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A Model of Chinese Central Government: the Role of Reciprocal Accountability¹

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ABSTRACT

Why was the same state in China able to promote economic growth in the reform era but not in the previous thirty years? In this paper we focus on a specific aspect that might help the search for a comprehensive explanation: the specific institutional arrangement that induced autocratic government to adopt growth-enhancing policies. To this aim, we consider a standard political agency model (Besley, 2006) where the incumbent leader may be either congruent or not, and where both types need the support of the ‘selectorate’ to hold on to power. Our main result is that in autocracies without electoral discipline, to restrain the opportunistic behavior of a leader, the size of the ‘selectorate’ should be intermediate: if too small, the ‘selectorate’ is captured by the leader and has no disciplinary role; if too big, the leader’s incentives are diluted.

JEL Code: D02, H11, D74.

Key Words: Accountability, Selectorate, Political agency, Chinese economic reform.

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1. INTRODUCTION

In last thirty years, the Chinese central government has been extremely successful in promoting economic development, especially in comparison to other autocratic governments and to the Mao Zedong era. According to the official data, China has maintained an average growth rate of 9.7 percent, the per capita GDP has increased from 250 USD at the end of the 1970s to 4,705 USD (current prices) in 2010, and the number of people in absolute poverty has decreased from an early 1980s figure of 300 million to 80 million today (China Statistical Yearbook, 2010).

China's post-Maoist governing model has experienced many attempts to explain this change. Western observers frequently emphasizes the Chinese government's ability to mobilize large amounts of resources and make quick decisions, a factor attributable to authoritarianism. Meanwhile, opinions from inside China often advocate the benevolence of the Chinese Communist Party (CCP) and of the supreme national leadership. But neither authoritarianism nor the benevolence of CCP and its leaders explains the degree of accountability that the Chinese government exhibited in the reform era: if authoritarianism or the benevolence of the Party were the key to the Chinese government's commitment to economic growth, China would have succeeded thirty years ago, when the state reached its apogee of authoritarianism. Hence the root of this accountability is still vague. The point is that, while the Chinese political system remains authoritarian, substantial institutional changes have taken place in the internal structure of the system which we believe were crucial for achieving the accountability of the government and thus for its economic success.

Another genre in the transition literature attributes China's remarkable economic growth to the country's fiscal and political decentralization. Fiscal decentralization is said to have generated 'fiscal incentives' for local governments to promote economic growth, resulting in high investment and hard budget constraint (Oi, 1992; Montinola et al., 1995; Qian and Weingast, 1997; Qian and Roland, 1998). Political decentralization is thought to have stimulated local policy experiments and restrained predatory central interventions (Xu and Zhuang, 1998; Qian and Weingast, 1996). We, too, believe that these aspects are important, however they are not adequate to account for the entire success of the reform

since they ignore the role played by the central government. Of course, local actors were important in the history of Chinese reforms, but they acted as agents in a game directed from Beijing (Cai and Treisman, 2006). Even if the huge amount of direct investment made by the central government were ignored, it was still the central government who took the decisive initiative to ‘reform and open up’ (*gaige kaifang*). It is then, important to understand why the Chinese central government showed a striking degree of accountability in promoting economic growth and why this occurred only after Mao’s death. In this paper, we try to tackle this question by studying the internal political structure of China before and after Mao’s death, focusing our the analysis on the role of reciprocal accountability between the leader and the ‘selectorate’. We find that the significant increase of the size of the ‘selectorate’ after Deng Xiaoping took power makes reciprocal accountability work effectively as a disciplinary device leading to good policies.

The remainder of the paper is organized as follows. First, we outline the relevant building blocks of our theory and their connections to the existing literature. Next, we present the basic model before section four analyzes the model, describing the equilibria and discussing the interpretation of the model. Section five applies the insights derived from the model to China, before ending with a concluding last section.

2. LITERATURE REVIEW

One focal point of the literature on democratic institutions is accountability through electoral competitions, which is seen as the main mechanism for restraining opportunistic behavior by politicians. In autocratic institutions dictators do not face a general threat from partisan or electoral competitions, however they face a threat from a subset of society, the ‘selectorate’ - those elites who have the opportunity to depose a leader in a given political regime.² Tullock (1987) argued that all dictators share the same primary goal: to hold on to office at whatever cost because a failure to do so will result in jail, exile, or death. Therefore the selectorate can shape a wide variety of economic and political outcomes, and as such the role of the selectorate as a disciplinary body is at the center of our analysis.

²This expression is adopted from British parliamentary politics to define the group that has the effective power to choose leaders (Shirk, 1993, p. 71).

In this paper, we rely on three substantial works on autocracies: Shirk (1993), Bueno de Mesquita et al. (2003) and Besley and Kudamatsu (2008).

Shirk's analysis on the behavior of the Chinese central government is based on the notion of 'reciprocal accountability' between the selectorate and the leader, although without a formal model. According to Shirk, in the Chinese political system there is a sort of 'reciprocal accountability' in that 'top leaders of the party appoint the subordinate officials of the party and government' and, in turn, 'the officials in the Central Committee choose (or at least ratify the choice of) the leaders'. 'Government officials are both the agents and constituents of the party leaders; local officials are both the agents and constituents of the central leaders. Officials hold their positions at the pleasure of the party leadership, but party leaders hold their positions at the pleasure of the officials in the selectorate' (Shirk, 1993, p. 83). This paper provides a formal model of this idea of reciprocal accountability between the incumbent leader and the selectorate, focusing its analysis on the relation between the size of the selectorate and the leader's behavior.

Bueno de Mesquita et al. (2003) were the first to formally model accountability in non-democratic regimes. As a way of disciplining the incumbent leader in an autocracy, they consider the role of two subsets of citizens, the winning coalition and the selectorate, concluding that the larger the winning coalition, whose support is necessary for the incumbent politician to stay in power, the higher the level of public goods provided by the government. Hence in a democracy, public goods provision is maximized. In our paper, as in Besley and Kudamatsu (2008), there is no distinction between the winning coalition and the selectorate. In fact they coincide, and allows us to focus on the notion of reciprocal accountability as previously defined. A crucial aspect of Bueno de Mesquita et al's theory is that they model the policy mechanism as a complete information game, which is tailored to their study of the problem of political survival for oppressive leaders, but doesn't allow the analysis of the accountability mechanisms as stressed by the principled agents approach of Besley (2006), which necessarily requires an incomplete information setting where the non-congruent leader may pool with the congruent ruler to establish his or her reputation as a good guide.

In political economics, Besley and Kudamatsu (2008) is surely the most author-

itative paper on autocracies and as such provides our main reference point. Their starting point is that in any economic system, economic performances depend on the leader's accountability, which in autocracies can be achieved when the selectorate is 'powerful' enough. In their model this power depends on the fact that the replacement of the leader triggers a contest where the opposition wins with positive probability. This idea is developed within a principled agents model of government, hence using an incomplete information game played between the autocrat and the selectorate, a characteristic that we use in our model too. They are then able to show that autocracy performs better than a democracy if the selectorate is powerful and the distributional conflict is not too salient. Following this approach, we consider incomplete information on the autocrat's possible types, our model however simplifies their voting contest to enable Shirk's logic of reciprocal accountability to be used more emphatically. In particular, our model differs from Besley and Kudamatsu in at least two ways. First, as previously explained, the focus of their model is on the ability of enfranchised and disenfranchised citizens, a superset of the selectorate, to take power after the incumbent leader has been ousted, which does not allow for the study of 'reciprocal accountability'. Instead, the focus of our model is on the size of the selectorate as a proxy for its power and how this matters for both the leader and the selectorate equilibrium behavior. In this way, our model is able to explain the conditions that make reciprocal accountability effective as a disciplinary device possibly leading to good policies. In particular, we are able to derive different Political Regimes (Kleptocracy, Roving Bandit and Efficiency) as equilibrium outcomes that depend on the selectorate size. Second, our finding regarding the size of the selectorate to uphold good economic policies is different from Besley and Kudamatsu: as stated, they show that the selectorate is able to discipline policy makers in an autocracy if their hold on power is sufficiently strong and in fact they model the strength of the selectorate as an increasing function of its size. This implies that a bigger selectorate will lead to more efficient policies, but this is actually a result of their unconvincing specification of the selectorate payoff function where the patronage is not divided by the size of the selectorate. While some empirical works show that to overextend the coalitions may tempt rebellion, since the accommodation of additional partners requires, so to say, thinner slices of a relatively fixed pie (Arriola, 2009), as far as

China is concerned, the leaders often use personnel appointments as patronage to the selectorate. Hence offering a position as a lure to another client would mean denying that position to their own client or splitting that position into different jobs. In this context, an overexpanded selectorate might increase the risk of being overthrown, thus inducing the non-congruent leader to embezzle money prior to running away rather than wait to be overthrown. In particular, our model will show that under certain circumstances, as long as the risk of being excluded from the new challenger's coalition is not too high, the selectorate is able to restrain the incumbent leader from opportunistic behavior inducing growth-enhancing policies.

