et al. (2013); Yu et al. (2016), etc.

mary empirical results regarding the consequences of tournament-style political competition. Section 6 concludes.

2 Institutional Background

In this section, we discuss three institutional features of China's political system and the government-business relationship which motivate our theoretical model and enable the empirical analysis.

2.1 Political Competition and Career Incentives of Local Leaders

China's centralized personnel control system is characterized by a hierarchical structure and intense tournament-style promotion competition among local politicians. China adopted a "one-level-down" appointment system in 1984, under which the evaluation and appointment of the provincial-or-higher ranked officials are conducted by the central government, and in turn the provincial government is in charge of the supervision, evaluation, and appointment of the prefectural city leaders. The appointment of a city leader is a deliberative process, and many factors may come into play—e.g., political loyalty, educational qualifications, age, expertise, and the economic performance of their regions. Among all these factors, regional economic performance measures (such as total output and capital investment) have been key performance indicators for the career advancement of local leaders, as documented in the literature (Li and Zhou, 2005; Yao and Zhang, 2015; Xu, 2011; Tsai, 2016).

In the hierarchical structure, there are fewer higher-ranked positions than suitable candidates from lower-level governments. Thus, local officials need to compete against their political peers for promotion. On the one hand, this incentive from the promotion tournament serves as a powerful mechanism to drive China's economic growth, as highlighted in the literature on Chinese political economy (Li and Zhou, 2005). On the other hand, the powerful incentives induced by the promotion tournament may also lead local governments to engage in short-termism behavior, which would sacrifice long run benefits and shift resources to projects that could quickly boost *local* economic growth to improve their chances of promotion; moreover, motivated by the strong incentives under the relative performance evaluation, local officials have little incentive to choose policies that can benefit the economic growth of competing regions. The lack of political incentives for local leaders in promoting long-run economic growth and regional coordination would be the key driving force for the biased resource allocation towards local firms, and naturally lead to local protectionism.

2.2 Government-business Dynamics

The interaction between local government officials and the business plays an important role in investment facilitation and resource allocation in China. Lacking adequate formal market-supporting institutions, Chinese firms seek protection from the local government, and the local government seeks the informal relational contract with the private enterprises. On the one hand, due to a high level of state control over the market and severe institutional frictions, it is commonplace for private firms to invest in political connections (known as *Guanxi* in Chinese) with powerful officials in exchange for the security of investment and other preferential treatments. While the central government maintains strict control over the political and personnel governance structure, regional governments have overall responsibility for economic activities such as initiating and coordinating reforms, providing public services, and enforcing laws and making regulations within their jurisdictions (Xu, 2011). This fundamental institutional feature of China suggests that firms have strong incentives to build relations with local governments and to follow government policies and instructions in their investment decisions (Fang et al., 2022). For example, Shi et al. (2021) find that transfer of a local leader between prefecture cities is associated with an increase in inter-regional investment along the direction of transfer. On the other hand, government officials rely on private firms to finance development projects, boost the local economy, and provide rents for their private consumption. Zhou (2019) argues that China's high rate of economic growth has been driven by a mutual embeddedness of bureaucratic markets and economic markets.

This intertwined relationship between the government and the market renders a salient role of local leaders to guide the directions of private investments. We thus expect that the competition between politicians would affect the way governments interact with firms from different regions. In particular, in the empirical analysis, we examine the allocation of government procurement contracts, in which local governments have discretions in the format and rules of bidding, as a measure of local governments' support for the firms. We may also expect local firms' interests to be highly aligned with the local governments. As such, we also examine firms' equity investment decisions to test whether the politicians' incentives are also reflected in firms' investment decisions.

2.3 Factional Ties

The third feature of the Chinese system that we incorporate in our analysis is that the informal political network formed by the politicians' personal connections plays an important role in politicians' career advancement. Factions are an informal social contract that enforces a quid-pro-quo relationship among members of that social group. Unlike party partisanship in the democratic system, factional ties in China's political system are informally formed.

The informal factional ties facilitate the formation of an intertwined political network in China's political system. Politicians are connected to each other and to the upper level government through this political network. While factions may be opaque and vary over time, the literature has reached a consensus that this unique network intertwined with the politicians' promotion incentive formed the foundation of the dynamic landscape of the Chinese political system (Pye, 1992; Dittmer, 1995; Shih, 2004; Li, 2012, 2013; Meyer et al., 2016; Francois et al., 2016). On the one hand, politicians from the same faction share similar background and ideologies in local policies. For example, Membership of the Communist Youth League of China (CYL), an auxiliary organization to the CCP responsible for the youth, has traditionally operated as an entry point in the CCP. Individuals with a background in the CYL are often referred to as members of the *Tuanpai*. Li (2012) argues that the CYL faction is associated with "populist" policies that benefit the rural poor and recent migrants to cities, as opposed to the policies preferred by more "elitist" groups comprised of CCP cadres connected to the Shanghai municipal administration (*Shanghai Gang*). On the other hand, factional ties affect local politicians' promotion probability and shape their career incentives. Jia et al. (2015), for example, report a complementary effect of connections and performance in determining provincial leaders' promotions. Persson and Zhuravskaya (2016) explore the role of promotions and career concerns in governing the policy choices of provincial leaders. Fisman et al. (2020), on the contrary, study the intra-faction competition in the competition for China's Politburo positions and find that sharing a hometown or college connection reduces the probability of success. We take into account the heterogeneity in politicians' preferences induced by the informal factional ties in our theoretical model and subsequent empirical analysis as detailed in Section 3.1.

3 A Model of Political Competition

In this section, we first build a simple tournament model in the spirit of Lazear and Rosen (1981) that incorporates rich ingredients of economic spillover, political factions, and promotion incentives, and yields rich testable implications that allow us to empirically examine the potential downsides of tournament-style political competition.

3.1 The Setup

The mayor in city $i \in \{1, 2\}$, whom we refer to as politician i, allocates a fixed budget amount—which we normalize to 1 without loss—by selecting projects from his home city i and/or the competing city $j \neq i$ to catalyze growth and development. Each city has a unit mass of projects for the politician to choose from. Each project costs 1, and generates the

same short-term economic benefit to the home city, which we normalize to unity.

However, projects differ in their intrinsic *quality*, which affect the city's *long-run* development. The quality of the projects in city i and j are independently drawn from the same cumulative distribution function (CDF) $H(\cdot)$, with support $[\underline{q}, \overline{q}]$, where $H(\cdot)$ admits a positive and continuous probability density function (PDF).

Spillover. Selecting a competing city's project generates positive economic spillover: If a project in city i is selected by a politician in city $j \neq i$, then city i's short-run economic performance would increase by $\tau > 0$.

Short-run Economic Performance and Political Competition. Let $x_i \in [0, 1]$ denote the measure of projects that politician i selects from the *competing* city, and the remaining $1 - x_i$ be the measure of projects politician i selects from the home city. Fixing politicians' strategy profile (x_1, x_2), politician i's performance before promotion takes place, which we denote by y_i, is

$$\begin{aligned} y_i := & \underbrace{x_i + (1 - x_i) + \tau x_j}_{\text{city } i\text{'s short-run economic performance}} + \underbrace{a_i}_{\text{politician } i\text{'s ability}} + \underbrace{\epsilon_i}_{\text{noise term}} \\ & = 1 + \tau x_j + a_i + \epsilon_i, \end{aligned} \tag{1}$$

where x_i and $1 - x_i$ are the short-run economic performance generated by projects from the competing city and the home city, respectively—recall that the short-term benefits are the same for all projects; τx_j denotes the economic spillover from the projects in city i chosen by the competing city; $a_i > 0$ may be interpreted as politician i's "ability," or, as in our empirical analysis, it is proxied by the *ex ante* predicted probability of politician i being promoted in order to capture how far ahead i is in the promotion tournament based on—e.g., his previous experience, performance and connections; and ϵ_i is a noise term that is drawn independently from a common distribution function. We follow Lazear and Rosen (1981) and assume that the PDF of $\epsilon_1 - \epsilon_2$, which we denote by $g(\cdot)$, is unimodal and symmetric around zero. Denote the CDF of $\epsilon_1 - \epsilon_2$ by $G(\cdot)$.

It is noteworthy that y_i is independent of x_i—i.e., the composition of city i's projects $(x_i, 1 - x_i)$ has no impact on its short-run performance but affects the competing city j's short-term performance due to the existence of positive economic spillover.

In the promotion tournament between politicians i and j, the winner is determined by the comparison between the short-term performances of the two politicians, namely y_i and y_j: politician i wins the tournament if and only if $y_i > y_j$.

From (1), it is obvious that if the politicians only care about the probability of winning the promotion tournament, then politician i would not select projects from the competing

city j—i.e., he will choose $x_i = 0$. However, we will assume that politicians also put some weight on the long-term development of their city.

Long-run Economic Performance of Selected Projects. Fixing x_i, politician i selects the highest quality projects from each city.[5] The long-run economic performance of the politician's selected projects, measured by the aggregate intrinsic quality of the selected projects in city i, amounts to

$$Q(x_i) := \underbrace{\int_{H^{-1}(1-x_i)}^{\overline{q}} qdH(q)}_{\text{projects selected from home city } i} + \underbrace{\int_{H^{-1}(x_i)}^{\overline{q}} qdH(q).}_{\text{projects selected from competing city } j} \tag{2}$$

It can be verified that $Q(x_i)$ is strictly concave in x_i, and that $Q(x_i) = Q(1 - x_i)$. Therefore, $Q(x_i)$ strictly increases with x_i for $x_i \in [0, \frac{1}{2}]$ and decreases with x_i for $x_i \in [\frac{1}{2}, 1]$. In other words, if politician i were only interested in maximizing the aggregate intrinsic quality of the selected projects, which we use to proxy the city's long-term development, politician i would choose $x_i = \frac{1}{2}$ so as to equalize the quality of the marginal projects from the home city and the competing city.

Politician's Preference. We assume that a politician's preference consists of two components. First, politician i derives utility from his own promotion and possibly the promotion of his competitor; second, the politician cares about his city's long-run economic performance. Specifically, we assume that the politician receives a utility gain of $V > 0$ if he himself wins the tournament and ascends the promotion ladder; however, he also potentially receives some utility gains from the promotion of his opponent represented by αV, where the parameter $\alpha \in [0, 1)$ measures the degree of *affinity* between the two politicians. In our empirical analysis below, we will use the factional ties between two competing politicians as a proxy for the strength of this affinity; indeed, it is plausible that two politicians from the same faction may benefit each other when one of them is promoted.

More formally, fixing the strategy profile (x_1, x_2), politician i's expected payoff is

$$u_i(x_i, x_j) := \delta \left[\Pr(y_i \geq y_j)V + \Pr(y_i < y_j)\alpha V\right] + (1 - \delta)Q(x_i), \tag{3}$$

where $\delta \in (0, 1)$ is the weight that the politician attaches to promotion. In our empirical section, we will hypothesize that the parameter δ increases as the politician gets closer to the change of his term.

[5] It can be verified that this is indeed optimal to the politician if he values the aggregate intrinsic quality, as specified in the politician's utility (3) later.

