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Citizenry Accountability in Autocracies. The Political Economy of Good Governance in China

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Abstract: *Do the citizens have a role in constraining policies in autocratic governments? Usually the political and economic literature model autocracy as if the citizens have no role in constraining leader's behavior, but actually autocratic government are afraid of possible citizens' revolts. In this paper we focus on contemporary China to analyze how citizens might induce an autocratic government to adopt congruent policies. Although there is no party or electoral competition, the leader fears deposition by coup d'état of the selectorate and revolutionary threats from citizens. We build a three player political agency model to study the role of both these constraints and we show that the effectiveness of the selectorate and of revolutionary threats are crucial factors in determining the policy outcomes. In particular, we show that the citizens can effectively discipline the leader because of the revolution threat notwithstanding the selectorate size, but this may result in a failed state when the costs of revolting and the selectorate size are small. As the size of the selectorate and the costs of revolution vary dramatically across countries, our result explain why different types of autocracies arise. In particular our model and results provide a useful framework to interpret China policy in the last twenty years.*

Citizenry Accountability in Autocracies.
The Political Economy of Good Governance in China[1]

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ABSTRACT

Do the citizens have a role in constraining policies in autocratic governments? Usually the political and economic literature model autocracy as if the citizens have no role in constraining leader's behavior, but actually autocratic government are afraid of possible citizens' revolts. In this paper we focus on contemporary China to analyze how citizens might induce an autocratic government to adopt congruent policies. Although there is no party or electoral competition, the leader fears deposition by coup d'état of the selectorate and revolutionary threats from citizens. We build a three player political agency model to study the role of both these constraints and we show that the effectiveness of the selectorate and of revolutionary threats are crucial factors in determining the policy outcomes. In particular, we show that the citizens can effectively discipline the leader because of the revolution threat notwithstanding the selectorate size, but this may result in a failed state when the costs of revolting and the selectorate size are small. As the size of the selectorate and the costs of revolution vary dramatically across countries, our result explain why different types of autocracies arise. In particular our model and results provide a useful framework to interpret China policy in the last twenty years.

Key Words: Autocracy, Accountability, Revolt, Chinese Economic Reform.

JEL Code: D02, H11, D74, P3.

"Of all China's problems, the one that trumps everything is the need for stability"[2]

- Deng Xiaoping.

1. INTRODUCTION

In the chronicle of human civilization, nondemocratic regimes had dominated throughout most periods; even today, despite the advances in democracy in recent decades, more than one third of countries are still ruled by autocratic governments.[3] This notwithstanding, research concerning nondemocratic institutions has remained stagnant for a prolonged period, possibly due to the fact that political economics has been caught in a "democratic prism", where scholars prioritize the study of phenomena that are inherently connected to democratic settings. However, many scholars have stressed the heterogeneous economic outcomes of different political regimes, with democracies and autocracies both obtaining significant economic success in some countries and periods, while in other contexts both types of governance have induced poor economic outcomes.[4] Hence understanding the characteristics and determinants of good governance in different institutional and political settings requires a theoretical framework to apply to large groups of countries over a relatively long period. If we believe, as we do, that small subtle institutional details significantly diversify the quality of policies implemented by different polities even within a general institutional frame such as democracy or autocracy, then an alternative complementary effective empirical strategy is to focus on an in-depth case study, as we do in this work. The crucial point is that democratic and authoritarian regimes exhibit a large variance in institutional details, therefore this dichotomy probably does not capture all the relevant differences that lead to good or bad policies; in other words it does not seem to be democracy or autocracy per se that make a huge difference in the quality of policies. This means

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[2]Deng's speech on March 4, 1989. *China Will Tolerate No Disturbances.* Selected Works of Deng Xiaoping, Volume 3.

[3]The Economist Intelligence Unit's Index of Democracy 2008.

[4]The literature on this topic is huge. For example, see Sirowy and Inkeles 1990, Bardhan 1993, Przeworski and Limongi 1993, Huber *et al.* 1993, Barro 1996; Rodrik 1997, Przeworski and Limongi 1997, Tavares and Wacziarg 2001, Almeida and Ferreira 2002, Baum and Lake 2003; Boix and Stokes 2003, Giavazzi and Tabellini 2004, Acemoglu *et al.* 2005, Papaioannou and Siourounis 2008, Acemoglu *et al.* 2008, Acemoglu *et al.* 2009, Boix 2011, Benhabib *et al.* 2011, Treisman 2011.

that insights from a historical case study might be more valuable than those from the usual cross-national econometric studies. Hence, our strategy is a case-based method of study, which builds on a theoretical framework and then proceed by analyzing a significant successful autocracy, China. In this way, our method gains information on historical sequence and can do justice to the particular geographical, cultural and historical context of the factors we analyze. The results is a set of theoretical propositions that are illuminated and illuminate the case study we consider. Among the successful autocracies, the fast economic development of China since the late 1970s is probably the most striking example. With consistent annual average economic growth rate at about 9 % for more than 30 years, China has emerged as the second largest economy in the world. In 2011, despite the most serious global economic crisis since the Great Depression, China's economic growth was sustained at 9.2%. The Chinese model of political economy has thus become a significant research area in recent years. The existing literature explaining the success of Chinese economic reform can be summed up into two schools: the first attributes the success of Chinese economic reform to the country's fiscal and political decentralization[5], that is said to have generated incentives for the local governments to promote economic growth; the second attributes the success of Chinese economic reform to the gradualist transition strategy the country has adopted[6]. Under the gradualist strategy China has pursued transition "without a blue print" or, according to the Chinese expression, "groping for stones to cross the river", in contrast with the "big bang" reforms experienced in Russia and Eastern Europe. However, the existing literature ignores the role played by the Chinese central government and the changes in the Chinese political system that were crucial to develop and implement such economic policies. This paper argues that while the Chinese political system is still authoritarian, in the last twenty years substantial institutional changes have been made in the internal structure of the system, which were crucial for achieving good governance and China's ensuing economic success.

In a previous paper[7], we focused on a specific aspect of a comprehensive ex-

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[5] Oi 1992; Montinola et al. 1995; Qian and Weingast 1996, 1997; Qian and Roland 1998; Xu and Zhuang 1998.

[6] McMillan and Naughton 1992, Naughton 1995 and 1999; Murrell 1991 and 1992, Rawski 1995, Perkins 1992, Lin, Cai and Li 1996.

[7] Gilli and Li 2011.

planation for the good governance of the Chinese government, that is the role of "reciprocal accountability" between the leader and the selectorate. The 'selectorate' refers to those elites who have the opportunity to depose a leader in a given political regime. Following Shirk 1993, we identify the selectorate at the beginning of the reform era with the revolutionary elders and top military leaders, while later after Mao's death the selectorate is expanded to a much larger coalition, including the younger generation of CCP leaders, the members of the Central Committee and other high-ranking officials of the central/local party and government apparatus. In that paper, we found that in autocracies without electoral discipline the size of the selectorate is crucial to restrain the opportunistic behavior of a leader. In particular, the size of the selectorate should be intermediate: if too small, the selectorate is captured by the leader and has no disciplinary role, however if the selectorate is too big, also the leader's incentives are diluted. Analyzing China situation, we also pointed out a risk associated to reciprocal accountability: to turn China into clientelism and a highly unequal society, as the leader is only accountable to the vested interests in the society. In particular reciprocal accountability is unsustainable as shrinking economic opportunities and exclusionary patterns of reward became a recipe for social unrest. Actually, at the end of the 1980s, rampant corruption combined with high inflation drove people onto the street in the spring of 1989. After the Tiananmen protest and the following repression, the political reform was trapped. During this period, the selectorate became subordinate to the central leadership, unable to function as a disciplinary device. Nonetheless, after a short economic contraction period in the following two years, the Chinese government continued to promote economic growth and to extend market economic reform. Governance improved and policies become more people centered.

Hence, in this paper we ask: how could the Chinese government be held accountable even when the selectorate was captured? We suggest that the accountability of the Chinese government after the 1980s was due to pressures outside the regime, i.e. to the citizens and their potential revolutionary threats. The Chinese government implemented congruent economic policies because they want to use high economic growth to maintain social stability. To investigate such issues we build a political agency model with three active players: the leader, the selectorate and the citizens. We find that under specific conditions both the selectorate and

the citizenry accountability can restrain politicians from opportunistic behaviors. As shown in Gilli and Li 2011 exploration of reciprocal accountability, the size of the elite is the factor that determines the effectiveness of the selectorate accountability, while in this more general setting the cost of revolting plays a more crucial role. Our model generates the obvious result that revolutionary threats from the citizens might restrain the leader from adopting non-congruent policies. However, our model also generates the counter-intuitive result that the threat of revolution may have negative effects when associated with weak institutions. The existence of potential revolts, generates two possible political regimes: either an instability situation where, due to this instability, the leader has an incentive to seize money and flee, or a more established setting where the threat of revolution ensures a congruent behavior of the leader even when the selectorate is captured. As the citizens will always avoid capture because of their size, a kleptocratic equilibrium is now impossible. However, as the size of the selectorate and the costs of revolt vary dramatically across countries, autocracies would adopt significantly different policies due to these specific institutional characteristics.

The remainder of the paper is organized as follows. In next section, we present the model, which is analyzed in section 3. Section 4 applies the model to explain the political economy of good governance in China after the 1980s. And finally, the last section concludes.

2. THE MODEL

2.1. The related Literature

The existing literature on the political economics of autocracies suggests that accountability in nondemocratic regimes comes from the "selectorate" that comprises insiders who have the ability to depose a leader. Bueno de Mesquita *et al.* 2003 were the first to model accountability under nondemocratic framework concluding that the larger the selectorate, whose support is necessary for the incumbent politician to remain in power, the higher the level of public goods provided by the government. In a series of recent papers, Bueno de Mesquita and Smith[8] extend their model into three players, where the citizens are included as another player

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[8] Bueno de Mesquita and Smith 2008 and 2010, Smith 2008.

who might threaten the leader with revolution. However, their models do not considered incomplete information which is extremely useful to model accountability as shown by Besley 2006 and Besley and Kudamatsu 2008. Moreover by incorporating Padro-i-Miquel 2006 insight that if the leader steals resources from her supporter group, then she extracts even more from the opposition group, Besley and Kudamatsu focus on the ability of enfranchised and disenfranchised citizens to seize power after the incumbent leader has been ousted. They find that an autocratic government works well when the power of the selectorate does not depend on the existing leader remaining in office. However, their model neglects the possibly important incentivizing role of the citizens. Although the citizens are excluded from political power, they are the majority and, coordinating their efforts, they may be able to overthrow those who control politics.[9] Hence this revolution threat can constrain the policies the ruling class would like to pursue and the impact of possible social conflicts on the policy outcomes should not be neglected. Even if these conflicts are not actually observed, their mere possibility constraints the set of optimal policies implemented in equilibrium. This paper provides a model that incorporates both incomplete information and the role of citizens' revolution threat as a possible incentives tool complementing the role played by the selectorate.

2.2. The Game

The game we use to model the above ideas is characterized by

1. incomplete information on the type of the incumbent leader;
2. two periods and
3. three players: one agent - the (female) incumbent Leader (L), and two principals - the (plural) Citizens (Z) and the (male) Selectorate (S).