3. THE MODEL

The basic game is a two-period political-agency model with incomplete information played between the incumbent leader and the selectorate. The country population is normalized to 1. Let $\phi \in [0, 1]$ to be the size of the selectorate (S). The rest of the people who do not have the power to choose leaders are the citizens and their size is $1 - \phi$. Therefore in this model ϕ can be considered as an indicator of the power of the selectorate, hence of democracy: $\phi = 1$ means full democracy in the sense that the leader is chosen by the entire population, while $\phi = 0$ means one man dictatorship. Clearly, in this way we abstract from many other aspects of liberal democracy, such as the rule of law, the separation of powers, and the freedom of speech and of information, but this notwithstanding we believe this model is an interesting starting point for analyzing politicians' accountability in autocracies. In particular, our definition agrees with Bollen's (1990) that definition of 'democracy as the extent to which the political power of the elites is minimized and that of the nonelites is maximized', and where political power refers 'to the ability to control the national governing system'.³ In the specific case of China, we identify Mao Zedong or the Politburo Standing Committee as the leader in our model before or after the launch of economic reform. We identify the selectorate in Mao's regime as a tiny number of powerful people in his inner circle, including other Chinese leaders who had not been purged, his successors and his wife. Such a selectorate size had expanded significantly after Mao's death. Following

³Bollen (1990), p. 9.

Shirk (1993), we identify the selectorate at the beginning of the reform with the revolutionary elders and top military leaders; and later the selectorate expanded to a much larger coalition including also the younger generation of CCP leaders, members of the Central Committee, and other high-ranking officials of the central or local party and government apparatus.

As is normal in political-agency models, there are two types of the incumbent leader, congruent or non-congruent, that is, $T \in \{C, N\}$ with probability π of being congruent, and the selectorate revise expectations about the leader's type according to first-period outcomes. However, contrary to standard political-agency models in democracy,⁴ there is no regular general election, so the incumbent leader will be removed from office if and only if the selectorate choose to depose the leader. Since there is no heterogeneity within the selectorate, there is no collective action problem and there is no role for election: the selectorate control the leader through the single decision either to remove or to support him or her.⁵ In each period $t = 1, 2$, the (female) incumbent leader (L) is privately informed of the true state of the world $\theta_t \in \{0, 1\}$ and has to make a discrete 'general interest' policy choice denoted by $e_t \in \{0, 1\}$. The general interest requires the leader to match the true state of the world, but this would also mean foregoing her private benefits. The public payoff from the general interest policy is Δ if $e_t = \theta_t$, 0 if $e_t \neq \theta_t$. However the non-congruent leader gets a private benefit r_t from picking $e_t \neq \theta_t$, where r_t is drawn from a distribution whose cumulative distribution function is $G(r_t)$ with $E(r_t) = \bar{r}$, $G(\Delta) = 0$, and $G(r_t) > 0$ for $r_t > \Delta$; on the other hand, the congruent leader gets a null private benefit from picking $e_t \neq \theta_t$. Hence, a congruent leader will always choose the growth-enhancing policy in the interest of the whole society, while the choice of a non-congruent leader will depend on the trade-off between the desire to be reappointed by the selectorate and the realization of private benefit r_t .

To gain the loyalty of the selectorate, the leader pays a patronage to the se-

⁴See, for example, Besley (2006, chapter 3); Berganzen (2000); Maskin and Tirole (2000).

⁵By mapping the diverse dimensions of political behaviors of the selectorate onto this simple dichotomic choice, we sacrifice details and subtle political strategies; but through this simplification we are able to emphasize the point of the paper, that is, the analysis of the incentives that might induce noncongruent politicians to implement a costly but growth-enhancing action even without the threat of new election but just through the accountability towards other strategic players of the policy game.

lectorate by using direct payment or high-level government appointments. In our model, we suppose the patronage to be realized through unfair distribution of a fixed amount of wealth, X , which could be thought of as the revenue accumulated from natural resources or as economic rents from holding government positions. The leader distributes all the patronage to the selectorate and nothing to the citizens. Therefore each member of the selectorate gets $\frac{X}{\phi}$, and each citizen gets 0.⁶ At the end of each period, the (male) representative member of the selectorate observes his utility in that period and on the basis of this information decides whether to support the leader or not. If the selectorate support the leader, then the leader still holds office in the subsequent period. If the selectorate decides to oust the leader from power, he is succeeded, as a leader with no basis of support cannot survive. When the incumbent autocrat is ousted from power, a new ruler will replace her and form a new selectorate of size ϕ .

There are three important assumptions behind these game rules. First, we abstract from voting processes because we are not focusing on mechanisms for aggregating heterogenous individual preferences but on how to hold office holders accountable. Note that in Besley and Kudamatsu (2008) the role of voting is just to capture the ability of a specific group of citizens to hold on to power after the incumbent is changed, not to model the process of how the new leader is chosen. Second, and differently from Bueno de Mesquita et al. (2003), we assume that the selectorate size⁷ is stationary and exogenous. Of course, it would not be difficult to assume an exogenous dynamic process for ϕ , but it would add no further explicative power, since the point of the paper is the analysis of exogenous change in the selectorate size on the non-congruent leader's behavior. Finally, we assume that the new leader randomly picks the members of the new selectorate from the pool of the whole population, so that if the selectorate changes the incumbent leader, he would then have a probability ϕ to be included in the new coalition. Of course, politics can be characterized by a more or less formalized mechanism that regulates the selectorate recruitment. However it is not difficult to check that any selection probability that is a monotonic transformation of ϕ would not change the qualitative results of this paper. The point is that in this model ϕ formally is the

⁶Of course, this is just a normalization.

⁷Remember that in their terminology what we call the selectorate is the winning coalition.

relative size of the selectorate, but actually is a reduced form of the selectorate strength in his bargaining with the incumbent leader: the greater ϕ , the larger the number of members of the selectorate that the incumbent leader has to appease to retain power, the smaller the patronage that she can concede to each of them and thus the bigger the incentive to provide congruent policies to increase the selectorate payoff.

The single period utility function of the representative member of the selectorate in period $t \in \{1, 2\}$ is

$$U^S(e_t, \theta_t) = \begin{cases} \Delta + \frac{x}{\phi} & \text{if } e_t = \theta_t \\ \frac{x}{\phi} & \text{if } e_t \neq \theta_t \end{cases}$$

The utility function of the congruent politician (C) coincide with the selectorate's utility, so that:

$$U^C(e_t, \theta_t) = U^S(e_t, \sigma_t, \theta_t)$$

The utility function of the non-congruent politician (N) is

$$U^N(e_t, \theta_t) = \begin{cases} \Delta + \frac{x}{\phi} & \text{if } e_t = \theta_t \\ r_t + \frac{x}{\phi} & \text{if } e_t \neq \theta_t \end{cases}$$

If the leader is removed from office, in the next period she receives a zero payoff. Finally, both players maximize the discounted sum of their expected utility in two periods, where $\beta < 1$ is the discount factor.