3.2 Equilibrium Analysis

A closer look at the politician' expected payoff (3) unveils the tradeoff he faces when deciding on the project allocation strategy. Specifically, the politician faces the tradeoff between promotion probability and the benefit he receives from his home city's long-run economic performance. Recall that x_i has no impact on y_i but increases y_j. On the one hand, to maximize his promotion probability $\Pr(y_i \geq y_j)$, politician i would not select projects from the competing city j and choose $x_i = 0$; on the other hand, to maximize the city's long-term economic performance $Q(x_i)$, he has an incentive to choose $x_i = \frac{1}{2}$. The politician's optimal strategy is thus shaped by these two countervailing forces.[6]

Denote the equilibrium strategy profile of the two politicians by (x_1^*, x_2^*). For notational convenience, let $\Delta_a := |a_1 - a_2|$. The following result can be obtained.[7]

Proposition 1 ***(Equilibrium Characterization)*** *Consider two competing politicians with "ability" pair (a_1, a_2) and suppose that $g(\Delta_a) < \frac{\overline{q}-\underline{q}}{(1-\alpha)V\tau} \times \frac{1-\delta}{\delta}$. Then there exists a unique pure-strategy equilibrium in the political tournament, in which*

$$x_1^* = x_2^* = Q'^{-1}\left(\tau \frac{\delta}{1-\delta}(1-\alpha)Vg(\Delta_a)\right) < \frac{1}{2}.$$

The condition $g(\Delta_a) < \frac{\overline{q}-\underline{q}}{(1-\alpha)V\tau} \times \frac{1-\delta}{\delta}$ guarantees that the distribution of noise is sufficiently dispersed such that there exists a pure-strategy equilibrium. The literature (e.g., Nalebuff and Stiglitz, 1983; Drugov and Ryvkin, 2020; Ryvkin and Drugov, 2020) commonly assumes large noise, and it is well-known that a pure-strategy equilibrium may cease to exist if there is too little noise in the tournament.

Two remarks are in order. First, both politicians adopt the same strategy in the equilibrium despite the heterogeneity in their "ability" or ex ante promotion probability. This is indeed a general property in asymmetric *two*-player contests.[8] Second, the measure of projects that a politician selects from the competing city in the equilibrium is below the social optimum—i.e., $x_i^* < \frac{1}{2}$. Put differently, a politician tends to select more projects from his own city in equilibrium than that is socially optimal, which is an indication of *local protectionism*. Importantly, such a distortion is driven by the *joint* presence of political competition and inter-city spillover; to see this, note that the distortion disappears if politicians

[6]Note that x_i resembles "effort" in a stylized tournament model (e.g., Lazear and Rosen, 1981; Dixit, 1987). In the typical setting, a contest organizer values effort (e.g., R&D investment) or wants to reduce it (e.g., rent-seeking activity), depending on the research context. In our framework under the context of project selection, a larger x_i benefits the society if $x_i < \frac{1}{2}$, whereas it reduces social welfare otherwise.

[7]The formal proofs of all propositions are relegated to Appendix A.

[8]See Bastani et al. (2022) for a thorough investigation on how symmetric equilibria emerge in general asymmetric two-player contests in which ability and effort are combined to produce output according to a general production technology.

do not value promotion (i.e., $\delta = 0$ or $V = 0$) or if there is no economic spillover between the two cities (i.e., $\tau = 0$), because $Q'^{-1}(0) = \frac{1}{2}$.

The following comparative statics can then be derived based on the equilibrium characterization established in Proposition 1.

Proposition 2 ***(Comparative Statics)*** *Consider two competing politicians with "ability" pair (a_1, a_2) and suppose that $g(\Delta_a) < \frac{\bar{q}-\underline{q}}{(1-\alpha)V\tau} \times \frac{1-\delta}{\delta}$. The following statements hold in the unique symmetric pure-strategy equilibrium:*

(i) The equilibrium measure of projects that politician i selects from the competing city, x_i^*, is U-shaped in his opponent's "ability" a_j and reaches the peak at $a_j = a_i$.

(ii) The equilibrium measure of projects that politician i selects from the competing city, x_i^*, increases in α—i.e., when politicians have stronger affinity.

(iii) The equilibrium measure of projects that politician i selects from the competing city, x_i^*, decreases with δ—i.e., when the politician is closer to change of his term.

(iv) The signs of the cross-partial derivatives $\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \alpha}$ and $\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \delta}$ depend on the distributions of the noise term, g, and the project quality H, and are indeterminate. However, the two partials must be of opposite signs—i.e., $sign\left(\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \alpha}\right) = -sign\left(\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \delta}\right)$.

3.3 Model Interpretations: From Model to Data

Next, we briefly discuss the empirical implications of our model and derive hypotheses that will be tested in our subsequent empirical investigation.

Model Interpretations. In our model, the decision maker is a local politician, say the mayor. In this context, the project selection can be interpreted as allocations of procurement contracts by local governments. The key variables can be interpreted as follows: (i) x_i refers to the total number of procurement contracts awarded by city i's government to firms in city j (e.g., infrastructure construction); (ii) τ refers to the short-run profit each project generates (e.g., tax revenue collected from the firm that executes the project); and (iii) q refers to the long-run quality of the project.

An alternative interpretation of our model is that the decision makers are the firms in a city i, who decide on where to make their equity investment—within the home city or across cities. The key variables can be interpreted as follows: (i) x_i refers to the equity investment from a representative firm in city i to firms in city j; (ii) τ refers to the short-run benefit from such investment on receiving city, such as employment and taxes; and (iii) q refers to future returns from the equity investment. In this context, a firm in city i may care about

its value as well as the payoff of its home-city politician (because, e.g., the firms operate under the "shadows" of the home city governments, see Fang et al., 2022). More formally, suppose that the firm's payoff is given by

$$\pi(x_i, x_j) := \lambda u_i(x_i, x_j) + (1 - \lambda)Q(x_i), \tag{4}$$

where $\lambda \in [0, 1)$ is the weight the firm attaches to the payoff of its home-city politician, and $1 - \lambda$ the weight on its long-run value. The above expression (4) can then be rewritten, by defining $\hat{\delta} := \lambda\delta$, as:

$$\pi(x_i, x_j) = \hat{\delta}\left[\Pr(y_i \geq y_j)V + \Pr(y_i < y_j)\alpha V\right] + (1 - \hat{\delta})Q(x_i), \tag{5}$$

which restores the payoff function (3) and the original game considered in Section 3.1. When we take the interpretation of the firms being the decision makers, it is worth pointing out that state-owned enterprises (SOEs), especially the local SOEs, are typically considered more aligned with the local politician and thus have a higher λ and a higher $\hat{\delta}$ than private-owned enterprises (POEs).

Testable Hypotheses. The above discussions regarding the model interpretations, together with Proposition 2, generate the following testable hypotheses:

Hypothesis 1 ***(Proposition 2(i))*** *For each pair of competing cities, the inter-city allocation of procurement contracts and firms' equity investment decrease as politicians in the two cities become more similar in their "ability" as proxied by ex ante promotion probabilities.*

Hypothesis 2 ***(Proposition 2(ii))*** *For each pair of competing cities, the inter-city allocation of procurement contracts and firms' equity investment are higher when politicians from the two cities have higher affinity toward each other as proxied by stronger political connection.*

Hypothesis 3 ***(Proposition 2(iii))*** *For each pair of competing cities, city i reduces its procurement contracts allocated to city j's firms, and firms in city i reduce their equity investments in city j, when city i's politician is closer to the change of term, and vice versa.*

Hypothesis 4 ***(Proposition 2(iv))*** *The effect of ex ante political competition (as measured by $\Delta_a \equiv |a_1 - a_2|$) on resource allocation should be affected by politicians' tenure and by their political connections in the opposite directions.*

4 Data Sets and Descriptive Statistics

4.1 Data Sets

We combine several unique data sets to investigate the effect of political competition and political connections on the allocation of local government procurement contracts and on firms' equity investment decisions.

The first data set is the universe of government procurement contracts in all prefectural-level cities in mainland China from January 2013 to December 2019. We collect this data set from the official website (http://www.ccgp.gov.cn/), where the detailed information of *all* government procurement contracts in China are publicly released, as required by the Ministry of Finance from 2013 in an effort to increase the transparency of government procurement. For each contract, we observe the government procurer's identity, the contract date, the format of the procurement, the winning contractor, the object of procurement, the winning bid, and other detailed requirements in the contract, etc. In summary, we have more than 3.8 million contracts in our data set. Based on this data set, we calculate the allocation of local government procurement contracts by the total number of the contracts signed between city i's local government (or its affiliated organizations and offices) and firms in a city j, and vice versa.

Our second data set is the firm registration database released by the Chinese State Administration for Market Regulation. This data set covers the universe of all registered firms—over 200 million in total—ever registered in China. It contains detailed information about a firm's location, the year of its establishment and exit (if any), the value of its registered capital, its investment history, its initial main shareholders, and the records of any subsequent changes in the main shareholders, etc. We use the firm registration data set in two ways. First, we merge it with the government procurement data described previously to obtain more information about the awardees of the contracts, especially their registration city and their ownership type. Second, based on the firms' registered location and investment history, we calculate the intercity equity investment flows between any city pair i and j in each year t, which is our second key outcome variable.

Our third data set is the manually collected data on provincial and prefectural level politicians. The sample includes all provincial and prefectural city chiefs, including both party secretaries and governors/mayors of all Chinese provinces and cities who were in their position between January 2003 and December 2019. For each politician, we have information on his/her key personal attributes such as age, gender, place of birth, educational background, work experience, and factional ties. In Section 4.3, we explain in details how we use this data set to measure local leaders' ex-ante promotion probability, which we will use as proxy for a_i in the model. This is the key independent variable for our empirical

analysis. We also use this data set to construct the measures for political connections among politicians, which we will use as a proxy for α in the model. Specifically, we use information on the local politicians' work experience to measure the strong factional ties of each local leader as: Chinese Youth League (CYL), Secretary Gang (*Mishu Bang*), and Party School (*Zhongqingban*).[9] We also measure the weak factional ties as: central government working experience, and provincial government working experience. While these shared working experience may not indicate any commonly acknowledged factional ties as the previous ones, they are useful in measuring loose political affiliations. Lastly, we measure prefectural level leaders' local factional ties by their personal connections to the provincial level governors and party secretaries. Following Shih et al. (2012) and Fisman et al. (2020), personal connection is defined as shared hometown, shared work experience, or shared college education background. Because mayors are mainly in charge of economic issues and party secretaries are mainly in charge of political issues, we mainly focus on the competition among city mayors in our empirical analysis. This yields a sample of 1,695 individuals with 5,660 city-year observations during the sample period 2003-2019.

Our final data set is compiled from the Chinese Prefecture City Yearbooks, from which we obtain information on the cities' population, GDP and growth rate, etc., which we use in Section 4.3 as factors that predict local politicians' promotion probabilities (Jia et al., 2015). We also use these variables as controls in our empirical analysis.

4.2 Descriptive Statistics

Table 1 reports the descriptive statistics for city mayors at the city-year and individual level.[10] It shows that at any given year, 20% of the city mayors are promoted, and mayors have an average tenure of 2.6 years. The mayors' ages range from 37 to 61 with an average of 50. At individual mayor level, 94% of the mayors are male (for this reason, we have been referring mayors as "he" in the text). In terms of education, 21% of the city mayors have doctoral degrees at the time of service and 58% have master degrees, and 17% have bachelor degrees. As for the measure of political connection, 20% are characterized as "CYL", 17% are characterized as "Secretary Gang", and 22% are characterized as "Party School." Based on working experience, 48% of the city mayors have worked in the provincial government bureaus, and 5% have working experience in the central government departments. Based on personal connections, 13% are connected to the provincial governor, and 11% are connected

[9]Note that our definition here is slightly different from that in the literature in studying the factional ties of provincial or higher-level leaders, which also includes Shanghai Clique (*Shanghai Bang*) and Princelings (*Taizi Dang*). The reason that we do not include these two factions is that at the prefecture city level, there are almost no members associated with Shanghai Clique or Princelings.

[10]We focus on city mayors instead of secretaries because they are the ones that closely work with firms and decide on economic policies.

to the provincial party secretary.