The incumbent Leader, whose type can be either congruent or noncongruent $T \in \{C, N\}$ with probability π, moves first, while the Citizens choose after the Leader and before of the Selectorate. In autocracies the Citizens do not have the power to choose the leader, but they have the power to initiate a revolution to try to overthrow the regime. The relative size of the Citizens is $1-\phi$. The last player to move is the Selectorate. The Selectorate refers to the group of people in a given political regime who have the actual possibility of deposing a leader. The relative

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[9] Acemoglu and Robinson 2006.

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size of the Selectorate is ϕ. There is no heterogeneity within the Selectorate or the Citizens.

Nature chooses the type of the Leader, who in each period $t = 1, 2$ is privately informed of the true state of nature $\theta_t \in \{0, 1\}$ and has to make a discrete "general interest" policy denoted by $e_t \in \{0, 1\}$. The general interest requires the Leader to match the true state of nature, but this would also mean that the incumbent Leader foregoes 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 noncongruent Leader gets a private benefit r_t from picking $e_t \neq \theta_t$, where r_t is drawn according to a cumulative distribution function $G(r_t)$ 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 selecting $e_t \neq \theta_t$. To gain the loyalty of the Selectorate, the Leader pays a patronage to the Selectorate by using direct payment or high-level government appointments. In our model, we suppose the patronage is realized through the distribution of a fixed amount of wealth, X, which could be considered as the revenue accumulated from resources or economic rents from holding government positions. The leader distributes all the patronage to the Selectorate and nothing to the Citizens. Hence the Selectorate gets $\frac{X}{\phi}$, and the Citizen gets 0.[10] If the Citizens choose to revolt (it doesn't matter whether the revolution succeeds or fails), all the production activities will cease, as revolution will ruin the economy. Hence in the subsequent periods, the utility of the Selectorate and the Leader will be both zero. We assume a conflict technology as simple as possible: the revolution succeeds with probability $1 - \phi$, i.e. the probability of success is linearly increasing in the relative size of the Citizens. If the revolution succeeds, each Citizen will receive a payoff $\frac{X - \mu}{1 - \phi}$, if the revolution fails each Citizen will receive a zero payoff. Both these payoffs are realized at the beginning of the second period. Of course, these assumptions are a simplification aimed to model the idea that the possibility of revolution generates further constraints on the Leader's behavior. If the Citizens choose not to revolt, the game continues and the Selectorate get his utility from the Leader policy and then decides whether to support or to remove her. If the Selectorate supports the Leader, then she still holds office in the subsequent period. If the Selectorate decides to oust the leader, she will be removed with certainty, as a Leader without

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[10]Of course, this is just normalization.

the Selectorate support cannot survive. When the incumbent Leader is ousted from power, a new one will be appointed and form a new selectorate with size of ϕ. We assume that the Selectorate size is stationary and the new Leader will randomly select the members of the new Selectorate from the pool of the total population; so if the Selectorate changes the incumbent Leader, then he has a probability ϕ to be included in the new coalition. This is clearly a simplification, however adding complexity and realism to this scenario would not provide interesting insights on our specific problem, i.e. the constraint on the Leader's behavior due to the revolution threat.

To sum up, the timing of the model is as follows:

1. Nature determines (θ_1, r_1) and the type of the Leader $T \in \{C, N\}$. These three random variables are stochastically independent and their realization is private information of the Leader.

2. Each type T Leader chooses the congruent policy with probability $\lambda_1^T(r_1) \in [0, 1]$ and each player period one payoffs are realized.

3. The Citizens observe their payoff and thus the policy chosen by the Leader but not her type and on the basis of this information decide to initiate a revolution with probability $\alpha(\delta) \in [0, 1]$, where $\delta \in \{0, \Delta\}$ is the payoff they got from the Leader public policy.

4. If the Citizens revolt, probability of success is $1 - \phi$. Then the game stops and the Citizens will receive a payoff $\frac{X - \mu}{1 - \phi}$ at the beginning of the second period if the revolution has been successful, zero otherwise.

5. If there is no revolt, the Selectorate observes his payoff and thus the policy chosen by the Leader but not her type and on the basis of this information decides to retain the incumbent Leader with probability $\rho(\delta) \in [0, 1]$, where $\delta \in \{0, \Delta\}$ is the payoff he got from the Leader public policy.

6. If the incumbent Leader is ousted from power, a new Leader will enter the office and she will be congruent with probability π. The new Leader will form her own coalition and the members of the Selectorate who deposed the previous leader will have a probability of ϕ to be included in the new one.

7. Nature determines (θ_2, r_2).

8. The period two type $T \in \{C, N\}$ Leader chooses the congruent policy with probability $\lambda_2^T(r_2) \in [0, 1]$, each player period two payoffs are realized and the

game ends.

Hence the players' payoffs are respectively for the two types $T \in \{C, N\}$ of the Leader C, the Citizens Z and the Selectorate S:

$$W^C(\lambda_1^T(r_1), \alpha(\delta), \rho(\delta), \lambda_2^T(r_2)|T, r_1, r_2) = W^S(\lambda_1^T(r_1), \alpha(\delta), \rho(\delta), \lambda_2^T(r_2)|T, r_1, r_2);$$

$$W^N\left(\lambda_1^T(r_1), \alpha(\delta), \rho(\delta), \lambda_2^T(r_2)|T, r_1, r_2\right) = \left(\Delta + \frac{X}{\phi}\right) \times \lambda^T(r_1) + \left(r_1 + \frac{X}{\phi}\right) \times \left(1 - \lambda^T(r_1)\right) + + \beta\{0 \times \alpha(\delta)\} +$$

$$+\beta\left\{\left[\left(\Delta + \frac{X}{\phi}\right) \times \lambda_2^T(r_2) + \left(r_2 + \frac{X}{\phi}\right) \times \left(1 - \lambda_2^T(r_2)\right)\right] \times \rho(\delta) + 0 \times (1 - \rho(\delta))\right\} \times (1 - \alpha(\delta));$$

$$W^Z\left(\lambda_1^T(r_1), \alpha(\delta), \lambda_2^T(r_2)|T, r_1, r_2\right) = \Delta \times \lambda^T(r_1) + 0 \times \left(1 - \lambda^T(r_1)\right) +$$

$$+\beta\left[\frac{X}{1 - \phi} \times (1 - \phi) \times \alpha(\delta) + \left[\Delta \times \lambda_2^T(r_2) + 0 \times \left(1 - \lambda_2^T(r_2)\right)\right] \times (1 - \alpha(\delta))\right];$$

$$W^S\left(\lambda_1^T(r_1), \alpha(\delta), \rho(\delta), \lambda_2^T(r_2)|T, r_1, r_2\right) = \left(\Delta + \frac{X}{\phi}\right) \times \lambda^T(r_1) + \frac{X}{\phi} \times \left(1 - \lambda^T(r_1)\right) + + \beta\{0 \times \alpha(\delta)\} +$$

$$+\beta\left\{\left[\left(\Delta + \frac{X}{\phi}\right) \times \lambda_2^T(r_2) + \frac{X}{\phi} \times \left(1 - \lambda_2^T(r_2)\right)\right] \times \rho(\delta) + \left[\left(\Delta + \frac{X}{\phi} \times \phi\right) \times \lambda_2^T(r_2) + \frac{X}{\phi} \times \phi \times \left(1 - \lambda_2^T(r_2)\right)\right] \times (1$$

where $\beta < 1$ is the discount factor.

The first stage game structure is reported in Figure 1.
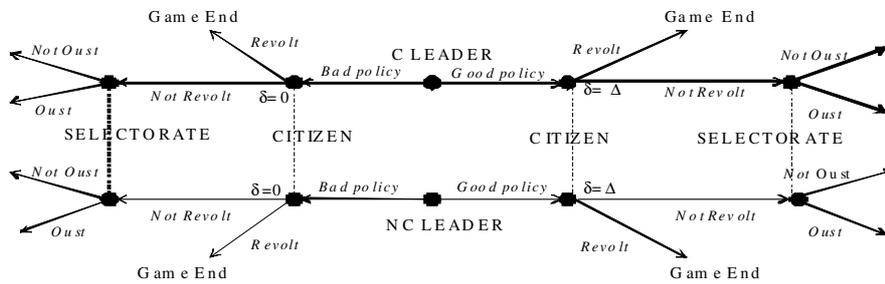
FIG. 1 The first stage game

The definitions used in the paper are summarized in the following table:

Table 1. Definition of Symbols

SYMBOL	DEFINITIONS
	PLAYERS
L	incumbent Leader
Z	Citizens
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
$r \sim G(r)$	private random rent the Leader can extract with cdf $G(r)$
β	discount factor
X	exogenous revenue of the country
μ	cost of revolution
$\phi \in [0, 1]$	relative size of the selectorate
	ENDOGENOUS VARIABLES
$\lambda^T(r)$	probability the type T Leader implements a congruent policy
$\alpha(\delta)$	probability the Citizens revolt after observing $\delta \in \{0, \Delta\}$
$\rho(\delta)$	probability the Selectorate retains the Leader after observing $\delta \in \{0, \Delta\}$
	PAYOFFS
$U^C(\lambda, \alpha, \rho)$	first period utility function of the congruent Leader
$U^N(\lambda, \alpha, \rho)$	first period utility function of the noncongruent Leader
$U^Z(\lambda, \alpha, \rho)$	first period utility function of the Citizens
$U^S(\lambda, \alpha, \rho)$	first period utility function of the Selectorate
$V^{C/Z/S}$	expected continuation payoff of the Leader/Selectorate/Citizens

2.3.   Comments on the Model

The model is aimed to analyze accountability in autocratic regimes and from this specific focus derives many of its simplification. As explained before, it is a standard model in the tradition of Besley principled agent models of political economics, even if we consider two common principal, the Selectorate and the Citizens. Hence, it inherits from the Besley approach the fact of being a screening and

a moral hazard model simultaneously, where paradoxically the incentives mechanism works when there is pooling. The problem is to understand under what conditions on the exogenous institutional parameters the incentives mechanism works and from this point of view our model fit the problem since it allows a full characterization of its unique Sequential equilibrium as a one-to-one map of the exogenous institutional parameters.

Before going to the full analysis of the model, a number of features of the model are worth stressing:

1. the Leader can not use redistributive policies to try to avoid citizens revolts. The reason for this assumption are two: first, we believe that such policies are not credible if they are not associated to a change in the political regime from autocracy to democracy, as argued in Acemoglu and Robinson 2006; second, we would like to focus on the incentives to promote growth, while the full analysis of redistributive policies would require the introduction of taxation and thus of distortion in production. We plan to analyze such issues in a future work;

2. the players are homogenous in the sense that all agents in the same group (Leader/Selectorate/Citizens) share the same preferences. This assumption allows to avoid two topics that although relevant, would possibly obscure the main focus of this analysis of accountability, i.e. the collective action problem and the mechanism to aggregate different preferences;

3. the Selectorate and the Citizens share the same information on the policies outcomes and the same prior on the incumbent Leader's type. This is clearly a simplification, since the members of the Selectorate are insiders, while the Citizens are outsiders;

4. the model is finite, the payoffs are linear and the conflict technology is trivial. These assumptions deliver a simple model which in turn allows a full characterization of the set of equilibria, in particular we show that for each parameters' specification there is a unique Sequential equilibrium, hence we are able to make meaningful comparative static analysis.

3. THE EQUILIBRIA

The calculations and the specific details of the equilibria are reported in the Appendix, here we present the results rather informally and comment on them. The game is analyzed using Sequential Equilibrium (SE) as solution concept instead of the more commonly used notion of Perfect Bayesian Equilibrium since we have to analyze a three player game and Sequential Equilibria encompass the notion of consistency which implies that players' beliefs on the true type of the leader agree out of the equilibrium path.

