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

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**Abstract**

This paper investigates how political elites make policy choices bearing on economy under an authoritarian regime, from the perspective of factional politics. A local leader makes policies primarily to secure his political survival, which is contingent on the protection from higher-level patrons, or on the support from his local grassroots constituents. In a simple model, we show that a local leader with close factional tie to the patrons at higher level will invest more on signaling his loyalty, while a poorly-connected one will make more efforts on spurring a broad-based economic growth to benefits his local constituents economically. Using county level data on factional politics of Zhejiang Province, China, we find that counties with weaker factional tie have lower tax burdens per capita, while spend more on local public goods provision, among others education. And the results are stable after various robustness tests.

**Keywords**: Political survival, Factional politics, Loyalty, Policy choice, Economic growth, China

# 1 Introduction and Literature Review

What motivations do dictators and their subordinates have when they make economic decisions, what are the mechanisms via which political elites' behaviors affect economic performance, like growth and investment, etc, in authoritarian countries, why do some autocrats act like benevolent dictators with long-term visions, while others are simply short-sighted tyrants, and so on? These intriguing questions have been heat debates in the field of political economy of authoritarianism.

In his seminal work, Olson (1993, 2000) distinguished "stationary bandit" from "roving bandit," arguing dictators who are stationary bandits facing no threat to his survival and thus having a long-time horizon have sufficient incentive to provide good governance because they receive much of the gains from economic growth. However, Olson's argument has been questioned by many theorists. First and foremost, no dictators are safe for sure as they always face constant threats of dethronement, either from mass uprisings or from the coup d'etat by regime insiders, or both, so that they must worry about their political survival (Bueno de Mesquita et al., 2003; Haber, 2006; Tullock, 1987; Wintrobe, 1998). As political survival rather than the economic considerations becomes autocrats' top priority, they must shape political and economic strategies and policies in a way to serve that end, including devoting huge resources both to prevent mass uprisings and to cultivate and monitor the loyalty of senior officials (Svolik, 2009), providing perks and privileges to narrow groups in exchange for the support of winning coalitions (Bueno de Mesquita et al., 2003), or even resorting to terrors such as Stalin's purges in the 1930s and Mao's Cultural Revolution in the 1960s-70s (Gregory, 2009; MacFarquhar and Schoenhals, 2006). Hence autocrats' pursuit of political survival very likely comes at the cost of economic efficiency and social public goods supply, and eventually smothers entrepreneurship as well as the long-term economic growth.

Despite the skepticism about Olson's economically benevolent dictator hypothesis, recent scholarship has argued that even if autocrats are preoccupied with political survival, they could have incentives to provide growth-enhancing institutions, among others political institutions like legislatures, parties, federalism, and even elections (Gandhi, 2008b; Gandhi and Przeworski, 2007), to attain that goal. These formal institutions enable political leaders in authoritarian countries to assure elite supporters aligning with dictator's intention, co-opt elite within the ruling bloc (Brownlee, 2007; Magaloni, 2008; Magaloni and Kricheli, 2010), or reward regime supporters (Greene, 2010; Magaloni, 2006). In the meantime, due to the quasi-democratic nature of these institutions, they in effect empower broader social forces and tie the dictator's hands against predatory actions, and thus deliver a credible commitment to potential investors that their investment will not be expropriated one day in the future (Magaloni, 2008; Myerson, 2008; Svolik, 2009). Not surprisingly, countries with these formal institutions perform much better economically than those without such institutions (Gandhi, 2008a; Wright, 2008).

However, many researchers questioned whether the above institutions are making binding commitments. For one thing, authoritarian politics is filled with lies, betrayal, and

treason, and lacks independent third party to enforce contract among key actors (Svolik, 2011), let alone those between the elite and the mass. Thus under authoritarian regime no institutions can compel politicians to honor their promises they made to their erstwhile patrons, clients, or allies. By the same token, no guarantees do economic agents have to prevent political elites from expropriating their private properties without warning.

The two opposing opinions can both find grounds on China's spectacular economic growth over the past three decades. As China being the world's largest communist regime, the so-called Chinese economic miracle to a large extent provide ammunition for the Olsonian argument that robust economic growth can happen in a system without official commitment to protection of private property.[1] Since the political strongman Deng Xiaoping and his colleagues formed a pro-reform leadership to launch the reform in 1978, the party has pursued a set of market-oriented economic policies to boost foreign and private investments (Shirk, 1993). One core feature of this system is the combination of political centralization and economic regional decentralization, which is dubbed as the regionally decentralized authoritarian (RDA) regime (Xu, 2011). The RDA regime leads China to become a major example of market-preserving fiscal federalism as the national government 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 (Jin et al., 2005; Li and Zhou, 2005; Montinola et al., 1995; Qian and Weingast, 1997). 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. As many scholars have noted, higher-level governments tend to score lower-level governments by assigning different kinds of targets to be accomplished in their jurisdictions. Failure to fulfill some "hard" targets, e.g., growth and fiscal collection, etc, can lead to unbearable administrative punishments. They believe such a performance-based scoring system is the key to understanding how local officials are motivated to intervene in their local economy (Edin, 2003; Landry, 2008; Whiting, 2004).

