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**Policy Choice and Economic Growth under Factional Politics:**

**Evidence from a Chinese Province**

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Highlights of this paper

- We model how factional ties affect local politicians' policy choices in China.
- A unique county-level data to measure factional ties and test relevant hypotheses.
- Counties with weaker (closer) factional ties impose lower (higher) *per capita* taxes .
- Counties with weaker (closer) factional ties spend more (less) on public goods provision.
- Contributes to the literature on economic development under authoritarian regimes.

## **Policy Choice and Economic Growth under Factional Politics: Evidence from a Chinese Province**

### **Abstract**

This paper investigates how political elites make policy choices that have bearing on an authoritarian regime's economy, from the perspective of factional politics. A local leader makes policies primarily to secure his political survival, which is contingent on the support from either his higher-level patrons or his local grassroots constituents. Using a simple model, we show that a local politician with close factional ties to high-level patrons will invest more in sending loyalty signals to the latter to receive their protections, while a poorly-connected politician will make more effort to spur a broad-based economic growth that economically benefits his local constituents. Using a unique county level data on the factional politics of Zhejiang Province, China, we find that counties with weaker (closer) factional ties have lower (higher) tax burdens per capita, while spending more (less) on local public goods provision. The results are stable after various robustness tests.

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## **1 Introduction**

Is dictatorship superior to democracy when it comes to making good and efficient economic policies, or is the opposite true? What motivates dictators and their subordinates when they make economic decisions and economic choices, like investments and public goods provisions, etc.? These are all intriguing questions in the literature of the political economy of authoritarianism.

In this research we examine how heterogeneous power status of local political elites resulting from factional politics affects their economic policy choices, in China's single-party institutional context, using a unique dataset collected from Zhejiang province. We argue that local political elite make policies primarily in a way that secures their political survival (Bueno de Mesquita et al. 2003), i.e., retaining office, which is contingent either on the protection from their higher-level patrons or on the support from their grassroots constituencies.<sup>1</sup> To receive protection from the patrons, local politicians must invest resources to send credible signals to the higher-ups to demonstrate loyalty; whereas to win the grassroots support, they must provide policies and institutions to economically benefit his or her supporters. Hence, the local political elites face the trade-off of how to allocate limited resources between the two activities. For example, they could invest more resources to signal their loyalty to their higher-level patrons, which surely leads to huge economic waste and inefficiency. Alternatively, they

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<sup>1</sup> By grassroots constituencies, we do not necessarily mean those who are excluded by the regime, such as ordinary people. In China's context, they could also include those merchants and even local low-level officials, such as county, township, and urban district level cadres, etc.

could shift more resources for local economic development to win over local grassroots support, e.g., by refraining from predatory behaviors, avoiding excess taxation, more social public goods provisions, etc., which brings about robust broad-based economic growth even in an environment feature with imperfect institutions at national level such as weak property rights protection and overall discrimination against private sector vis-à-vis state sector.

We further argue that local political elites are ex ante heterogeneous in terms of their connection with higher-level power holders. Some may have ex ante close ties to powerful figures at higher levels and therefore enjoy better chances of political survival *ceteris paribus*, while others are largely excluded from the clubs formed by higher level patrons, and their political survival is therefore exposed to huge uncertainties if they rely on the existing networks. Hence political elites who are politically marginalized by factional politics within the regime are obliged to seek more support from the grassroots constituents, to increase their chance of political survival. As a result, those local politicians, who have close ties with the patrons, will invest relatively more resources in signaling their loyalty, as they are more effective in engaging this activity. In contrast, the other local politicians, who do not have such ties and are political marginalized in the extant power hierarchy, will make more effort to foster a growth-enhancing business environment that benefits their local constituents.

We develop a simple theoretical model in which the political survival of a local politician is determined by the joint outputs of loyalty signaling and local

economic development. The two outputs are substitutes to each other, and a local politician who has a close political tie is more effective in signaling his loyalty to the higher-level patrons. Given this assumption, a well-connected local politician will invest relatively more resources in signaling his loyalty, if compared with a poorly-connected one. We clearly model the competition equilibrium between these two types of local politicians. Our model implies higher tax rates and lower public goods investment in localities where the political elites have closer factional ties with higher-level patrons. Furthermore, the model also shows that higher tax rates and less investment in public goods will drive away private capital. As a result, the localities governed by the well-connected politicians have slower economic growth, heavier tax burdens, and lower public goods investment than those run by the politically marginalized politicians.

We use a unique county-level longitudinal data from Zhejiang province to test the theoretical hypotheses. The merits of using Zhejiang's county-level data are twofold: first, county and township governments are at the lowest tier of administrative structure in China and are in charge of policy making and implementation at the grassroots level.<sup>2</sup> Second, and more importantly, the pre-1949 communist revolution in Zhejiang provides a natural experiment to divide local political elites into two rival factions, which enables us to distinguish the factional backgrounds of local politicians and contrast economic policies

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<sup>2</sup> The Chinese hierarchical administrative system ranks as follows (from low to high): township, county, province, and the central government.

between counties governed by politicians with different factional ties. Based on the dataset covering 54 counties spanning 1994 to 2005, the regression results are consistent with our arguments: during this period, counties ruled by politicians with close factional ties with the provincial leadership have higher tax rates, lower public expenditures on education, and slower growth rate of per capita GDP. And these results are stable after various robust tests.

The remainder of the paper is organized as follows: Section 2 elaborates on how factional politics in communist regimes influence political elites' economic policy making; Section 3 sets up our theoretical model and derives testable hypotheses; Section 4 briefly introduces the revolutionary history of Zhejiang province prior to 1949, which we use to identify the factional backgrounds of political elites who are currently governing the province's counties; Section 5 describes the estimation strategy and the results; Section 6 concludes.

## **2. Factionalism and policy choices in communist regimes**

Our analysis starts with one fundamental problem with the factional politics that is widely believed to be pervasive in communist countries (Nathan 1973; Easter 1996). That is, due to the lack of regular votes and the absence of a free media, patrons are always in the dark about the loyalty of their subordinates (Wintrobe 1998). As a result, they are actually vulnerable to clients' likely betrayal during a power crisis that can dethrone the patrons. Hence the patrons have the dire need to obtain knowledge of their subordinates' loyalty to minimize the likelihood of the latter, that is, the clients reneging on the factional bargain. This



makes demonstrating loyalty to the patrons a central task for clients at all echelons of bureaucracy.<sup>3</sup> Sending loyalty signals is not only a nauseating job in the psychological sense, but consumes huge economic resources, leading to massive resource misallocation and waste. In the context of China, examples include launching propaganda campaigns that bootlick powerful political figures, giving lucrative government contracts to the friends and family members of power holders at high levels, and building flashy infrastructure projects in order to court the higher-ups with ambitious economic visions. In some circumstances, this can cause economic disarray and even disaster.<sup>4</sup> The socioeconomic costs associated with the loyalty displaying, however, make it credible rather than a cheap talk, especially when such costs jeopardize the interests of their potential grassroots supporters.

On the other hand, political elites likely differ in their incentives of displaying loyalty, which is contingent on their heterogeneous power status in the power structure shaped by factionalism. For those elites who are included in the dominant factions and rely on established patron-client networks within the regime

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<sup>3</sup> For a study on how provincial leaders engaged in ideological campaigns to display their loyalty to the then Party Secretary General Jiang Zemin during 2001-2004, see Shih (2008).

<sup>4</sup> One example is the Great Famine, part of the Great Leap Forward movement from 1959-1961. Kung and Chen (2011) argue that those party elites who had the highest incentive for promotions into the top echelons of party hierarchy made greater efforts to carry out Mao's radical grain procurement policy, in order to look good in front of Mao. Their actions, thus led to higher death rates in provinces under their jurisdictions.

to secure their political livelihood, they have strong motivations to carry out policies in line with the preference of their patrons to demonstrate their loyalty, even at the cost of social interests.

In contrast, for those who are excluded from dominant factions, and therefore are endowed with significantly less political resources and left vulnerable to attacks from the dominant factions, such factionalism compels them to seek help from forces outside the factions and the regime, i.e., from grassroots constituents. Given their limited resources, marginalized elites could hardly resort to the costly strategy of clientelism by providing a continual stream of material benefits to supporters (Bueno de Mesquita et al. 2003). Instead, they have to provide social public goods such as growth-enhancing institutions to economically benefit their constituents, thereby winning grassroots support.<sup>5</sup>

As long as the marginalized politicians' shaky status and their vulnerability to attack remains due to factional struggles within the regime, the aids they offer to their local selectorate will be continuous and long-lasting, which is indispensable

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<sup>5</sup> Students of China studies have observed that, in many localities, local officials often connect strongly and collude with their local constituents to protect them from the encroachment of radical state policies, to help them get around state regulations or prohibitions against deviant economic activities, or to facilitate the cooperation between local government and local people in pushing forward rural non-state industrialization (Oi 1985, 1997; Liu 1992; Tsai 2006). Hence, compared with current scholarship which attributes local officials' close connections with ordinary people to their local native values and identity, our research provides an additional political economy interpretation for why and under what circumstance such elite-mass linkage could be so deep-rooted and pervasive in a Leninist system like China.

for de facto protection of private property rights and fostering entrepreneurship under the communist regime. In addition, when the marginalized elites are loosely connected to higher authorities so that they have ex ante difficulty in credibly signaling their loyalty, and when signaling loyalty causes giant waste and misallocations of economic resources that would have been used otherwise to benefit local people and society, it would have been a risky strategy for the marginalized elites to demonstrate loyalty to the higher-ups at the expense of their grassroots constituencies due to the incompatibility between courting the power holders and meeting the popular desire for better economic well-being through broad-based economic development. Therefore, at equilibrium local political elites who are not included in the dominant factions will invest less resources in loyalty demonstration but more resources in promoting local economic welfare.