[Table 1 about here]

In Table 2 we report the descriptive statistics for the prefectural cities in our data sample. Panel A reports the summary statistics for the control variables at city level. Panel B reports the statistics for city-pair-year level observations within the same province, which is the main data sample for our empirical analysis. We first report the summary statistics for our dependent variables of interest. The average yearly inter-city equity investment flow between different cities within the same province is 937.5 million CNY, about 62% of which are from SOEs, and 38% from POEs. Among the investment from SOEs, less than 6% are from central SOEs, and the other 94% are from local SOEs. For the period 2013-2019, the average yearly number of government procurement contracts signed between a city government and a firm registered in a different city is 59.8, with a maximum of 8,401. We then report the three measures of political network at city-pair level. 12.9% of the city mayor pairs in the same province belong to the same political faction, 23.9% of them shared the same, albeit not necessarily overlapping, working experiences, and 3.2% of them belong to the same personal political network of the provincial governor or provincial party secretary. Panel C reports the statistics for city pairs from different provinces. The average yearly inter-city equity investment flow between cities from different provinces is 38.86 million CNY, which is only about 4% of the size of inter-city equity investment flow between cities from the same province, and the average number of procurement contracts signed is slightly above 1.

[Table 2 about here]

4.3 Predicting Local Politicians' *Ex Ante* Promotion Probabilities

The theoretical framework in Section 3 predicts that the distortion in resource allocation is driven by politician's relative strength measured by their ability differential $|a_i - a_j|$ rather than their absolute ability (a_i, a_j), and becomes less severe as $|a_i - a_j|$ increases. In order to test our model hypothesis, we construct an empirical measure for the politicians' "ability," which we proxy by their ex ante (and exogenous) promotion probability.[11]

The ruling Chinese Communist Party (CCP)'s cadre evaluation system and promotion decisions crucially depend on the personal characteristics including local officials' factional ties with various top leaders, educational qualifications, age, work experience, economic performance, etc. (see, e.g., Li and Zhou, 2005; Shih et al., 2012; Jia et al., 2015; Fisman et al., 2020). We follow the literature to construct a single index summarizing all factors

[11] As can be seen from Equation (1), a_i indeed represents i's ex ante promotion probability in a tournament competition against j, in the absence of the short-term economic performance consideration.

that may potentially affect one's promotion probability, such as age, gender, education level, tenure, factional ties, and the cities' economic performance. Our method of constructing the measurement for career incentive is similar to that of Wang et al. (2020), but we include a full set of variables to take into account all of the relevant factors documented in the literature.[12] We construct the single index by estimating local officials' likelihood of promotion based on their personal characteristics. We first define a promotion dummy variable for each city-year cell to be equal to 1 if the mayor in the city was promoted to a higher-level position by the end of the year. We next regress the promotion dummy on the set of personal and city characteristics, then use the estimated coefficients to predict the *ex ante* promotion likelihood for each of the city mayors in each year. The predicted promotion likelihood serves as the index that captures all important personal characteristics that may affect one's promotion probability, exactly as a_i does in the theoretical model.

We first run the following Logit regression, and use the predicted probability $\hat{p}_{it}$ as an empirical measure for a_i, the politician's "ability:"[13]

$$\log\left(\frac{p_{it}}{1-p_{it}}\right) = \gamma_0 + \gamma_1 X_{it} + \mu_i + \xi_t + \epsilon_{it}, \tag{6}$$

where p_{it} is the probability of city i's mayor being promoted in year t; X_{it} is a vector of city-level covariates, including city i's population and GDP growth rate, and the mayor's characteristics such as age, gender, education, tenure, and experience; and μ_i and ξ_t are respectively the city and year fixed effects. It is noteworthy that the shift of the central power in 2013 and the subsequent anti-corruption campaign witnessed a significant change in the local politicians as well as the party's promotion rules (Lu and Lorentzen, 2016). Thus, we run the regressions separately for the two periods 2003-2012 and 2013-2019.

[Table 3 about here]

Table 3 shows that the factors that contribute to officials' promotion differ significantly between the two periods 2003-2012 and 2013-2019. For example, "Secretary Gang" and "Chinese Youth League" connections were both significant positive contributors to promotion in the period of 2003-2012, but they became negative contributors to promotion in the period 2013-2019. This is consistent with the findings in (Lu and Lorentzen, 2016). It is also worth pointing out that the city's GDP growth rate is a positive but insignificant contributor to promotion. This is consistent with our contention that the promotion tournament in China is based on *relative* performances among competing politicians, instead of a city's absolute growth performance.

[12] All of our results remain robust by using age, education level, or tenure as the measure for "ability."
[13] We also estimated a linear probability model, and all of our results remain robust.

5 Empirical Results

Propositions 1 and 2 show that the presence of political competition and regional spillover jointly lead to local protectionism and distortions in resource allocation. In this section, we empirically test the four model predictions in the context of governments' allocation of procurement contracts and firms' equity investment decisions, as discussed in Section 3.3.

5.1 Political Competition and Distortion in Resource Allocation

We use the measure constructed in Section 4.3 to test our model predictions. Hypothesis 1 predicts that for each pair of competing cities, the inter-city allocation of procurement contracts and firms' investment decrease as mayors in the two cities become more similar to each other in their "ability," proxied by their *ex ante* promotion probabilities. As the competition for promotion of city mayors is mostly within a province and rarely crosses provincial boundaries, we test the hypothesis using city pairs from the same province in our main specification, but we will also use city pairs from different provinces as a falsification test (see Table 8).[14] The basic estimation equation is

$$Y_{ijt} = \beta_0 + \beta_1|a_{it} - a_{jt}| + \beta_2 a_{it} + \beta_3 a_{jt} + \gamma_1 X_{it} + \gamma_2 X_{jt} + \iota_{ij} + \delta_t + \rho_{k(j)} + \epsilon_{ijt}, \qquad (7)$$

where Y_{ijt} is the outcome variable. As detailed in Section 3.3, we examine two sets of outcome variables: The first outcome variable measures the total *number* of procurement contracts (in logs) signed between firms in city i and government departments in city j in year t; and the second measures equity investment flows (in logs) from city j to city i in year t. (Both outcome variables correspond to x_{ij} in the model.) Recall that a_{it} represents the promotion propensity score predicted from the first stage Logit regression (6) for city i's mayor in year t; $|a_{it} - a_{jt}|$ measures the ability differential between city i's mayor and city j's as detailed in the theoretical model; X_{it} is a set of city characteristics for city i in year t; ι_{ij} is the city-pair fixed effect; $\rho_{k(j)}$ is the fixed effect of city j's mayor in year t;[15] and ϵ_{ijt} is the error term.

It is worth noting that sub-national leaders are rotated by their superiors among different regions (Xi, 2019; Yao and Zhang, 2015). The rotation of local officials creates an arguably exogenous shock to the level of political competition and local factional ties. Empirically, we examine how the *change* in the competition measures affect the allocation of government procurement contracts, and furthermore, the firms' equity investment flows between cities. By controlling for city-pair fixed effect, the identification of β_1 essentially comes from the *change* of local officials, which we believe is less subject to endogeneity concerns.

[14] About 95% of the promotions of city mayors in our data sample were within-province promotions.

[15] Note that it is a mayor fixed effect rather than a city fixed effect.

Remark 1 For our main results on procurement contracts allocations, we choose to use the *number*, instead of the *value* of procurement contracts, between city pairs. The main reason for this choice is that the value of procurement contract may be manipulated by local governments. In order to combat the potential corruption in the market, the central government requires that contracts with a total value of over 2 million RMB go through public bidding procedure to select the contractor with the lowest bid, while contracts with a lower value can be signed by negotiation with a pre-designated contractor. This gives local governments a strong incentive to reduce the budget value of a contract such that they can select the preferred contractor. The problem becomes more severe in the presence of local protectionism. As such, we use the number of contracts instead of the total value of procurement contracts as the dependent variable in our baseline empirical analysis. However, in Tables B1 to B5 in the online appendix, we also report the regression results with the total value of procurement contracts as the dependent variable. Our results remain qualitatively unchanged to a large extent.

Remark 2 Because our empirical tests are motivated by the theoretical model characterizing the equilibrium resource allocation among competing cities in the same province, this may lead to within-province correlation of the outcome variables. Thus, in all our regression analysis, the reported standard errors are estimated using cluster-bootstrap at the province-year level (Cameron et al., 2008).

Allocation of Government Procurement Contract. First, we examine the effect of political competition on the allocation of government procurement contracts. Table 4 reports the baseline estimation results of the regression as specified in Equation (7), with the log of total number of cross-city government procurement contracts (plus one because of the existence of zeros) being the dependent variable. The data sample includes city pairs from the *same* province. We present the regression results separately for a different set of control variables, first controlling for city pair fixed effect only, then adding a set of covariates progressively as discussed in the text following Equation (7). The results show that the total number of cross-city government procurement contracts increases as the *difference* between the promotion probability of city mayors ascends. This suggests that local leaders compete with those with similar promotion probability by supporting *less* firms from their competitors' regions. In column (1), we find that increasing the difference between a_i and a_j by 0.1 (which is about 1 standard deviation) results in an increase in the total number of cross-city allocations of procurement contracts by 3.58%. In column (2), after controlling for the city mayors' promotion probability measure in the city pair separately, increasing the ability differential $|a_i - a_j|$ by 0.1 still leads to a 3.71% increase in the cross-city allocation of

procurement contracts. In column (3), we further control for the city pair's GDP and population, and all of the results remain robust in magnitude and statistical significance. These findings provide evidence that political competition distorts the allocation of government procurement contracts.

One may be concerned that the assignment of local leaders is endogenous, and those with similar abilities were assigned to cities with less economic linkages to foster competition. To address this concern, we further control for the city mayor fixed effect. In column (4), we control for the procuring city's mayor fixed effect; that is, we assign one dummy for each specific city mayor in our data, regardless of the city where he/she served. The results remain largely unchanged, which indicates that the competition effect occurred for the same city mayor no matter where he/she served. Thus, the distortion of resource allocation is not driven by the turnovers of city mayors who may have different preferences regarding which city to interact with. This corroborates our interpretation that it is indeed the incentive for political competition that distorts the allocation of government resources and fosters local protectionism.

Among other factors that may affect local governments' decisions in procurement allocation, we find that the sizes of the both the procuring city and in the supply city as measured by total populations are positively correlated with the total number of procurement contracts between the two cities. Economic development of the supply firm's city, measured by GDP, does not have a statistically significant effect on the allocation of procurement contracts, while the economic development of the procuring city is positively correlated with the number of procurement contracts between the two cities.

[Table 4 about here]

Firms' Equity Investment Flow. Second, we test whether the politicians' incentives are passed on to local firms' investment decisions. Table 5 reports the results of estimating Equation (7), with the log of inter-city investment flows being the dependent variable. As with the allocation of procurement contracts, we present the regression results separately for a different set of control variables, first controlling only the city pair fixed effect, then adding a set of covariates progressively. The results show that the volume of firms' cross-city equity investment also increases as the *difference* between the promotion probability of city mayors becomes larger. Firms, in making their investment decisions, indeed take into account the politicians' career concerns. In column (1), we find that increasing the difference between a_i and a_j by 0.1 results in an increase in inter-city equity investment by 5.68%. In column (2), after controlling for the city mayors' promotion probability measure in the city pair separately, increasing the ability differential $|a_i - a_j|$ by 0.1 still leads to a 3.73% increase in inter-city equity investment. In column (3) we further control for the city pair's GDP

and population, and in column (4) we further control for the mayor fixed effect, and the results remain robust in magnitude and statistical significance. This finding suggests that firms internalize the local politicians' career concerns.

[Table 5 about here]

Heterogeneous Analysis of Firm Investment. As for firms' investment decisions, our theoretical model predicts that firms whose objectives are more aligned with the local government are less likely to invest in a city whose mayor is a political competitor to the mayor in their home city. As previously noted, SOEs are in general more aligned with local politicians compared to POEs. Thus, we further investigate whether the results on inter-city equity investment are driven by SOEs or POEs. More specifically, for each investing firm, we identify its ultimate shareholder through the circulated tracing process (also known as the depth search algorithm, Allen et al., 2019). The investing firm is identified as an SOE if a government bureau is one of the firm's ultimate owners, or a POE if otherwise.