On the other hand, however, many scholars argue that it goes too far to assume that China's top leadership has a long-time horizon and to attribute China's economic achievement primarily to a well-designed merit-based bureaucracy. First and foremost, even in the post-Mao era, Chinese politics has been inflicted by frequent and fierce political struggles at the top, leading two of four top party leaders (Hu Yaobang in 1986 and Zhao Ziyang in 1989) to be removed from their posts through irregular means.[2] Apart from the intense political struggles at the top, since the 1990s the party, especially those local governments, have to face waves of large-scale mass protests and riots motivated by ethic

[1] Only in the fourth amendment of the Constitution made in 2004 did China for the first time after 1949 stipulated that the state honors and would protect private property.

[2] Besides, over the past fifteen years there are two senior party officials sitting in the Politburo who were put into prison. The latest case was Bo Xilai's drama. Bo was a Politburo member and was widely believed to be a promising candidate in the line for membership in the Standing Politburo, China's paramount power agency. In January 2012, when Bo was attending a conference at the National People's Congress, the party center suddenly announced he committed grave mistakes and was then detained at home. On September 28th, he was deprived of both the party membership and the government posts.

and economic grievance (O'Brien and Li, 2006; Pei, 2006). In other words, officials at various levels have immediate political concerns of retaining office and maintaining political stability. Therefore policies would be made and resources be used in a way to primarily address these urgent non-economic goals, while bringing about economic growth may be of secondary importance.

The empirical evidence are also mixed. Some researchers have found there is positive association between sub-national fiscal decentralization and provincial economic growth (Jin et al., 2005; Lin and Liu, 2000).[3] And some research provide evidence that provincial economic growth is correlated with the promotion of the top two officials in a province (Chen et al., 2005; Li and Zhou, 2005). Many other researchers, however, argue that these findings should at best be viewed as correlation rather than causality. As Cai and Treisman (2006) argue, the CCP's top-down power structure and the soft-budget constraint faced by local authorities likely diminished the impact of fiscal federalism. They further point out that the actual evolution of Chinese economic history after 1978 does not fit neatly into the narratives of the theory of decentralization. In a recent study, Shih et al. (2012) find that factional ties with top leaders rather than performance-based measures boost the chance of climbing higher in the CCP upper echelons through much of the reform period. In fact, after controlling for the factional ties, the effect of growth on career advancement is much weakened, suggesting top leaders use promotion institutions primarily to cultivate factions rather than bolster growth or public service provisions via yardstick competition among provincial officials.

## 2 Our Argument and Hypothesis

In this research we look into the incentive issue of local officials and test how local political elites are motivated to decide on policy making that bears on economic growth and social public goods provision. We argue a local politician makes policies primarily in a way to secure his political survival, i.e., retaining office, which is contingent either on the protections offered by higher-level patrons or on the support from his grassroots constituencies who are excluded by the regime.[4] To receive protection from the higher-level patrons, signals sent by the politician to show his loyalty to the higher-ups is necessary; whereas to win the grassroots support, the politician must provide growth-enhancing policies and institutions to benefit their supporters economically. Hence the political survival issue is reduced to a policy decision on resource allocation, i.e., to invest more resources either in sending loyalty signals to court the patrons, which surely will lead to huge economic waste and inefficiency, or in providing a more growth-enhancing environment, e.g., protection of property rights, low tax, more social public goods, etc, which will bring about robust broad-based economic growth.

[3] For a detailed summary and comments on this kind of empirical findings, see Xu (2011).

[4] By grassroots constituencies, we do not mean the ordinarily people necessarily. 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.

We further argue that local political elites are not alike in terms of their relationship with higher-level power holders. While some have close ties to powerful figures at higher levels and therefore enjoy high ex ante chance of political survival by resting their political career on the patron-client networks established by the powerful patrons, others are largely excluded from the networks and their political survival is therefore exposed to huge uncertainties if they counter on the existing networks to secure their political life. Hence a politician who is politically marginalized by the factional politics within the regime is obliged to seek support from the grassroots constituents who are largely excluded by the regime. The policy implication is clear: those who have close factional ties with the patrons would invest more resources to signal their loyalty to the patrons, while those who do not have such ties will take more efforts to build up a growth-enhancing business environment to take care of the local economy under their jurisdictions.