Our research is related to recent literature on information revelation over loyalty in authoritarian regimes. Based on cross-country case studies, many scholars point out that authoritarian countries have contrived various methods for revealing such information. For example, the propaganda campaigns in China (Shih 2008) and national and regional elections in Russia (Reuter and Robertson 2012) help authoritarian leaders assess the political loyalty of their subordinates. Similarly, Svolik (2012) argued that many authoritarian countries set up seemingly democratic institutions, e.g., legislature and elections, etc, to mitigate the information asymmetry between the dictators and other ruling elites.

These authors assume that subordinates in authoritarian regimes have the

same motivation to show loyalty to their patrons. Unlike them, we argue that local politicians' loyalty demonstration should first and foremost be viewed as a decision based on the tradeoff between demonstrating loyalty to their patrons or cultivating a grassroots political foundation. The former strategy requires the economically inefficient and wasteful investment of sending loyalty signals, while the latter strategy leads to the growth-enhancing investment of social public goods. The equilibrium result is contingent on local officials' power status, i.e., their connections with the power holders, shaped by factionalism.

This paper is also related to the theoretical debate within the wider literature on politicians' recruitment and appointment, in the context of authoritarianism in general, and of China in particular. On one hand, China's nomenklatura system is viewed as a prime example of appointing cadres based on their ability to generate economic growth, i.e., the central government successfully makes use of a national cadre appointment and promotion system to induce regional administrators to compete with each other to generate economic growth, in order to win promotion in the ruling CCP (Chen et al. 2005; Li and Zhou 2005; Xu 2011). Such a personnel management and evaluation system is emulated by the sub-provincial governments at various levels, e.g., county and township governments, to spur economic growth and maximize fiscal revenues (Landry 2008; Whiting 2004; Edin 2003). However, recent quantitative studies have found no evidence for growth-based promotions at prefectural and city levels (Guo 2007; Landry 2008). At the central level, Shih et al. (2012) found that, through much of the reform

period, factional ties with top leaders, rather than performance-based measures, boosted the chances of climbing higher in the CCP upper echelons.

Our findings in this research are consistent with the skeptics who question whether authoritarianism can seamlessly walk the line between meritocratic and loyalty-based standards of promotion and appointment. As the Zhejiang case shows, officials from the counties with better economic performance can hardly guarantee their career advancement, because they are excluded from the provincial dominant faction. Moreover, our research helps illuminate why, in a communist state such as China, the loyalty-based and performance-based standards are incompatible: authoritarian politics in general encourages political elites to indulge in a game of demonstrating loyalty to the king makers, thus diverting countless resources to non-productive usage, and resulting in huge economic waste and inefficiency. Only those who are naturally marginalized by the dominant faction have sufficient incentive to enhance economic institutions and governance.

### **3 The Model**

We develop a simple model that characterizes the policy choices of local politicians under factional politics. A local politician<sup>6</sup> makes policy decisions under the premier concern of political survival, which is contingent both on the protection by higher-level patrons and on the supports from his grassroots

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<sup>6</sup> A representative local politician can be an individual decision maker, or a group of political elites who belong to the same faction and share the same policy preferences.

constituents. Therefore, the local politician's policy decision is indeed twofold: signaling his loyalty to the patrons and developing local economy through public investment. Both activities are economically costly and financed through local taxation. Moreover, we assume local politicians are *ex ante* heterogeneous in terms of their political connections with the patrons.

This model is based on Cai and Treisman (2005), where they explore capital competition across regions. Here, we focus instead on how factional politics could affect the policy choices of local politicians in a competitive equilibrium, and on its implications on local economic development. Besides, it is worth attention that our model here is a static one, where we do not investigate the endogenous formation and evolution of political connections.

### 3.1 Setup

Consider an economy where there are  $N$  local jurisdictions, each governed by a local politician  $g_i, i=1, 2, \dots, N$ . The local politicians differ in their political connections with the patrons at higher level. For simplicity, we assume among the local politicians,  $M < N$  of them are well-connected, while the other  $N - M$  are poorly-connected. We denote the group of well-connected politicians as  $\bar{G}$ , and the poorly-connected as  $\underline{G}$ .

The premier concern of a local politician is political survival, which is determined jointly by the effective output of loyalty signaling to his patrons, and the local economic output that benefits local constituents. Therefore, a local

politician  $g_i$ 's,  $i=1, 2, \dots, N$ , payoff is

$$u_i = \theta_i S_i + Y_i \quad (1)$$

where  $S_i$  represents signaling expenditure, and  $Y_i$  is local gross economic output.<sup>7</sup>  $\theta_i$  is a parameter measuring signaling efficiency, and

$$\theta_i = \begin{cases} \bar{\theta}, & \text{if } g_i \in \bar{G} \\ \underline{\theta}, & \text{if } g_i \in \underline{G} \end{cases}$$

with  $0 < \underline{\theta} < \bar{\theta} < 1$ . Therefore, a well-connected  $g_i$  is more efficient in signaling his loyalty to the patron than a poorly-connected one.<sup>8</sup>

The gross output of  $Y_i$  is in the form of Cobb-Douglas,

$$Y_i = f(k_i, I_i) = A k_i^\alpha I_i^\beta \quad (2)$$

where  $k_i$  is local private capital, and  $I_i$  is local public investment, such as infrastructure or other public investments that facilitate economic output. We assume decreasing return to scale, e.g.,  $\alpha + \beta < 1$ .

We assume capital is fully mobile across local jurisdictions, and the total capital stock is  $K = \sum_{i=1}^N k_i$ , which is taken as given. Each local government has an initial fiscal revenue of  $R_0$ , and a local government's budget constraint is thus

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<sup>7</sup> To be sure, signaling loyalty can sometime cause overall growth by boosting investment in projects favored by the patron. However, the beneficiaries of such growth cannot be potential supporters of the poorly-connected. To distinguish the heterogeneous effect of growth, we restrict  $Y$  to be the output that benefits private sector foremost.

<sup>8</sup> One thing worthy of attention is that, our model is not a signaling model, in which signaling private information plays a central role. Instead, our model is about signaling activity, which is substitutable to economic output  $Y$ , and there is no information asymmetry in our model.

$$I_i + S_i = R_0 + t_i Y_i \quad (3)$$

where  $t_i$  is the tax rate in region  $i$ .

We investigate a static game where all the local governments simultaneously make their decisions. A local politician  $g_i$  selects his signaling expenditure  $S_i$ , public investment  $I_i$  and tax rate  $t_i$  to maximize the value of the payoff function of equation (1).

### 3.2 Results

As private capital is fully mobile across different regions, it is necessary that in equilibrium the net return of private capital must be the same across regions.

Let  $r$  be the equilibrium net return of capital, then in equilibrium it is necessary that

$$r = (1-t_i) \frac{\partial f}{\partial k_i} = \alpha(1-t_i) A k_i^{\alpha-1} I_i^\beta, \quad i=1, 2, \dots, N$$

Furthermore, we assume  $N$  is large enough and each local politician takes  $r$  as given in equilibrium. Then, in equilibrium

$$k_i^* = \frac{\alpha(1-t_i)Y_i}{r} = \left[ \frac{\alpha A}{r} (1-t_i) I_i^\beta \right]^{\frac{1}{1-\alpha}} \quad (4)$$

which defines the equilibrium capital allocation,  $k_i^*$ , as function of  $t_i$  and  $I_i$ . The following result is obvious.

**Lemma 1:** In equilibrium, other things equal, more private capital will be allocated to regions with lower tax rate  $t_i$  and higher public investment  $I_i$ .

$$\frac{\partial k_i^*}{\partial t_i} < 0 \quad \frac{\partial k_i^*}{\partial I_i} > 0$$



*Proof:* Take log on both sides of equation (4), and it is easy to show that

$$\frac{\partial k_i^*}{\partial t_i} = \frac{-k_i^*}{(1-\alpha)(1-t_i)} < 0, \text{ and } \frac{\partial k_i^*}{\partial I_i} = \frac{\beta k_i^*}{(1-\alpha)I_i} > 0$$

The intuition behind this result is straightforward: higher tax rate or lower government investment will drive away private capital, as both government policies will reduce the net marginal returns of capital. Next, we investigate a local politician  $g_i$ 's optimal policy choice, which includes the optimal levels of signaling expenditure  $S_i$ , public investment  $I_i$  and tax rate  $t_i$ . The problem for a local politician is as below

$$\begin{aligned} \max_{I_i, S_i, t_i} \quad & \theta_i S_i + f(k_i(t_i, I_i), I_i) \\ \text{s.t.} \quad & I_i + S_i = R_0 + t_i f(k_i(t_i, I_i), I_i) \end{aligned} \quad (5)$$

where the equilibrium capital allocation  $k_i^* = k_i(t_i, I_i)$  is governed by equation (4).