The timing of the model is as follows:

1. Nature determines (θ_1, r_1) and the type of the leader $T_1 \in \{C, N\}$. These three random variables are stochastically independent and their realization is the private information of the leader.
2. The leader chooses the policy e_1 and period one payoffs are realized.
3. The selectorate observes his payoff $\delta \in \{0, \Delta\}$ and thus the policy chosen by the leader but not her type.
4. The selectorate decides whether to retain the incumbent leader, given his information.
5. If the incumbent leader is ousted from power, a new leader will enter office and she will be congruent with probability π . The new leader will form her own coalition and members of the selectorate who deposed the previous leader would have a probability ϕ to be included in the new selectorate.

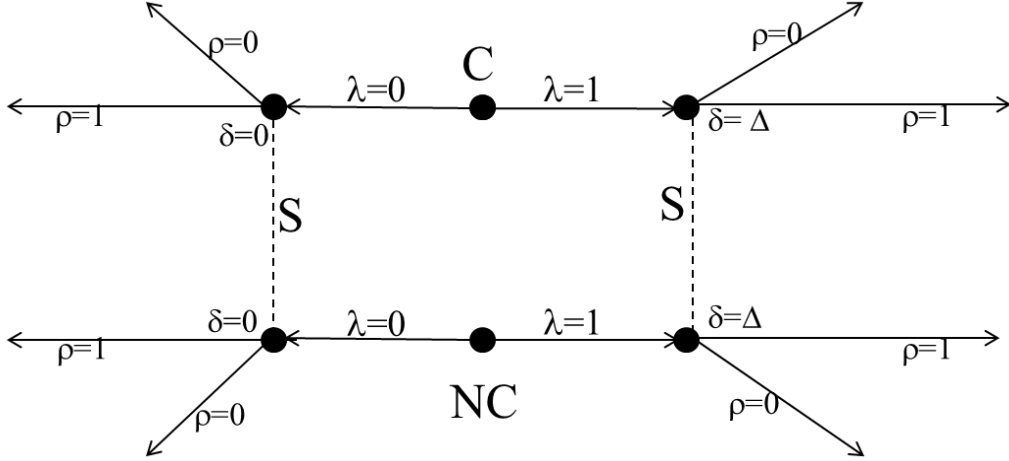


FIG. 1 The Two-player Model

6. Nature determines (θ_2, r_2) .

7. The period two leader chooses e_2 and period two payoffs are realized.

Let $\lambda^T(\theta_1, r_1)$ be the probability that, in the first period, the type T leader implements action $e_1 = \theta_1$, given the state of the world θ_1 and the rent r_1 , and let $\rho(\delta)$ be probability that the selectorate retains the incumbent leader, given that in the first period he obtained a payoff equal to $\delta \in \{0, \Delta\}$.

Figure 1 corresponds to the stage game of the model. The symbols used are summarized in Table 1.

Table 1. Definition of Symbols

Symbol	Definition
	PLAYERS
L	incumbent leader
S	selectorate
$T \in \{C, N\}$	type of the incumbent leader with $\Pr\{T = C\} = \pi$
	EXOGENOUS VARIABLES
$\theta \in \{0, 1\}$	state of nature
$\delta \in \{0, \Delta\}$	payoff from the general interest policy
$r \sim G(r)$	random rent the leader can extract, with cdf $G(r)$ and expected value \bar{r}
β	discount factor
X	exogenous revenue of the society
$\phi \in [0, 1]$	size of the selectorate
	ENDOGENOUS VARIABLES
$\lambda^T(\theta, r)$	probability that the type T leader implements a congruent policy
$\rho(\delta)$	probability that the selectorate retains the leader after observing $\delta \in \{0, \Delta\}$
	PAYOFFS
$U^C(\lambda, \rho \theta, r)$	the single period utility function of the congruent leader
$U^N(\lambda, \rho \theta, r)$	the single period utility function of the non-congruent leader
$U^S(\lambda, \rho)$	the single period utility function of the selectorate
V^S	expected continuation payoff of the selectorate

4. EQUILIBRIA OF THE TWO-PLAYER MODEL

We use pure strategy Perfect Bayesian equilibrium (hence PBE) as the equilibrium concept to analyze this model. The detailed calculations are reported in the Appendix, so here we just consider the results and comment on them. Note that we consider only pure strategies, but since the non-congruent leader's choice will depend on the realization of her random private rent not observed by the selectorate, from the point of view of the selectorate the leader's choice will be random depending on the cumulative distribution function of the leader's rent, $G(r)$. Moreover, in the propositions we will omit the specification of the beliefs

that support the equilibrium strategy profile, since they will be explicitly derived in the proof of the results.

We should distinguish between two cases according to the size of the selectorate.

4.1. Case 1. Suppose $\frac{(1-\phi)}{\phi}X \geq \pi\Delta$ which implies $\phi \leq \frac{X}{X+\Delta\pi} =: \Phi(X, \pi, \Delta)$.

In this case, the selectorate will choose to retain the incumbent leader even if he is certain that she is not congruent, since the probability of being in a newly appointed selectorate in the next period is too small. In this situation, the selectorate is completely loyal to the leader as it is afraid of losing its privileges and therefore supports the leader no matter what kind of general interest policy choice she has made. The non-congruent leader, knowing that she could always obtain support, will choose the action that maximizes her short term utility, that is for any r_1 , $\lambda^N(\theta_1, r_1) = 0$.

PROPOSITION 1. *When $\phi \leq \frac{X}{X+\Delta\pi} =: \Phi(X, \pi, \Delta)$, there exists an unique Perfect Bayesian equilibrium where*

$$\lambda^C(\theta_1, r_1) = 1, \lambda^N(\theta_1, r_1) = 0, \rho(0) = 1, \rho(\Delta) = 1.$$

This means that the leader would pursue her own interest and this notwithstanding she will retain the power.

In this equilibrium, the government is kleptocratic and the bad autocrat behaves as a ‘stationary bandit’ who can syphon off private rent without fearing of being removed from power, hence we will call this a ‘**Kleptocratic Equilibrium**’. This is the case if the size of the selectorate ϕ is sufficiently small.

Why does a small selectorate lead to loyalty notwithstanding the leader’s behavior? Suppose the selectorate defect from the leader by switching allegiance to a challenger, then the challenger has the opportunity to form a new selectorate. But any defector cannot be certain that he will be included in the new selectorate, for the challenger will only draw ϕ members from the population. In other words, when ϕ is small, the selectorate is captured by the leader since there is a risk associated with defection which involves the chance of exclusion from the privileges of being in the selectorate. Therefore, the smaller the size of ϕ , the greater the risk from defecting.

This proposition could explain the political failure of China during the Cultural Revolution. During this era, when China grew slowly, the size of the selectorate was extremely small and politics was characterized by increasing despotism. Mao Zedong had absolute power and he only relied on a small selectorate the core of which was the Gang of Four⁸ and CCP General Secretary Hua Guofeng who was unconditionally loyal to him. ‘He (Mao) trusted primarily those in his inner circle — his administrative secretaries ... ; personal guards under Wang Dongxing; his physician; a few close associates, relatives and mistresses’. ‘He set his entourage to spying on each other, and he had the last word even on the diagnoses and treatment of medical problems that other leading officials developed. Mao dictated, for example, the timing of operations on Zhou Enlai’s cancer in the early 1970s’ (Lieberthal, 2004, p. 208-209). As the size of the selectorate was extremely small, it became completely loyal to Mao. Just as our theory predicted, this small selectorate could never create effective checks to the leader, because the leader was their sole support and their hold on power was completely dependent on Mao. Without the checks from an effective selectorate, Mao abused his power and made many poor decisions which had serious consequences.

Now consider $\Phi(X, \pi, \Delta)$ as a function of X, π and Δ .