This research therefore sheds light on how factional politics in the Leninist system influences political elites deciding on policy making bearing on economy. It is almost a near-consensus view that factionalism and patron-client relations are pervasive in communist countries (Dittmer, 1995; Easter, 1996; Nathan, 1973). One fundamental problem with the factional politics, however, is that due to the lack of regular votes and free media, patrons are always in the dark about the loyalty of their subordinates (Wintrobe, 1998). Moreover, because there has no an outside third party beyond the patrons to monitor and enforce the factional bargain, they are actually vulnerable to clients' likely betray during a power crisis that can dethrone the patrons. In other words, the patrons have the dire need to obtain knowledge of the subordinates' loyalty to minimize the likelihood of the latter's reneging on the factional bargain. This put revealing loyalty to the patrons a central task on the part of the clients at all echelons of bureaucracy.[5] Thus contrary to the expectation of the benevolent dictator theory which predicts a game of competition for performance-based promotion, instead in practice we more likely see a competition of showing loyalty to high-ups in communist countries. Sending loyalty signals, however, is not only a nauseating job in psychological sense, but will consume huge economic resources leading to massive resource misallocation and waste. In China context, examples include launching propaganda campaigns to bootlick powerful political figures, giving lucrative government contracts to the friends and family members of power holders at high levels, building showoff infrastructure projects to court the high-ups with ambitious economic visions. Under some extreme circumstances, this can cause economic disarray and even disasters.[6]

On the other hand, by relying on a relatively small and narrow group to secure political life, factionalism discriminates many state officials who are not included in the factions and compels them to seek help from forces outside the regime, i.e., from the

[5] For an excellent research 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).

[6] One such example is the Great Famine happened in the Great Leap Forward movement in 1959-1961. Kung and Chen (2011) argued those party elites who had incentive of getting promotion at the top echelon of the party hierarchy made greater efforts to carry out Mao's radical grain procurement policy in order to look good in front of Mao, thus leading to higher excessive death rate in provinces under their jurisdictions.

grassroots constituents. Therefore for those political elites who are politically marginalized by the dominant factions within the regime, providing socially public goods such as growth-enhancing institutions to benefit their own constituents economically has become a necessary policy option to win over the grassroots support.[7] To be sure, the usefulness and efficacy of the protection offered by the politically marginalized elites to their selectorate can vary substantially as the big political environment changes, e.g., the change from the Mao era to the post-Mao era. But as long as those politicians' shaky status resulted from the factional struggle within the regime remains no obvious change, it is still imperative for them to maintain the alliance with the grassroots constituents. By the same token, the aids they offer to their allies will be continuous and long-lasting, which is inevitable for de facto protection of private property rights and fostering entrepreneurship under communist regime.

# 3 The Model

In this section, we develop a simple model that characterizes the policy choice of local government leaders between signaling their loyalty to the patron at higher level and developing local economy through public investment. Based on this simple model, we will derive the main testable hypotheses in this paper.

This model is based on Cai and Treisman (2005), where they focus on capital competition across regions with different economic endowment. In our model, we focus instead on local government leaders' difference in political connection with the patron, and investigate how it would affect the different policy choice of local government leaders. More importantly, under some simple assumptions, we achieve close-form solutions of policy variables.

## 3.1 Setup

Consider an economy where there are $N$ local governments, each governed by a local political leader $g_i$, $i = 1, 2, \cdots, N$. The local leaders differ in their connection with the political patron at higher government level. For simplicity, we assume among the local political leaders, $M < N$ are well connected, while the other $N - M$ are poorly connected. We denoted the group of well-connected leaders as $\bar{G}$, and the poorly-connected as $\underline{G}$. Other things equal, a well-connected local leader have more chance of promotion than one who is poorly-connected, and within each group, we assume the local leaders are identical.

[7] Students of China studies have observed that in many localities local officials often connect strongly and collude with their local constituents to prevent 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 (Liu, 1992; Oi, 1985, 1997; Tsai, 2006). Hence compared with current scholarship which attribute local officials' close connections with ordinary people to their local native identity with which they commonly share and tie them together, our research provide an additional political economy interpretation for why and under what circumstance such elite-mass linkage could be so deep-rooted and pervade in a Marxist Leninist system like China.