PROPOSITION 1.   *1. When $\phi \leq \frac{X}{X+\pi\Delta}$ and $\mu \in [0, X - \Delta]$, there exists a unique Sequential Equilibrium where both types of the leader would pursue their own interest and both will be challenged by a citizens' revolt, because given the unequal income distribution, the citizens' payoffs from accepting a congruent policy are too small compared to the cost of revolution and because the selectorate, being captured by the leader, is not able to discipline her behavior. This is the case we call of **Failed State Equilibrium**, since we have revolt with certainty, even if the policy is congruent. Because of this, there are no incentives to ever induce a congruent policy by the non congruent leader;*

*2. when $\phi \geq \frac{X}{X+\pi\Delta}$ and $\mu \in [0, X - \Delta]$, there exists a unique Sequential Equilibrium where both types of the leader would pursue their own interest and both will risk to be overthrown from power: the congruent leader by a citizens' revolt, because given the unequal income distribution, the citizens' payoffs from accepting a congruent policy are too small compared to the cost of revolution. On the other hand the selectorate is big enough not to be captured by the leader, hence he is able to discipline the leader's behavior avoiding a revolt when the policy is non congruent. This is the case that we call of **Partially Failed State Equilibrium**, since we have revolt after a congruent policy, i.e. with probability π, and a simple change of leadership within the given regime when there is a non congruent policy, i.e. with probability $1 - \pi$; in any case the incentives are not enough to ever induce a congruent policy by the non congruent leader;*

3. when $\phi \leq \frac{X}{X+\pi\Delta}$ and $\mu \in [X - \Delta, X - \pi\Delta]$, there exists a possibly mixed Sequential Equilibrium where the non congruent leader would pursue her own interest

*with positive probability and because of this she will face a citizens' revolt: this is the case of **Roving Bandit Equilibrium (RBE) outcome**; on the other hand if the policy is congruent, which happens with the complementary probability, then because of the unequal income distribution we will have revolt with probability $\overline{\alpha}$, and no revolt with probability $(1 - \overline{\alpha})$. This is the case that we might call of **Partially Efficient Equilibrium (PEE) outcome**, since the noncongruent leader has only partial incentives to behave correctly because with positive probability she will be removed by a revolt;*

4. *when $\phi \geq \frac{X}{X + \pi \Delta}$ and $\mu \in [X - \Delta, X - \pi \Delta]$, there exists a possibly mixed Sequential Equilibrium where the non congruent leader would pursue her own interest with positive probability and because of this she will be dismissed by the selectorate: this is the case of **Roving Bandit Equilibrium (RBE) outcome**; on the other hand if the policy is congruent, which happens with the complementary probability, then because of the unequal income distribution we will have revolt with probability $\overline{\alpha}$, and no revolt with probability $(1 - \overline{\alpha})$. This is the case that we might call of **Partially Efficient Equilibrium (PEE) outcome**, since the noncongruent leader has only partial incentives to behave correctly because with positive probability she will be removed by a revolt;*

5. *when $\phi \leq \frac{X}{X + \pi \Delta}$ and $\mu \in [X - \pi \Delta, X]$ there exists a unique Sequential Equilibrium, where the non congruent leader would pursue her own interest with positive probability and because of this she will be overthrown from power by a citizens' revolt: this is the case of **Roving Bandit Equilibrium (RBE) outcome**; on the other hand if the policy is congruent, then we will have no revolt. This is the case of **Efficient Equilibrium (EE) outcome**, since the noncongruent leader has the maximum possible incentive to behave correctly;*

6. *when $\phi \geq \frac{X}{X + \pi \Delta}$ and $\mu \in [X - \pi \Delta, \infty)$, there exists a unique Sequential Equilibrium, where the non congruent leader would pursue her own interest with positive probability and because of this she will be dismissed by selectorate: this is the case of **Roving Bandit Equilibrium (RBE) outcome**; on the other hand if the policy is congruent, then we will have no revolt. This is the case of **Efficient Equilibrium (EE) outcome**, since the noncongruent leader has the maximum possible incentive to behave correctly. Note that in this case the Citizens are not an active player;*

7. when $\phi \leq \frac{X}{X+\pi\Delta}$ and $\mu \in [X, +\infty)$, there exists a unique Sequential Equilibrium, where the non congruent leader would pursue her own interest with certainty and this notwithstanding she will remain in power: this is the case of **Kleptocratic Equilibrium (KE)**. Note that in this case the Citizens are not an active player.

The following tables synthetically illustrate how the possible regimes change as a consequence of the costs of the Citizens' revolution threat, showing how the set of possible equilibria depends on the selectorate size and on the probability of first period private benefit .

Small costs of revolution: $\mu \in [0, X - \Delta]$

	$r_1 \geq \Delta + \beta(\overline{r} + \frac{X}{\phi})$	$r_1 \leq \Delta + \beta(\overline{r} + \frac{X}{\phi})$
$\phi \geq \frac{X}{X+\pi\Delta}$	Partially Failed State Equilibrium	Partially Failed State Equilibrium
$\phi \leq \frac{X}{X+\pi\Delta}$	Failed State Equilibrium	Failed State Equilibrium

Intermediate costs of revolution: $\mu \in [X - \Delta, X - \pi\Delta]$

	$r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)$	$r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)$
$\phi \geq \frac{X}{X+\pi\Delta}$	Roving Bandit Equilibrium	Partially Efficient Equilibrium
$\phi \leq \frac{X}{X+\pi\Delta}$	Roving Bandit Equilibrium	Partially Efficient Equilibrium

High costs of revolution: $\mu \in [X - \pi\Delta, X]$

	$r_1 \geq \Delta + \beta(\overline{r} + \frac{X}{\phi})$	$r_1 \leq \Delta + \beta(\overline{r} + \frac{X}{\phi})$
$\phi \geq \frac{X}{X+\pi\Delta}$	Roving Bandit Equilibrium	Efficient Equilibrium
$\phi \leq \frac{X}{X+\pi\Delta}$	Roving Bandit Equilibrium	Efficient Equilibrium

Enormous costs of revolution: $\mu \in [X, +\infty)$

	$r_1 \geq \Delta + \beta(\overline{r} + \frac{X}{\phi})$	$r_1 \leq \Delta + \beta(\overline{r} + \frac{X}{\phi})$
$\phi \geq \frac{X}{X+\pi\Delta}$	Roving Bandit Equilibrium	Efficient Equilibrium
$\phi \leq \frac{X}{X+\pi\Delta}$	Kleptocratic Equilibrium	Kleptocratic Equilibrium

These results significantly change the set of possible political regimes we analyzed when the citizens are not active players[11] (see the last table). In particular,

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[11] Gilli and Li 2011.

the Kleptocratic Equilibrium in the two players game no longer exists, unless the costs of revolution are high enough to prevent any active behavior by the citizens. Otherwise, the citizens will revolt if the government is kleptocratic; more generally the citizens will play a substitute role to discipline the leader, unless the selectorate correctly performs his incentive role inducing free rider behavior from the citizens. The selectorate can be captured by the patronage of X when their size is small and $\frac{X}{\phi}$ is thereby large enough to disincentivize the leader's removal. However, as the citizens can only attain the payoff of a congruent policy, after a non congruent policy they have a significant incentive to revolt, in turn increasing the leader's incentive to implement a congruent policy. This analysis also emphasizes that the possibility of a Roving Bandit Equilibrium can never be avoided, as it is partially independent from the prevailing political institutions and does not depend on leader accountability towards the citizens or the selectorate. Instead, it primarily depends on the particularly high realization of the private rents, which the leader can seize. Finally, the proposition also shows that the citizens' power may have a paradoxical effect: when the conditions for a Failed State Equilibrium are satisfied, then the gains from accepting a congruent policy compared to the cost of revolution are such that the citizens will always revolt, hence the non congruent leader will try to reap as much money as possible before being overthrown by a revolt. However, in general, the possibility of getting an Efficient Equilibrium is significantly higher when the citizens play an active role, as the leader is accountable not only towards the selectorate, but also towards the citizens.

To conclude, it is interesting to stress that:

1. due to the threat of revolution, the government will often adopt growth-enhancing policies even when it is not accountable towards the selectorate. However, sometimes the certainty of social unrest will have the opposite effect of inducing a roving bandit outcome. Hence, the possibility of social unrest should be managed with care;

2. the threat of revolution is an effective mechanism for ensuring accountability only when the selectorate does not have the ability to constrain the leader, i.e. when the size of the selectorate is very small and thus he is captured by the government, otherwise generally the Citizens prefer to free ride on the incentives role of the Selectorate.

4. THE LINK BETWEEN CHINA AND THE THEORY

The analysis of section 3 provides an answer to our initial question: how could the Chinese government have been accountable even when the selectorate was captured? It suggests that, China after the 1989 Tiananmen protests fits the situation where the leader implements congruent policies due to her accountability towards the citizens, hence in this section we check whether in the ninety the Chinese institution reflect the characteristics emphasized by our model. As explained by our previous comments, we can divide the incentives scheme that could generate a successful autocracy into two categories: either because of the leader's accountability towards the selectorate or because of the leader's accountability towards the citizens. In this section we will argue that while 1980s China fitted into the first category, from the 1990s China has fitted into the second category, and the 1989 Tiananmen incident was the watershed. We are aware that we should be careful about any generalization we make because of the broad diversity within China, however we believe that our theoretical frame allows important insights into China policies.

Gilli and Li 2011 provides significant evidence that the Chinese policies in the eighties fit into the first category, where the leader pursues the general interest because of the effective checks from the selectorate who had the possibility of playing an effective role thanks to the institutional reforms launched by the Chinese leaders at the beginning of the reform period, after Mao's death. However, after the Tiananmen protest and the following repression, the political reform was trapped. The current Chinese political system is characterized by extremely limited political participation where top-down authority is superior to bottom-up authority. The selectorate aims to remain in the leader's coalition, and therefore acquiesce to any policy arrangement once the central leaders have reached an agreement. In other words, after the 1990s the selectorate has become too weak to discipline the leaders, hence according to our model the Kleptocratic Equilibrium should prevail if the game is played between the leader and the selectorate only. However, in spite of trapped political reforms and weakened restraints from the selectorate, the central leadership still seems accountable to the interests of the general population and its ultimate goal is the pursuit of economic growth and not just the grab of public

resources. We argue that this has occurred because the citizens began to play an active role after the 1990s, hence the leader pursues the general interest not because of the selectorate control, but rather because of her accountability towards the citizens.

This section will proceed as follows: in the first subsection we will discuss some of the major events during the 1980s and 1990s to show that the selectorate accountability channel became ineffective as a result of hampered political reform. In the second subsection we will contextualize social unrest in China. An unavoidable result of "reciprocal accountability" in autocracy is high inequality, as the selectorate will receive all the redistribution. Rising inequality, consolidation of an elite-based exclusionary ruling coalition and increasing marginalization of disempowered groups, such as workers, peasants, and migrant labourers caused growing tensions between the ruling elite and the masses. In the third subsection, we will argue that while the cost of revolution was enormous in the 1980s, it fell significantly in the 1990s, so to assure the effectiveness of citizenry accountability. In the final subsection, we will show that as the protest role of the citizens became effective, maintaining social stability became the top priority of Chinese leaders. The leaders continue to pursue the general interest in spite of the weakened selectorate control because they want to use high economic growth to maintain social stability.