We replicate the main regression based on this ownership type data, with the results shown in Table 6. Columns (1) and (2) report the regression results for investment made by SOEs and by POEs, respectively. Both regressions control for the estimated promotion probabilities of the city mayors, the city-pair and the year fixed effects, and the investing cities' mayor fixed effect. The results show that the impact of political competition on firm investment is mainly driven by the SOEs not the POEs. Column (1) shows that increasing the "ability" differential $|a_i - a_j|$ by 0.1 will increase the SOE's inter-city equity investment by 18.3%. In contrast, column (2) shows that the effect on POE investment is only 3.3%. These findings corroborate our model prediction that firms whose interests are more aligned with the local government would respond more to the politicians' incentives in their investment decisions.

[Table 6 about here]

In Columns (3) and (4) of Table 6, we further delve into the heterogeneity within the SOE by separating the SOEs into central SOEs—i.e., SOEs controlled by the State-Owned Assets Supervision and Administration Commission (SASAC) of the State Council or other ministries of the central government—and local SOEs—i.e., SOEs controlled by different levels of the local governments. As shown in columns (3)-(4), where the independent variables are respectively the log of inter-city investment made by the central SOEs and that by the local SOEs, our key result in column (1) of Table 6 is mainly driven by the local SOEs rather than the central SOEs. Column (3) shows that the investment made by the central SOEs increases by about 4% if city mayors' "ability" differential $|a_i - a_j|$ increases by one

standard deviation; in contrast, column (4) shows that the investment made by the local SOEs increases by over 20% if the "ability" differential increases by one standard deviation.

Adjacent Cities. The theoretical model implies that it is the joint presence of regional spillover and the incentive for political competition that leads to resource allocations biased against firms in the competing cities. Put differently, the allocation of government procurement contracts and firm investment would be maximized in the absence of regional spillover between the two cities ($\tau = 0$) *or* political competition ($\delta = 0$). By testing model predictions using city pairs from the same province, we set the two parameters to be non-zero at the same time. Cities in the same province enjoy higher economic spillover from each other as the transaction cost, trade barriers, migration barriers, etc. are lower within the same province. At the same time, their politicians engage in more intense political competition with each other: cross-province promotions are rare, and more than 95% of the promotions of city-level leaders take place within the province. In order to separately identify the role of the two parameters in distorting resource allocation, we compare cities that are adjacent but not in the same province to the adjacent cities in the same province. Adjacent cities have stronger regional spillover ($\tau > 0$); moreover, city leaders in the same province compete against each other ($\delta > 0$) for promotion while those in different provinces do not ($\delta = 0$). The comparison of the two enables us to identify the role of political competition—i.e., δ.

We run the main regression based on this adjacent cities sample; the results are shown in Table 7. Columns (1)-(2) report the results with the log of total number of government procurement contracts as the dependent variable, for adjacent city pairs within the same province and those in different provinces, respectively. Both regressions control for the estimated promotion probabilities of the city mayors, the city pair and the year fixed effects, and the investing cities' mayor fixed effect. Column (1) indicates that increasing the "ability" differential $|a_i - a_j|$ by 0.1 will result in a statistically significant increase in the number of government procurement contracts acquired by firms in city i by 3%, a magnitude slightly larger than that of the average effect of city pairs within the same province as reported in Table 4. In contrast, the effect is statistically insignificant for city pairs that cross the province borders, as shown in column (2).

[Table 7 about here]

In columns (3) and (4) of Table 7 we repeat the exercise for firms' inter-city equity investment. Column (3) shows that increasing the "ability" differential $|a_i - a_j|$ by 0.1 results in a statistically significant increase in city j's firms' equity investment to city i by 10.4%, which is larger in magnitude than the 3.8% found in the baseline model, as reported in Table 5. In contrast, column (4) shows that the effect turns negative and statistically insignificant for city pairs that cross the province borders.

To summarize, these findings confirm the role of δ—i.e., the promotion incentive in the political competition—as a key driving force for government resource allocation. Moreover, the larger effect found in the *adjacent* within-province city pairs sample compared to the average effect found for all within-province city pairs indicates that the parameter τ—i.e., regional spillover—also plays an important role in local governments' decision on the allocation of procurement contracts and firms' investment decisions. In summary, the presence of political competition and regional spillover jointly lead to local protectionism and distortions in resource allocation.

Falsification Test. As politicians' competition for promotion at city level is mostly within province and rarely goes beyond, one would expect that the allocation of government procurement contracts and firm investment flows would not be affected by the "ability" differential $|a_i - a_j|$ if the city pair i and j are in different provinces. We conduct a falsification test and run the regression as specified in Equations (7) using city pairs from different provinces. The results are reported in Table 8. Columns (1)-(3) report the results for the number (in logs) of government procurement contracts. Column (1) controls for the career incentives of the city mayors on both sides, the cities' characteristics, and the city pair fixed effect; column (2) further controls for the mayor fixed effect and the mayors' tenure fixed effect; and column (3) controls for city-by-year fixed effect. As shown in the table, the effect is much smaller in magnitude among cities in different provinces than among those in the same province and is statistically insignificant. Columns (4)-(6) repeat the exercise for inter-city firm investment flows. Again, there is no significant effect of political competition on the inter-city investment flow, reaffirming the role of politicians' promotion incentives in shaping their and firms' decisions.

[Table 8 about here]

5.2 Political Connection and Competition

Hypothesis 2 predicts that for each pair of competing cities, the inter-city allocation of procurement contracts and firms' investment increase as α increases—i.e., when politicians have stronger affinity. We first test the hypothesis using city pairs from the same province. The regression equation is

$$Y_{ijt} = \beta_0 + \beta_1 \mathbb{1}(f_i = f_j) + \beta_2 a_{it} + \beta_3 a_{jt} + \beta_3 X_{it} + \beta_4 X_{jt} + \iota_{ij} + \delta_t + \rho_{k(j)} + \epsilon_{ijt}, \quad (8)$$

where f_i is a categorical variable measuring the type of political connection for city i's mayor, $\mathbb{1}(f_i = f_j)$ equals 1 if both sides have the *same type* of political connection. More specifically, in the empirical results, we define three types of political connections:

(i) $Faction = 1$ if both sides are from the CYL, the Secretary Gang, or the Party School;

(ii) $Work = 1$ if both sides have working experience in the center, or in the provincial government;

(iii) $Connection = 1$ if both sides are personally connected to the governor or the provincial party secretary.

Other variables are defined as in Equation (7). The coefficient of main interest is β_1—i.e., how investment varies when mayors from both sides have the same type of political connection.

Allocation of Government Procurement Contract. Table 9 reports the estimation results as specified in Equation (8), with the log of total number of cross-city government procurement contracts being the dependent variable. We present the regression results separately for different types of political connections and a different set of control variables, first controlling only the political faction measure and the city-pair and the year fixed effects, then adding a set of covariates and the procuring cities' mayor fixed effect. The results show that the number of cross-city government procurement contracts between cities whose mayors are similar in their political connections is higher than those whose mayors have different connections. This suggests that politicians with stronger political connections are less biased against firms in competing cities.

In columns (1) and (2), the number of cross-city allocation of procurement contracts increases by about 6.1% when mayors in the city pair are from the same political faction. Similarly, columns (3) and (4) show that the number of cross-city allocation of procurement contracts increases by about 5.4% when the mayors in the city pair both have central or provincial working experience, but the effect becomes insignificant after controlling for a set of city characteristics and the mayor fixed effect. Columns (5) and (6) show that the number of cross-city allocation of procurement contracts increases by about 12.1% when mayors in the city pair are both personally connected with the provincial governor or secretary, suggesting that city mayors who are personally connected to provincial level leaders form an informal "faction" within the province and have strong ties with each other.[16]

[Table 9 about here]

[16]In Tables B6-B11 in the online appendix, we provide a further breakdown of the results with detailed measures of each kind of political connection. Table B6 shows that being a member of the Party School, the Secretary Gang, or the CYL has similar effects in affecting the allocation of government resources. Table B7 shows that provincial working experience, instead of central working experience, is driving the result in Table 9 columns (3) and (4). Table B8 shows that personal connection to the provincial party secretary and the provincial governor have similar effect in affecting the allocation of government resources. Tables B9-B11 report similar patterns for the effect of political connection on inter-city firm investment flows.

Firms' Equity Investment Flow. Table 10 reports the regression results with the log of inter-city investment flows being the dependent variable. The results show a similar pattern as for government procurement contracts: Firms invest more in cities whose mayors are similar in their political connections as with their mayor. This indicates that the potential quid-pro-quo relationship among politicians would be passed on to firms, which incentivizes firms to form stronger inter-city equity network. Columns (1) and (2) show that firms invest about 18.7% more in cities whose mayors are from the same political faction as their city mayor. By Columns (3) and (4), firms invest by 12% more in cities whose mayors have the same provincial or central working experience as their city mayors. Columns (5) and (6) show that the inter-city equity investment increases by about 11.7% when mayors in the city pair are both personally connected with the provincial governor or secretary. As with government procurement, this finding also suggests that personal connection to the provincial leaders has the largest effect in influencing firms' decisions.[17]

[Table 10 about here]

5.3 Promotion Incentive and Political Competition

Hypothesis 3 predicts that for each pair of competing cities, the inter-city allocation of procurement contracts and firms' investment decrease with δ—i.e., when politicians place more weight on promotion. Empirically, we measure δ with the number of years before the politicians' change of term. As a politician is closer to the change of his term, he is more concerned about promotion and less concerned about the long-run welfare of local residents.[18] The basic estimation equation is

$$Y_{ijt} = \beta_0 + \beta_1 BC_{it} + \beta_2 BC_{jt} + \beta_3 a_{it} + \beta_4 a_{jt} + \beta_5 X_{it} + \beta_6 X_{jt} + \iota_{ij} + \delta_t + \rho_{k(j)} + \epsilon_{ijt}, \quad (9)$$

where BC_{it} (and BC_{jt}, respectively) is the number of years *before* the change of office for city i's (city j's, respectively) mayor in year t, measured by -5, -4, -3, -2, -1, or 0, and other variables are defined as in Equation (7). The coefficient of main interest is β_2—i.e., how equilibrium allocation of government procurement contract and firm investment vary as the procuring or investing city j's mayor is closer to the change of term.

[17] Tables B10-B11 in the online appendix further confirm that provincial working experience (instead of central working experience) and personal connection to the provincial party secretary (instead of to the provincial governor) are driving the results in Table 10.

[18] One may postulate that the relationship between politicians' promotion incentive and their years of tenure is non-monotone because those who stay too long in the current position have a low probability of being promoted. We conduct a robustness check by restricting to the sample of politicians within three years before promotion and the results remain robust.

Allocation of Government Procurement Contract. Table 11 reports the estimation results of regression as specified in Equation (9), with the log of total number of cross-city government procurement contracts being the dependent variable. In column (1), we control for the key variable of interest BC_i and BC_j—i.e., the number of years before the change of office for mayors in the city pair and the city pair and year fixed effects. In column (2) we further control for the city pair's promotion probability (measured by a_i and a_j), and in column (3) we further control for the cities' characteristics and the procuring city's mayor fixed effect. The results show that one year closer to the change of term of the mayor of the procuring city on average leads to a 4.8% decrease in the number of government procurement contracts from government in city j to firms in city i. These findings provide consistent evidence that local protectionism is stronger when politicians have more imminent career concerns.

[Table 11 about here]

Remark 3 Table B12 in the online appendix reports regression results based on an alternative specification allowing for non-monotone effect of the mayors' tenure on inter-city resource allocation. The results show that procurement contract allocation as well as firms' investment exhibit a U-shape with respect to the city mayors' tenure, with the minimum taking place around 3 years as the mayors resume office. This is consistent with the literature finding that local officials have the largest probability of being promoted in the third year and the likelihood becomes lower if he is still not promoted after three years (Wu, 2021).