As pointed out in section 2, the patron at higher government level care about not only economy, but primarily the loyalty of $g_i$'s to him, which may play an important role in his decision of promoting a local government leader. Therefore, it is important for local government leaders with close ties to the patron to signal their political loyalty to the latter, through ideology campaigns, flattering, building window-dressing projects, and so on. For those poorly-connected politicians, however, they have to foster their own political foundation by benefiting their local constituents, through public investment to promote growth. So we formulate a local government leader $g_i$'s payoff as

$$u_i = \theta_i S_i + Y_i \tag{1}$$

where $S_i$ represents signalling expenditure or cost, and $Y_i$ is local gross output. $\theta_i$ 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 signalling his loyalty to the patron than a poorly-connected one.

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

$$Y_i = f(k_i, I_i) = A k_i^{\alpha} I_i^{\beta} \quad \alpha + \beta < 1 \tag{2}$$

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, $\alpha + \beta < 1$.

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

$$I_i + S_i = R_0 + t_i Y_i \tag{3}$$

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

We investigate a game where all the local governments simultaneously make their decisions. A local government leader $g_i$ select the signaling expenditure $S_i$, public investment $I_i$ and tax ratio $t_i$ to maximize the value of the payoff function of (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 equal across regions. Let $r$ be the equilibrium net return of capital, then in equilibrium it is necessary that

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

Furthermore, we assume $N$ is large and each local government leader takes $r$ as given in equilibrium. Therefore, in equilibrium

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

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,more private capital will be allocated to regions with lower tax rate $t_i$ and higher public investment $I_i$*

$$\frac{\partial k_i}{\partial t_i} < 0 \qquad \frac{\partial k_i}{\partial I_i} > 0$$

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

$$\tfrac{\partial k_i}{\partial t_i} = \tfrac{-k_i}{(1-\alpha)(1-t_i)} < 0 \qquad \tfrac{\partial k_i}{\partial I_i} = \tfrac{\beta k_i}{(1-\alpha) I_i} > 0$$

■

We then solve a local government leader, $g_i$'s optimal policy choice, which includes the optimal levels of signaling expenditure $S_i$, public investment $I_i$ and tax ratio $t_i$. The problem is as below

$$\mathcal{P}_i \quad \begin{array}{cc} \max_{I_i, S_i, t_i} & \theta_i S_i + f\left(k_i\left(t_i, I_i\right), I_i\right) \\ s.t. & I_i + S_i = R_0 + t_i f\left(k_i\left(t_i, I_i\right), I_i\right) \end{array} \tag{5}$$

where the equilibrium capital allocation $k_i\left(t_i, I_i\right)$ is given by (4). Substituting the budget constraint and by rearrangement, the objective function is now

$$u_i\left(t_i, I_i\right) = \theta_i R_0 + \left(\theta_i t_i + 1\right) f\left(k_i\left(t_i, I_i\right), I_i\right) - \theta_i I_i$$

The first order conditions are

$$\begin{aligned} \frac{\partial u_i}{\partial t_i} &= \theta_i f\left(k_i, I_i\right) + \left(\theta_i t_i + 1\right) \frac{\partial f}{\partial k_i} \frac{\partial k_i}{\partial t_i} = 0 \\ \frac{\partial u_i}{\partial I_i} &= \left(\theta_i t_i + 1\right) \left( \frac{\partial f}{\partial k_i} \frac{\partial k_i}{\partial I_i} + \frac{\partial f}{\partial I_i} \right) - \theta_i = 0 \end{aligned}$$

Substituting back, we get

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

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

from the first condition (6), we have the optimal tax rate

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

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 government leader, and $\underline{t}$ for a poorly-connected one, and we have the following result.

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

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

From the second condition (7), we have the optimal public investment level

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

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 the optimal public investment by a well-connected and a poorly-connected government leader, respectively, and a formal result is given as below

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

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

**Proof.** Take log of (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 take 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

$$\underbrace{\frac{1-\alpha-\beta}{(1-\alpha)}\frac{1}{I_i}\frac{\partial I_i}{\partial \theta_i}}_{\text{positive}} = \underbrace{-\frac{1}{(1+\theta_i)\theta_i} + \frac{\alpha}{k_i}\frac{\partial k_i}{\partial t_i}\frac{\partial t_i}{\partial \theta_i}}_{\text{negative as } \frac{\partial k_i}{\partial t_i}<0}$$

and it is obvious that $\frac{\partial I_i}{\partial \theta_i} < 0$. ■

From the above two lemmas and the expression of $k_i(t_i, I_i)$, (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 measurments