Substituting the budget constraint of the government and by rearrangement, the first order conditions for optimization are

$$\frac{\partial u_i}{\partial t_i} = \theta_i A k_i^\alpha I_i^\beta - (\theta_i t_i + 1) \alpha A k_i^\alpha I_i^\beta \frac{1}{(1-\alpha)(1-t_i)} = 0 \quad (6)$$

$$\frac{\partial u_i}{\partial I_i} = (\theta_i t_i + 1) \left( \alpha A k_i^{\alpha-1} I_i^\beta \frac{\beta K_i}{(1-\alpha)I_i} + \beta A k_i^\alpha I_i^{\beta-1} \right) - \theta_i = 0 \quad (7)$$

Moreover, the second order sufficient conditions are satisfied given our assumption of technology. From the first condition of equation (6), we have the following expression of optimal tax rate

$$t_i^* = (1-\alpha) - \frac{\alpha}{\theta_i} \quad (8)$$

It is evident that  $t_i^*$  is strictly increasing in  $\theta_i$ . We let  $\bar{t}$  denote the optimal tax rate for a well-connected politician, and  $\underline{t}$  that for a poorly-connected one, and we get the following result.

**Lemma 2** In equilibrium, a well-connected local politician chooses higher tax rate than a poorly-connected one, that is,

$$\bar{t} > \underline{t}$$

From the second condition of equation (7), we get the following condition for optimal government investment

$$I_i^* = \left[ \left( 1 + \frac{1}{\theta_i} \right) \beta A k_i^\alpha \right]^{\frac{1}{1-\beta}} \quad (9)$$

A first glance of equation (9) reveals that  $I_i^*$  decreases in  $\theta_i$  and increase in  $k_i$ . Let  $\bar{I}$  and  $\underline{I}$  denote respectively the optimal government investment by a well-connected and a poorly-connected politician, and a formal result is summarized as below

**Lemma 3** In equilibrium, a poorly-connected local politician invests more in public investment than a well-connected leader, that is,

$$\underline{I} > \bar{I}$$

*Proof:* First taking log of equation (9),

$$(1-\beta)\ln I_i = \ln(\beta A) + \ln\left(1 + \frac{1}{\theta_i}\right) + \alpha \ln k_i(t_i, I_i)$$

and then taking partial differentiation with respect to  $\theta_i$ , we get

$$\frac{(1-\beta)}{I_i} \frac{\partial I_i}{\partial \theta_i} = -\frac{1}{(1+\theta_i)\theta_i} + \frac{\alpha}{k_i} \left( \frac{\partial k_i}{\partial t_i} \frac{\partial t_i}{\partial \theta_i} + \frac{\partial k_i}{\partial I_i} \frac{\partial I_i}{\partial \theta_i} \right)$$

After some simple re-arrangement, we get

$$\frac{(1-\alpha-\beta)}{(1-\alpha)} \frac{1}{I_i} \frac{\partial I_i}{\partial \theta_i} = -\frac{1}{(1+\theta_i)\theta_i} + \frac{\alpha}{k_i} \frac{\partial k_i}{\partial t_i} \frac{\partial t_i}{\partial \theta_i}$$

The right hand side of the equation is negative as  $\frac{\partial k_i}{\partial t_i} < 0$ , and on the left handside,  $\alpha + \beta < 1$  by assumption. Therefore, we have  $\frac{\partial I_i}{\partial \theta_i} < 0$ .

From the above two lemmas and the expression of  $k_i(t_i, I_i)$  in equation (4), we get the following result about the equilibrium capital allocation, where  $\bar{k}$  and  $\underline{k}$  follow the same notation rule as above.

**Lemma 4** In equilibrium, a politically poorly-connected region attracts more private capital than a well-connected one, that is,

$$\underline{k} > \bar{k}$$

#### 4 Historical background, data, and measurements

The simple model developed in section 3 provides several testable hypotheses. Lemma 2 and lemma 3 suggest that areas ruled by the poorly connected politicians will have a more growth-enhancing business environment with lower tax burdens and more investment in socially public goods. Lemma 1 considers the responses of private investors to the difference in governance across localities, and the final equilibrium is embodied by lemma 4. In this section we use county-level data in the Zhejiang province of China to test if the empirical evidence are consistent with the theoretical predictions. Specifically, we will present evidence showing how the intraprovincial factional politics affected tax

burdens, public expenditures (on public goods), and, eventually economic growth rates across counties in Zhejiang province.

#### 4.1 Factionalism in Zhejiang since 1949

Testing the above hypotheses requires data on factional politics to distinguish politicians who belong to the dominant faction from those who are excluded from the patron-client network. Fortunately, a natural experiment of the pre-1949 revolution in Zhejiang province led to the formation of two opposing factions in 1949 that still persist today. One faction was established by the central army, among others the Third Field Army, which entered and took over the province in 1949. The military officials and the civilian cadres affiliated with the central army system were called the Southbound Cadres (SCs), because the vast majority of them were from the Northern provinces, e.g., Shandong, Jiangsu, etc. As the central army conquered many parts of Zhejiang, these areas were under the direct control of the SCs (hereafter the non-guerrilla area). Another faction was led by the local guerrilla cadres (LGCs), who had developed into powerful forces through independent guerrilla warfare against the then ruling Nationalist Party (GMD) before 1949. In 1949, even before the central army entered Zhejiang, the local guerrillas had taken over 16 county seats on their own and put more under their direct control (hereafter the guerrilla area). Therefore in 1949 the political power in Zhejiang was shared by the SC group and the LGC group.

In the ensuing power struggle, the LGCs were disadvantaged not only because the SCs sent by the party center were seen as enforcers for the ruling

power holders,<sup>9</sup> but also because the LGCs had minimal direct contact with the party center during the guerrilla warfare period, let alone any close personal ties with prominent figures in the party center. As a result, the SCs held more powerful positions in provincial leadership than the LGCs during most of the post-1949 period. Figure 1 shows the evolution of composition of the party's provincial standing committee (PPSC), the paramount power body in the province, from 1950 to 1994.<sup>10</sup> As we can see, until the early 1980s more than 60 percent of members sitting in the PPSC were still SCs, while, by the end of the 1980s the proportion of LGCs was less than 20 percent.<sup>11</sup> Moreover, although the first-generation SCs began to vanish from the political arena by the early 1990s, the networks they cultivated during the Mao era persevered, and continue to play a role in the post-Mao era.<sup>12</sup> Even today, as expected, the confrontation between the

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<sup>9</sup> For example, both Tan Zhenlin, the first top provincial leader after 1949, and his successor Jiang Hua, who was in charge of Zhejiang for nearly 12 years, from 1954 onwards, were Mao's close aids before 1949.

<sup>10</sup> In the figure, the SCs are those who are directly from the Third Field Army and its affiliated civilian officials who entered Zhejiang in 1949. The LGCs are those who participated in the guerrilla warfare before 1949. We do not include those who were elevated to the PPSC only after 1949 as well as those who were transferred to Zhejiang from outside provinces after 1949. So the sum of the SCs proportion and the LGCs proportion can be less than 1.

<sup>11</sup> In fact, at local level, even in many counties taken over by the LGCs senior positions such as party county secretaries and county heads were occupied by the SCs. But LGCs continued to maintain a majority status below the county level, including at township and village levels, and therefore to a large extent swayed the de facto policy implementations in local society in practice.

<sup>12</sup> The power struggle between the two groups has always been quite complicated

SCs and the GCs are still pervasive across locales in Zhejiang,<sup>13</sup> and most provincial senior officials are mainly recruited from the traditional sphere of the influence of the SCs, which are typical non-guerrilla regions,<sup>14</sup> as well as from the province-affiliated SOEs, rather than from places traditionally under the control of the LGCs. In addition, the SC continues to dominate provincial leadership, while the LGC group is largely marginalized. In short, factionalism born in the Mao era is still alive and well. The politics in Zhejiang, therefore, enable us to exploit the information about factionalism in the province to test our hypotheses.

[Figure 1 about here]

#### 4.2 Data and measurement

The factionalism in Zhejiang introduced in section 4.1 suggests that we can

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over such a long period. Basically speaking, the SCs were on the offensive and maintained the upper hand in the fight until the mid-1960s. For example, among the fourteen members serving in the first session of the PPSC (1949-1954), only three of them had guerrilla backgrounds. However, after Yang Siyi and Sha Wenhan were purged from the PPSC in 1957, until 1970 no one in the PPSC was from the LGC camp. The SCs were substantially weakened during the Cultural Revolution, compared to their previous position, and were no longer able to persecute the LGCs in the same manner as they had been doing before. In the post-reform era, the two groups have continued to jostle for power, but in a much gentler fashion.

<sup>13</sup> In a field interview with a local party cadre, he told the authors that in the county he lives, the power struggle between the two camps is still fierce. Oral source, in Tian'tai county, August 2009.