Firms' Equity Investment Flow. Table 10 reports the regression results with the log of inter-city investment flows being the dependent variable. The results show the same pattern as those for government procurement contract—firms exhibit home bias and invest less in other cities when their city mayors are approaching the change of term. In column (1), we control for the key variable of interest BC_i and BC_j—i.e., the number of years before the change of office for mayors in the city pair and the city pair and the year fixed effects. In column (2), we further control for the city pair's promotion probability (measured by a_i and a_j). In column (3), we further control for the cities' characteristics and the procuring city's mayor fixed effect. The results show that one year closer to the change of term of the mayor of the investing firm's city on average leads to about a 2% decrease in the volume of equity investment from firms in city i to firms in city j, though the coefficient becomes statistically less significant as we add more control variables. Again, these findings corroborate that firms behave in a way that is aligned with the government in selecting which cities to invest in.

[Table 12 about here]

5.4 Competition Intensity

Thus far, we have tested the model predictions on the comparative statics regarding the first-order derivatives. In what follows, we test the model predictions regarding the cross-partial derivatives. Although the signs of the cross-partial derivatives $\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \alpha}$ and $\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \delta}$ depend on the distribution of the noise term and that of the project quality and thus are indeterminate, Hypothesis 4 predicts that $sign\left(\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \alpha}\right) = -sign\left(\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \delta}\right)$—i.e., the effect of political competition (as measured by $|a_i - a_j|$) on resource allocation should be affected by tenure and political connection in the opposite directions. We use the following two regression equations to test this prediction:

$$Y_{ijt} = \alpha + \beta_1 |a_{it} - a_{jt}| + \beta_2 \mathbb{1}(f_i = f_j) * |a_{it} - a_{jt}| + \beta_3 a_{it} + \beta_4 a_{jt} + \gamma_1 X_{it} + \gamma_2 X_{jt} + \iota_{ij} + \delta_t + \rho_{k(j)} + \epsilon_{ijt}, \quad (10)$$

$$Y_{ijt} = \tilde{\alpha} + \tilde{\beta}_1 |a_{it} - a_{jt}| + \tilde{\beta}_2 BC_j * |a_{it} - a_{jt}| + \tilde{\beta}_3 a_{it} + \tilde{\beta}_4 a_{jt} + \tilde{\gamma}_1 X_{it} + \tilde{\gamma}_2 X_{jt} + \tilde{\iota}_{ij} + \tilde{\delta}_t + \tilde{\rho}_{k(j)} + \tilde{\epsilon}_{ijt}, \quad (11)$$

where all variables are as previously defined. The coefficients of interest are β_2 and $\tilde{\beta}_2$: How competition intensity varies as city j's mayor is closer to the change of term or when city mayors on both sides possess the same political connection. Our model predicts that the coefficients β_2 and $\tilde{\beta}_2$ should have different signs.

Remark 4 Hypothesis 4 sounds less intuitive compared to Hypotheses 1-3. To the extent that a reader may be concerned that our theoretical model is guided by our empirical results, evidence supporting Hypothesis 4 can serve as an external validation of our model as this prediction is purely model-based without obvious priors. In addition, it is noteworthy that Hypothesis 4 is not a natural extension of Hypotheses 2 and 3.

Allocation of Government Procurement Contract. Table 13 reports the effect of the interaction terms on the allocation of government procurement contracts. Columns (1)-(3) report the estimation results of regression as specified in Equations (10), and column (4) reports the estimation result of regression as specified in Equations (11), with the log of total number of cross-city government procurement contracts being the dependent variable. In all regressions, we control for the competition measure, the city mayors' promotion probability, cities' characteristics, and the city pair fixed effect. Columns (1)-(3) show that the coefficients of the interactions of political connection and the competition measure are *positive* and mostly statistically significant. Column (1) shows that when the mayors of the city pair are not in the same political network defined by political faction, increasing the difference between a_i and a_j by 0.1 will result in an increase in the total number of government procurement contracts acquired by firms in city j from city i's government by 3.34%. In contrast, when the mayors of the city pair are in the same political faction, the competition measure has a *larger* effect on procurement contract allocation—increasing the difference

between a_i and a_j by 0.1 will result in an increase in the total number of government procurement contracts acquired by firms in city j from city i's government by 6.18% (= 3.34% + 2.84%). Column (2) and column (3) show a similar pattern for the other two political connection measures—having common working experience *increases* the effect of a one standard deviation change in political competition on procurement contract allocation by 0.34%, and having common connections to the provincial government increases the effect by 6.25%. This is consistent with our previous finding that personal connections with provincial leaders have the largest effect in shaping local officials' behavior.

In contrast, column (4) shows that the coefficients of the interactions of career concern measure BC and the competition measure is *negative* and statistically significant, suggesting that the effect of political competition on procurement contract allocation is *smaller* when one is approaching the change of the term. To be more specific, in the year of the change of office, increasing the difference between a_i and a_j by 0.1 will result in an increase in the total value of government procurement contracts acquired by firms in city j from city i's government by 1.78%. Compared to that, one additional year before the change of office increases the effect of political competition on procurement contract allocation by 1.93%. Thus, for the procuring city, when the mayor is one year before the change of office, increasing the difference between a_i and a_j by 0.1 will result in an increase in the total value of government procurement contracts acquired by firms in city j from city i's government by 3.71% (= 1.78% + 1.93%).

A comparison between columns (1)-(3) and column (4) collaborates our model prediction that the effect of political competition on resource allocation should be affected by tenure and political connections in the opposite directions.

[Table 13 about here]

Firms' Equity Investment Flow. Table 14 reports the regression results with the log of inter-city investment flows being the dependent variable. Columns (1) - (3) report the estimation results of regression as specified in Equations (10), and columns (4) report the estimation results of regression as specified in Equations (11). Column (1) shows that when the mayors of the city pair are not in the same political network defined by political faction, increasing the difference between a_i and a_j by 0.1 will result in an increase in the volume of equity investment from firms in city j to firms in city i by 2.60%. In contrast, when the mayors of the city pair are in the same political faction, the competition measure has a *larger* effect on firm investment—increasing the difference between a_i and a_j by 0.1 will result in an increase in the volume of equity investment from firms in city j to firms in city i by 10.65% (= 2.60% + 8.05%). Column (2) and column (3) show a similar pattern for the other two political connection measures—having common working experience *increases* the effect of a

one standard deviation change in political competition on firm investment by 8.93%, and having common connections to the provincial government increases the effect by 10.77%.

In contrast, column (4) shows that the coefficients of the interactions of career concern measure BC and the competition measure is again *negative* and statistically significant. In the year of the change of office, increasing the difference between a_i and a_j by 0.1 will result in an increase in the volume of equity investment from firms in city i to firms in city j by 2.66%. Compared to that, one additional year before the change of office increases the effect of political competition on investment by 1.75%. Thus, for the investing firms' city, when the mayor is one year before the change of office, increasing the difference between a_i and a_j by 0.1 will result in an increase in the volume of equity investment from firms in city j to firms in city i by 4.41% (2.66%+1.75%=4.41%). Similar to the allocation of procurement contracts, we find the effect of political competition on firm investment is also *smaller* when one is approaching the change of the term.

[Table 14 about here]

6 Concluding Remarks

Tournament-style political competition is often considered a foundation for the institution of Regionally Decentralized Authoritarianism (RDA) underlying the Chinese economic success in the last forty years. In this paper, we examine its potential downside in driving local protectionism that can result in inefficient inter-city resource allocations.

We develop a theoretical model in which local politicians compete with each other in a promotion tournament based on short-term local economic performance, by allocating government contracts to firms in their own city or to firms in competing cities. The model robustly predicts that the *joint presence* of regional spillover and the promotion incentive of the local politicians leads to inefficient resource allocations biased in favor of the local firms, thus explaining local protectionism. Our model also yields testable predictions of the impact of political network and the politicians' change of office on the inter-jurisdictional resource allocation.

In the empirical part of our study, we combine several unique data sets and test our model predictions in the contexts of government procurement contract allocation and firms' equity investment across cities. We find that when the mayors in a city pair are more similar in their *ex ante* promotion prospects—which indicates that they are in more intense political competition—they allocate fewer government procurement contracts to firms in the competing city. More interestingly, we find that firms, especially local SOEs, who internalize more of the local politicians' political concerns, tend to invest less in the competing cities. These lead to inefficient local protectionism. These findings are robust to a set of

alternative specifications. Our empirical findings also corroborate the model predictions that political network based on factional ties, working experience, or personal connections, tend to alleviate the distortion in resource allocation, but the distortion is more severe as the local politicians approach the change of office and thus have more imminent career concerns. This analysis highlights the inefficiency in the inter-jurisdictional resource allocation and the local protectionism as the downside of the tournament-style political competition under an autocratic regime.

To the best of our knowledge, this paper provides the first systematic empirical evidence and theoretical foundation for local protectionism in China, and contributes to our understanding of the potential adverse consequences of political tournament. While our empirical analysis is conducted in the context of competition among prefecture city mayors and party secretaries, and thus explains the *within*-province protectionism, applying the same mechanism one level up to the promotion tournament of provincial governors and party secretaries aiming to be promoted to the central government, we can explain the *cross*-province protectionism that the literature has so far focused on.

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Table 1: Summary Statistics for Prefectural Mayors

Variable	Obs	Mean	Std. Dev.	Min	Max
Panel A: City-Year Level Observation					
Promotion	5,652	0.202	0.401	0	1
Age	5,641	50.634	3.866	37	61
Tenure	5,660	2.583	1.559	1	12
Panel B: Individual Level Observation					
Gender (1=Male, 0=Female)	1,690	0.94	0.24	0	1
Education					
College	1,682	0.04	0.21	0	1
Bachelor	1,682	0.17	0.38	0	1
Master	1,682	0.58	0.49	0	1
Doctor	1,682	0.21	0.40	0	1
Political Ties					
Chinese Youth League	1,690	0.20	0.40	0	1
Party School	1,690	0.22	0.41	0	1
Secretary Gang	1,690	0.17	0.37	0	1
Central work experience	1,690	0.05	0.23	0	1
Provincial work experience	1,690	0.48	0.50	0	1
Connection to governor	1,695	0.13	0.34	0	1
Connection to secretary	1,695	0.11	0.31	0	1

Note: This table presents the descriptive statistics of the city mayors' characteristics. The unit of observation for Panel A is city-year, and the unit of observation for Panel B is mayor. The sample covers the period between 2003 and 2019.

Table 2: Descriptive Statistics for Cities

	Obs	Mean	Std. Dev.	Min	Max
Panel A: City level observation					
GDP	4,590	160388.400	259380.200	3177.31	3267987
GDP growth rate	4,211	11.746	4.280	-19.38	37.69
Population	4,602	438.532	390.164	16.37	11098.4
Panel B: City-pair level observation, same Province					
Investment	53,774	937.461	12144.310	0	1139267
Investment from SOE	53,710	589.485	7001.299	0	626374.1
Investment from POE	53,710	349.005	5748.366	0	618120.8
Investment from central SOE	53,774	34.722	649.439	0	60004.98
Investment from local SOE	53,710	554.802	6808.408	0	626346.1
Number of procurement contracts	33,586	59.77	286.06	0	8,401
Same faction	53,774	0.129	0.335	0	1
Same working experience	53,774	0.239	0.427	0	1
Same connection	53,774	0.032	0.175	0	1
Panel C: City-pair level observation, different province					
Investment	1,194,626	38.863	6579.998	0	5,001,633
Number of procurement contracts	451,978	1.45	163.30	0	2,864

Note: This table presents the descriptive statistics of the city-level and city-pair level variables used in this study. Panel A corresponds to the city-year level variables, and Panel B and Panel C correspond to the city-pair-year level variables for city pairs within the same province and from different provinces separately. The sample covers the period between 2003 and 2019.