4.1. Trapped Inner-party Democracy after the 1980s

Gilli and Li 2011 illustrates how positive changes had begun to take place in the Chinese political system since the late 1970s, particularly the significant increase in the size of the selectorate. According to Deng, in 1982 China was in the midst of an "administrative revolution" and measures were introduced to prevent the overconcentration of power in too few hands and recruit new, better technically trained members into the party. Gradually, as originally planned[12], political reform went hand in hand with economic reform in the first ten years of the "reform and opening up". In particular Hu Yaobang and Zhao Ziyang sustained the push to liberalize the polity in China through some bold, though tentative, measures

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[12]Besides economic reform, Deng Xiaoping also proposed political reform at the beginning of the 1980s. But his views on political reform received relatively little attention (Ng-Quinn 1982).

planned to reform the political system including the abolition of party committees within government agencies and the separation of the functions of the party and of the government.[13] As a result of the expansion of the selectorate, checks and balances within party institutions emerged while were absent in Mao's era. As widely discussed in Gilli and Li 2011, we believe that this institutional change in the political structure of the Chinese ruling system explain the accountability of the Chinese central government in the first phase of the reform period. However, the gradual progress of political reforms was trapped after the 1989 repression of Tiananmen protests. The Tiananmen repression, a watershed event for Chinese politics, had profound and far-reaching influences over the reform process, and the impact of Tiananmen remains deeply engraved in China's political system today. The incident ended with the reformists being completely defeated by the conservatives inside the party. Some people left China and others lost power, the selectorate stopped growing in size and power and actually lost part of his relevance. In late June 1989, the Fourth Plenum of the Thirteen CC announces the removal of Zhao Ziyang, who was not allowed to defend himself at the plenum. The manner of Zhao's removal and Jiang's appointment show that in that dangerous period the crucial decisions were made by a cabal of veteran revolutionaries at Deng's residence. The attempts to create a more powerful Central Committee, to separate functions of the party and of the government and ultimately to realize inner-party democracy were cut off since political competition and even a more powerful Central Committee were treated as threats to stability.[14] Worse still, public discussion and debate on political liberalization and democratization was banned, while previously it was tolerated and even encouraged.[15] As a result, a concentration of power into the Politburo, particularly in the Politburo Standing Committee emerged. All the members of the Politburo Standing Committee are top leaders from the party, the government and the military, they decide the nomination of members to the Central Committee and the promotion of government officials and military officers. The number one leader, from then on, simultaneously assumes the three most important political positions in China: general secretary of the CCP, President of China, and chairman of the Central Military

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[13] Huang, 1998.

[14] Guo 2004.

[15] Pei 2006.

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Commission. This institutional arrangement weakens the ability of the selectorate to place checks and balances on the leader's power. Although power still flows in both directions, as the leaders still need the approval of members in the Central Committee to be elected according to the Constitution of CCP, top-down power is greater than bottom-up power, as top party leaders have effective control over the composition and the membership of the Central Committee. This is exemplified by the Central Committee standard acquiescence once a general agreement is reached among the top leadership.[16] Hence, after the Tiananmen revolt and subsequent repression, few new or significant political reform initiatives have been launched. The role of the selectorate as an effective incentives scheme to constrain the leader's behavior has been weakened since then. A good example to illustrate this point relates to the resistance of the recentralization attempts proposed by central authorities. This confrontation against central authorities was led by Ye Xuanping, the reformist governor of Guangdong province.[17] At several meetings in 1989-90, Ye, sometimes supported by other governors, criticized the recentralization of budget revenues proposed by Premier Li Peng. At one conference of provincial governors, his speech was reportedly met by "wild applause".[18] Therefore, the Central Committee had to be postponed and the central government backed down. However, the central authorities later removed Governor Ye in 1991, along with the Guangdong party secretary, and appointed two more junior officials who were more compliant. In late 1993, the fiscal system favored by Ye was abandoned and replaced by the central authority's preferred arrangement.[19] Since then, the selectorate has become subordinate to the central leadership: it is still an important player in the Beijing game of politics, but it is significantly less powerful to limit the central leaders policies.

4.2. High Inequality and Rising Social Conflict in China

From an economic point of view, social unrest in autocratic polities is partially a consequence of unequal distribution of wealth.[20] The official newspaper of the

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[16] Oksenberg 2001.

[17] Cai and Treisman 2006, Montinola et al. 1995, Shirk 1993.

[18] Gibney, 1990.

[19] Cai and Treisman, 2006.

[20] Acemoglu and Robinson, 2006.

Communist Party, People's Daily (*Renmin Ribao*), reports that according to an opinion survey 70 percent of people think that "the great disparity between the rich and the poor" has adversely affected social stability. It notes that people are most outraged about wealth illegitimately acquired by corrupt officials in "power-for-money transactions".[21] Actually in China, fast economic growth went hand in hand with increasing income inequality. The richest 10 percent hold 45 percent of the country's wealth, and the poorest 10 percent have only 1.4 percent.[22] The Gini coefficient in the whole country at the present time is estimated to be around 0.47, a much higher level compared to 0.30 in the early 1980s.[23] Official data shows that in 2010 urban per capita income was 19,109 yuan while rural per capita income was only 5,919 yuan, a ratio of 3.23 to 1.[24] On one hand, rich Chinese begin to pursue lavish lifestyle, while on the other hand, the lives of the poor are still extremely hard. The Ministry of Commerce estimates that China will become the world's largest luxury market by 2014, accounting for 23 percent of the total. As an online posting said "as we just start to solve the dilemma of three generations living under one roof, you now live in fancy villas; as we just start to wear gold necklaces, you are wearing diamonds; as we just start to drink beer, you are switching to 100-year-old Scotch whisky". This vivid description showcases the lifestyle enjoyed by the newly rich Chinese.[25] In the meantime, poverty is still a serious problem in China. In the rural area, 9.9 percent of the population in 2005 was living on less than one dollar per day and 34.9 percent was living on less than two dollars per day.[26] For the absolute poor, many of whom live in remote mountainous areas, liberalization and the increased use of market forces have been of little benefit as they have little to sell. In fact, with increased price for agricultural inputs and the collapse of medical access, their living standards have almost certainly declined. In addition, with financial pressures increasing on local authorities many have resorted to raising illegal fees and levies that fall on the poor disproportionately. In urban China, the official statistics indicate the number of individuals receiving income allowance from Dibao Program (Minimum Living

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[21] People's Daily, May 11, 2002.

[22] Shirk 2007, p. 30.

[23] Li, 2010.

[24] China Statistical Yearbook, 2010.

[25] China Daily 13/09/2008, http://www.chinadaily.com.cn/bizchina/2008-09/13/content_7025131.htm.

[26] The United Nations Development Program (UNDP: 2007). http://hdr.undp.org/en/statistics.

Standard Guarantee) approached 43 million in 2007.[27] Official unemployment figures (just over 4 per cent for 2009) significantly underrepresented the true levels and the regional variation. One survey by the Chinese Academy of Social Sciences calculates urban unemployment at around 9.4 per cent for 2008.[28] Worse still, the progress of reconstructing the social security and welfare system is lagging. Urban workers have lost the in-kind health and education benefits from the former social security system, while the majority of rural residents, migrant workers and informal workers employed by private sectors are not covered by the system at all. This huge socioeconomic divide motivates potential social unrest by the citizens. In recent years, the view that China's inequality trend is fueling growing popular unrest has gained general acceptance among researchers, policy analysts and even the Chinese leadership.[29] Social instability has become a serious problem and a major concern for the Chinese government. Although there are no reliable official statistics, recent trends show that social conflicts are increasing in number and size and are becoming better organized. We compared the number of "mass incidents" reported in different sources: the number has surged from 8,700 in 1993, to 32,000 in 1999,[30] 58,000 in 2003,[31] approximately 74,000 in 2004,[32] and rocketed to 180,000 in 2010[33]. The size of the incidents can be measured by the number of people involved in protests which reached 3.76 million in 2004, compared with 730,000 a decade earlier.[34] These incidents take various forms, from peaceful small-group petitions and sit-ins to marches and rallies, labor strikes, merchant strikes, student demonstrations, ethnic unrest, and even armed fighting and riots.

4.3. The Reduced Cost of Revolution

Our model shows that in order to ensure the effectiveness of the citizenry accountability channel, the cost of revolution should be intermediate, neither small nor enormous. If the cost of revolution is too small, the country will become a failed

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[27] Li, 2010.

[28] Saich 2011.

[29] Whyte 2010, p 5.

[30] Tanner, 2004.

[31] Keidel, 2005.

[32] Shirk, 2007.

[33] Bloomberg News, May 27, 2011. http://www.bloomberg.com/news/2011-05-26/china-tops-india-as-asian-country-most-likely-to-maintain-economic-growth.html

[34] Shirk 2007, p. 56.

state, which is the situation in some Sub-Saharan African countries; if the cost of revolution is enormous, there will be no willingness to revolt even if the citizens suffer under bad policies, as exemplified by North Korea. Although in our model we treat the cost of revolution as an exogenous variable, the cost of revolution can be influenced by the leadership policies, who can exercise strict control over the threats of potential social unrest strengthening the coercive power, however the mechanism determining the cost of revolution in autocracies is not the focus of this work. Actually, once the changes in the cost of revolution are consolidated, policy outcomes are shaped according to the political game we have described before. In this subsection, we argue that in China the cost of revolution has decreased from "enormous" in the 1980s to "large but not too enormous" in the 1990s as a result of changes in attitudes toward social conflicts by the Chinese leadership. This change in the cost of revolution has assured the effectiveness of citizenry accountability. The party remained defensive in the aftermath of Tiananmen and felt threatened by enemies from both within and without. Yet, the party prided itself on the fact it had ridden out the storm of protest and had been spared the dramatic collapse of communist regimes in Eastern Europe The attitude of Chinese authorities towards social conflicts keeps evolving over time. In the past, Chinese authorities tended to attribute social unrest to enemy conspiracies, reflecting the classic Leninist insistence that social and economic protests in a Communist country cannot just happen, they must be instigated.[35] Therefore, social and economic unrest were suppressed with tough measures, which made the cost of revolt enormous. But gradually, the authorities began to recognize the economic causes of unrest, with some even claiming that economic conflicts ultimately underlie all social protests. At the same time, more and more sympathetic views arose. The CCP has started to adopt a paternalistic attitude towards limited protests that do not put in dangers the regime stability. For example, a surprising number of analysts in the public security system displayed an undisguised sympathy for the worker and peasant protestors the police were supposed to suppress. In their writings, they characterize laid-off demonstrators as "exploited", "marginalized", "socially disadvantaged", "victims" and "losers" in economic competition, driven to protest by social distrust and the "heartlessness" of the free market. They

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[35] Tanner, 2004.

frankly conceded that many protestors were victims of crooked managers who drove their factories into bankruptcy through illicit dealings or who absconded company assets. More importantly, Chinese authorities began to recognize that it was no longer convenient to fully repress all kinds of protest.[36] In 2003 the new appointed leadership under Hu Jintao and Wen Jiabao has been at pains to portray themselves as more open, efficient and concerned about the plight of the poor. In the eyes of many, Jiang represents the interests of China's new economic and coastal elites, yet even in the latter years of Jiang's rule there was increasing concern about inequality and the potential threat that might pose to stability. As a result of the shifts in attitudes, the Chinese authorities' responses to social conflicts have also changed. First, the central authority tolerates small-scale riots and sometimes uses the conflicts as a multipurpose governance tool. The small scale riots can serve as an information collection source, which helps central leadership to monitor the actions of local officials.[37] Moreover, sometimes through direct intervention, correcting the mistreatment of the citizens and punishing the corrupted local officials, the central leadership can improve its image and enhance the legitimacy of the CCP and of the government. Second, in the past Chinese media were not allowed to publish any news about protests and demonstrations, but from 2008 Hu Jintao lifted the ban against media reporting of mass protests. Just a week after Hu's speech in June 2008, the first "mass incident," a protest in Weng'an county, was reported in the official *Xinhua News*. A year later, the *People's Daily*, also for the first time, broadcast local protests in Shishou City.[38] Therefore, instead of simple repression, the new implicit goal of the central authorities was to forge an internal security strategy that would permit the effective containment of unrest, while at the same time addressing some of the underlying economic and policy-related causes, in an attempt to prevent the protests from becoming a major threat to the regime's stability.[39] Nonetheless, the cost of revolution in China still remains very high, and is far from falling into the range of the too small category where it is associated to a failed state regime. When arises any major social unrest that might jeopardize social stability and challenge the rule of

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[36] Tanner, 2004.