<sup>14</sup> These regions are well known as the so-called Hangzhou-Jiaxing-Huzhou area.

measure local politicians' factional ties according to where they are serving their offices. For local politicians in localities which belonged to the sphere of influence of the guerrillas before 1949, their political connections with the provincial leadership have been rather weak after 1949, while their counterparts in localities that are under the control of the southbound cadres have maintained tight connections with the provincial authority since 1949. Thus we divide Zhejiang's counties into two categories: guerrilla counties (GCs) and non-guerrilla counties (non-GCs). A county is viewed as a GC as long as any one of the following criteria is met: (1) There were military forces established as early as the Anti-Japanese War (AJW) period (1937-1945), or (2) the county city was liberated by local guerrilla, rather than by the central field army, in 1949. Otherwise this county is viewed as a non-GC. Correspondingly, we construct a dummy variable GC taking value of 1 if it is viewed as a guerrilla county and of 0 otherwise. The definition of GCs/Non-GCs captures the fact that in Zhejiang the de facto local power configuration at county level and below and the resulting policy outcomes are not simply shaped by nominal local leadership and individual leading cadres, but instead are basically influenced by the conflicts and power balance between the two political groups, i.e., LGCs and SCs, and therefore are influenced by the differentiated incentives of local political elites as well, including those county and township level cadres (Zhang and Liu 2013; Zhang, Liu, and Shih 2013).<sup>15</sup> Panel

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<sup>15</sup> In this vein, many scholars have noted that in China even local officials and cadres at grassroots levels can significantly influence policy implementations and its consequences, e.g., by selectively carrying out some policies whereas blocking

A of Table 1 (the first row) gives the number of GCs and Non-GCs.

Our theory suggests that local political elites' policy choices are affected by their factional ties with their patron at higher levels. To measure the policy stances of a locality (county), we use two main variables in terms of the actual policy outcomes: county tax burdens as per capita county tax revenue (PTR)<sup>16</sup> and county public expenditures on social public goods as per capita county fiscal expenditure on education (FISCAL\_EDU).

As for the county tax burden variable of PTR, it is noteworthy that it only considers the tax revenues submitted to subnational governments, including provincial government and county government, but excludes the revenues going to

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others, no matter whether these policies are assigned by the central government or by their supervisors. See O'Brien and Li (1996), Oi (1985), Liu (1992), Tsai (2006).

<sup>16</sup> The PTR does not include extra-budgetary revenues (EBR), which is another revenue source for many local governments in China. Unlike tax revenues, EBRs are ad hoc fees, levies and charges on businesses and individual persons such as peasants under different names and justifications, and the local government has the full discretion over its usage. Thus EBRs can be viewed as a kind of implicit taxes. In this research we do not consider EBRs because many counties do not report extra-budgetary revenue figures until after 1999 so that the total observations reduce by nearly half if we take the EBRs into account. Even after 1999, many counties still avoid disclosing any information about extra-budgetary revenues. No doubt this will downplay the effect of factional politics since these non-guerrilla counties tend to conceal their extractive tax-collection behaviors. However, if we include EBRs when calculating the per capita tax burdens, despite the considerable loss of observations, we still get similar results as what we report here. For space reason, we do not present these results, which are available on request.



the central government. The reason is that under the current Tax-sharing System (*fen shui zhi*) introduced in 1994, the central government established its own tax collection capabilities (state tax bureau) to get all tax revenues belonging to the center.<sup>17</sup> County government only has the discretion to levy local income taxes.

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The data for constructing guerrilla county dummy variable are from various county gazetteers, and dozens of official publications, government documents, and archival materials collected by the authors. The original data for policy variables, i.e., tax burdens as well as public expenditures on education, are from The Fiscal Data of All Prefectures, Counties, and Cities of China from 1993 to 2005. Finally, we have unbalanced data covering 53 counties spanning 1993 to 2005. Panel B of table 1 gives the descriptive statistics of the policy variables.

[Table 1 about here]

## 5 Estimation strategy and results

### 5.1 Estimated equation

The baseline equation to be estimated is

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<sup>17</sup> Even taxes shared between the central and subnational governments are collected by the central government, with those taxes for the subnational governments returned to them later on.

<sup>18</sup> The Tax-sharing System does not stipulate how the subnational fiscal system ought to work. Because of this, subprovincial fiscal institutions vary substantially across provinces in China. Zhejiang adopts a so-called province-governing-county (*sheng guan xian*) fiscal system in which county government collects all local income taxes and then shares it with the provincial government. For a detailed account of Zhejiang's intraprovincial fiscal system, see Qian and Zhang (2017).

$$\ln(Policy_{it}) = \alpha \cdot GC + \beta \cdot \ln(X_{it}) + \theta \cdot G_i + \gamma \cdot T + \nu_t + \varepsilon_{it}$$

where subscripts  $i$  and  $t$  are  $i^{\text{th}}$  county and  $t^{\text{th}}$  year, respectively. GC is the guerrilla county dummy.<sup>19</sup> Policy stands for the policy variables, including per capita tax burdens as PTR and public expenditures on education as FISCAL\_EDU. According to our theory, we expect the estimated coefficient of GC to be negative when the dependent variables is PTR and to be positive when the dependent variable is FISCAL\_EDU.

X includes two control variables reflecting the social and economic environments, that is, per capita GDP and total population. Particularly, we use one year lagged per capita GDP to address the potential endogeneity problem. G includes three variables controlling for a county's geographical features: logarithm of the shortest distance from the county seat to Hangzhou (the provincial capital city, DISTANCE), logarithm of the altitude of the county seat (ALTITUDE), and a dummy variable for when the county is a coastal county (COAST). T is time trend variable.  $\nu_t$  is year fixed effect.  $\varepsilon_{it}$  is error term. All monetary variables (expenditures and income) are measured in 1993 price and therefore are

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<sup>19</sup> The GC dummy captures the cross-sectional variation between guerrilla counties and non-guerrilla counties, but not temporal variation in the nature of factional ties with the provincial authority. Since our main objective is to contrast policy differences between local officials in different counties belonging to the two different factions, which result from the institutional feature shaped in 1949 and persisted in to today in the sense that they do not change after 1949, failing to capture the temporal variation in factional connections with the provincial patrons does not invalidate our results. For a recent work using similar identification strategy, see Lü and Landry (2014).

comparable. We use Prais--Winsten regressions with panel corrected standard errors (PCSEs) that correct for panel heteroskedasticity and contemporaneous correlations by assuming an AR(1) structure.

## 5.2 Results

Table 2 shows the results of the estimation of the baseline model. The first column shows the results when the dependent variables is PTR, in which the estimated coefficient of GC is negative and statistically significant at the 5 percent level, suggesting that guerrilla counties have lower tax burdens, measured as per capita local tax revenue. This result is consistent with our theoretical prediction that localities that have weak political connections with the provincial leadership should have lower tax burdens. The marginal effect of being a guerrilla county is sensible. According to the estimated coefficient, if a non-guerrilla county turned into a guerrilla county, then its per capita local tax revenue will decrease by around 10.3 percent.

Among the control variables, both lagged per capita GDP and total population have positive coefficients and are statistically significant. For the marginal effect of income level, on average one percent increase of per capita GDP is associated with a 2.3 percent increase of the tax burdens in column 1. For the marginal effect of population size, on average a one percent increase of county population will lead tax burdens to increase by 0.8 percent. In addition, all three of the geographical variables are not significant in column 1.

Column 2 reports the results for county public expenditure on education. As expected, the coefficient of GC is positive and statistically significant at the 1 percent level. However, the marginal effect of being a guerrilla county is not as large as those in the first column. With all other things being equal, if a non-guerrilla county had turned into a guerrilla county, its public expenditure on education would have increased by 2 percent. In addition, a one percent increase of per capita GDP in the last year corresponds to a 0.53 percent increase in public expenditure on education, and a one percent increase of county population size will decrease the expenditure on education by 0.16 percent.

Column 3 presents the results obtained when the dependent variable is the annual growth rate of per capita GDP. If factional politics affect the establishment of growth-enhancing institutions by influencing local politicians' resource allocation, then it should affect local private sector growth, as well. Lemma 4 in section 3 also predicts that a region that is poorly-connected, politically speaking, attracts more private capital than a well-connected one. Since we do not have private investment and growth data, we use the annual growth rate of county per capita GDP as a proxy for them.<sup>20</sup> The rationale of using the annual growth rate of per capita GDP is that Zhejiang's economic growth in the reform era has been relying mainly on its private sector growth, which is dubbed as the Zhejiang model. As we can see from the results in column 3, GC has a positive and very significant

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<sup>20</sup> The annual growth rate in tth year is calculated as  $(\text{Growth of } Y_t) = \text{Ln}\left(\frac{Y_t}{Y_{t-1}}\right)$

coefficient, suggesting a guerrilla county income level as per capita GDP will grow faster each year by nearly two percent more than a non-guerrilla county, all other things being equal.

[Table 2 about here]

### 5.3 Robustness Check

To see if the above results and inferences are robust, we first adopt a new metric to distinguish between guerrilla counties and non-guerrilla counties. In the old definition of GC, all counties liberated by local guerrillas on their own in 1949 were labeled as guerrilla counties. However, some of them only rarely, or even never, experienced guerrilla activities before their arrival, and thus the guerillas' de facto influence in these counties was still rather weak after 1949. By virtue of this, it might seem arbitrary to categorize these counties as guerrilla counties, since it was relatively easy for the southbound group to take their place after 1949. We address this potential problem by constructing a new dummy variable GC\_new, which excludes those counties that were liberated by the guerrillas but had little or no guerrilla activities prior to 1949. As a result, six counties which are labeled as guerrilla counties by the definition of GC are now regarded as non-guerrilla counties in GC\_new. Table 3 shows the estimation results using the same empirical strategy employed in section 5.1 but the explanatory variable is now GC\_new rather than GC.