Table 3: Mayor Promotion Probability

	2003-2012	2013-2019
Age	0.0103	0.210***
	(0.0202)	(0.0409)
Male	0.0502	-0.692
	(0.280)	(0.514)
Education	0.301***	0.321*
	(0.0973)	(0.190)
Tenure	0.159	0.552**
	(0.166)	(0.263)
Party School	0.421**	0.561*
	(0.198)	(0.303)
Secretary Gang	0.830**	-0.0123
	(0.331)	(0.431)
Chinese Youth League	0.291**	-0.472*
	(0.144)	(0.253)
Central experience	0.306*	-0.243
	(0.172)	(0.280)
Provincial experience	0.751***	0.948***
	(0.0478)	(0.0813)
Governor connection	-0.0565	-0.0827
	(0.143)	(0.265)
Secretary connection	-0.250	-0.255
	(0.187)	(0.320)
log(Population)	0.195	-0.350
	(0.276)	(2.146)
City GDP growth rate	0.594	0.00882
	(0.731)	(0.105)
Year FE	Yes	Yes
City FE	Yes	Yes
Observations	2,620	1,157

Note: This table reports the results of estimating Equation (6) separately for the time period 2003-2012 and 2013-2019. Standard errors are clustered at city level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 4: Political Competition and Allocation of Procurement Contract

	(1)	(2)	(3)	(4)
$\lvert a_i - a_j \rvert$	0.358***	0.371***	0.349***	0.293***
	(0.102)	(0.125)	(0.122)	(0.0738)
a_i		-0.0147	0.00524	0.161
		(0.123)	(0.120)	(0.160)
a_j		-0.00866	0.0205	0.0216
		(0.113)	(0.105)	(0.0807)
$\log(\text{Population}_i)$			0.799***	0.670
			(0.284)	(0.478)
$\log(\text{Population}_j)$			1.021*	0.265*
			(0.529)	(0.137)
$\log(\text{GDP}_i)$			-0.0846	0.0741
			(0.0677)	(0.0767)
$\log(\text{GDP}_j)$			0.0804	0.0631*
			(0.0795)	(0.0371)
Constant	1.326***	1.326***	-9.391**	-0.705***
	(0.143)	(0.143)	(3.937)	(0.117)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	No	No	No	Yes
Observations	20,122	20,122	20,122	20,122
R-squared	0.886	0.886	0.887	0.914

Note: This table reports the results of estimating Equation (7) with log(Number of procurement contracts + 1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 5: Political Competition and Firm Investment

	(1)	(2)	(3)	(4)
$\lvert a_i - a_j \rvert$	0.568***	0.373*	0.351	0.397**
	(0.183)	(0.219)	(0.216)	(0.190)
a_i		0.390	0.384	0.212
		(0.261)	(0.260)	(0.240)
a_j		-0.0311	-0.0373	-0.153
		(0.199)	(0.202)	(0.193)
$\log(\text{Population}_i)$			-0.0665	-0.145
			(0.148)	(0.227)
$\log(\text{Population}_j)$			-0.00491	-0.0871
			(0.107)	(0.104)
$\log(\text{GDP}_i)$			0.278*	0.439***
			(0.166)	(0.159)
$\log(\text{GDP}_j)$			0.300**	0.105
			(0.144)	(0.0709)
Constant	4.403***	4.398***	-3.817	-0.860***
	(0.195)	(0.196)	(4.710)	(0.281)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	No	No	No	Yes
Observations	53,774	53,774	53,774	53,774
R-squared	0.639	0.639	0.639	0.669

Note: This table reports the results of estimating Equation (7) with log(Volume of investment + 1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 6: Political Competition and Firm Investment

	All SOE	All POE	Central SOE	Local SOE
	(1)	(2)	(3)	(4)
$\lvert a_i - a_j \rvert$	1.827***	0.334**	0.385**	2.204***
	(0.250)	(0.167)	(0.184)	(0.252)
a_i	0.522*	0.141	-0.491**	0.477*
	(0.268)	(0.218)	(0.220)	(0.270)
a_j	-0.238	-0.101	-0.181	-0.262
	(0.231)	(0.160)	(0.220)	(0.226)
log(Population$_i$)	-0.0506	-0.177	-0.0338	-0.0369
	(0.277)	(0.219)	(0.117)	(0.286)
log(Population$_j$)	-0.0720	-0.119	0.103	-0.0620
	(0.0931)	(0.0976)	(0.132)	(0.0905)
log(GDP$_i$)	0.433**	0.432***	0.300**	0.447**
	(0.179)	(0.154)	(0.144)	(0.178)
log(GDP$_j$)	0.217**	-0.0114	0.694***	0.220**
	(0.0852)	(0.0661)	(0.0941)	(0.0890)
Constant	-0.884***	-0.921***	0.654***	-0.853***
	(0.309)	(0.265)	(0.218)	(0.311)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	Yes	Yes	Yes	Yes
Observations	53,710	53,774	53,774	53,774
R-squared	0.234	0.285	0.073	0.245

Note: This table reports the results of estimating Equation (7) with log(Volume of investment + 1) being the dependent variable. The data sample includes city pairs from the same province. Column (1) reports the regression results for investment made by SOEs, column (2) reports the regression results for investment made by POEs, and columns (3) and (4) report the regression results for investment made by central SOEs and local SOEs respectively. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 7: Political Competition and Procurement–Adjacent Cities

	Procurement		Investment	
	Same Province	Different Province	Same Province	Different Province
	(1)	(2)	(3)	(4)
$\lvert a_i - a_j \rvert$	0.296*	-0.244	1.063***	-0.136
	(0.168)	(0.326)	(0.359)	(0.857)
a_i	0.195	-0.191	-0.0536	-1.527
	(0.276)	(0.290)	(0.395)	(0.938)
a_j	-0.131	0.423	-0.392	0.621
	(0.169)	(0.428)	(0.332)	(0.924)
$\log(\text{Population}_i)$	1.058	2.113	-0.148	-0.621
	(0.884)	(1.856)	(0.221)	(0.712)
$\log(\text{Population}_j)$	0.137	2.802	-0.137	-0.349
	(0.203)	(1.592)	(0.127)	(0.581)
$\log(\text{GDP}_i)$	0.0960	0.128	0.339	-0.437
	(0.0881)	(0.190)	(0.282)	(0.599)
$\log(\text{GDP}_j)$	0.0843	-0.138	-0.205	-0.347
	(0.0614)	(0.110)	(0.130)	(0.467)
Constant	-0.782***	-28.97	-1.588***	16.00
	(0.150)	(18.94)	(0.441)	(10.64)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	Yes	Yes	Yes	Yes
Observations	5,686	2,396	15,032	6,336
R-squared	0.499	0.779	0.317	0.626

Note: This table reports the results of estimating Equation (7). The data sample includes adjacent city pairs. Columns (1) and (2) report the regression results with log(Number of procurement contracts + 1) being the dependent variable, and columns (3) and (4) report the regression results with log(Volume of investment + 1) being the dependent variable. Columns (1) and (3) report the regression results for adjacent city pairs from the same province, and columns (2) and (4) report the regression results for adjacent city pairs from different provinces. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 8: Placebo: Political Competition and Inter-province Allocation

	Procurement			Investment		
	(1)	(2)	(3)	(4)	(5)	(6)
$\|a_i - a_j\|$	0.0502	0.0471	0.0197	0.183	0.162	-0.0292
	(0.0290)	(0.0259)	(0.0164)	(0.111)	(0.107)	(0.0582)
a_i	-0.0299	-0.0281	-0.0462	-0.392***	-0.396***	-0.288***
	(0.0312)	(0.0263)	(0.0356)	(0.129)	(0.121)	(0.0640)
a_j	0.00520	0.00850	0.0108	-0.451***	-0.452***	-0.326***
	(0.0182)	(0.0147)	(0.0407)	(0.124)	(0.119)	(0.0850)
log(Population$_i$)		0.639	0.239		0.680***	0.186***
		(0.367)	(0.199)		(0.223)	(0.0512)
log(Population$_j$)		0.190	0.0952		0.618**	0.133*
		(0.124)	(0.109)		(0.258)	(0.0683)
log(GDP$_i$)		0.115**	0.0505*		0.460***	0.134***
		(0.0370)	(0.0212)		(0.0837)	(0.0440)
log(GDP$_j$)		0.0218	0.0202		0.391***	0.0998
		(0.0125)	(0.0120)		(0.113)	(0.0682)
Constant	0.219***	-6.093*	-2.481	0.828***	-15.33***	-3.400*
	(0.000666)	(2.495)	(1.383)	(0.00705)	(3.728)	(1.683)
City pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mayor FE	No	No	Yes	No	No	Yes
Observations	451,978	451,978	451,978	1,194,626	1,194,626	1,194,626
R-squared	0.686	0.689	0.724	0.494	0.496	0.543

Note: This table reports the results of estimating Equation (7). The data sample includes city pairs from *different* provinces. Columns (1) to (3) report the regression results with log(Number of procurement contracts + 1) being the dependent variable, and columns (4) to (6) report the regression results with log(Volume of investment + 1) being the dependent variable. Standard errors are clustered at city level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 9: Political Connection and Procurement Contract Allocation

	(1)	(2)	(3)	(4)	(5)	(6)
Faction	0.0608**	0.115***				
	(0.0279)	(0.0179)				
Work			0.0537**	0.0176		
			(0.0270)	(0.0159)		
Connection					0.121**	0.0984**
					(0.0516)	(0.0406)
a_i		0.379**		0.373**		0.375**
		(0.163)		(0.163)		(0.163)
a_j		0.197***		0.208***		0.209***
		(0.0663)		(0.0669)		(0.0665)
log(Population$_i$)		0.674		0.677		0.675
		(0.482)		(0.479)		(0.478)
log(Population$_j$)		0.258*		0.262*		0.267*
		(0.138)		(0.137)		(0.138)
log(GDP$_i$)		0.0789		0.0785		0.0813
		(0.0761)		(0.0764)		(0.0763)
log(GDP$_j$)		0.0598		0.0661*		0.0661*
		(0.0374)		(0.0373)		(0.0369)
Constant	0.983***	-0.699***	0.980***	-0.697***	0.989***	-0.697***
	(0.135)	(0.117)	(0.136)	(0.117)	(0.135)	(0.117)
City pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mayor FE	No	Yes	No	Yes	No	Yes
Observations	33,586	20,122	33,586	20,122	33,586	20,122
R-squared	0.884	0.909	0.884	0.909	0.884	0.909

Note: This table reports the results of estimating Equation (8) with log(Number of procurement contracts + 1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 10: Political Connection and Firm Investment

	(1)	(2)	(3)	(4)	(5)	(6)
Faction	0.187***	0.0661*				
	(0.0534)	(0.0385)				
Work			0.120**	0.0620*		
			(0.0598)	(0.0360)		
Connection					0.117	0.179*
					(0.106)	(0.0960)
a_i		-0.142		-0.141		-0.142
		(0.227)		(0.227)		(0.226)
a_j		-0.0847		-0.0858		-0.0841
		(0.105)		(0.104)		(0.106)
log(Population$_i$)		0.443***		0.442***		0.446***
		(0.159)		(0.159)		(0.159)
log(Population$_j$)		0.104		0.108		0.107
		(0.0704)		(0.0699)		(0.0705)
log(GDP$_i$)		0.475**		0.474**		0.474**
		(0.199)		(0.199)		(0.200)
log(GDP$_j$)		0.0728		0.0799		0.0825
		(0.144)		(0.144)		(0.144)
Constant	3.350***	-0.835***	3.349***	-0.833***	3.359***	-0.833***
	(0.170)	(0.280)	(0.169)	(0.279)	(0.172)	(0.281)
City pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mayor FE	No	No	No	No	No	No
Observations	75,968	53,774	75,968	53,774	75,968	53,774
R-squared	0.697	0.679	0.697	0.679	0.697	0.679

Note: This table reports the results of estimating Equation (8) with log(Volume of investment + 1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 11: Career Incentive and Procurement Contract Allocation