The simple model developed in section 3 provide several testable hypotheses. Lemma 2 and lemma 3 suggest that areas ruled by the poorly connected politicians will have better growth-enhancing business environment: lower tax burdens and more public investments in socially public goods. Lemma 1 considers the responses of private investors to the governance difference across localities which resulted from the outcome of factional politics, and the final equilibrium is embodied by lemma 4. In this section we use county-level data in 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 established by the powerful patron. Fortunately, in Zhejiang the provincial revolutionary history before 1949 led to the formation of two opposing factions in 1949, which persisted into today: one faction was established by the central field army which entered and took over the province in 1949. The military officials and the civilian cadres affiliated with the field army system were called the Southbound Cadres (SCs) because the vast majority of them were from the Northern provinces, e.g., Shandong, He'bei, etc. As the field 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 then the ruling party the Nationalist Party (GMD) before 1949. In 1949, even before the field 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 the representation the will of top power holders,[8] but also because the LGCs had minimal direct contact with the party center during the guerrilla warfare period, let alone had close personal ties with any prominent figures in the party center. As a result, the SCs had the supremacy over the LGCs in the provincial

[8] 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 since 1954, are both Mao's close aids before 1949.

leadership in most of the post-1949 period. In effect, until the early 1980s over 60 percent of members sitting in the provincial standing party committee were still SCs, while by the end of the 1980s the proportion of LGCs were less than 20 percent. Moreover, although the SCs of the first generation began to vanish in the political arena from the early 1990s, the networks they cultivated during the Mao era had been preserved and continued to play its role in the post-Mao era. Even today, most provincial senior officials are mainly recruited from the traditional sphere of the influence of the SCs, which are typical non-guerrilla regions (i.e., the so-called Hangzhou-Jiaxing-Huzhou area), as well as from the province-affiliated SOEs. In short, factionalism born in the Mao era is still alive and active until now. And no doubt in the provincial leadership the SC group has been the dominant faction, while the LGC group is largely marginalized. The politics in Zhejiang therefore enables us to exploit the information about the factionalism in the province to test our hypotheses.

### 4.2 Data and measurement

The factionalism in Zhejiang introduced in section 4.1 suggests that we can measure local politicians' factional ties with the provincial leadership according to where they are serving their offices. In localities which belonged to the sphere of influence of the guerrillas before 1949, after 1949 local politicians' political connections with the high-ups should be rather weak, while in other localities which are under the control of the southbound cadres after 1949 local politician should have tight connections with the provincial authority. 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 featuring with active guerrilla forces before 1949 as long as any one of the following criteria is met: 1. there were military forces established during the Anti-Japanese War (AJW) period, or 2. there were military forces established during the Liberation War (LW) period, or 3. the county city was liberated by local guerrilla rather than by the field army. 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. Panel A of table 1 (the first row) gives the number of GCs and Non-GCs.

Our theory suggests that local politicians' policy choices are affected by their factional ties with the patron at higher levels. To measure the policy stances of a locality (county), we use four main variables: county tax burdens as per capita county tax revenue (PTR) and per capita (county tax revenue + county extra budgetary revenue, PTEBR),[9] county public expenditures on social public goods as per capita county fiscal expenditure on education and per capita county fiscal expenditure on health care & social security.

As for the county tax burden variable of PTR, it is noteworthy to point out that it only considers the tax revenues submitted to subnational governments, including provincial government and county government, but excludes the revenues going to the central government. The reason is that under current Tax-sharing System (*fen shui zhi*) intro-

[9] Mathematically, PTEBR equals PTR plus per capita county extra budgetary revenue.

duced in 1994, the central government established its own tax collection capabilities (*state tax bureau*) to get all tax revenues belonging to the center.[10] County government has only discretion of levying local income taxes.[11] Second, PTR does not include extra-budgetary revenues, which is another revenue source for local governments in China. Unlike tax revenues, extra-budgetary revenues are ad hoc fees, levies and charges on businesses and individual persons such as peasants under different names and justifications, and local government has the full discretion over its usage. The calculation of PTEBR thus takes extra-budgetary revenues into account by viewing it as a kind of implicit taxes.

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 social public goods, are from The fiscal data of all prefectures, counties, and cities of China (quanguo di'xian'shi caizheng tongji ziliao) from 1993 to 2005. All variables are measured at county level. In addition, the original fiscal data do not contain any information about how many fiscal revenues were turned over to the center. Fortunately, Qian (2011) investigated how fiscal revenues are divided between the central government and local government and we got the data from him. Finally, we have unbalanced data covering 53 counties spanning from 1993 to 2005. Panel B of table 1 gives the descriptive statistics of the policy variables.

[Insert Table 1 here]

# 5 Estimation strategy and results

## 5.1 Estimated equation

The baseline equation to be estimated is

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

where subscripts $i$ and $t$ are $i^{th}$ county and $t^{th}$ year, respectively. GC is the guerrilla county dummy. Policy stands for the policy variables, including: per capita tax burdens as PTR and PTEBR, public expenditures on social public goods as FISCAL_EDU and FISCAL_HSS. According to our theory, we expect the estimated coefficient of GC to be negative when the dependent variables are PTR and PTEBR and to be positive when the dependent variables are FISCAL_EDU and FISCAL_HSS.