Note that $\frac{\partial \Phi(X, \pi, \Delta)}{\partial X} > 0$, that is, higher values of X increases the range of the selectorate’s size such that the selectorate always supports the incumbent. Thus if the exogenous wealth of the society that can be privately appropriated by the selectorate and the leader is salient, then the selectorate does not want to remove the leader. That is why we can see a natural resource curse in some kleptocratic politics, caused by governments not caring about developing the economy, and focusing instead on hoarding resources.

The probability of the incumbent being congruent, π , also plays a role, since $\frac{\partial \Phi(X, \pi, \Delta)}{\partial \pi} < 0$ and in particular $\lim_{\pi \rightarrow 0} \Phi(X, \pi, \Delta) = 1$: the smaller the probability of a congruent leader, the less restrictive the condition on the selectorate size. If the challenger is expected to be as bad as the incumbent, the selectorate would not risk a probably ineffective change of the leader.

Finally $\frac{\partial \Phi(X, \pi, \Delta)}{\partial \Delta} < 0$ and in particular $\lim_{\Delta \rightarrow 0} \Phi(X, \pi, \Delta) = 1$: therefore the less

⁸The group included Mao’s wife Jiang Qing and three of her close associates, Zhang Chunqiao, Yao Wenyuan, and Wang Hongwen.

effective a congruent policy is, the less restrictive the condition on the selectorate size. As previously with the probability of selecting a congruent leader, if the type of the challenger is expected to matter in almost an irrelevant way, then the selectorate would not risk a probably ineffective change of leader.

4.2. Case 2. Suppose $\frac{(1-\phi)}{\phi}X \leq \pi\Delta$ which implies $\phi \geq \frac{X}{X+\pi\Delta} =: \Phi(X, \pi, \Delta)$

In this case the selectorate might choose to change the incumbent leader when it is certain that the leader is not congruent.

PROPOSITION 2. *When $\phi \geq \frac{X}{X+\pi\Delta}$, there exists an unique Perfect Bayesian equilibrium where*

$$\lambda^C(\theta_1, r_1) = 1, \quad \lambda^N(\theta_1, r_1) = G\left(\Delta + \beta\left(\bar{r} + \frac{X}{\phi}\right)\right), \quad \rho(0) = 0, \quad \rho(\Delta) = 1.$$

This means that even the non-congruent leader might pursue the general interest because of her accountability towards the selectorate, depending on the realization of her private rent.

When the size of the selectorate is big enough, the selectorate has the incentive to remove the non-congruent incumbent. But since the rent she can extract in the first period can be very high given her discount factor, the non-congruent incumbent might still choose to take the rent even if she anticipates her removal in the next period. In this equilibrium, the bad autocrat might behave as a roving bandit, whose aim of holding office is to steal the country's wealth before leaving. Therefore, we will call the equilibrium path when $r_1 \geq \Delta + \beta(\bar{r} + \frac{X}{\phi}) =: R(\Delta, \beta, \bar{r}, X, \phi)$ the '**Roving Bandit Equilibrium**' (RBE) outcome. Actually, autocracies often witness such roving bandits who syphon off huge private rent. Mohammed Suharto, Ferdinand Marcos and Mobutu Sese Seko embezzled up to \$50bn from the impoverished people of Indonesia, the Philippines and Zaire. Alberto Fujimori was estimated to have stolen up to \$600m during 1990-2000 as president of Peru, before fleeing to Japan in 2000 amidst the ensuing corruption scandal.⁹ On the other hand, when $r_1 \leq \Delta + \beta(\bar{r} + \frac{X}{\phi}) =: R(\Delta, \beta, \bar{r}, X, \phi)$, a successful autocracy arises. Although not democratic, the government chooses the correct policies because of the leader's accountability towards the selectorate. Note that to sustain such an

⁹See for example <http://www.guardian.co.uk/world/2004/mar/26/indonesia.philippines>.

‘Efficient Equilibrium’ (EE) path, expected payoffs from holding office must be greater than today’s personal rents, as then the incumbent leader has more to lose from being removed from office. This EE outcome happens with the complementary probability of having a RBE.

As seen, an EE happens with probability $G(R(\Delta, \beta, \bar{r}, X, \phi))$ and it is interesting to consider how this probability changes with our parameters.

First, note that $\frac{\partial G(R(\Delta, \beta, \bar{r}, X, \phi))}{\partial \Delta} > 0$, therefore the more effective a congruent policy, the more likely an EE, since it is more difficult to realize private benefits high enough to induce the leader to grab the rent and run away.

Second, $\frac{\partial G(R(\Delta, \beta, \bar{r}, X, \phi))}{\partial \beta} > 0$, therefore the less myopic a leader is the more likely an EE is, since the future expected benefits of holding power have more weight.

Third, $\frac{\partial G(R(\Delta, \beta, \bar{r}, X, \phi))}{\partial \bar{r}} > 0$, therefore the higher the expected value of private benefits, the greater the likelihood of an EE, since the future expected benefits of holding power are higher.

Fourth, $\frac{\partial G(R(\Delta, \beta, \bar{r}, X, \phi))}{\partial X} > 0$, that is, higher values of X increases the probability of an EE: as before, the future expected benefits of holding power are higher.

Finally, $\frac{\partial G(R(\Delta, \beta, \bar{r}, X, \phi))}{\partial \phi} < 0$, that is, the greater size of a selectorate decreases the probability of an EE. To induce congruent policies, on the one hand, the size of the selectorate cannot be too small, since otherwise there is no restraints on the leader’s behavior and thus no accountability. But on the other hand, and different from what Besley and Kudamatsu (2008) and Bueno de Mesquita et al. (2003) found regarding the size of the selectorate, it is not always true that the bigger the selectorate, the more efficient it will be. Note that the motivation for the non-congruent leader to mimic the behavior of the congruent leader in the first period — the expected payoffs from holding office — consists of two components: the total payoffs from implementing the general interest policy, say, $\Delta + \beta\bar{r}$; and the expected future rent from redistribution, that is, $\beta\frac{X}{\phi}$. The second component implies that the effect of the size of the selectorate on the incumbent leader’s incentive to hold on power is negative. A bigger selectorate dilutes the patronage every member of the selectorate can receive; it reduces the incentive for the non-congruent leader to hold office and thus reduces her incentive to pick the congruent policy.

4.3. The Characteristics of the Possible Political Regimes and the Selectorate Size

In this model, the set of possible equilibrium outcomes as a function of the selectorate size and of the probability of first period private benefit can be summed up as follows:

Table 2. Summary of Equilibria

	$1 - G\left(\Delta + \beta\left(\bar{r} + \frac{X}{\phi}\right)\right)$	$G\left(\Delta + \beta\left(\bar{r} + \frac{X}{\phi}\right)\right)$
$\phi \geq \frac{X}{X+\pi\Delta}$	Roving Bandit Equilibrium	Efficient Equilibrium
$\phi \leq \frac{X}{X+\pi\Delta}$	Kleptocratic Equilibrium	Kleptocratic Equilibrium

Using previous observations, we can sum up the effects of different parameters on the likelihood of different equilibria when $\phi < 1$:

Table 3. The Effects of Different Parameters on the Likelihood of Different Equilibria

	Kleptocratic Equilibrium	Roving Bandit Equilibrium	Efficient Equilibrium
$\uparrow \phi$	\downarrow	\uparrow	$\downarrow \uparrow = ?$
$\uparrow \pi$	\downarrow	\uparrow	\uparrow
$\uparrow X$	\uparrow	\downarrow	$\downarrow \uparrow = ?$
$\uparrow \Delta$	\downarrow	$\downarrow \uparrow = ?$	\uparrow
$\uparrow \beta$	\longleftrightarrow	\downarrow	\uparrow
$\uparrow \bar{r}$	\longleftrightarrow	\downarrow	\uparrow
$\uparrow r_1$	\longleftrightarrow	\uparrow	\downarrow

Consider the Efficient Equilibrium (EE) regime and focus on the size of the selectorate ϕ as restricted by the two inequalities $\phi \geq \frac{X}{X+\pi\Delta}$ and $r_1 \leq \Delta + \beta\left(\bar{r} + \frac{X}{\phi}\right)$.