	(1)	(2)	(3)
BC_i	0.0471**	0.0259	0.0232
	(0.0212)	(0.0233)	(0.0235)
BC_j	-0.0487**	-0.0451***	-0.0429***
	(0.0192)	(0.0142)	(0.0138)
a_i		0.615***	0.596***
		(0.237)	(0.221)
a_j		0.0624	0.0721
		(0.118)	(0.105)
$\log(\text{Population}_i)$			0.974*
			(0.550)
$\log(\text{Population}_j)$			1.318***
			(0.237)
$\log(\text{GDP}_i)$			-0.277*
			(0.165)
$\log(\text{GDP}_j)$			0.346***
			(0.0726)
Constant	1.151***	-0.561***	-0.622***
	(0.139)	(0.118)	(0.132)
City pair FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Mayor FE	No	Yes	Yes
Observations	19,336	16,056	16,056
R-squared	0.708	0.911	0.912

Note: This table reports the results of estimating Equation (9) with log(Number of procurement contracts+1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 12: Career Incentive and Firm Investment

	(1)	(2)	(3)
BC_i	0.00525	0.00569	0.00504
	(0.0155)	(0.0162)	(0.0161)
BC_j	-0.0200*	-0.0128	-0.0125
	(0.0119)	(0.0133)	(0.0133)
a_i		0.358*	0.390**
		(0.189)	(0.189)
a_j		0.128	0.124
		(0.131)	(0.132)
$\log(\text{Population}_i)$			-0.147
			(0.228)
$\log(\text{Population}_j)$			-0.0649
			(0.0935)
$\log(\text{GDP}_i)$			0.371**
			(0.161)
$\log(\text{GDP}_j)$			0.103
			(0.0787)
Constant	3.906***	-1.452***	-0.935***
	(0.178)	(0.151)	(0.235)
City pair FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Mayor FE	No	Yes	Yes
Observations	54,988	48,912	48,912
R-squared	0.669	0.669	0.669

Note: This table reports the results of estimating Equation (9) with $\log(\text{Volume of investment} + 1)$ being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 13: Competition Intensity and Procurement Contract Allocation

	(1)	(2)	(3)	(4)
$\lvert a_i - a_j \rvert$	0.334***	0.364***	0.299**	0.178
	(0.126)	(0.132)	(0.138)	(0.167)
$\lvert a_i - a_j \rvert$*Faction	0.284**			
	(0.129)			
$\lvert a_i - a_j \rvert$*Work		0.0342		
		(0.124)		
$\lvert a_i - a_j \rvert$*Connection			0.624*	
			(0.350)	
$\lvert a_i - a_j \rvert$*BC_j				-0.193*
				(0.113)
a_i	-0.0249	-0.0148	-0.00622	0.271
	(0.123)	(0.123)	(0.122)	(0.179)
a_j	-0.0188	-0.00870	-0.000144	-0.266
	(0.113)	(0.113)	(0.113)	(0.182)
Constant	1.326***	1.326***	1.327***	1.299***
	(0.143)	(0.143)	(0.143)	(0.140)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	20,122	20,122	20,122	17,625
R-squared	0.887	0.886	0.887	0.709

Note: This table reports the results of estimating Equations (10) and (11) with log(Number of procurement contracts+1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 14: Competition Intensity and Firm Investment

	(1)	(2)	(3)	(4)
$\lvert a_i - a_j \rvert$	0.260	0.183	0.354	0.266
	(0.222)	(0.240)	(0.219)	(0.258)
$\lvert a_i - a_j \rvert$*Faction	0.805***			
	(0.271)			
$\lvert a_i - a_j \rvert$*Work		0.893***		
		(0.343)		
$\lvert a_i - a_j \rvert$*Connection			1.077	
			(0.820)	
$\lvert a_i - a_j \rvert$*BC_j				-0.175*
				(0.100)
a_i	0.372	0.389	0.391	0.446**
	(0.259)	(0.260)	(0.260)	(0.226)
a_j	-0.0482	-0.0313	-0.0300	-0.265
	(0.198)	(0.198)	(0.199)	(0.241)
Constant	4.402***	4.400***	4.398***	4.386***
	(0.196)	(0.195)	(0.196)	(0.187)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	53,774	53,774	53,774	50,872
R-squared	0.639	0.639	0.639	0.613

Note: This table reports the results of estimating Equations (10) and (11) with log(Volume of investment + 1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Appendix A: Proofs

Proof of Proposition 1

Proof. Politician i's expected payoff (3) can be simplified as

$$\begin{aligned} u_i(x_i, x_j) &= \delta\,(1-\alpha)\,V \Pr\left(\epsilon_i - \epsilon_j \geq \tau(x_i - x_j) - (a_i - a_j)\right) + (1-\delta)Q(x_i) \\ &= \delta\,(1-\alpha)\,V\left[1 - G\left(\tau(x_i - x_j) - (a_i - a_j)\right)\right] + (1-\delta)Q(x_i),. \end{aligned}$$

where the first equality follows from (1).

Recall that $Q(x_i) = Q(1-x_i)$ and $Q(x_i)$ is strictly increasing in x_i for $x_i \in [0, \frac{1}{2}]$ and is strictly decreasing in x_i for $x_i \in [\frac{1}{2}, 1]$. It follows immediately that $x_i^* \leq \frac{1}{2}$ for $i \in \{1, 2\}$. Moreover, it can be verified that

$$Q'(x_i) = H^{-1}(1-x_i) - H^{-1}(x_i),$$

which strictly decreases with x_i. Therefore, $Q(x_i)$ is strictly concave in x_i.

The first-order condition of $u_i(x_i, x_j)$ with respect to x_i, with $i \in \{1, 2\}$, gives

$$\tau\delta\,(1-\alpha)\,V g\left(\tau(x_1^* - x_2^*) - (a_1 - a_2)\right) = (1-\delta)Q'(x_1^*),$$

and

$$\tau\delta\,(1-\alpha)\,V g\left(\tau(x_2^* - x_1^*) - (a_2 - a_1)\right) = (1-\delta)Q'(x_2^*).$$

Note that the density function $g(\cdot)$ is symmetric around zero by assumption. Therefore, $g\left(\tau(x_1^* - x_2^*) - (a_1 - a_2)\right) = g\left(\tau(x_2^* - x_1^*) - (a_2 - a_1)\right)$, which in turn implies that $(1-\delta)Q'(x_1^*) = (1-\delta)Q'(x_2^*)$ and hence $x_1^* = x_2^*$.

Substituting $x_1^* = x_2^*$ into the above first-order conditions yields that

$$x_1^* = x_2^* = Q'^{-1}\left(\tau\frac{\delta}{1-\delta}(1-\alpha)Vg(a_1 - a_2)\right) < \frac{1}{2}.$$

The term $Q'^{-1}\left(\tau\frac{\delta}{1-\delta}(1-\alpha)Vg(a_1-a_2)\right)$ is well defined if $\tau\frac{\delta}{1-\delta}(1-\alpha)Vg(a_1-a_2) < Q'(0) = \overline{q} - \underline{q}$, or equivalently, $g(\Delta_a) < \frac{\overline{q}-\underline{q}}{(1-\alpha)V\tau} \times \frac{1-\delta}{\delta}$. This concludes the proof. □

Proof of Proposition 2

Proof. Parts (i), (ii), and (iii) of the proposition is obvious and it remains to prove part (iv). For notational convenience, let $z := g(\Delta_a)$, $w := \tau\frac{\delta}{1-\delta}(1-\alpha)V$, and $t := wz$. Carrying out

the algebra, we can obtain that

$$\frac{\partial x_i^*}{\partial \Delta_a} = \frac{dQ'^{-1}(t)}{dt} \times g'(\Delta_a) \times w.$$

Therefore, we have that

$$\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \alpha} = -g'(\Delta_a) \times \frac{\tau \delta V}{1-\delta} \times \left[\frac{dQ'^{-1}(t)}{dt} + \frac{d^2 Q'^{-1}(t)}{dt^2} \times w \times g(\Delta_a) \right],$$

and

$$\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \alpha} = g'(\Delta_a) \times \frac{\tau (1-\alpha) V}{(1-\delta)^2} \times \left[\frac{dQ'^{-1}(t)}{dt} + \frac{d^2 Q'^{-1}(t)}{dt^2} \times w \times g(\Delta_a) \right],$$

from which we can obtain that $sign\left(\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \alpha}\right) = -sign\left(\frac{\partial^2 x_i^*}{\partial \Delta_a \partial \delta}\right)$. This concludes the proof. □

Online Appendix B: Tables

Table B1: Political Competition and Procurement Contract Allocation

	(1)	(2)	(3)
$\lvert a_i - a_j \rvert$	1.121***	0.272	0.550
	(0.301)	(0.558)	(0.646)
a_i		0.355	0.344
		(0.484)	(0.554)
a_j		1.157	0.786
		(1.482)	(0.737)
log(Population$_i$)			0.913
			(1.158)
log(Population$_j$)			6.251***
			(1.399)
log(per capital GDP$_i$)			-0.0132
			(0.397)
log(per capital GDP$_j$)			0.318
			(0.452)
Constant	9.415***	9.377***	-36.73***
	(0.0525)	(0.0569)	(12.57)
City pair FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	18,360	18,360	15,546
R-squared	0.701	0.701	0.767

Note: This table reports the results of estimating Equation (7) with log(Total value of procurement contracts + 1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B2: Political Connection and Procurement Contract Allocation

	(1)	(2)	(3)	(4)	(5)	(6)
Faction	0.0863	0.300*				
	(0.118)	(0.172)				
Work			0.396***	0.423***		
			(0.0997)	(0.144)		
Connection					0.729***	0.900***
					(0.125)	(0.188)
log(Population$_i$)		-0.284		-0.312		-0.212
		(1.182)		(1.181)		(1.181)
log(Population$_j$)		3.132***		3.092***		3.175***
		(1.127)		(1.127)		(1.126)
log(per capital GDP$_i$)		-0.226		-0.199		-0.258
		(0.393)		(0.393)		(0.393)
log(per capital GDP$_j$)		0.00472		0.0307		-0.0189
		(0.394)		(0.394)		(0.394)
Constant	6.356***	-5.468	6.284***	-5.707	6.272***	-5.641
	(0.0320)	(10.42)	(0.0353)	(10.42)	(0.0328)	(10.41)
City pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	27,500	15,611	27,500	15,611	27,500	15,611
R-squared	0.759	0.718	0.760	0.719	0.760	0.719

Note: This table reports the results of estimating Equation (8) with log(Total value of procurement contracts + 1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B3: Career Incentive and Procurement Contract Allocation

	(1)	(2)
BC_i	-0.0137	0.155***
	(0.0433)	(0.0570)
BC_j	-0.273***	-0.273***
	(0.0432)	(0.0479)
a_i		-0.250
		(0.571)
a_j		1.676***
		(0.340)
log(Population$_i$)		3.415***
		(0.908)
log(Population$_j$)		4.639***
		(0.872)
log(per capital GDP$_i$)		0.482
		(0.316)
log(per capital GDP$_j$)		-1.235***
		(0.236)
Constant	8.092***	-25.85**
	(0.0840)	(11.57)
City pair FE	Yes	Yes
Year FE	Yes	Yes
Observations	18,342	16,048
R-squared	0.736	0.705

Note: This table reports the results of estimating Equation (9) with log(Total value of procurement contracts + 1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B4: Competition Intensity and Procurement Contract Allocation