X includes two control variables reflecting the social and economic environments, including, per capita GDP and total population. Particularly, we use one year lagged per

[10] Even taxes shared between the central and subnational governments should be collected by the central government and then return the part belonging to the subnational governments back to the latter.

[11] The Tax-sharing System does not stipulate how the subnational fiscal system ought to be. By virtue of this reason, subprovincial fiscal institutions vary substantially across provinces in China. Zhejiang adopts a so-called Province-governing-county (*sheng guan xian*, PGC) fiscal system in which county government collects all local income taxes and then share it with the provincial government. For a detailed account of Zhejiang's intraprovincial fiscal system, see Qian (2011)

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 if the county is a costal county (COAST). T is time trend variable. $\nu_t$ is year fixed effect. $\varepsilon$ is error term. All monetary variables (expenditures and income) are measured in 1993 price and therefore are comparable. We use Prais–Winsten regressions with panel corrected standard errors (PCSEs) that correct for panel heteroskedasticity and contemporaneous correlation by assuming an AR(1) structure.

### 5.2 Results

Table 2 shows the results of the estimation of baseline model. The first two columns show the results when the dependent variables are PTR and PTEBR, respectively. In the first column, the estimated coefficients of GC is negative and statistically significant at 5% level, suggesting that guerrilla counties have lower tax burdens measured as per capita local tax revenue. This result is consistent with our theoretical expectation that localities with poor connection 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.

In the second column, the dependent variable counts the extra-budgetary revenues into the calculation of tax burdens. Although the total county-year observations drop considerably due to data availability problem with the extra-budgetary revenues for many year and counties,[12] the estimated coefficient remains negative and statistically significant at 10 percent level. Due to losing many observations, the marginal effect of being a guerrilla county become less. But a guerrilla county still has 2.3 percent lower tax burdens than a non-guerrilla county, when other things are equal.

In column 1 and column 2, 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 2.3 percent increase of the tax burdens in column 1 and 1.6 percent in column 2, respectively. For the marginal effect of population size, on average one percent increase of county population will lead tax burdens to increase by 0.8 percent in column 1 and 0.13 percent in column 2, respectively.

All the three geographical variables are not significant in column 1. In column 2, only the altitude of the county seat has a significant and negative coefficient.

Column 3 reports the results for county public expenditure on education. As expected,

[12]The total observations reduce by nearly half compared to the first column. The reason is that many counties do not report extra-budgetary revenue figures until after 1999. Even after 1999, many counties still avoid disclosing any information about the extra-budgetary revenues at all. No doubt this will downplay the effect of factional politics since those non-guerrilla counties tend to conceal their extractive tax-collection behaviors.

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

Column 4 shows the results for county public expenditure on health care & social security. Contrary to the our expectation, the coefficient of GC is negative but insignificant at any conventional levels. This suggests that being a guerrilla county or a non-guerrilla county makes no difference in affecting the public expenditure on health care and social security. One possible explanation to this result is that the total observations of FISCAL_HSS are much limited, only 411 in total.

Column 5 presents the results obtained when the dependent variable is the annual growth rate of per capita GDP. If factional politics affects the establishment of growth-enhancing institutions by influencing local politician's resource allocation, then it should affect local private sector growth as well. Lemma 4 in section 3 also predicts that a politically poorly-connected region 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.[13] 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 Zhejiang model, compared with the Su'nan model which counts on collective sector as the primary growth engine. As we can see from the results in column 5, GC has a positive and very significant coefficient, suggesting a guerrilla county income level as per capita GDP will grow annually faster by nearly two percent than a non-guerrilla county, other things being equal.

[Insert Table 2 here]

### 5.3 Robust results

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 saw rare or even no guerrilla activities before the arrival of guerrillas and thus the social foundation of guerrilla group in these counties was rather weak after 1949. By virtue of this, it might be arbitrary to categorize these counties as guerrilla counties because the southbound group was easy to take root in place of the local guerrillas in these counties after 1949. We address this potential problem by constructing a new dummy variable GC_new which counts those counties liberated by the guerrillas but had little or no guerrilla activities prior to 1949 as non-guerrilla counties. As a result, six

[13] The annual growth rate in tth year is calculated as (Growth of $Y_t$) $=\ln(\frac{Y_t}{Y_{t-1}})$.