[37] Minzner, 2006.

[38] Shirk 2010, p. 24-26.

[39] Tanner, 2006.

the CCP, the government resorts to tight controls and repression. However, the cost of revolution is no longer enormous, and thus the government begins to make concessions and responses to citizens' demand, especially to nationwide popular demands.

4.4. Maintain Social Stability, a new Source of Accountability

As far as China is concerned, pursing high economic growth to maintain social stability has proved an effective solution as robust economic growth improves living standards and creates new opportunities to promote the acceptance of the current system. This strategic vision of the political leaders has guided the reform. While Deng was bitterly critical of Gorbachev for undermining socialism, he realized that unless the CCP could satisfy the material aspirations of the population, it might be destined for the same fate. The year 1992 proved to be a watershed and let to the dramatic economic boom and building craze that characterized much of the 1990s. The breakthrough came with Deng inspection tour to South China in January-February 1992, when he concluded that continued economic reform was vital for the party's legitimacy. He claimed that if China's economic reform were reversed, the party would lose the people's support and "could be ovethrown at any time". As former premier Zhu stated in his March 2003 valedictory, "Development is the fundamental principle, and the key to resolving all problems which China currently faces. We must maintain a comparatively high growth rate in our national economy". Zhu also argued that the pace of reform had to be balanced against the risks of unrest.[40] Therefore, although the selectorate has lost its effectiveness as disciplinary device, the leaders still pursue economic growth, as they believe that China would be threatened by social and political upheaval if economic growth seriously slows. "[T]he government has based its economic policies on an algorithm derived from its priority on stability. The economy must grow at an annual rate of 7 percent or more in order to create a certain number of jobs ... , and keep unemployment rates at levels that will prevent widespread labor unrest ...".[41] These explicit growth targets to maintain social stability remain in the minds of all Chinese leaders as they develop domestic policies. From Jiang

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[40] Zhu Rongji, "Report on the Work of the Government," speech, March 5, 2003.

[41] Shirk 2007, p. 55.

Zeming's initiation of the "Development of the West" campaign in the late 1990s, to Hu Jingtao's proclaimed goal of a "harmonious society", all leaders intended to improve the lives of Chinese poor citizens in general, and poor farmers in particular, to avoid social unrest. In particular Hu Jintao "authoritarian populism" is based on the "Three People's Principles" that power be used by the people, concern be shown to the people, and that benefits be enjoyed by the people. This means that policies should be pursued to reduce income inequality, improving access to healthcare and education for those in the rural areas and migrants and improving the social security system. The Chinese leaders also recognized that in the short-term China's high growth could be achieved by utilizing its relatively cheap labor force, but that in the long-term corruption and privileges of elite groups are inimical to the productivity growth required to maintain fast economic expansion. The Asian financial crisis of 1997 limit China's growth alternatives and help it focus on developing the domestic market but also the CCP leadership seem to have been unnerved by the sudden fall of the Suharto regime in Indonesia. Here was a man who had presided over along period of economic growth and who seemed securely in power supported by the military and yet was swiftly swept away by street demonstrations. And recently the world financial crisis together with the Arab Spring seem an alarming potential parallel. Thus, although curtailing vested interests was a very tough task, the CCP had the resolution to do so, since the top leaders link domestic stability, and thus their power, to the state of the economy.

5. CONCLUSION

At the beginning of this paper we asked how was that the Chinese government remained accountable even when the selectorate was captured by the leader. In this paper we argue both theoretically and empirically that when "reciprocal accountability" is ineffective due to the capture of the selectorate, the protest role of the citizens may be an effective way to induce the Efficient Equilibrium, as the leader want to avoid revolution. Note that a necessary condition for effective citizenry accountability is that the cost of revolution is large but not enormous, a condition we argue is satisfied in China since the 1980s. Hence, we conclude that while prior to the Tiananmen incident, China fits the results where success-

ful autocracy arises because of accountability towards the selectorate, after the Tiananmen incident we need to refer to the equilibria where successful autocracy arises because of accountability towards the citizens. Leaders adopted good policies to promote economic growth believing that high growth will solve other social problems and that improvements in living standards would divert people's demand for democracy. So far this strategy has worked well, as high economic growth helped to generate social stability, and social stability in turn provided China with a peaceful environment in which to develop its economy. However, the two-digit growth rate cannot last forever, as China is facing more constraints than ever before, especially related to environment, energy and natural resources. Besides, China will soon become an aging society, which will turn into a heavy burden on society. At the same time, the gap between poor and rich, the rural and urban differences, ethnic conflicts in areas populated by rent-seeking minorities tend to create more serious social tensions than before. As the strategy of using high growth to maintain social stability will not be effective forever, catching up with the long neglected political reform is a reasonable alternative.

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6. APPENDIX

We use Sequential Equilibrium (SE) as solution concept instead of the more commonly used notion of Perfect Bayesian Equilibrium since we have to analyze a three player game and Sequential Equilibria encompass the notion of consistency which implies that players' beliefs on the true type of the leader agree out of the equilibrium path, as we will see. The players' sequential rational choices are derived backwards, working on each player's information set.

The selectorate has two possible information sets that we will denote by $\delta \in \{0, \Delta\}$ depending on the policy observed. In each of these two information sets, sequential rationality implies that the selectorate will retain the incumbent leader in $\delta \in \{0, \Delta\}$ if and only if :

$$V^S(\rho = 1|\delta) \geq V^S(\rho = 0|\delta) \tag{1}$$

i.e.

$$P^S(C|\delta)\Delta + \frac{X}{\phi} \geq \pi\Delta + \phi\frac{X}{\phi} \iff P^S(C|\delta)\Delta + \frac{1-\phi}{\phi}X \geq \pi\Delta. \tag{2}$$

This condition can be rewritten to show an interesting interpretation of sequential rationality for the Selectorate:

$$V^S(\rho = 1|\delta) \geq V^S(\rho = 0|\delta) \iff \frac{1-\phi}{\phi}X \geq \left(\pi - P^S(C|\delta)\Delta\right)\Delta$$

i.e. the selectorate retains the leader if and only if the risk of loosing the private privileges more than compensate the expected social gains from changing the leader.

As usual the players' beliefs $P^S(C|\delta)$ should be derived using Bayes rule:

$$P^S(C|\delta = \Delta) = \frac{\pi \times \overline{\lambda}^C \times (1 - \alpha(\Delta))}{\left[\pi \times \overline{\lambda}^C + (1-\pi) \times \overline{\lambda}^N\right] \times (1 - \alpha(\Delta))}$$

$$P^S(C|\delta = 0) = \frac{\pi \times \left(1 - \overline{\lambda}^C\right) \times (1 - \alpha(0))}{\left[\pi \times \left(1 - \overline{\lambda}^C\right) + (1-\pi) \times \left(1 - \overline{\lambda}^N\right)\right] \times (1 - \alpha(0))} \tag{3}$$

where

$$\overline{\lambda}^T = \int_{-\infty}^{\infty} \lambda^T(r_1) dG(r_1), \text{ with } T \in \{C, NC\}.$$

Note that by consistency $(1 - \alpha(0)) > 0$ and $(1 - \alpha(\Delta)) > 0$, hence we can simplify previous ratios getting

$$P^S(C|\delta = \Delta) = \frac{\pi \times \overline{\lambda}^C}{\pi \times \overline{\lambda}^C + (1-\pi) \times \overline{\lambda}^N} = P^Z(C|\delta = \Delta) \tag{4}$$

$$P^S(C|\delta = 0) = \frac{\pi \times \left(1 - \overline{\lambda}^C\right)}{\left[\pi \times \left(1 - \overline{\lambda}^C\right) + (1 - \pi) \times \left(1 - \overline{\lambda}^N\right)\right]} = P^Z(C|\delta = 0) \tag{5}$$

as stated at the beginning of the Appendix. Moreover, since by construction $\lambda^C(r_1) = 1$ for any r_1 and thus $\overline{\lambda}^C = 1$, then

$$P^S(C|\delta = \Delta) = P^Z(C|\delta = \Delta) = \frac{\pi}{\left[\pi + (1 - \pi) \times \overline{\lambda}^N\right]} \tag{6}$$

which implies

$$\forall \lambda^N(r_1) \in [0,1] \quad P^S(C|\delta = \Delta) = P^Z(C|\delta = \Delta) =: \Pi(\overline{\lambda}^N) \in [\pi, 1] \tag{7}$$

with

$$\frac{\partial \Pi}{\partial \overline{\lambda}^N} < 0, \ \Pi(0) = 1 \ \text{ and } \ \Pi(1) = \pi.$$

Moreover

$$P^S(C|\delta = 0) = \frac{0}{(1 - \pi) \times \left(1 - \overline{\lambda}^N\right)} \tag{8}$$

which implies

$$\forall \overline{\lambda}^N \in [0,1) \quad P^S(C|\delta = 0) = P^Z(C|\delta = 0) = 0. \tag{9}$$

Hence the only problematic case is when $\overline{\lambda}^N = 1$, that would imply $P^S(C|\delta = 0) = P^Z(C|\delta = 0) \in [0,1]$. However, in this case we can use a standard forward induction argument[42] to assume that $P^S(C|\delta = 0) = P^Z(C|\delta = 0) = 0$ since the congruent type has no reason to deviate to a non congruent policy. Hence we conclude that

$$\forall \overline{\lambda}^N \in [0,1] \quad P^S(C|\delta = 0) = P^Z(C|\delta = 0) = 0. \tag{10}$$

Now we can derive the selectorate's sequential rational choice as a function of his beliefs and of his size. If $\delta = \Delta$, then $V^S(\rho(\Delta) = 1) \geq V^S(\rho(\Delta) = 0)$ is equivalent to

$$P^S(C|\Delta)\Delta + \frac{(1 - \phi)}{\phi}X \geq \pi\Delta, \tag{11}$$

which is always satisfied since $P^S(C|\Delta) \in [\pi, 1]$. Therefore in any SE the selectorate observing $\delta = \Delta$ will choose to retain the incumbent leader, i.e.

$$\rho(\Delta) = 1.$$

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[42] For example we can apply Cho and Kreps 1987 intuitive criterion.