Note that if $r_1 \leq \Delta + \beta\bar{r}$, the second inequality is trivially satisfied for any ϕ . This is because the first component of the expected benefits from holding office, the total payoffs from implementing the general interest policy, is already greater than the personal rent the non-congruent leader can extract in the first period. That is to say, to pursue public interest by remaining in power is always better than to grab money and run away. Thus as long as there exists an effective selectorate, the non-congruent leader will always implement the good policy in the first period. In

this scenario, there are no upper limits on the size of the selectorate: the larger the size of the selectorate, the more effective it becomes.

On the other hand, if $r_1 > \Delta + \beta\bar{r}$, the second inequality implies the following upper limit on the size of the selectorate: $\phi \leq \beta \frac{X}{r_1 - \Delta - \beta\bar{r}}$. This condition shows that in case the total gains from implementing the general interest policy is not high enough compared to the realization of today's personal rents, the other component of the expected benefits from holding office, the payoffs from redistribution, becomes salient for the non-congruent leader to decide whether or not to pursue public interest. Thus as the amount the leader gets from redistribution decreases with ϕ , a too big a selectorate reduces the incentives to pursue the public interest. Hence in order to induce the non-congruent leader to mimic the behavior of the congruent leader in the first period, the size of the selectorate can not be too big. Then, when $r_1 > \Delta + \beta\bar{r}$ there is an EE if the size of the selectorate is intermediate, that is if

$$\phi \in \left[\frac{X}{X + \pi\Delta}, \beta \frac{X}{r_1 - \Delta - \beta\bar{r}} \right].$$

Clearly, this interval is not empty if and only if $\beta \geq \frac{r_1 - \Delta}{\pi\Delta + X + \bar{r}}$, that is, if the leader is not too myopic and if the realization of the rent in the first period r_1 is not too big.

The previous observations show when we would meet upper limits on the size of the selectorate to uphold efficient policy outcomes. We can consider the total gains from implementing the general interest policy as the rent the leader can get through running the country's economy, and the payoffs from redistribution as the rent from resources. Then the above observations say that when the private rent the leader can extract in the first period is very large such that it exceeds what the leader can get through running the country's economy, the role of the rent from resources becomes decisive and a bigger selectorate would decrease the amount the leader could get from the overall share, hence reducing the leader's incentives for adopting good policies and promoting economic growth.

4.4. A comparison between autocracy and democracy

Democracy is associated with a variety of characteristics such as an independent judiciary, free press, legal constraints on the government power and voting

mechanisms. The selectorate size, however, is one crucial aspect and in this section we present the impact on the leader's incentives of the largest possible selectorate size, ϕ equals to 1, regardless of the previously mentioned features.

Obviously, in a democracy the lower limit on the selectorate size is always satisfied, that is, the voters (who coincide with the selectorate) are always able to create real checks on the behavior of the incumbent politician. In a democracy, if the incumbent politician has been shown to conduct non-congruent activities, then the voters can use their votes to change the politician. However, in an autocracy the institutions to restrain the politician's behavior are weak, hence if the selectorate cannot create real checks against the leader, then the citizens may only count on good luck to have congruent politicians to rule their country.

However, in a democracy the non-congruent incumbent politician will implement the good general interest policy if and only if $r_1 \leq \Delta + \beta(\bar{r} + X)$, that is, $\beta \geq \frac{r_1 - \Delta}{\bar{r} + X}$. Therefore in a democracy the size of the selectorate, ϕ , does not determine the outcomes since $\phi \equiv 1$. In a democracy, the crucial point is to avoid myopic leaders, while it is well known that one of the most serious problems in democratic countries can be the lack of incentives to implement farsighted policies.

To sum up, consider the likelihood of getting the different political regimes in a democracy compared with an autocracy:

Table. 4 Comparison between Autocracy and Democracy

AUTOCRACY				DEMOCRACY			
	KE	RBE	EE		KE	RBE	EE
$\uparrow \phi$	\downarrow	\uparrow	$\downarrow \uparrow = ?$	$\uparrow \phi$	$\#$	\longleftrightarrow	\longleftrightarrow
$\uparrow \pi$	\downarrow	\uparrow	\uparrow	$\uparrow \pi$	$\#$	\longleftrightarrow	\longleftrightarrow
$\uparrow X$	\uparrow	\downarrow	$\downarrow \uparrow = ?$	$\uparrow X$	$\#$	\downarrow	\uparrow
$\uparrow \Delta$	\downarrow	$\downarrow \uparrow = ?$	\uparrow	$\uparrow \Delta$	$\#$	\downarrow	\uparrow
$\uparrow \beta$	\longleftrightarrow	\downarrow	\uparrow	$\uparrow \beta$	$\#$	\downarrow	\uparrow
$\uparrow \bar{r}$	\longleftrightarrow	\downarrow	\uparrow	$\uparrow \bar{r}$	$\#$	\downarrow	\uparrow
$\uparrow r_1$	\longleftrightarrow	\uparrow	\downarrow	$\uparrow r_1$	$\#$	\uparrow	\downarrow

A final aspect we should note is that although successful autocracies can promote economic growth as well as democracies, they will do a poorer job in maintaining social equality, because the leader will only distribute the fruit of reforms

to the selectorate in return for their loyalty and support. Instead, in a democracy, the selectorate encompasses all the citizens, and the wealth of the society is thus distributed more equally to every member in that society. This implication is consistent with the claim that democracies lessen economic inequality (Bollen and Jackman, 1985).

5. CHINA AND THE THEORY

In this section we want to test our model on a crucial case study: China and its transition, which has been explained by Shirk (1993) as a salient example of reciprocal accountability. Before any further consideration, it is important to stress that this paper is not about the optimal mechanism design to discipline the Chinese leaders; our primary concern is to provide some insights into explaining why the same ruling party perform in radically different ways before and after the reform, and how these discrepancies might be related to the role of the selectorate.

5.1. How ‘reciprocal accountability’ works in China

China is often considered to be an economic miracle, the latest of a string of such miracles throughout Asia. However, the CCP’s astounding survival skills make it more of a political miracle, albeit built on economic growth. In China, institutions are formally hierarchical in that the top leaders of the party appoint subordinate officials of the party, government, and military. Yet this relationship is not purely hierarchical in that party leaders need the support of party, government, and military officials to remain in power. This is exactly what Shirk (1993) called ‘reciprocal accountability’, a relationship where neither side has a definitive right and the lines of authority run in both directions. In China, reciprocal accountability is maintained by the party and is integral to its rule, and it is not just an unintended consequence of the one-party system, but is the very essence of the system itself. It is a complex multi-tier network, which extends to different hierarchies of the society, from the highest reaches of the party center in Beijing, to the humblest village assembly.

As a political machine, CCP is a phenomenon of an enormous and unique dimension: by mid 2009, its membership stood at 75 million, which means 8.3

percent of the Chinese adult population (McGregor, 2010, p. XIV). In this system, public loyalty to the party and its ideology is mingled with personal loyalties between party branch officials and their clients (Walder, 1986, p. 6). While in exchange for loyalty and ideological adherence from officials and other individuals at various levels of the hierarchy, the party offers preferential treatment in career opportunities and other tangible or intangible rewards.

In practice, the party approaches a constellation of power centers of greater or lesser magnitude, each with its accompanying entourage of satellites with fields of influence extending through government, the police, and the administrative and military hierarchies (Fainsod, 1963, p. 236). In addition, these networks developed in particular regions (*'kuai'*) and along vertical lines (*'tiao'*) because they are useful in helping the patron to accomplish his tasks. Hence, every member inside the elite selectorate we have previously identified is not simply an individual but a nodule of power which represents the interests of a particular region or a faction of society. These 'nodules of power' use the resources at their disposal to build up their own patronage networks and, in order to give necessary incentives for their subordinates, utilize their power as a selectorate to help out the constituencies whom they represent. The Central leadership who wants to buy the loyalty of these elite selectorates thus also has to take the interest of their constituencies into account. In this way, 'reciprocal accountability' shapes a wide variety of economic and political outcomes in China.