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, the updated definition of guerrilla counties result in no obvious changes to the results in Table 2. In column 1, 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), while after considering the extra-budgetary revenues the gap is reduced to 3 percent in column 2 (compared with a 2 percent gap in Table 1). In column 3, guerrilla counties tend to spend more public expenditures 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. In column 4, now the coefficient of GC_new turns into positive, compared with a negative coefficient in Table 1, but still remains statistically insignificant. Finally, in column 5, a guerrilla county grows annually faster by 2.1 percentage points than a non-guerrilla county.

[Insert Table 3 here]

Second, even among those guerrilla counties (which take value of 1 in GC and GC_new), the local guerrillas in different locales before 1949 may differ a lot as they employed different guerrilla warfare strategies and tactics which in turn influenced their strength in local societies. 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 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 having no military forces or headquarters garrisoned in the counties before 1949, while that gap is 9.3 percent in guerrilla counties (GC_area2=1) having military forces or headquarters garrisoned in the counties before 1949. After we count extra-budgetary revenues in the calculation of tax burdens (column 2 results), only in guerrilla counties of GC_area2=1 the per tax burdens is significant lower than the benchmark non-guerrilla counties (the gap is 4.3 percent), while in guerrilla counties with GC_area1=1 the statistical significance disappears. These results are not that surprising, given the total observations in column 2 are much less than in column 1.

Regarding the public expenditure on education (column 3 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. More interesting, in column 4, the per capita expenditure on health care and social security in a guerrilla county with GC_area1=1 is higher than a non-guerrilla counties by 11 percent and this marginal effect is significant at 5 percent level. But in a guerrilla county with GC_area2=1 such welfare-enhancing effect is not found. Finally, in column 5 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.

[Insert Table 4 here]

Besides, we also conduct other several sensitivity tests to see if our findings are to changes of sub-samples and alternative specifications. First, we add a new control variable COMPETITION as the median growth rate of all counties expect 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 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 the whole 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 of the number of observations, we are luck to see that in most results the explanatory variables variable still plays a significant role in reducing per tax burdens,[14] 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 economy rely disproportionally 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.

# 6 Conclusion

In this article we provide a novel framework to analyze the incentive and decision making of politicians in China. We argue politicians' motivations and behaviors are shaped by their

[14] 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.

power status in the power hierarchy, which determine if they will invest more resources in sending loyalty or providing growth-enhancing institutions. The empirical evidence of Zhejiang largely confirm our theory.

More inferences we can get from the logic of this research include: first, authoritarian countries can have huge economic waste and inefficiency as in general the politics under authoritarianism encourages political elites to indulge in a game of showing loyalty to the king makers in their political career, thus diverting countless resources to non-productive usage.

Second, even for a communist state like China the logic of factional politics, combined with historical shocks, can make it no longer politically and 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, huge economic variance, as noted by many students of China studies, exists across various regions. To be sure, examining divergent economic development models in different localities, including collecting information about local politicians' power status and their power foundations and, based on that, comparing their economic performance shall be a formidable but also a promising task. We leave these works to future research.

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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 Tax Burden 2 | 369 | 342.74 | 324.58 | 3.43 | 1674.41 |
| Per Capita GDP | 800 | 8473.78 | 6208.07 | 1011.07 | 50819.34 |
| Annual growth rate of Per Capita GDP | 737 | 0.12 | 0.07 | -0.87 | 0.40 |
| Per capita expenditure on Education | 800 | 79.36 | 59.89 | 13.31 | 520.61 |
| Per capita expenditure on Health care & Social Security | 484 | 32.77 | 39.53 | 0.04 | 277.27 |

**Table 2: Estimation results: basic results**

| | Tax Burden | Tax Burden2 | Expenditure on Education | Expenditure on Health care & Social Security | Annual GDP Growth rate |
|---|---|---|---|---|---|
| Guerrilla County dummy | -0.37** | -0.12* | 0.09*** | -0.07 | 0.02*** |
| | (0.15) | (0.07) | (0.03) | (0.14) | (0.01) |
| Log (per capita GDP)$_{-1}$ | 1.15*** | 1.00*** | 0.31*** | 0.38** | -0.003 |
| | (0.20) | (0.09) | (0.04) | (0.17) | (0.01) |
| Log (population) | 0.75*** | 0.18** | -0.19*** | -0.59*** | 0.01** |
| | (0.20) | (0.07) | (0.02) | (0.10) | (0.00) |
| Log (distance to Hangzhou) | -0.17 | -0.04 | -0.03 | -0.10 | -0.01 |
| | (0.11) | (0.05) | (0.03) | (0.15) | (0.01) |
| Log (altitude of county seat) | -0.00 | -0.05* | 0.02 | -0.06 | -0.01** |
| | (0.06) | (0.03) | (0.02) | (0.07) | (0.00) |
| Costal Dummy | 0.03 | 0.05 | 0.02 | -0.28 | 0.01 |
| | (0.15) | (0.06) | (0.05) | (0.17) | (0.01) |
| Time Trend | 0.01 | -0.67*** | 0.13*** | 0.59*** | -0.00 |
| | (0.03) | (0.15) | (0.01) | (0.03) | (0.00)** |
| Year Fixed effect | YES | YES | YES | YES | YES |
| $R^2$ | 0.52 | 0.94 | 0.96 | 0.66 | 0.30 |
| No. of Observations | 624 | 312 | 520 | 411 | 624 |

Reported in parentheses are standard errors. * Significant at 10%, ** 5%, *** 1%.