As we can see, with the modified definition of guerrilla counties, the regression results do not significantly differ from those in Table 2. In column 1,

the per capita tax burden is 13 percent lower in a guerrilla county than that in a non-guerrilla county (compared with a 10 percent gap in Table 1). In column 2, guerrilla counties tend to spend more public money on education than non-guerrilla counties. On average, per capita expenditure on education in a guerrilla county is 2 percent higher than that in a non-guerrilla county. Finally, in column 3, a guerrilla county grows faster by 2.1 percent annually than a non-guerrilla county.

[Table 3 about here]

As a second step for the robustness test, we study the within-group variations among those guerrilla counties (which take the value of 1 in both GC and GC\_new). We observe that the local guerrillas in different localities may differ greatly from each other in terms of guerrilla warfare strategies and tactics before 1949. To take this into account, we create two new dummy variables: one dummy variable is GC\_area1, which takes the value of 1, if in a county there are active guerrilla forces but they are not the main forces and there are no guerrilla headquarters established in that county. Otherwise its value is 0. The second dummy variable is GC\_area2, which takes the value of 1 if in a county where the main guerrilla military force are garrisoned and the guerrilla headquarters are located in that county. Otherwise its value is 0. The new estimation results are shown in Table 4.

As we can see, in column 1, guerrilla county dummies (both GC\_area1 and GC\_area2) have negative coefficients and are statistically significant. According to

the estimated coefficients, compared with the non-guerrilla counties, the per capita tax burden is 16 percent lower in guerrilla counties ( $GC\_area1=1$ ) with active guerrilla activities but where no military forces or headquarters were garrisoned in the counties before 1949, while that gap is 9.3 percent in guerrilla counties ( $GC\_area2=1$ ) with military forces or headquarters garrisoned in the counties before 1949.

When it comes to public expenditure on education (column 2 results), guerrilla counties tend to spend more on education than non-guerrilla counties. And the marginal effects are close, i.e. in a guerrilla county with  $GC\_area1=1$ , the per capita expenditure on education is 2.2 percent higher than that in a non-guerrilla county, while the gap is 1.9 percent in a guerrilla county with  $GC\_area2=1$ . Finally, in column 3 the marginal effects of being guerrilla counties are statistically significant, i.e., 2.2 percentage points higher, in terms of per capita GDP growth rate, in  $GC\_area1=1$  counties and 1.9 percentage points higher in  $GC\_area2=1$  counties, respectively.

[Table 4 about here]

We also conduct several other sensitivity tests to see if our findings are sensitive to changes of sub-samples, alternative specifications, and competing hypotheses. First, we add a new control variable **COMPETITION** as the median growth rate of all counties, except for the county under concern, into the regressions. According to the RDA hypothesis, local officials compete with each other in order to get promotions. To take this potential mechanism into account,

we control for COMPETITION in all regressions by using the same empirical strategies employed in Table 2, Table 3, and Table 4. In most cases, our explanatory variables (GC, GC\_new, GC\_areas) are still significant and have the expected coefficients, while the COMPETITION variable is not statistically significant.

Second, we look at if the pattern we found above still holds when we average all the monetary variables across entire periods and use cross-county OLS estimation. To be sure, by using the averaged values rather than the yearly data in the county-year panel, the total observations are reduced to 52. Despite the considerable loss in the number of observations, we are fortunate to see that in most results the explanatory variables still plays a significant role in reducing per capita tax burdens,<sup>21</sup> increasing per capita education expenditures, and promoting per capita GDP growth.

In addition, we drop the samples in 1993 to see if the introduced Tax-sharing System in 1994 leads to any dramatic changes to our findings. Second, we drop some counties, such as Daishan county and Shengsi county, etc., because their economies rely disproportionately on fishing industry. Third, we employ other regression methods, including ordinary OLS, random panel effect method, and so on, to run the regressions. We found our results are robust to all of these changes.<sup>22</sup>

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<sup>21</sup> When extra-budgetary revenues are included, the explanatory variables GC and GC\_new still have negative coefficients but are no longer statistically significant at conventional levels.

<sup>22</sup> For space reason, we do not report these results here. They are available on request.



Finally, we control for county leaders' personal backgrounds and political connections with provincial leadership (Jia et al. 2014; Shih et al. 2012). To do this, we glean data on a county's county party secretary (CPS) and county head (CH) to construct three variables: a dummy variable for the local background of CPS/CH (=1, if CPS/CH was born in the county or escalated their career from within the county; =0, otherwise); CPS/CH's connections with provincial leadership, measured as the proportion of provincial party standing committee (PPSC) members who once shared previous working experience (professional link) with the CPS/CH in the county, in the same administrative or party unit for over one year, within two administrative steps of one another before they served in the PPSC (Shih et al. 2010; Mayer et al. 2015). We found in a majority of these tests our conclusions still hold, and they further confirm our argument that in Zhejiang local policy choices as well as its outcomes are equilibria resulting more from factional politics between the two groups than from individual leading officials' personal preferences and decisions.<sup>23</sup>

#### 5.4 Endogeneity Issue

An empirical issue regarding the validity of the above findings is that both the formation of the guerrilla/non-guerrilla counties and the policy and growth variables in effect reflect some conditions that simultaneously drive them. For example, some may hypothesize that local cultural factors and traditions could

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<sup>23</sup> Ibid.

cause some counties to be more restive than others in both the pre-1949 and the post-1949 periods, which meant that they were sites of guerrilla garrisons before 1949 and are now more capitalistic. Although such concerns have theoretic grounds, we believe they do not apply to this research. As the historical research by Zhang and Liu (2013) has shown, the pre-1949 revolutionary history in Zhejiang does not support such a doubt. The establishment of Zhejiang's main guerrilla areas, as well as the buildup of the guerrilla's strength, resulted from historical events that were beyond the control of the revolutionaries, and thus can be regarded as random events that have little to do with local societal, cultural, and geographic conditions.<sup>24</sup> Second, if local conditions play a big role in driving both the formation of the types of counties and current policy outcomes, then it must have exert its impact over a long-term horizon. A way to test this is to compare the economic variations around 1949 between counties. Therefore we

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<sup>24</sup> The two biggest guerrilla areas, Zhe'nan Guerrilla Base Area (ZNGBA) and Zhe'dong Guerrilla Base Area (ZDGBA), were both established by the revolutionaries from outside provinces in different periods. For example, ZNGBA was first established by a column of the red army which was defeated by the GMD in Jiangxi province and was forced to retreat to the Zhejiang province. The remnant of this army first escaped to the southwest Zhejiang in 1935 but was defeated again shortly. They were forced to continue fleeing in to Zhe'nan (the southern Zhejiang) by the late 1935, where they established the ZNGBA. As pointed out by Benton (1992), they would not have survived 1937, let alone become stronger after, if it weren't for invasion by the Japanese that year, which triggered Xi'an Accident which forced the GMD and the CCP into a truce against their shared enemy. Similarly, the GDGBA was established by revolutionaries who entered eastern Zhejiang in 1944 from Shanghai. See Appendix A for details.

contrast the county-level per capita industrial output (PCIO) in 1952 between the guerrilla/non-guerrilla dummies defined above.<sup>25</sup> The t-test results show that either the non-guerrilla counties had higher PCIO than the guerrilla counties, or that the difference between the two types of counties is not statistically significant at all conventional levels.<sup>26</sup>

Besides the above evidence suggesting that today's regional economic differences are shaped by the post-1949 factional politics rather than by the compounding factors endemic to local societies, we adopt a formal endogenous treatment (ET) model to identify the effects of political connections by viewing the formation of GCs as an endogenous binary-variable treatment so as to allow for correlation between the unobservables that affect the treatment and the unobservables that affect the potential outcomes (Heckman 1978). To implement the ET estimation, besides the three county characteristics such as DISTANCE, ALTITUDE, and COAST, we include two additional variables into the treatment assignment: one is GC\_Neighbor, measured as the proportion of a county's neighboring counties which had active guerrilla activities before 1949; the other is BORDER, a dummy variable for whether a county is located alongside the border line separating Zhejiang and other provinces (like Fujian province, An'Hui

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<sup>25</sup> Except for PCIO, there are no other systemic statistics of social and economic status as early as 1952 at county level in Zhejiang.

<sup>26</sup> We also regress PCIO in 1952 on the guerrilla/non-guerrilla dummies, after controlling for the geographical variables included in Table 2-Table 4. The regression results are very similar to that of the t-test comparisons.

province, etc). <sup>27</sup> Table 5 presents the results of the ET estimation. From column 1 to column 3 are results when the outcome variables are per capita tax revenues, public expenditures on education, and per capita private output growth rate, respectively. In the first two columns, the Wald test p-values at the bottom of the Panel B indicate that the treatment variable (GC) should be viewed as endogenous in the model. In all the three columns, the treatment variable GC has the expected signs and is statistically significant. In fact, the marginal effects of the treatment become larger after we take the endogeneity issue into account. Based on the estimation results, if a non-guerrilla county turned into a guerrilla county, then its per capita local tax revenue will decrease by around 14.4 percent, its per capita expenditure on education will increase by 3.2 percent, and the private sector growth rate will increase by 1.4 percent, respectively.