If $\delta = 0$, then the selectorate is certain to face a non congruent leader, hence he should compare the expected loss of private privileges with the possible social gains from changing the leader, i.e. $V^S(\rho = 1|0) \geq V^S(\rho = 0|0)$ if and only if

$$\frac{(1-\phi)}{\phi}X \geq \pi\Delta, \tag{12}$$

which might be satisfied depending on the parameters.

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

6.1.1. Sequential rational choices of the Selectorate when $\phi \leq \frac{X}{X+\Delta\pi}$.

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 the selectorate next period is too small:

$$\rho(0) = 1.$$

In this situation, the Selectorate is completely loyal to the Leader being afraid of loosing his privileges and therefore he is always supporting the Leader no matter what kind of general interest policy choice she had made, i.e.

$$\phi \leq \frac{X}{X + \Delta\pi} =: \Phi(X, \pi, \Delta) \implies \forall \delta \ \rho(\delta) = 1.$$

Hence in this institutional setting, the only control on the Leader's behavior relies on the Citizens.

6.1.2. Sequential rational choices of the Citizens when $\phi \leq \frac{X}{X+\Delta\pi}$.

When $\phi \leq \frac{X}{X+\Delta\pi}$, the Selectorate is captured by the Leader, hence he is *de facto* a passive player and the game is actually played by the Leader and the Citizens as the following figure shows.

The citizens have two possible information sets that we will denote by $\delta \in \{0, \Delta\}$: sequential rationality implies that the citizens will revolt at $\delta \in \{0, \Delta\}$ if and only if :

$$V^C(\alpha = 1|\delta) \geq V^C(\alpha = 0|\delta). \tag{13}$$

The expected continuation utility the citizens will get in δ after they choose to initiate a revolution is:

$$V^Z(\alpha = 1|\delta) = (1-\phi) \times \frac{X-\mu}{1-\phi} + \phi \times 0 = X - \mu, \tag{14}$$
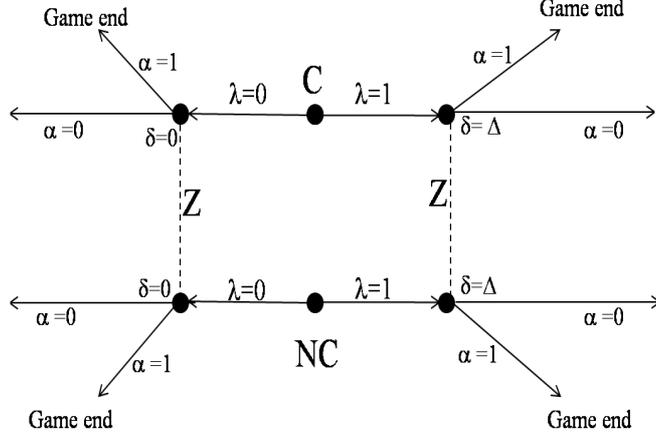
FIG. 2 The *de facto* reduced game when the Selectorate is captured.

while without revolution is:

$$V^Z(\alpha = 0|\delta) = \rho(\delta)P^Z(C|\delta)\Delta + (1 - \rho(\delta))[\phi(\pi\Delta + \frac{X}{\phi}) + (1 - \phi)\pi\Delta] = \tag{15}$$

$$= \rho(\delta)P^Z(C|\delta)\Delta + (1 - \rho(\delta))[\pi\Delta + X] \tag{16}$$

since if the selectorate will retain the incumbent at the end of period one, i.e. if $\rho(\delta) = 1$, the citizens will get the expected payoff $P^Z(C|\delta)\Delta$, while if the selectorate will remove the incumbent at the end of period one, i.e. $\rho(\delta) = 0$, the citizen will get the expected payoff $\phi(\pi\Delta + \frac{X}{\phi}) + (1 - \phi)\pi\Delta$, because once the incumbent has been ousted, the citizens will have probability ϕ to be included in the challenger's coalition getting $\pi\Delta$ from the general interest policy and a private payoff $\frac{X}{\phi}$, while with probability $1 - \phi$ the citizens will not be included into the newly formed selectorate receiving just $\pi\Delta$.

Since in this setting $\rho(\delta) = 1$ for any δ, the citizens will accommodate in δ, i.e. $\alpha(\delta) = 0$, if and only if:

$$X - \mu \le P^Z(C|\delta)\Delta; \tag{17}$$

moreover $P^Z(C|0) = 0$, hence this inequality is satisfied in $\delta = 0$ if and only if $\mu \geq X$. Hence when $\mu \leq X$ the only sequential rational choice by the citizens in $\delta = 0$ is to revolt

$$\alpha(0) = 1 :$$

the citizens observing a bad social policy perfectly infer that the leader is non congruent, moreover they perfectly anticipate that the selectorate is captured by the leader, hence they will go for a change. On the other hand, when $\mu \geq X$ the citizens are actually passive players that will always accommodate, so that we are back to the reciprocal accountability model analyzed in Gilli and Li 2011.

Now consider the citizens sequentially rational behavior in $\delta = \Delta$: the citizens will revolt in Δ, i.e. $\alpha(\Delta) = 1$, if and only if

$$X - \mu \geq \Pi(\overline{\lambda}^N)\Delta \Longleftrightarrow \mu \leq X - \Pi(\overline{\lambda}^N)\Delta. \tag{18}$$

Hence the citizens' choice in Δ depend on $\Pi(\overline{\lambda}^N)$, i.e. on $\overline{\lambda}^N$. In particular $\alpha(\Delta) = 1$ if and only if:

$$\mu \leq X - \Pi(\overline{\lambda}^N)\Delta \Longleftrightarrow \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \tag{19}$$

Hence we conclude that

$$\alpha(\Delta) = 1 \Longleftrightarrow \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right). \tag{20}$$

Note that

$$\frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \leq 0 \Longleftrightarrow \mu \leq X - \Delta.$$

Therefore, when $\mu \leq X - \Delta$, then $\alpha(\Delta) = 1$ for any $\overline{\lambda}^N$. On the other hand

$$\frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \geq 1 \Longleftrightarrow \mu \geq X - \pi\Delta$$

and thus when $\mu \geq X - \pi\Delta$, then $\alpha(\Delta) = 0$ for any $\overline{\lambda}^N \leq 1$. Finally

$$\frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \in [0,1] \Longleftrightarrow \mu \in [X - \Delta, X - \pi\Delta]$$

Before of the analysis of the non congruent Leader sequential best rational behavior, let sum up the Citizens best reply choices, which we will denote by $\alpha(\overline{\lambda}^N|\delta)^{BR}$. As seen before:

1. when $\mu \leq X$

$$\alpha(\overline{\lambda}^N|0)^{BR} = 1 \text{ for any } \overline{\lambda}^N;$$

2. when $\mu \leq X - \Delta$

$$\alpha(\overline{\lambda}^N|\Delta)^{BR} = 1 \text{ for any } \overline{\lambda}^N;$$

3. when $\mu \geq X - \pi\Delta$

$$\alpha(\overline{\lambda}^N|\Delta)^{BR} = 0 \text{ for any } \overline{\lambda}^N;$$

4. when $\mu \in [X - \Delta, X - \pi\Delta]$

$$\alpha(\overline{\lambda}^N|\Delta)^{BR} = \begin{cases} 0 & \text{if } \overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ [0,1] & \text{if } \overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ 1 & \text{if } \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \end{cases}.$$

6.1.3. Sequential rational choices of the Leader when $\phi \leq \frac{X}{X+\Delta\pi}$.

Note that while the Citizens will best respond to $\overline{\lambda}^N$, the leader would choose the sequential rational $\lambda^N(r_1)$ anticipating the Citizens best reply $\alpha(\overline{\lambda}|\delta)^{BR}$. In particular

1. when $\mu \leq X - \Delta$

$$\alpha(\overline{\lambda}^N|0)^{BR} = \alpha(\overline{\lambda}^N|\Delta)^{BR} = 1 \text{ for any } \overline{\lambda}^N;$$

then the Leader would choose to always get the private rent since the Citizens will revolt anyway, i.e. $\lambda^N(r_1|\alpha(\delta)^{BR}) = 0$ for any r_1. Note that in this case $\overline{\lambda}^N = 0$, implying $\Pi(\lambda^N) = 1$. Hence we can conclude that

$$\lambda^N(r_1) = 0 \text{ for any } r_1, \ \alpha(0) = \alpha(\Delta) = 1$$

is part of a unique Sequential Equilibrium when $\mu \leq X - \Delta$;

2. when $\mu \geq X - \pi\Delta$

$$\alpha(\overline{\lambda}^N|0)^{BR} = 1 \text{ for any } \overline{\lambda}^N \ \& \ \alpha(\overline{\lambda}^N|\Delta)^{BR} = 0 \text{ for any } \overline{\lambda}^N;$$

then the non congruent Leader might prefer to implement a good policy instead of getting the private rent r_1. 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 Citizens' beliefs. Let $EU^N(\lambda|\alpha(\delta)^{BR})$ be the non congruent Leader's expected utility she get from choosing λ in period one anticipating the Citizens best reply. Since in this parameters' region $\alpha(0) = 1, \alpha(\Delta) = 0$ and $\rho(0) = \rho(\Delta) = 1$, then

$$EU^N(\lambda(r_1) = 1) = \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \tag{21}$$

and

$$EU^N(\lambda(r_1) = 0) = r_1 + \frac{X}{\phi} + \beta \times 0 = r_1 + \frac{X}{\phi}. \tag{22}$$

Hence the non congruent Leader will choose $\lambda^N(r_1) = 0$ if and only if:

$$EU^N(\lambda(r_1) = 1) \leq EU^N(\lambda(r_1) = 0) \tag{23}$$

that is,

$$r_1 + \frac{X}{\phi} \geq \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \Longleftrightarrow r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \tag{24}$$

Therefore the non congruent Leader's sequentially rational actions are

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

This means that $\overline{\lambda}^N = \int_{-\infty}^{\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)} G(r_1)dr_1 = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right)$ implying $\Pi(\overline{\lambda}^N) = \frac{\pi \times 1}{\pi \times 1 + (1-\pi) \times G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right)} > \pi$. Hence we can conclude that

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

is part of a unique Sequential Equilibrium when $\mu \geq X - \pi\Delta$;

3. when $\mu \in [X - \Delta, X - \pi\Delta]$

$$\alpha(\overline{\lambda}^N|0)^{BR} = 1 \text{ for any } \overline{\lambda}^N \quad \& \quad \alpha(\overline{\lambda}^N|\Delta)^{BR} = \begin{cases} 0 & \text{if } \overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ [0,1] & \text{if } \overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ 1 & \text{if } \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \end{cases};$$

then the non congruent Leader might prefer to implement a good policy instead of getting the private rent r_1. 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 Citizens' beliefs. Let $EU^N(\lambda|\alpha(\delta)^{BR})$ be the non congruent leader's expected utility she get from choosing λ in period one anticipating the Citizens best reply. Suppose $\overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$ and thus $\alpha(\overline{\lambda}^N|\Delta)^{BR} = 0$, then

$$EU^N(\lambda(r_1) = 1) = \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \tag{25}$$

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and

$$EU^N(\lambda(r_1) = 0) = r_1 + \frac{X}{\phi} + \beta \times 0 = r_1 + \frac{X}{\phi}. \tag{26}$$

Hence the non congruent leader will choose $\lambda^N(r_1) = 0$ if and only if:

$$EU^N(\lambda(r_1) = 1) \leq EU^N(\lambda(r_1) = 0) \tag{27}$$

that is,

$$r_1 + \frac{X}{\phi} \geq \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \iff r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \tag{28}$$