	(1)	(2)	(3)	(4)
$\lvert a_i - a_j \rvert$	-0.219	-0.547	-0.316	-0.841
	(0.614)	(0.676)	(0.686)	(0.676)
$\lvert a_i - a_j \rvert$*BC_j	-0.375			
	(0.316)			
$\lvert a_i - a_j \rvert$*Faction		0.395		
		(0.865)		
$\lvert a_i - a_j \rvert$*Work			0.504	
			(0.808)	
$\lvert a_i - a_j \rvert$*Connection				2.676***
				(0.982)
a_i	0.535	1.003*	1.001*	1.131*
	(0.496)	(0.582)	(0.581)	(0.581)
a_j	1.445***	2.197***	2.186***	2.310***
	(0.493)	(0.582)	(0.582)	(0.581)
log(Population$_i$)	-0.371	-0.323	-0.358	-0.243
	(1.102)	(1.179)	(1.179)	(1.178)
log(Population$_j$)	4.626***	3.329***	3.280***	3.386***
	(1.001)	(1.126)	(1.126)	(1.125)
log(per capital GDP$_i$)	-0.566**	-0.235	-0.200	-0.270
	(0.226)	(0.393)	(0.393)	(0.392)
log(per capital GDP$_j$)	-0.838***	-0.0829	-0.0505	-0.102
	(0.231)	(0.394)	(0.394)	(0.394)
Constant	7.731	-5.548	-5.860	-5.852
	(8.784)	(10.40)	(10.40)	(10.39)
City pair FE			Yes	Yes
Year FE			Yes	Yes
Observations	17,582	15,556	15,556	15,556
R-squared	0.699	0.720	0.720	0.721

Note: This table reports the results of estimating Equation (10) with log(Total value of procurement contracts+1) being the dependent variable. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B5: Political Competition and Procurement–Adjacent Cities

	Same Province		Different Province	
	(1)	(2)	(3)	(4)
$\lvert a_i - a_j \rvert$	1.365	1.329	0.308	0.320
	(0.997)	(0.994)	(1.896)	(1.864)
a_i	-1.176	-0.865	-2.601	-2.337
	(0.851)	(0.847)	(1.619)	(1.594)
a_j	0.353	0.152	-0.306	-0.410
	(0.851)	(0.847)	(1.619)	(1.594)
log(Population$_i$)		1.459		9.055**
		(1.279)		(4.308)
log(Population$_j$)		2.062		10.59**
		(1.279)		(4.308)
log(per capital GDP$_i$)		0.562**		0.942**
		(0.253)		(0.430)
log(per capital GDP$_j$)		-0.815***		-1.581***
		(0.253)		(0.430)
Constant	11.26***	-5.678	4.794***	-103.4**
	(0.0990)	(15.70)	(0.171)	(50.92)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	5,686	5,686	2,462	2,462
R-squared	0.629	0.634	0.360	0.383

Note: This table reports the results of estimating Equation (7) with log(Total value of procurement contracts+1) being the dependent variable. The data sample includes adjacent city pairs. Columns (1) and (2) report the regression results for adjacent city pairs from the same province, and columns (3) and (4) report the regression results for adjacent city pairs from different provinces. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B6: Political Connection and Procurement Contract Allocation

	(1)	(2)	(3)	(4)	(5)	(6)
Party school	0.0463	0.100***				
	(0.0409)	(0.0293)				
Secretary gang			0.0882**	0.101***		
			(0.0421)	(0.0315)		
CYL					0.0221	0.125***
					(0.0478)	(0.0298)
a_i		0.377**		0.376**		0.373**
		(0.163)		(0.163)		(0.163)
a_j		0.197***		0.207***		0.207***
		(0.0666)		(0.0664)		(0.0670)
log(Population$_i$)		0.678		0.678		0.674
		(0.477)		(0.479)		(0.482)
log(Population$_j$)		0.257*		0.264*		0.268*
		(0.136)		(0.139)		(0.138)
log(GDP$_i$)		0.0794		0.0784		0.0776
		(0.0760)		(0.0765)		(0.0764)
log(GDP$_j$)		0.0640*		0.0635*		0.0609
		(0.0371)		(0.0373)		(0.0372)
Constant	0.987***	-0.699***	0.988***	-0.696***	0.990***	-0.695***
	(0.136)	(0.117)	(0.136)	(0.117)	(0.135)	(0.117)
City pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mayor FE	No	Yes	No	Yes	No	Yes
Observations	33,586	20,122	33,586	20,122	33,586	20,122
R-squared	0.884	0.909	0.884	0.909	0.884	0.909

Note: This table provides a further breakdown of the results of estimating Equation (8) with detailed measures of each kind of political connection. The dependant variable is log(Total number of procurement contracts + 1). The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B7: Political Connection and Procurement Contract Allocation–Work Experience

	(1)	(2)	(3)	(4)
Central work	-0.186	-0.0362		
	(0.123)	(0.0514)		
Province work			0.0618**	0.0185
			(0.0277)	(0.0163)
a_i		0.373**		0.373**
		(0.163)		(0.163)
a_j		0.207***		0.208***
		(0.0667)		(0.0669)
log(Population$_i$)		0.676		0.677
		(0.479)		(0.479)
log(Population$_j$)		0.264*		0.261*
		(0.137)		(0.137)
log(GDP$_i$)		0.0787		0.0785
		(0.0764)		(0.0764)
log(GDP$_j$)		0.0648*		0.0662*
		(0.0370)		(0.0373)
Constant	0.993***	-0.696***	0.978***	-0.697***
	(0.136)	(0.117)	(0.136)	(0.117)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	No	Yes	No	Yes
Observations	33,586	20,122	33,586	20,122
R-squared	0.884	0.909	0.884	0.909

Note: This table provides a further breakdown of the results of estimating Equation (8) with detailed measures of each kind of political connection. The dependant variable is log(Total number of procurement contracts + 1). The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B8: Political Connection and Procurement Contract Allocation–Provincial Connection

	(1)	(2)	(3)	(4)
Governor connection	0.0438	0.0738		
	(0.0856)	(0.0485)		
Secretary connection			0.0835	0.0861
			(0.0663)	(0.0643)
a_i		0.375**		0.374**
		(0.163)		(0.163)
a_j		0.208***		0.207***
		(0.0666)		(0.0667)
log(Population$_i$)		0.676		0.675
		(0.478)		(0.479)
log(Population$_j$)		0.266*		0.265*
		(0.137)		(0.138)
log(GDP$_i$)		0.0795		0.0800
		(0.0764)		(0.0765)
log(GDP$_j$)		0.0649*		0.0659*
		(0.0371)		(0.0369)
Constant	0.991***	-0.696***	0.991***	-0.697***
	(0.135)	(0.117)	(0.135)	(0.117)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	No	Yes	No	Yes
Observations	33,586	20,122	33,586	20,122
R-squared	0.884	0.909	0.884	0.909

Note: This table provides a further breakdown of the results of estimating Equation (8) with detailed measures of each kind of political connection. The dependant variable is log(Total number of procurement contracts+1). The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B9: Political Connection and Firm Investment–Faction

	(1)	(2)	(3)	(4)	(5)	(6)
Party school	0.231***	0.0523				
	(0.0674)	(0.0573)				
Secretary gang			0.341***	0.145**		
			(0.102)	(0.0738)		
CYL					-0.0222	-0.0213
					(0.0917)	(0.0732)
a_i		-0.143		-0.142		-0.143
		(0.227)		(0.227)		(0.227)
a_j		-0.0857		-0.0854		-0.0856
		(0.105)		(0.105)		(0.105)
log(Population$_i$)		0.443***		0.442***		0.443***
		(0.159)		(0.159)		(0.159)
log(Population$_j$)		0.106		0.104		0.106
		(0.0702)		(0.0702)		(0.0704)
log(GDP$_i$)		0.474**		0.475**		0.473**
		(0.199)		(0.199)		(0.200)
log(GDP$_j$)		0.0749		0.0767		0.0787
		(0.144)		(0.144)		(0.145)
Constant	3.353***	-0.835***	3.359***	-0.838***	3.362***	-0.837***
	(0.171)	(0.280)	(0.171)	(0.280)	(0.171)	(0.280)
City pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mayor FE	No	Yes	No	Yes	No	Yes
Observations	75,968	53,774	75,968	53,774	75,968	53,774
R-squared	0.697	0.679	0.697	0.679	0.697	0.679

Note: This table provides a further breakdown of the results of estimating Equation (8) with detailed measures of each kind of political connection. The dependant variable is log(Volume of investment + 1). The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B10: Political Connection and Firm Investment–Work Experience

	(1)	(2)	(3)	(4)
Central work	0.309	0.251		
	(0.198)	(0.159)		
Province work			0.114*	0.0539
			(0.0613)	(0.0375)
a_i		-0.143		-0.141
		(0.227)		(0.227)
a_j		-0.0852		-0.0857
		(0.104)		(0.104)
log(Population$_i$)		0.442***		0.442***
		(0.159)		(0.159)
log(Population$_j$)		0.106		0.107
		(0.0702)		(0.0699)
log(GDP$_i$)		0.473**		0.474**
		(0.199)		(0.199)
log(GDP$_j$)		0.0776		0.0798
		(0.144)		(0.144)
Constant	3.361***	-0.837***	3.350***	-0.834***
	(0.171)	(0.280)	(0.169)	(0.279)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	No	Yes	No	Yes
Observations	75,968	53,774	75,968	53,774
R-squared	0.697	0.679	0.697	0.679

Note: This table provides a further breakdown of the results of estimating Equation (8) with detailed measures of each kind of political connection. The dependant variable is log(Volume of investment + 1). The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B11: Political Connection and Firm Investment–Provincial Government

	(1)	(2)	(3)	(4)
Governor connection	0.0831	0.197**		
	(0.126)	(0.0984)		
Secretary connection			0.331	0.154
			(0.210)	(0.209)
a_i		-0.143		-0.142
		(0.227)		(0.227)
a_j		-0.0843		-0.0850
		(0.106)		(0.105)
log(Population$_i$)		0.444***		0.445***
		(0.159)		(0.159)
log(Population$_j$)		0.105		0.108
		(0.0708)		(0.0705)
log(GDP$_i$)		0.475**		0.473**
		(0.200)		(0.200)
log(GDP$_j$)		0.0817		0.0794
		(0.144)		(0.145)
Constant	3.360***	-0.836***	3.361***	-0.833***
	(0.171)	(0.280)	(0.171)	(0.280)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	No	Yes	No	Yes
Observations	75,968	53,774	75,968	53,774
R-squared	0.697	0.679	0.697	0.679

Note: This table provides a further breakdown of the results of estimating Equation (8) with detailed measures of each kind of political connection. The dependant variable is *log*(Volume of investment+1). The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table B12: Tenure and Political Competition

	Procurement		Investment	
	(1)	(2)	(3)	(4)
Tenure_i	0.0177	-0.0656***	0.00683	-0.147***
	(0.0182)	(0.0215)	(0.0348)	(0.0390)
Tenure_i^2	-0.00174	0.0155***	0.00263	0.0293***
	(0.00271)	(0.00353)	(0.00510)	(0.00585)
Tenure_j	-0.0981	-0.155**	-0.642***	-0.750***
	(0.0646)	(0.0624)	(0.126)	(0.137)
Tenure_j^2	0.0214	0.0326**	0.128***	0.153***
	(0.0163)	(0.0157)	(0.0318)	(0.0346)
$\log(\text{Population}_i)$		2.395***		0.343***
		(0.114)		(0.0832)
$\log(\text{Population}_j)$		2.083***		0.0309
		(0.114)		(0.0833)
$\log(\text{GDP}_i)$		-0.601***		0.0361
		(0.0143)		(0.0242)
$\log(\text{GDP}_j)$		0.535***		0.615***
		(0.0142)		(0.0239)
Constant	1.880***	-23.26***	5.813***	-5.989***
	(0.0612)	(1.348)	(0.118)	(0.916)
City pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mayor FE	No	Yes	No	Yes
Observations	22,953	19,482	50,295	44,766
R-squared	0.672	0.748	0.507	0.619

Note: This table reports the results of estimating Equation (9) controlling for the quadratic form of the city mayors' tenure. The data sample includes city pairs from the same province. Standard errors are estimated using cluster-bootstrap at the province-year level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.