[Table 5 about here]

Based on the ET estimation, we further consider how the GC treatment effects interact with the power distribution at the top of the provincial power hierarchy. Our theory in fact suggests that when a politician's political status in the power distribution changes, his/her policies will change accordingly to reflect such

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<sup>27</sup> We prefer the endogenous treatment model to the Instrumental Variable model because the treatment variable, GC, is a binary dummy variable so ET model is more appropriate in our case. However, we also tried the IV estimation in which GC\_Neighbor and BORDER are used as exclusive instruments for GC, and we got very similar results as what we report here.

changes. To test this interaction effects, we first divide all members sitting in the Zhejiang provincial party standing committee (PSC), the paramount power body of a province, into three groups: the Guerrilla group (those who were elevated from the GC counties), the Southbound Cadre group (those who were recruited from the SC counties), and the Outsider Group (who were transferred to Zhejiang from other provinces by the central government). We then calculate the share of the Guerrilla groups in the total PSC members (GC\_PSC) in various years and control for the interaction between GC and GC\_PSC in the ET model. We already confirm that guerrilla counties tend to have lower tax burdens, greater expenditures on education, and faster private sector growth rate. However, we expect that such economic effects should be weakened when there were more PSC members who climbed up the power hierarchy from guerrilla counties since we believe the more representatives the guerrilla counties have in the PSC should improve the political situation of politicians in the guerrilla counties relative to their counterparts in the non-guerrilla counties.

The new results after controlling for the interaction effects are reported in column 4 (for per capita tax revenues), column 5 (for expenditures on education), and column 6 (private sector growth rate), respectively.<sup>28</sup> Figure 2a - Figure 2c illustrate how the effects of GC vary with the whole value range of GC\_PSC,

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<sup>28</sup> Because GC\_PSC has a same value in each year for all the counties, so in column 4-column 6 we do not include the dummy variables for the various years as we do in column 1-column3.

which are derived from the results of column 3-column5, respectively. Figure 2a shows that in contrast to the non-guerrilla counties, the guerrilla counties have lower tax burdens, while the gap between the two types of counties tends to be reduced as the value of PC\_PSC increases. Figure 2b and Figure 2c show that in contrast to non-guerrilla counties, the guerrilla counties have greater per capita fiscal expenditures on education and higher private sector growth rate, respectively, but the differences between them become smaller as the value of PC\_PSC increases. In fact, in figure 2c, after the value of PC\_PSC increase to a certain level (0.3), the differences in private sector growth rate between the two types of counties are no longer statistically significant. All of these results are consistent with our theoretical expectations.

## **6. Conclusion**

In this paper, we study how political factionalism affects the policy choices of local politicians in the context of China's authoritarian political system. We argue that in order to secure their political survival, local political elites who belong to dominant faction will invest more in loyalty signaling to have protection or support from the powerful patrons, while the others who are politically marginalized will focus more on delivering good governance and public goods provisions to win over support from local grassroots constituents. With the aid of a unique county-level dataset collected from Zhejiang province during the period of 1994-2005, we found compared with counties under the rule of marginalized faction (i.e., the GC group), counties under the sphere of influence of the dominant

faction (i.e., the SC group) had higher tax rates, lower public expenditures on education and social welfare, and a slower economic growth rate.

One insight this research offers into the political economy of authoritarianism is that the logic of factional politics, combined with historical shocks, can make a politically centralized communist state such as China no longer economically monolithic, since how political elites perform economically can vary substantially with their differing status within the ruling party. This helps us understand why within China a huge economic variance exists across various regions, even within a province, and such variations can persist through long periods as long as the factional conflicts unfold in the similar manner as we depict in this article. For example, in Zhejiang province, it has been long noted that local economic development models differ substantially between GCs and Non-GCs, in terms of local policy orientations toward private sector and property rights protections (Zhang and Liu 2013). Similar scenarios are found between Su'nan (Southern Jiangsu) and Non-Su'nan regions in Jiangsu province (Zhang et al. 2017), between Mindong (Eastern Fujian) and Non-Mindong regions (Fang et al. 2017), and so forth. Furthermore, we suspect that the mechanism of local factionalism and its effects on policy choices on the part of local elites are common in the developing world, especially where historical shocks have produced elite cleavages similar to the ones identified in this research, e.g., the local natives versus newly arrived Kuomintang (KMT) in Taiwan and northerners versus southerners in Vietnam after the communist victory (Edmund 2008).

Another natural question is, given the obvious importance of maintaining close relationships with powerful patrons in authoritarian politics, why don't those politically marginalized officials make more of an effort to join the dominant faction? Theoretically speaking, officials on the political periphery can participate in the competition of displaying loyalty to the powerful patrons in order to be absorbed into the small circles of the latter. Given the fact that Zhejiang's factional politics have remained basically unchanged over the past six decades,<sup>29</sup> we hypothesize that, for those political elites excluded by the core faction, the chance of being admitted into it is small, therefore in practice it is dangerous for the marginalized officials to show loyalty at all costs to the powerful patrons. Testing this hypothesis, however, is beyond the scope of this research, and we leave this work to the future.

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<sup>29</sup> Zhejiang is not unique in this regard. Recent studies on China's other provinces make the similar observation that the provincial power distribution between a province's factions has remained rather stable since 1949. See Liu et al. (2012) for a case study on Hebei province.



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Table 1 Descriptive Statistics

Panel A:					
Variable Name	County Obs. (=0)	County Obs. (=1)	County Obs. (=2)		
Guerrilla County dummy	16	37			
Guerrilla County dummy_new	22	31			
Guerrilla County dummy_area	22	19		12	
Panel B:					
Variable name	County-yr Obs.	Mean	Std. Dev.	Min	Max
Per Capita Tax Burden	786	97.78	102.68	0.14	635.17
Per Capita GDP	800	8473.78	6208.07	1011.07	50819.34
Per capita expenditure on Education	800	79.36	59.89	13.31	520.61
Annual growth rate of Per Capita GDP	737	0.12	0.07	-0.87	0.40

Table 2 Estimation results: basic results

	Tax Burden	Expenditure on Education	Annual GDP Growth rate
Guerrilla County dummy	-0.37 (0.15)**	0.09 (0.03)***	0.02 (0.01)***
Log (per capita GDP) <sub>-1</sub>	1.15 (0.20)***	0.31 (0.04)***	-0.003 (0.01)
Log (population)	0.75 (0.20)***	-0.19 (0.02)***	0.01 (0.00)**
Log (distance to Hangzhou)	-0.17 (0.11)	-0.03 (0.03)	-0.01 (0.01)
Log (altitude of county seat)	-0.00 (0.06)	0.02 (0.02)	-0.01 (0.00)**
Costal Dummy	0.03 (0.15)	0.02 (0.05)	0.01 (0.01)
Time Trend	0.01 (0.03)	0.13 (0.01)***	-0.00 (0.00)**
Year Fixed effect	YES	YES	YES
R2	0.52	0.96	0.30
No. of Observations	624	520	624

Reported in parentheses are robust standard errors. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

Table 3 Robust test results - 1: new definition of Political connection

	Tax Burden	Expenditure on Education	Annual GDP Growth rate
Guerrilla County dummy_new	-0.49 (0.16)***	0.10 (0.03)***	0.02 (0.01)***
Log (per capita GDP) <sub>-1</sub>	1.26 (0.22)***	0.29 (0.04)***	-0.01 (0.01)
Log (population)	0.77 (0.20)***	-0.20 (0.02)***	0.01 (0.00)*
Log (distance to Hangzhou)	-0.13 (0.11)	-0.03 (0.03)	-0.01 (0.01)**
Log (altitude of county seat)	0.02 (0.06)	0.02 (0.02)	-0.01 (0.00)**
Costal Dummy	-0.02 (0.15)	0.04 (0.04)	0.01 (0.01)
Time Trend	-0.00 (0.03)	0.14 (0.01)***	-0.00 (0.00)*
Year Fixed effect	YES	YES	YES
R2	0.53	0.96	0.30
No. of Observations	624	520	624

Reported in parentheses are robust standard errors. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

Table 4 Robust Test results 2

	Tax Burden	Expenditure on Education	Annual GDP Growth rate
Guerrilla County dummy_area1	-0.58 (0.19)***	0.10 (0.03)***	0.02 (0.01)***
Guerrilla County dummy_area2	-0.34 (0.12)***	0.09 (0.04)***	0.02 (0.01)***
Log (per capita GDP) <sub>-1</sub>	1.29 (0.22)***	0.29 (0.04)***	-0.01 (0.01)
Log (population)	0.74 (0.19)***	-0.19 (0.02)***	0.01 (0.01)**
Log (distance to Hangzhou)	-0.07 (0.11)	-0.04 (0.03)	-0.01 (0.01)**
Log (altitude of county seat)	0.02 (0.06)	0.02 (0.02)	-0.01 (0.00)**
Costal dummy	-0.05 (0.14)	0.04 (0.04)	0.01 (0.01)
Time Trend	-0.01 (0.03)	0.14 (0.01)***	-0.00 (0.00)*
Year Fixed effect	Yes	Yes	Yes
R2	0.54	0.96	0.30
No. of Observations	624	520	624