Therefore when $\phi \leq \frac{X}{X+\pi\Delta}$ and $\alpha(\Delta) = 0$, the non congruent leader's sequentially rational actions are

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

This means that $\overline{\lambda}^N = \int_{-\infty}^{\Delta+\beta(\overline{r}+\frac{X}{\phi})} G(r_1)dr_1 = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right)$. Hence if $G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right) \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, then

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

is part of a unique Sequential Equilibrium when $\mu \in [X - \Delta; X - \pi\Delta]$, otherwise we need to look for mixed strategy behavior since $\lambda^N(r_1) = 0$ for any r_1 would imply $\alpha(\Delta) = 0$ which in turn would imply $\lambda^N(r_1) = 1$ for any r_1, inducing however $\alpha(\Delta) = 1$ as best reply, which implies $\lambda^N(r_1) = 0$ so that we are back at the starting point without any fixed point. To look for a mixed sequential equilibrium, we interpret $\lambda^N : [\Delta, +\infty) \to [0,1]$ as a behavioral strategy for the noncongruent Leader, where $\lambda^N(r_1) \in [0,1]$ is the probability of a congruent policy by the non congruent Leader given a private rent r_1; similarly a mixed behavioral strategy for the Citizens is a map $\alpha : \{0, \Delta\} \to [0,1]$, where $\alpha(\delta) \in [0,1]$ is the probability of revolting by the Citizens given a policy δ. Note that given the restriction on $\phi \leq \frac{X}{X+\pi\Delta} =: \Phi(X, \pi, \Delta)$ and the consequent passive Selectorate behavior, we have seen before that $\alpha(0) = 1$ is a strictly dominant action for the Citizens who then can not mix in $\delta = 0$. Hence, a mixed behavioral strategy for the Citizens is just a number $\alpha \in [0,1]$. Now we exploit the sequential structure of the game. Hence, working backward, we start from

Citizens expected payoff in $\delta = \Delta$: as seen before the Citizens best reply correspondence in $\delta = \Delta$ is

$$\alpha(\overline{\lambda}^N | \Delta)^{BR} = \begin{cases} 0 & \text{if } \overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ [0,1] & \text{if } \overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ 1 & \text{if } \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \end{cases}.$$

Now consider the non congruent Leader expected payoff from playing a mixed strategy $\lambda(r_1)$ when $\alpha(0) = 1$ and $\alpha(\Delta) \in [0,1]$:

$$\begin{aligned} EU^N(\lambda^N(r_1), \alpha) &= \left[1 - \lambda^N(r_1)\right]\left(r_1 + \frac{X}{\phi}\right) + \lambda^N(r_1)\left[\Delta + \frac{X}{\phi} + \beta\left(1 - \alpha(\Delta)\right)\left(\overline{r} + \frac{X}{\phi}\right)\right] = \\ &= -\lambda^N(r_1)\left[r_1 - \Delta - \beta\left(\overline{r} + \frac{X}{\phi}\right) + \alpha(\Delta)\beta\left(\overline{r} + \frac{X}{\phi}\right)\right] + r_1 + \frac{X}{\phi}. \quad (29) \end{aligned}$$

Substituting $\alpha(\Delta)^{BR}$ in $EU^N(\lambda^N(r_1), \alpha)$ we get

$$EU^N(\lambda^N(r_1), \alpha(\Delta)^{BR}) =$$

$$= \begin{cases} -\lambda^N(r_1)\left[r_1 - \Delta - \beta\left(\overline{r} + \frac{X}{\phi}\right)\right] + r_1 + \frac{X}{\phi} & \text{if } \overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ -\lambda^N(r_1)\left[r_1 - \Delta - \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)\right] + r_1 + \frac{X}{\phi} & \text{if } \overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right), \overline{\alpha} \in [0,1] \\ -\lambda^N(r_1)\left[r_1 - \Delta\right] + r_1 + \frac{X}{\phi}. & \text{if } \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \end{cases}$$

Consider the three possible situations one by one.

(a) If $\overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, then the non congruent Leader best reply is $\lambda^N(r_1)^{BR} = 0$ which is not consistent with the condition $\overline{\lambda}^N = \int_\Delta^{+\infty} \lambda^N(r_1)dG(r_1) \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$;

(b) If $\overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, then the non congruent leader best reply is

$$\lambda^N(r_1)^{BR} = \begin{cases} 0 & r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \\ 1 & r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \end{cases}$$

which might be consistent with the condition $\overline{\lambda}^N = \int_\Delta^{+\infty} \lambda^N(r_1)dG(r_1) = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right) \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, depending on the characteristic of the cdf G and of the structural parameters, as seen before;

(c) Finally, if $\overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, then the non congruent leader best reply is

$$\lambda^N(r_1)^{BR} = \begin{cases} 0 & r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right) \\ 1 & r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right) \end{cases}$$

which is consistent with the condition $\overline{\lambda}^N = \int_\Delta^{+\infty} \lambda^N(r_1)dG(r_1) = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)\right) = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$ for an opportune value of $\overline{\alpha} \in [0,1]$ that depends on the characteristic

of the cdf G and of the structural parameters. In other words the equation

$$G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)\right) = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$$

implicitly define the equilibrium mixed behavioral strategy $\overline{\alpha} \in [0,1]$.

The following proposition sum up this discussion and the calculations:

PROPOSITION 2. *Suppose* $\phi \leq \frac{X}{X+\pi\Delta}$, *then we have the following Sequential Equilibrium depending on the parameters values:*

1. when $\mu \in [0, X - \Delta]$, *there exists a unique Sequential Equilibrium where:*

$$\lambda^C(r_1) = 1, \lambda^N(r_1) = 0, \alpha(0) = 1, \alpha(\Delta) = 1, \rho(0) = 1, \rho(\Delta) = 1;$$

2. when $\mu \in [X - \Delta, X - \pi\Delta]$, *there exists a possibly mixed Sequential Equilibrium where:*

$$\lambda^C(r_1) = 1, \lambda^N(r_1) = \begin{cases} 0 & r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right) \\ 1 & r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right) \end{cases}$$

$$\alpha(0) = 1, \overline{\alpha}(\Delta) \in [0,1], \rho(0) = 1, \rho(\Delta) = 1$$

where $\overline{\alpha}(\Delta)$ *is implicitly defined by the equation* $G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}(\Delta)\beta\left(\overline{r} + \frac{X}{\phi}\right)\right) = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$;

3. when $\mu \in [X - \pi\Delta, X]$, *there exists a unique Sequential Equilibrium, where*

$$\lambda^C(r_1) = 1, \lambda^N(r_1) = \begin{cases} 1 & r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \\ \in [0,1] & r_1 = \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \\ 0 & r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \end{cases},$$

$$\alpha(0) = 1, \alpha(\Delta) = 0, \rho(0) = 1, \rho(\Delta) = 1;$$

4. when $\mu \in [X, +\infty)$, *there exists a unique Sequential Equilibrium, where*

$$\lambda^C(r_1) = 1, \lambda^N(r_1) = 0,$$

$$\alpha(0) = 0, \alpha(\Delta) = 0, \rho(0) = 1, \rho(\Delta) = 1.$$

6.2.   Case 2 Suppose $\frac{(1-\phi)}{\phi}X \leq \pi\Delta$ which implies $\phi \geq \frac{X}{X+\pi\Delta}$.

6.2.1.   *Sequential rational choices of the Selectorate when* $\phi \geq \frac{X}{X+\Delta\pi}$.

In this case when $\delta = 0$ the Selectorate will choose to remove the incumbent leader because he is certain that she is not congruent and the probability of being part of the future selectorate

is big enough, hence the unique sequentially rational action is

$$\rho(0) = 0.$$

In this situation, the Selectorate is disciplining the leader (reciprocal accountability as analyzed in Gilli and Li 2011) and the citizens would take this into account. On the other hand we have seen that if $\delta = \Delta$, then in any Sequential Equilibrium the selectorate will choose to retain the incumbent leader, i.e.

$$\rho(\Delta) = 1.$$

6.2.2. Sequential rational choices of the Citizens when $\phi \geq \frac{X}{X+\Delta\pi}$.

As seen before, the expected continuation utilities the citizens will get in δ after they choose to initiate a revolution is:

$$V^Z(\alpha = 1|\delta) = (1 - \phi) \times \frac{X - \mu}{1 - \phi} + \phi \times 0 = X - \mu, \tag{30}$$

while without revolution is:

$$\begin{aligned} V^Z(\alpha &= 0|\delta) = \rho(\delta)P^Z(C|\delta)\Delta + (1 - \rho(\delta))[\phi(\pi\Delta + \frac{X}{\phi}) + (1 - \phi)\pi\Delta] = \\ &= \rho(\delta)P^Z(C|\delta)\Delta + (1 - \rho(\delta))\left[\pi\Delta + X\right] \end{aligned} \tag{31}$$

since if the Selectorate will retain the incumbent at the end of period one, i.e. if $\rho(\delta) = 1$, the Citizens will get the expected payoff $P^Z(C|\delta)\Delta$, while if the Selectorate will remove the incumbent at the end of period one, i.e. $\rho(\delta) = 0$, the Citizens will get the expected payoff $\phi(\pi\Delta + \frac{X}{\phi}) + (1 - \phi)\pi\Delta$, because once the incumbent has been ousted, the Citizens will have probability ϕ to be included in the challenger's coalition getting $\pi\Delta$ from the general interest policy and a private payoff $\frac{X}{\phi}$, while with probability $1 - \phi$ the Citizens will not be included into the newly formed selectorate receiving just $\pi\Delta$.

Since in this setting

$$\rho(0) = 0 \text{ and } \rho(\Delta) = 1,$$

then

$$V^Z(\alpha = 0|0) = X + \pi\Delta \quad \text{and} \quad V^Z(\alpha = 0|\Delta) = P^Z(C|\Delta)\Delta = \Pi(\overline{\lambda}^N)\Delta. \tag{32}$$

Hence the citizens will accommodate in $\delta = 0$, i.e. $\alpha(0) = 0$, if and only if:

$$X - \mu \leq X + \pi\Delta \tag{33}$$

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which is always satisfied, hence the only sequential rational choice by the citizens in $\delta = 0$ is

$$\alpha(0) = 0.$$

The fact is that the citizens anticipate that the selectorate will remove the leader if $\delta = 0$, so they prefer to free ride on the selectorate.