To explain the way reciprocal accountability has worked in China, we can mention four examples.

Firstly, central ministries and state-owned sectors hold powerful positions inside the party and have vested interests in the central-planned economic system. So, a dual-track price system was introduced in the first decade of the reform to compensate their private benefits from the pre-reform system. The dual-track price system although had brought some improvements (Lau, Qian and Roland, 1997), and created spaces for rent seeking. Enterprises and government officials who controlled the quotas could easily get rich by selling their quotas to other enterprises and individuals. At the end of the 1980s, *guan-dao*, or official profiteering, became a popular phrase, creating deep public resentment and was one of the reason for the Tiananmen protests.

Second, the military is one of the fundamental pillars of the Chinese political structure whose support is very important for the central leaders. Although the military's influence was weaker under Deng compared to its pervasive influence in Mao's era, their interests are still of high consideration to the top leaders. A bigger defense budget is the most common way to ensure their loyalty. The reported expenditure for national defense is 355.49 billion Chinese Yuan in 2007, almost 21 times larger than 1978's figure of 16.78 billion Chinese Yuan.¹⁰ Besides there were many business operations run by the military, the police and even the courts during the 1980s and much of the 1990s (Yang, 2004).

Third, local governments, another important group inside the party, specifically benefit from decentralization and economic reform. A motivation behind the decentralization promoted by Deng Xiaoping and the reformists in the party is then merely a 'reciprocal accountability' consideration, because they want to get the support from local officials to overcome the resistance of central bureaucrats toward reforms (Shirk, 1993). As a result, township and village enterprises boomed during the first phase of the reform and became the place where local officials could extract and hide their rents.

Last but not least, the biased social welfare provision in China also reflect the preferential treatment given to the important constituents of the party. In urban China social benefits provision is consistently privileged over the rural, with those in government employment or working in state-owned enterprises enjoying types of support that are not available to those working in other sectors of the economy, especially in the informal sector that is home to increasing numbers of migrant labors (Saich 2008, p. 18). These key groups in urban areas were seen as crucial to the industrialization drive and as important constituents for the Party, so they received more benefits than those groups from the rural areas.

5.2. The role of the selectorate as disciplinary device in the reform era

According to our theory, within an autocracy such as China, the transition from the disastrous economic policies of the Mao Zedong period to the extremely successful reform era might be partially explained as a transition towards the 'Efficient Equilibrium' outcome where the leader would pursue the general interest

¹⁰China Statistical Yearbook, 2009.

because of her accountability to the selectorate. In particular, our model shows that reciprocal accountability might work effectively as a disciplinary device leading to good policies if the size of the selectorate is not too small (and in particular conditions not too big). Although in the model we treat the selectorate size as exogenous, obviously the changes in the size of the selectorate are due partially to the proclivities of individual leaders and partially to institutional structures that have evolved in response to crises and needs. But what is more important is that once the changes in the size of the selectorate consolidate, it begins to shape policy outcomes according to the political game we have described in our model.

Comparing politics in China before and after the reform, there has been a significant expansion in the size of the selectorate. Under the totalitarian rule of Mao, the size of the selectorate was extremely small, and hence the selectorate lived in the leader's shadow rather than the other way around. After Mao's death (September 1976) and the arrest of the Gang of Four (October 1976), Deng Xiaoping returned to his post again at the Tenth Plenum of the Tenth Central Committee (July 1977). One of the major policies Deng implemented immediately after his restoration was to rehabilitate the veteran leaders and Long March loyalists who had been purged by Mao. This policy helped Deng to build a new larger coalition to support himself and to compete with Hua Guofeng, another dominant leader who was Mao's hand-picked successor. In particular, the power struggle requires a search for new constituencies, hence Deng needed to enlarge the selectorate to dilute Hua supporters and at the same time to increase his own followers. This means that in a period of conflict over leadership succession, the political dependence of party leaders on the selectorate becomes more prevalent, and the ability of members of the selectorate to extract resources is enhanced. Partly because of this, Deng Xiaoping promoted market reforms not only because he believed they were the best solution for improving economic performances but also because they allowed the creation of political resources to be employed in his succession contest: in exchange for special economic treatment, local and ministry officials pledged political loyalty to Deng and his platform of economic reform. For example, the political leaders of the Special Economic Zones were grateful for the advantages Beijing had showered on them and reciprocated by becoming staunch supporters of Deng and of the reforms. In addition the envy of officials in units not yet

benefiting from economic reforms turned them into reform extension advocates, pressing the central leader to achieve greater autonomy and opportunities.

Besides the consideration of power struggles, Deng clearly saw the accountability failure in the Chinese political system under Mao; and the potential serious consequence if the elite and the masses lost their confidence in the communist party rule due to the post-Cultural Revolution crisis. Thus he tried to rebuild a political system that had to be able to create effective checks on the main leader and make politicians accountable. In this situation, Deng threw out Mao's destructive notions and returned the party organization to its roots, as an empowered elite providing enlightened leadership to the masses. He laid out a political agenda which proposed a system governed by rules, clear lines of authority and collective decision-making institutions to replace the overconcentration of power and patriarchal rule that had characterized China under Mao. For example, he recommended abolishing the life tenure in leading posts, to promote young and middle-aged cadres, to ensure a necessary degree of decentralization, and even to distinguish between the responsibilities of the party and of the government.¹¹ More generally, Deng argued that the overconcentration of power in the hands of a few individuals in the party had produced the Great Leap Forward, the Cultural Revolution, and other excesses of the Mao Zedong era, hence he urged that more groups be consulted in policy decision-making.

Although due to different considerations, all these policies launched by Deng Xiaoping implied a significant expansion of the size of the selectorate after Mao's death, from a tiny coterie consists members of the leader's inner circle to a much larger coalition including revolutionary elders, military leaders, younger generation of CCP leaders, members of the Central Committee, and other high-ranking officials of the central or local party and government apparatus. As the size of a selectorate grows, we expect an increased role of the selectorate in constraining the leader's behavior, and this was exactly the case in China since the reforms.

An important and interesting example of the way the selectorate can discipline the incumbent leader was the removal of Hua Guofeng. This decision was made because, first, the size and thus the power of the selectorate had been increased

¹¹Deng's speech on August 18, 1980. *On the Reform of the System of Party and State Leadership*. Selected Works of Deng Xiaoping, p. 302-25.

thanks to the policies Deng had implemented after returning to his post; second, the selectorate were not satisfied with Hua's attempt to pursue a policy of 'Maoist without Mao'. Most of the selectorates inside the party had suffered dramatically from the Cultural Revolution, therefore after they saw Hua continue the Mao cult and set about creating one of his own, they decided to force him to gradually hand over power (Saich, 2004, p. 55; Lieberthal, 2004, p. 125-127). Indeed, Hua gave up the premiership in September 1980 and his position as party chair in June 1981. If Hua did not put forward the 'Two whatever'¹² approach and abandoned Maoist policies instead, he would not lose his position as the top leader. Gaining more weight in constraining the leader's behavior, the selectorate at that time was eager to have a leader who could rescue the regime from collapsing and who could deliver material rewards to a population that had become bitterly disillusioned.

Another significant example can be seen when conservative CCP leaders Chen Yun and Yao Yilin tried to recentralize China's fiscal system after 1989. In the work conferences preceding both the Fifth Plenum of the Thirteenth Central Committee in November 1989 and the Seventeenth Plenum in December 1990, the provincial and municipal officials in the Central Committee objected to the recentralization proposals. As a result of this opposition, the Central Committee had to be postponed, and when they finally met it acted to retain fiscal decentralization, thereby reversing the original recommendation of the leaders (Lam, 1989; Shirk, 1993).