Reported in parentheses are robust standard errors. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

Table 5 Endogenous Binary Variable Treatment Effect Model Results

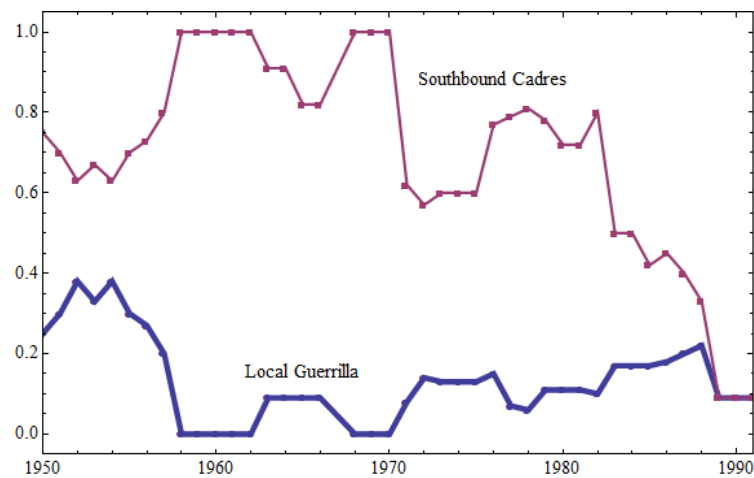
	Tax Burden	Expenditure on Education	Annual GDP Growth rate	Tax Burden	Expenditure on Education	Annual GDP Growth rate
Panel A: the outcome equation						
Guerrilla County dummy (GC)	-0.50*** (0.10)	0.15*** (0.03)	0.01*** (0.005)	-0.70** (0.30)	0.31** (0.12)	0.06*** (0.02)
GC*GC_PSC				0.74 (1.07)	-0.65 (0.41)	-0.19** (0.08)
Proportion of PSC members from guerrilla counties (GC_PSC)				1.67 (0.92)	0.30 (0.35)	0.01 (0.07)
Year Fixed effect	Yes	Yes	Yes	No	No	No
Panel B: the treatment (GC) equation						
GC_Neighbor	6.90*** (0.93)	4.56*** (0.69)	5.79*** (0.74)	6.93*** (0.94)	5.10*** (0.76)	5.80*** (0.74)
Border dummy	-4.07*** (0.36)	-3.63** (0.39)	-4.18*** (0.35)	-4.07*** (0.36)	-4.02*** (0.35)	-4.20*** (0.34)
No. of Obs.	624	520	624	624	520	624
P-value of Wald Chi2 test for independence	0.02	0.00	0.56	0.00	0.00	0.56

Reported in parentheses are robust standard errors. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

Note: All regressions in both Panel A include Log (per capita GDP)<sub>-1</sub>, Log (population), Log (distance to Hangzhou), Log (altitude of county seat), Coastal dummy, and Time trend, and in Panel B include Log (distance to Hangzhou), Log (altitude of county seat), and Coastal dummy. For space reason, we do not present the estimated coefficients of these variables.



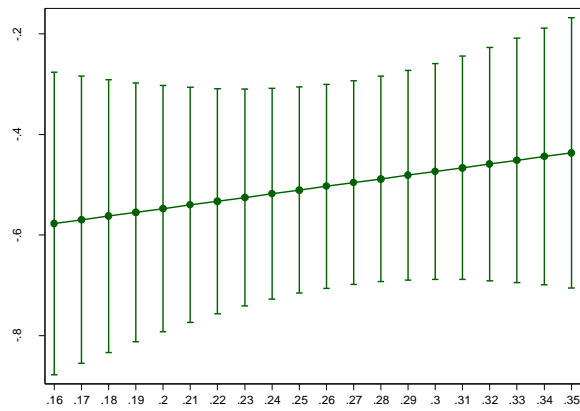
Figure 1: Power Contrast in Zhejiang Provincial Party Standing Committee, 1950-90



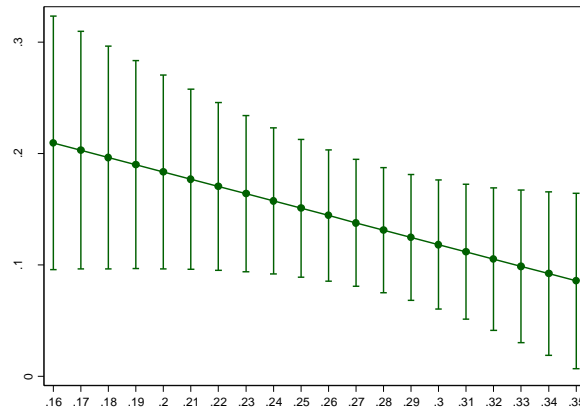
Note: In the figure, the SCs are those who are directly from the Third Field Army and its affiliated civilian officials who entered Zhejiang in 1949. The LGCs are those who participated in the guerrilla warfare before 1949. We do not include those who were elevated to the PPSC only after 1949 as well as those who were transferred to Zhejiang from outside provinces after 1949. So the sum of the SCs proportion and the LGCs proportion can be less than 1.

Figure 2 The contrast of average treatment effects of GC

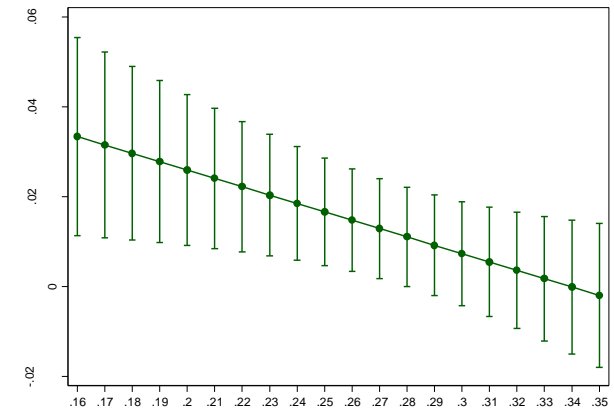
a. the outcome variable is per capita tax revenues



b. the outcome variable is per capita expenditure on education



c. the outcome variable is private sector growth rate



figures on the x-axis are values of GC\_PSC (the proportion of PSC members who were elevated from the guerrilla counties)

Note: figure 2a, 2b, and 2c are based on the estimation results of column 4, column 5, and column 6 in Table 5, respectively.

RE: "Policy Choice and Economic Growth under Factional Politics: Evidence from a Chinese Province"

November 5, 2017

Dear Xiaobo,

We appreciate the careful readings of our manuscript by the reviewer, as well as her/his valuable suggestions. The following are the summary of our response to the two reviewers' questions and suggestions.

1. The reviewer's main concern is that if our key explanatory captures the political connections of counties. She/he proposes to look at county leaders' connections (to the provincial authority).

**Our response:** We believe in Zhejiang case current explanatory variable (GC) is superior to other alternative variables, such as those based on connections of individual politicians as suggested by the reviewer. The reason is that in Zhejiang context the role of local individual politicians is rather limited. Rather, it is the interactions of officials and cadres at various levels from the two factions (SCs versus GCs) that forge the final equilibria of local policy making and its implementations. For example, from 1949 onwards, almost all senior positions from provincial level down to county level are occupied by SCs but they cannot simply sway the policy outcomes across different localities because these policies meet resistances from or were altered by local GCs to fit their interests (Zhang and Liu forthcoming). For other works on local selective implementations, see O'Brien and Li (1996), Oi (1985), Liu (1992), Tsai (2006). Hence in the formal texts, especially in the introduction of the power structure in Zhejiang, we place more emphasis on the group identity of local political elites rather than individual county leading cadres such as county party secretary or county head. We put these points in the last paragraph including a new footnote 16 in the revised draft.

Take two recent salient examples. One is that in 2005 or so, then the Taizhou city leaders decided to merge Huangyan County into Taizhou by turning the county into a district unit of Taizhou city. The order was opposed by Huangyan's local cadres, who even deposed the head of Huangyan People's Congress, who were appointed by Taizhou city leadership to oversee the task of merging Huangyan into Taizhou. Huangyan's local cadres even appealed to provincial authority and the central government as well. Eventually both Taizhou and Huangyan made a compromise in 2008-2009 so that Huangyan became a district of Taizhou but remained its old fiscal independence and autonomy. The other example is in Wenzhou (another typical GC area) its party secretary in 2014-2015 ordered to remove crosses from churches in its jurisdiction. The campaign stoked wide protests from local society and tacit resistance from local cadres, so that the campaign was put to end only lasting for one year.

Another reason we do not rely on county leaders' personal political connections as the main explanatory is the relevant data is seriously restricted. Having the reviewer's concern in mind, we glean personal data on Zhejiang's county party secretary (CPS) and county head (CH) but eventually we only have in total 75

county-year observations. Response Table 1 at the end of this Response Letter gives a detailed list of CPS/CH across different counties and years that is available for empirical analysis.