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

| | Tax Burden | Tax Burden2 | Expenditure on Education | Expenditure on Health Care & Social Security | Annual GDP Growth rate |
|---|---|---|---|---|---|
| Guerrilla County dummy_new | -0.49*** | -0.15** | 0.10*** | 0.10 | 0.02*** |
| | (0.16) | (0.07) | (0.03) | (0.13) | (0.01) |
| Log (per capita GDP)$_{-1}$ | 1.26*** | 1.05*** | 0.29*** | 0.30 | -0.01 |
| | (0.22) | (0.10) | (0.04) | (0.18) | (0.01) |
| Log (population) | 0.77*** | 0.18** | -0.20*** | -0.60*** | 0.01* |
| | (0.20) | (0.07) | (0.02) | (0.10) | (0.00) |
| Log (distance to Hangzhou) | -0.13 | -0.02 | -0.03 | -0.12 | -0.01** |
| | (0.11) | (0.06) | (0.03) | (0.15) | (0.01) |
| Log (altitude of county seat) | 0.02 | -0.04 | 0.02 | -0.11 | -0.01** |
| | (0.06) | (0.03) | (0.02) | (0.07) | (0.00) |
| Costal Dummy | -0.02 | 0.03 | 0.04 | -0.32* | 0.01 |
| | (0.15) | (0.06) | (0.04) | (0.16) | (0.01) |
| Time Trend | -0.00 | -0.76*** | 0.14*** | 0.60*** | -0.00* |
| | (0.03) | (0.17) | (0.01) | (0.03) | (0.00) |
| Year Fixed effect | | | | | |
| $R^2$ | 0.53 | 0.94 | 0.96 | 0.66 | 0.30 |
| No. of Observations | 624 | 312 | 520 | 411 | 624 |

Reported in parentheses are standard errors. * Significant at 10%, ** 5%, *** 1%.

**Table 4: Robust test results 2**

| | Tax Burden | Tax Burden2 | Expenditure on Education | Expenditure on Health care & Social Security | Annual GDP Growth rate |
|---|---|---|---|---|---|
| Guerrilla County dummy_area1 | -0.58*** | -0.11 | 0.10*** | 0.28** | 0.02*** |
| | (0.19) | (0.09) | (0.03) | (0.14) | (0.01) |
| Guerrilla County dummy_area2 | -0.34*** | -0.21*** | 0.09*** | -0.18 | 0.02*** |
| | (0.12) | (0.07) | (0.04) | (0.18) | (0.01) |
| Log (per capita GDP)$_{-1}$ | 1.29*** | 1.05*** | 0.29*** | 0.27 | -0.01 |
| | (0.22) | (0.11) | (0.04) | (0.18) | (0.01) |
| Log (population) | 0.74*** | 0.19*** | -0.19*** | -0.54*** | 0.01** |
| | (0.19) | (0.07) | (0.02) | (0.10) | (0.01) |
| Log (distance to Hangzhou) | -0.07 | -0.05 | -0.04 | -0.22 | -0.01** |
| | (0.11) | (0.06) | (0.03) | (0.16) | (0.01) |
| Log (altitude of county seat) | 0.02 | -0.04 | 0.02 | -0.10 | -0.01** |
| | (0.06) | (0.03) | (0.02) | (0.08) | (0.00) |
| Costal dummy | -0.05 | 0.04 | 0.04 | -0.27* | 0.01 |
| | (0.14) | (0.06) | (0.04) | (0.17) | (0.01) |
| Time Trend | -0.01 | -0.74*** | 0.14*** | 0.61*** | -0.00* |
| | (0.03) | (0.18) | (0.01) | (0.03) | (0.00) |
| Year Fixed effect | Yes | Yes | Yes | Yes | Yes |
| R2 | 0.54 | 0.94 | 0.96 | 0.66 | 0.30 |
| No. of Observations | 624 | 312 | 520 | 411 | 624 |

Reported in parentheses are standard errors. * Significant at 10%, ** 5%, *** 1%.