As a result of the significant improvement in elite politics, with the role of the selectorate as disciplinary device becoming more effective, the incumbent leader became more accountable and could commit itself to promoting economic growth. Meanwhile, it is important to note that reform ideas did not initially extend much beyond 'giving farmers a chance to catch their breath' or 'expanding enterprise autonomy.' Inevitably, initial reforms were 'without a blue print', characterized by experimentation, or 'groping for stepping stones to cross the river' (Naughton, 2005). That is to say, it would be biased to attribute the success of Chinese economic reform to the Central leadership only. But at the same time, we cannot deny that if the central authorities had behaved as poorly as Mao, the economic

¹²The "Two whatever" refers to the statement that "We will resolutely uphold whatever policy decisions Chairman Mao made, and unswervingly follow whatever instructions Chairman Mao gave". People's Daily February 7, 1977.

reforms would not have survived or succeeded. Further, we believe that an important key to the accountable behaviors of the Chinese central government in the reform era is the existence of a partially independent selectorate whose size was not too small.

6. CONCLUSION

One of the central political challenges is getting the government to direct public resources toward public goods rather than toward special interests, in the form of corruption or narrowly targeted transfers for the benefit of the selectorate. If rulers build tax and legal systems and direct public spending toward the needs of their populations, then they might be able to foster growth and human and social development. Although the means by which governments can make this shift are complex, the subject is simply too important for economics to dismiss. We don't pretend to have an answer to this huge crucial question, and probably there is no single answer and no magic formula. However we aim here to provide a specific insight into a peculiar topic: reciprocal accountability in autocratic systems. In particular, this paper tries to give some insight into the institutional basis of China's fast economic growth in the reform era and to provide a plausible explanation for the dramatic change from the Mao Zedong economic policies to the reform period. We apply this insight to China, since over the past three decades, the country has grown remarkably quickly achieving, in the process, what is probably the largest reduction in mass poverty the world has ever seen. The World Bank estimates that around 600 million fewer Chinese live in chronic poverty today than was the case in 1980. China managed these results by funneling significant resources into public goods. An increasingly strong and well-organized state drove economic development, with municipal governments cooperating with higher tiers of government. This process created a symbiotic relationship with private-sector development: governments and the CCP educated the labor force and built roads, railways, and bridges, which, in turn, encouraged the private sector to invest in factories and create new jobs. Although the benefits were sometimes uneven, the impact on the living standards of many citizens was immense. But there is no magic formula for building a developmental state. Many countries have tried and

failed. One trick is getting political and economic structures to work in tandem, as China has managed to do so far. Our main thesis is that the Chinese government has institutionalized its rule through an one-party system that constrains autocratic power with internal checks and balances and that gives policy makers an incentive to take a long-term view, which, following Shirk (1993), we call ‘reciprocal accountability’.

It is worth stressing that the economic success this system has delivered has muted citizens’ calls for political change, establishing a social contract that hinges on continued growth. But the model is vulnerable to an economic slowdown or to demands for change as a larger middle class seeks political liberalization as an end in itself. Although economic development has been partially achieved, it is characterized by social inequality, since the leader is only accountable to the vested interests in the society. In this paper, we stressed that reciprocal accountability in some conditions might lead to congruent policies while in different situations it will hurt economic growth. Then the change of CCP’s ruling pattern might also be due to other forces such as pressures outside the regime, in particular the threat of revolution by its citizens (Shirk, 2007), but we believe that reciprocal accountability remains a crucial force to be considered when analyzing autocratic economic policies in general and China’s transition in particular. The final result could be either the democratization of the system or an increasingly brutal regime. China’s best hope is to open the political system gradually while increasing the constraints on executive power. But managing such a feat will not be easy.

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7. APPENDIX

This Appendix reports all the detailed calculations required to show the pure strategy Perfect Bayesian equilibria of our model. Note that we consider only pure strategies, but since the non-congruent leader's choice will depend on the realization of her random private rent not observed by the selectorate, from the point of view of the selectorate the leader's choice will be random depending on the cumulative distribution function of the leader's rent, $G(r)$. Moreover, in the propositions we will omit the specification of the beliefs that support the equilibrium strategy profile, since they will be explicitly derived in the proof of the results.

7.1. Preliminary Remarks On The Choices of The Leader

In the first period the congruent leader has the strictly dominant action of choosing the congruent policy, so only the non-congruent type is actually a strategic player as leader. In the second final period, both types of the incumbent leader will choose to implement the policy according to their short term preferences. This implies that in period two a congruent incumbent will choose $e_2 = \theta_2$, while a non-congruent politician will choose $e_2 = 1 - \theta_2$.

7.2. Best Responses and Beliefs of the Selectorate

Working backward we derive the conditions under which the selectorate will choose to retain the incumbent leader, that is, $\rho(\delta) = 1$ or subvert her authority, that is, $\rho(\delta) = 0$. This choice depends on his observation $\delta \in \{0, \Delta\}$ since this would provide some information about the type of the leader and thus on her future policy choices, since the selectorate will choose to support the incumbent leader if and only if the expected continuation payoff from retaining the incumbent is greater than the expected continuation payoff from subverting her.

Let $V^S(\rho(\delta) = 0)$ be the expected continuation payoff for the selectorate if they subvert the incumbent leader. Clearly this payoff does not depend on the previous observation δ , since the leader has been changed. Therefore for any $\delta \in \{0, \Delta\}$,

$$V^S(\rho(\delta) = 0) = \pi \times \Delta + (1 - \pi) \times 0 + \phi \times \frac{X}{\phi} + (1 - \phi) \times 0 = \pi\Delta + X. \quad (1)$$

As the type of the newly picked up leader is unknown, she will produce Δ with

probability π and 0 otherwise. Moreover both types of the leader will distribute all the social revenue to the selectorate, but the members of the selectorate who ousted the leader, with probability ϕ will be included in the successor's selectorate getting the patronage $\frac{X}{\phi}$ in the second period.

Let $V^S(\rho(\delta) = 1)$ be the expected continuation payoff for the selectorate if they support the incumbent leader. Clearly in this case the payoff does depend on the previous observation δ , since the leader has not been changed and δ might convey some information about the type of the leader. Therefore for any $\delta \in \{0, \Delta\}$,

$$V^S(\rho(\delta) = 1) = P(C|\delta)\left(\Delta + \frac{X}{\phi}\right) + (1 - P(C|\delta))\frac{X}{\phi} = P(C|\delta)\Delta + \frac{X}{\phi} \quad (2)$$

where $P(C|\delta)$ is the selectorate's posterior belief on the incumbent leader being congruent given that in the first period from the general interest policy he got a payoff $\delta \in \{0, \Delta\}$.

Sequential rationality implies that after $\delta \in \{0, \Delta\}$ the selectorate will retain the incumbent leader if and only if:

$$V^S(\rho(\delta) = 1) \geq V^S(\rho(\delta) = 0), \quad (3)$$

which implies,

$$P(C|\delta)\Delta + \frac{(1 - \phi)}{\phi}X \geq \pi\Delta. \quad (4)$$

As usual, $P(C|\delta)$ is derived using Bayes rule:

$$\begin{aligned} P(C|\delta = \Delta) &= \frac{P(C)P(\delta = \Delta|C)}{P(C)P(\delta = \Delta|C) + P(N)P(\delta = \Delta|N)} = \\ &= \frac{\pi \times \lambda^C(\theta_1, r_1)}{\pi \times \lambda^C(\theta_1, r_1) + (1 - \pi) \times \lambda^N(\theta_1, r_1)} = \\ &= \frac{\pi \times 1}{\pi \times 1 + (1 - \pi) \times \lambda^N(\theta_1, r_1)} \end{aligned} \quad (5)$$

$$\begin{aligned} P(C|\delta = 0) &= \frac{P(C)P(\delta = 0|C)}{P(C)P(\delta = 0|C) + P(N)P(\delta = 0|N)} = \\ &= \frac{\pi \times (1 - \lambda^C(\theta_1, r_1))}{\pi \times (1 - \lambda^C(\theta_1, r_1)) + (1 - \pi) \times (1 - \lambda^N(\theta_1, r_1))} = \\ &= \frac{\pi \times 0}{\pi \times 0 + (1 - \pi) \times (1 - \lambda^N(\theta_1, r_1))} \end{aligned} \quad (6)$$

Remark 1. The Selectorate will support the incumbent Leader if and only if (4) holds.