Based on this information, we construct three variables to reflect CPS/CH's personal features and their connections as well, including: a dummy variable for the local background of CPS/CH (=1, if CPS/CH was born in the county or escalated their career from within the county; =0, otherwise); CPS/CH's connections with provincial leadership, measured as the proportion of provincial party standing committee (PPSC) members who once shared previous working experience (professional link) with the CPS/CH in the county, in the same administrative or party unit for over one year, within two administrative steps of one another before they served in the PPSC (Shih et al. 2010; Mayer et al. 2015). We found in a majority of these tests our conclusions still hold, and they further confirm our argument that in Zhejiang local policy choices as well as its outcomes are equilibria resulting more from factional politics between the two groups than from individual leading officials' personal preferences and decisions. We put these points in the last paragraph of section 5.3 in the revised draft. For space reason, we do not put the table in the formal texts but instead present the results in Response Table A2 at the end of this Response Letter for your reference.

2. To better reflect the county leaders' connections, the reviewer suggests us to look at county leader's promotion and fiscal transfers a county received from above (in Zhejiang's fiscal system this is equivalent to province-to-county transfers).

**Our response:** By virtue of the same reason in Response point 1, we do not think personal promotion perspective fits Zhejiang. For example, in Wenzhou all the city's party secretary were appointed by the provincial authority in the first place and almost all of them were then promoted to higher positions, say, Wang Jianman (2004-2008) , Chen Derong (2010-2013), Chen Yixin (2013-2015),.... For these individual politicians, they indeed got big promotions to more senior positions after they finished their career in Wenzhou. But in fact Wenzhou is a typical bastion of GC faction and therefore has been one of the regions with worst relation with the provincial leadership (dominated by the SC faction). Besides, as aforementioned in Response Point 1, limited official data and poor information revelation regarding these leading cadres make it impossible to track their career path to test the driving forces behind their promotions.

But we do have data from Qian and Zhang (2017) on province-to-county transfers to test the underlying rationale of clientelism in Zhejiang. The results are presented in Response Table A3 for reference, using province-to-county earmarked transfers per capita a county received from provincial government as outcome variable. As it shows, there is significant negative relationship between transfers and GC dummy, showing that GCs indeed received less earmarked transfers compared with Non-GCs. This effect still holds even after we control for county leaders' personal background (the observations drop to 75), and the latter variables are not that important in the distribution of transfers.

Although the above results lend more support to our argument, we do not put these evidence in the manuscript because we think that clientelism is another big issue that is beyond the scope of this article. We believe it is worth doing further in-depth researches on this topic in future works.

### 3. Other responses:

(1) The reviewer asks if we can take advantage of the information of GC locals in provincial party standing committee.

We actually have done this in section 5 of the original draft.

(2) The reviewer wonders if there are other alternative explanations, e.g., GCs have stronger local state capacity and are more effective on tax enforcement.

We acknowledge that there might be other potential variables that we do not control for in this article. We do hope to control for more variables if richer data are available in the future so we can take more competing hypotheses into account. In the meantime, we believe factors such as local state capacity do not nullify the validity of our hypotheses because: firstly, local state capacity itself can likely be endogenous from factionalism as we emphasize in this article; secondly, it is hard to believe that state infrastructure capacity differs along the line between GCs and Non-GCs. Even if we accept that taxation ability is weaker in GCs due to reasons other than factionalism, it is hard to reconcile with the findings that GCs have greater investment in public goods provisions because the capacity to invest in public goods also is a reflection of state capacity.

(3) The reviewer asks why less connected agents would not tax even more to signal their loyalty to the superiors? Why embarrassing local constituents is a credible signal of loyalty to higher level patrons?

We actually have tackled the issues in the manuscript including the revised version. The two questions are relevant to each other. The key point is that there is an opportunity cost of taxing more to send loyalty signal because the more taxes local elites levy the more they hurt their grassroots constituents. This certainly put them in danger, especially when local elites have poor relationship with powerful patrons and they have to rely more on their grassroots constituents. By the same token, in such case embarrassing local constituents is not a cheap talk but a credible signal of loyalty to higher level patrons. These discussions can be found in section 2. In Conclusion section, we return to this issue and acknowledge that further research should be done to get to the bottom of the game of loyalty displaying under authoritarianism.

(4) The reviewer hopes us to add discussions on the difference in development outcomes between GCs and non-GCs, whether it persisted, and whether the difference is a Zhejiang-specific phenomenon or a more generality under authoritarianism, etc.

We revise the first two paragraphs of the Conclusion section in response to these questions. We point out that systematic difference between regions identified in this research is a more general phenomenon across China and we suspect similar logic developed in this research can apply to other developing countries, especially where historical shocks have produced elite cleavages similar to the ones identified in this

research, e.g., the local natives versus newly arrived Kuomintang (KMT) in Taiwan and northerners versus southerners in Vietnam after the communist victory.

Thank you and the reviewers for all of your suggestions on the revision of this manuscript.

I look forward to hearing from you.

Best,

Luke Qi Zhang  
Associate Professor  
China Center for Economic Studies, School of Economics  
Fudan University

Fang, Hanming et al. 2017. "Local Accountability, Factions and Economic performance: Evidence from the Chinese Province of Fujian," working paper.

Qian, Tao and Qi Zhang. 2017. "Fiscal Decentralization and Pattern of County Public Expenditures in a Chinese Province," *Annals of Economics and Finance*, 18(1): 199-223.

Zhang, Qi and Mingxing Liu. *Revolutionary Legacy, Power Structure, and Grassroots Capitalism under the Red Flag in China*. Cambridge University Press, forthcoming.

Zhang, Qi et al. 2017. "Elite Cleavage and the Rise of Capitalism under Authoritarianism: A Tale of Two Provinces in China," working paper.

Response Table 1 Data availability on County Party Secretary (CPS) and  
County Head (CH) in Zhejiang

County name	Data available for periods		County name	Data available for periods
An'Ji	2003-2005		Rui'an	2002-2005
Cang Nan	2003-2005		Shao Xing	2003-2005
Cang Shan	2003-2005		Sheng Si	2002-2005
Chang Xing	2001-2005		Sheng Zhou	2004-2005
Chun'an	2002-2005		Tai Shun	2002-2005
De Qing	2003-2005		Wen Cheng	2003-2005
Dong Tou	2002-2005		Wu Yi	2005
Fu Yang	2002-2005		Xian Ju	2005
Hai Ning	2004-2005		Yi Wu	2005
Jia Shan	2003-2005		Yong Jia	2003-2005
Jian De	2005		Yu Huan	2005
Jiang Shan	2004-2005		Yue Qing	2005
Jin Yun	2005			
Lan Xi	2004-2005			
Lin Hai	2005			
Long Quan	2005			
Pan'an	2003-2005			
Ping Yang	2003-2005			
Pu Jiang	2005			
Qing Tian	2004-2005			
Qing Yuan	2004-2005			

Response Table 2: Control for county leader's personal characteristics and networks

	(1)	(2)	(3)
<b>Panel A: outcome variable is Tax Burden</b>			
Guerrilla County dummy (GC)	-0.72*** (0.25)	-0.57** (0.28)	-0.55* (0.28)
County Party Secretary (CPS) was born in the county (yes=1, no=0)	-0.47** (0.22)		
County head (CH) was born in the county (yes=1, no=0)	-0.24 (0.19)		
CPS received formal education in college (yes=1, no=0)		-0.23 (0.25)	
CH received formal education in college (yes=1, no=0)		-0.09 (0.27)	
CPS's connections to provincial leadership			-2.47* (1.42)
CH's connections to provincial leadership			0.75 (1.17)
No. of observations	75	75	75

Reported in parentheses are robust standard errors. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . All regressions include Log (per capita GDP)<sub>-1</sub>, Log (population), Log (distance to Hangzhou), Log (altitude of county seat), Coastal dummy, and Time trend, and year fixed effect. For space reason, we do not present the estimated coefficients of these variables.



Response Table 3: Clientelism under factionalism: considering province-to-county transfers in Zhejiang

Outcome variables	(1) Log (earmarked transfers)	(2) Log(earmarked transfers per capita)
<b>Panel A:</b>		
Guerrilla County dummy (GC)	-0.09*** (0.03)	-0.09*** (0.03)
No. of observations	614	613
<b>Panel B:</b>		
Guerrilla County dummy (GC)	-0.13* (0.07)	-0.11** (0.06)
CPS was born in the county (yes=1, no=0)	0.07 (0.07)	0.05 (0.07)
CH was born in the county (yes=1, no=0)	0.16*** (0.07)	0.18*** (0.07)
No. of observations	75	75
<b>Panel C:</b>		
Guerrilla County dummy (GC)	-0.16*** (0.06)	-0.14** (0.06)
CPS's connections to provincial leadership	-0.11 (0.52)	0.05 (0.36)
CH's connections to provincial leadership	0.20 (0.37)	0.26 (0.37)
No. of observations	75	75

Reported in parentheses are robust standard errors. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . All regressions include Log (per capita GDP)<sub>-1</sub>, Log (population), Log (distance to Hangzhou), Log (altitude of county seat), Costal dummy, and Time trend, and year fixed effect. For space reason, we do not present the estimated coefficients of these variables. We do not report results after controlling for CPS/CH's education level, which is very similar to what report here.