7.3. The choices of the leader and of the selectorate

Since by construction the congruent type always chooses the congruent policy $\lambda^C(\theta_1, r_1) = 1$, while in general $\lambda^N(\theta_1, r_1) \in [0, 1]$. Therefore

$$P(C|\delta = \Delta) = \frac{\pi \times 1}{\pi \times 1 + (1 - \pi) \times \lambda^N(\theta_1, r_1)} \equiv \Pi(\lambda^N) \in [\pi, 1]; \quad (7)$$

and

$$P(C|\delta = 0) = \frac{\pi \times 0}{\pi \times 0 + (1 - \pi) \times (1 - \lambda^N(\theta_1, r_1))} \in [0, 1]. \quad (8)$$

However a simple forward induction argument shows that we can restrict $P(C|\delta = 0)$:

$$P(C|\delta = 0) = \frac{\pi \times 0}{\pi \times 0 + (1 - \pi) \times (1 - \lambda^N(\theta_1, r_1))} = 0. \quad (9)$$

Consider the selectorate. If $\delta = \Delta$, then $V^S(\rho(\delta) = 1) \geq V^S(\rho(\delta) = 0)$ is equivalent to

$$\Delta + \frac{(1 - \phi)}{\phi} X \geq \pi \Delta, \quad (10)$$

which is always satisfied. Therefore after observing $\delta = \Delta$ the selectorate will choose to retain the incumbent leader being certain that she is congruent.

If $\delta = 0$, then $V^S(\rho(\delta) = 1) \geq V^S(\rho(\delta) = 0)$ is equivalent to

$$\frac{(1 - \phi)}{\phi} X \geq \pi \Delta, \quad (11)$$

which might be satisfied depending on the exogenous parameters.

7.3.1. Case 1. Suppose $\frac{(1 - \phi)}{\phi} X \geq \pi \Delta$ which implies $\phi \leq \frac{X}{X + \Delta \pi} =: \Phi(X, \pi, \Delta)$.

In this case the selectorate will choose to retain the incumbent leader even if he is certain that she is not congruent since the probability of being in a new appointed selectorate next period is too small. In this situation, the selectorate is completely loyal to the leader being afraid to lose his privileges and therefore supporting the leader no matter what kind of general interest policy choice she makes. The non-congruent leader, knowing that she could always obtain support, will choose the action that maximizes her short term utility, that is for any r_1 , $\lambda^N(\theta_1, r_1) = 0$.

Proposition 1. When $\phi \leq \frac{X}{X + \Delta \pi} =: \Phi(X, \pi, \Delta)$, there exists an unique Perfect Bayesian equilibrium where

$$\lambda^C(\theta_1, r_1) = 1, \lambda^N(\theta_1, r_1) = 0, \rho(0) = 1, \rho(\Delta) = 1.$$

This means that the leader would pursue her own interest and this notwithstanding she will retain the power.

7.3.2. *Case 2* Suppose $\frac{(1-\phi)}{\phi}X \leq \pi\Delta$ which implies $\phi \geq \frac{X}{X+\pi\Delta} =: \Phi(X, \pi, \Delta)$.

In this case if $\delta = 0$, the selectorate will choose to change the incumbent leader being certain that she is not congruent.

In this scenario, to find out the behavior of the non-congruent incumbent leader, we need to compare her payoffs when she switch from non-congruent to congruent actions behaving as if she is the congruent type. Thanks to this switching behavior, she might be able to stay in power depending on the selectorate beliefs.

Let $EU^N(\lambda = 1)$ be the non-congruent leader's expected utility she get switching to a growth-enhancing action in period one, that is, when $\lambda^N(\theta_1, r_1) = 1$

$$EU^N(\lambda = 1) = \Delta + \frac{X}{\phi} + \beta(\bar{r} + \frac{X}{\phi}). \quad (12)$$

And let $EU^N(\lambda = 0)$ be the non-congruent leader's expected utility from choosing a non-congruent action in period one, that is, when $\lambda^N(\theta_1, r_1) = 0$

$$EU^N(\lambda = 0) = r_1 + \frac{X}{\phi}. \quad (13)$$

The non-congruent leader will choose $\lambda^N(\theta_1, r_1) = 0$ if and only if:

$$EU^N(\lambda = 1) \leq EU^N(\lambda = 0) \quad (14)$$

that is,

$$r_1 \geq \Delta + \beta(\bar{r} + \frac{X}{\phi}) =: R(\Delta, \beta, \bar{r}, X, \phi) \quad (15)$$

Therefore when $\phi \geq \frac{X}{X+\pi\Delta}$, the the non-congruent leader's sequentially rational actions are

$$\lambda^N(\theta_1, r_1) = \begin{cases} 1 & r_1 \leq \Delta + \beta(\bar{r} + \frac{X}{\phi}) =: R(\Delta, \beta, \bar{r}, X, \phi) \\ \in [0, 1] & r_1 = \Delta + \beta(\bar{r} + \frac{X}{\phi}) =: R(\Delta, \beta, \bar{r}, X, \phi) \\ 0 & r_1 \geq \Delta + \beta(\bar{r} + \frac{X}{\phi}) =: R(\Delta, \beta, \bar{r}, X, \phi) \end{cases} .$$

This means that since the first period rent has had a significant high realization, the non-congruent leader would pursue her own interest, however because of this she will be overthrown from power.

Therefore on the equilibrium path we get the following beliefs

$$P(C|\delta = \Delta) = \frac{\pi \times 1}{\pi \times 1 + (1 - \pi) \times G(\Delta + \beta(\bar{r} + \frac{X}{\phi}))} =: \Pi(\Delta + \beta(\bar{r} + \frac{X}{\phi})) > \pi; \quad (16)$$

while out of equilibrium we get

$$P(C|\delta = 0) = \frac{\pi \times 0}{\pi \times 0 + (1 - \pi) \times \left(1 - G(\Delta + \beta(\bar{r} + \frac{X}{\phi}))\right)} = 0. \quad (17)$$

Sequential rationality implies that the selectorate will retain the incumbent leader if and only if:

$$V^S(\rho(\delta) = 1) \geq V^S(\rho(\delta) = 0) \quad (18)$$

that is

$$P(C|\delta)\Delta + \frac{(1 - \phi)}{\phi}X \geq \pi\Delta. \quad (19)$$

When $\delta = \Delta$, this implies

$$\Pi\Delta + \frac{(1 - \phi)}{\phi}X \geq \pi\Delta \quad (20)$$

which is always satisfied. Therefore, $\rho(\Delta) = 1$.

When $\delta = 0$, this implies

$$\frac{(1 - \phi)}{\phi}X \geq \pi\Delta. \quad (21)$$

To sustain the non-congruent leader choices as an equilibrium, we need to have that the selectorate is loyal to the leader only when the general interest policy choice she had made is congruent, otherwise the non-congruent leader has an obvious incentive to switch to a non-congruent policy. Then $\rho(0) = 0$ if and only if $\phi \geq \frac{X}{X + \pi\Delta}$.

Proposition 2. When $\phi \geq \frac{X}{X + \pi\Delta}$, there exists an unique Perfect Bayesian equilibrium where

$$\lambda^C(\theta_1, r_1) = 1, \quad \lambda^N(\theta_1, r_1) = G\left(\Delta + \beta\left(\bar{r} + \frac{X}{\phi}\right)\right), \quad \rho(0) = 0, \quad \rho(\Delta) = 1.$$

This means that even the non-congruent leader might pursue the general interest because of her accountability towards the selectorate, depending on the realization of her private rent.