Now consider the Citizens' rational behavior in $\delta = \Delta$: they will revolt in Δ, i.e. $\alpha(\Delta) = 1$, if and only if:

$$X - \mu \geq \Pi(\overline{\lambda}^N)\Delta \iff \mu \leq X - \Pi(\overline{\lambda}^N)\Delta. \tag{34}$$

Hence the citizens' choice in Δ depend on $\Pi(\overline{\lambda}^N)$, i.e. on $\overline{\lambda}^N$. In particular $\alpha(\Delta) = 1$ if and only if:

$$\mu \leq X - \Pi(\overline{\lambda}^N)\Delta \iff \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \tag{35}$$

Hence we conclude that

$$\alpha(\Delta) = 1 \iff \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right). \tag{36}$$

Note that

$$\frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \leq 0 \iff \mu \leq X - \Delta.$$

Therefore, when $\mu \leq X - \Delta$, then $\alpha(\Delta) = 1$ for any $\overline{\lambda}^N$. On the other hand

$$\frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \geq 1 \iff \mu \geq X - \pi\Delta$$

and thus when $\mu \geq X - \pi\Delta$, then $\alpha(\Delta) = 0$ for any $\overline{\lambda}^N \leq 1$. Finally

$$\frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \in [0,1] \iff \mu \in [X - \Delta, X - \pi\Delta]$$

Before of the analysis of the non congruent Leader sequential best rational behavior, let sum up the Citizens best reply choices, which we will denote by $\alpha(\overline{\lambda}^N|\delta)^{BR}$. As seen before:

1. when $\mu \leq X$

$$\alpha(\overline{\lambda}^N|0)^{BR} = 0 \text{ for any } \overline{\lambda}^N;$$

2. when $\mu \leq X - \Delta$

$$\alpha(\overline{\lambda}^N|\Delta)^{BR} = 1 \text{ for any } \overline{\lambda}^N;$$

3. when $\mu \geq X - \pi\Delta$

$$\alpha(\overline{\lambda}^N|\Delta)^{BR} = 0 \text{ for any } \overline{\lambda}^N;$$

4. when $\mu \in [X - \Delta, X - \pi\Delta]$

$$\alpha(\overline{\lambda}^N|\Delta)^{BR} = \begin{cases} 0 & \text{if } \overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ [0,1] & \text{if } \overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ 1 & \text{if } \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \end{cases} \quad .$$

6.2.3. Sequential rational choices of the Leader when $\phi \geq \frac{X}{X+\Delta\pi}$.

Note that while the Citizens will best respond to $\overline{\lambda}^N$, the leader would choose the sequential rational $\lambda^N(r_1)$ anticipating the Citizens best reply $\alpha(\overline{\lambda}|\delta)^{BR}$. In particular

1. when $\mu \leq X - \Delta$

$$\alpha(\overline{\lambda}^N|0)^{BR} = 0 \text{ for any } \overline{\lambda}^N \text{ and } \alpha(\overline{\lambda}^N|\Delta)^{BR} = 1 \text{ for any } \overline{\lambda}^N;$$

then the Leader would choose to always get the private rent since the Citizens will revolt just after a congruent policy, i.e. $\lambda^N(r_1|\alpha(\delta)^{BR}) = 0$ for any r_1. Note that in this case $\overline{\lambda}^N = 0$, implying $\Pi(\lambda^N) = 1$. Hence we can conclude that

$$\lambda^N(r_1) = 0 \text{ for any } r_1, \ \alpha(0) = 0, \ \alpha(\Delta) = 1$$

is part of a unique Sequential Equilibrium when $\mu \leq X - \Delta$;

2. when $\mu \geq X - \pi\Delta$

$$\alpha(\overline{\lambda}^N|0)^{BR} = \alpha(\overline{\lambda}^N|\Delta)^{BR} = 0 \text{ for any } \overline{\lambda}^N;$$

then in this scenario the Citizens are a passive player and the Leader is accountable to the Selectorate only, as in Gilli and Li 2011: the non congruent Leader might prefer to implement a good policy instead of getting the private rent r_1 since thanks to this switching behavior, she might be able to stay in power depending on the Selectorate behavior. Let $EU^N(\lambda|\rho(\delta)^{BR})$ be the non congruent Leader's expected utility she get from choosing λ in period one anticipating the Selectorate best reply. Since in this parameters' region $\alpha(0) = \alpha(\Delta) = 0$, $\rho(0) = 0$ and $\rho(\Delta) = 1$, then

$$EU^N(\lambda(r_1) = 1) = \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \tag{37}$$

and

$$EU^N(\lambda(r_1) = 0) = r_1 + \frac{X}{\phi} + \beta \times 0 = r_1 + \frac{X}{\phi}. \tag{38}$$

Hence the non congruent Leader will choose $\lambda^N(r_1) = 0$ if and only if:

$$EU^N(\lambda(r_1) = 1) \leq EU^N(\lambda(r_1) = 0) \tag{39}$$

that is,

$$r_1 + \frac{X}{\phi} \geq \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \iff r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \tag{40}$$

Therefore the non congruent Leader's sequentially rational actions are

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

This means that $\overline{\lambda}^N = \int_{-\infty}^{\Delta + \beta(\overline{r} + \frac{X}{\phi})} G(r_1) dr_1 = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right)$ implying $\Pi(\overline{\lambda}^N) = \frac{\pi \times 1}{\pi \times 1 + (1-\pi) \times G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right)} > \pi$. Hence we can conclude that

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

is part of a unique Sequential Equilibrium when $\mu \geq X - \pi\Delta$;

3. when $\mu \in [X - \Delta, X - \pi\Delta]$

$$\alpha(\overline{\lambda}^N|0)^{BR} = 0 \text{ for any } \overline{\lambda}^N \quad \& \quad \alpha(\overline{\lambda}^N|\Delta)^{BR} = \begin{cases} 0 & \text{if } \overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ [0,1] & \text{if } \overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ 1 & \text{if } \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \end{cases} ;$$

then the non congruent Leader might prefer to implement a good policy instead of getting the private rent r_1. 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 Citizens' beliefs. Let $EU^N(\lambda|\alpha(\delta)^{BR})$ be the non congruent leader's expected utility she get from choosing λ in period one anticipating the Citizens best reply. Suppose $\overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$ and thus $\alpha(\overline{\lambda}^N|\Delta)^{BR} = 0$, then

$$EU^N(\lambda(r_1) = 1) = \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \tag{41}$$

and

$$EU^N(\lambda(r_1) = 0) = r_1 + \frac{X}{\phi} + \beta \times 0 = r_1 + \frac{X}{\phi}. \tag{42}$$

Hence the non congruent leader will choose $\lambda^N(r_1) = 0$ if and only if:

$$EU^N(\lambda(r_1) = 1) \leq EU^N(\lambda(r_1) = 0) \tag{43}$$

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that is,

$$r_1 + \frac{X}{\phi} \geq \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \iff r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \tag{44}$$

Therefore when $\phi \geq \frac{X}{X+\pi\Delta}$ and $\alpha(\Delta) = 0$, the non congruent leader's sequentially rational actions are

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

This means that $\overline{\lambda}^N = \int_{-\infty}^{\Delta+\beta\left(\overline{r}+\frac{X}{\phi}\right)} G(r_1)dr_1 = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right)$. Hence if $G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right) \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, then

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

is part of a unique Sequential Equilibrium when $\mu \in [X-\Delta; X-\pi\Delta]$, otherwise we need to look for mixed strategy behavior since $\overline{\lambda}^N = \int_{-\infty}^{\Delta+\beta\left(\overline{r}+\frac{X}{\phi}\right)} G(r_1)dr_1 = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right) \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$ would imply $\alpha(\Delta) = 1$ which in turn would imply $\lambda^N(r_1) = 0$ for any r_1, inducing $\overline{\lambda}^N = 0$ and then $\alpha(\Delta) = 0$ as best reply, which implies $\overline{\lambda}^N = \int_{-\infty}^{\Delta+\beta\left(\overline{r}+\frac{X}{\phi}\right)} G(r_1)dr_1 = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right) \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$ so that we are back at the starting point without any fixed point. To look for a mixed sequential equilibrium, we interpret $\lambda^N : [\Delta, +\infty) \to [0,1]$ as a behavioral strategy for the noncongruent Leader, where $\lambda^N(r_1) \in [0,1]$ is the probability of a congruent policy by the non congruent Leader given a private rent r_1; similarly a mixed behavioral strategy for the Citizens is a map $\alpha : \{0, \Delta\} \to [0,1]$, where $\alpha(\delta) \in [0,1]$ is the probability of revolting by the Citizens given a policy δ. Note that given the restriction on $\phi \geq \frac{X}{X+\pi\Delta}$ and the consequent active Selectorate behavior, we have seen before that $\alpha(0) = 0$ is a strictly dominant action for the Citizens who then can not mix in $\delta = 0$. Hence, a mixed behavioral strategy for the Citizens is just a number $\alpha \in [0,1]$. Now we exploit the sequential structure of the game. Hence, working backward, we start from Citizens expected payoff in $\delta = \Delta$: as seen before the Citizens best reply correspondence in $\delta = \Delta$ is

$$\alpha(\overline{\lambda}^N | \Delta)^{BR} = \begin{cases} 0 & \text{if } \overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ [0,1] & \text{if } \overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\ 1 & \text{if } \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \end{cases}.$$

Now consider the non congruent Leader expected payoff from playing a mixed strategy $\lambda(r_1)$ when $\alpha(0) = 0$, $\alpha(\Delta) \in [0,1]$, $\rho(0) = 0$ and $\rho(\Delta) = 1$:

$$
\begin{aligned}
EU^N(\lambda^N(r_1), \alpha) &= \left[1 - \lambda^N(r_1)\right]\left(r_1 + \frac{X}{\phi}\right) + \lambda^N(r_1)\left[\Delta + \frac{X}{\phi} + \beta\left(1 - \alpha(\Delta)\right)\left(\overline{r} + \frac{X}{\phi}\right)\right] \quad (45) \\
&= -\lambda^N(r_1)\left[r_1 - \Delta - \beta\left(\overline{r} + \frac{X}{\phi}\right) + \alpha(\Delta)\beta\left(\overline{r} + \frac{X}{\phi}\right)\right] + r_1 + \frac{X}{\phi}. \quad (46)
\end{aligned}
$$

Substituting $\alpha(\Delta)^{BR}$ in $EU^N(\lambda^N(r_1), \alpha)$ we get

$$
EU^N(\lambda^N(r_1), \alpha(\Delta)^{BR}) =
$$

$$
= \begin{cases}
-\lambda^N(r_1)\left[r_1 - \Delta - \beta\left(\overline{r} + \frac{X}{\phi}\right)\right] + r_1 + \frac{X}{\phi} & \text{if } \overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right) \\
-\lambda^N(r_1)\left[r_1 - \Delta - \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)\right] + r_1 + \frac{X}{\phi} & \text{if } \overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right), \overline{\alpha} \in [0,1] \\
-\lambda^N(r_1)[r_1 - \Delta] + r_1 + \frac{X}{\phi}. & \text{if } \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)
\end{cases}
$$

Consider the three possible situations one by one.

(a) If $\overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, then the non congruent Leader best reply is $\lambda^N(r_1)^{BR} = 0$ which is not consistent with the condition $\overline{\lambda}^N = \int_\Delta^{+\infty} \lambda^N(r_1)dG(r_1) \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$;

(b) If $\overline{\lambda}^N \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, then the non congruent leader best reply is

$$
\lambda^N(r_1)^{BR} = \begin{cases}
0 & r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \\
1 & r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)
\end{cases}
$$

which might be consistent with the condition $\overline{\lambda}^N = \int_\Delta^{+\infty} \lambda^N(r_1)dG(r_1) = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right) \leq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, depending on the characteristic of the cdf G and of the structural parameters, as seen before;

(c) Finally, if $\overline{\lambda}^N = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$, then the non congruent leader best reply is

$$
\lambda^N(r_1)^{BR} = \begin{cases}
0 & r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right) \\
1 & r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)
\end{cases}
$$

which is consistent with the condition $\overline{\lambda}^N = \int_\Delta^{+\infty} \lambda^N(r_1)dG(r_1) = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)\right) = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)$ for an opportune value of $\overline{\alpha} \in [0,1]$ that depends on the characteristic of the cdf G and of the structural parameters. In other words the equation

$$
G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right)\right) = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right)
$$

implicitly define the equilibrium mixed behavioral strategy $\overline{\alpha} \in [0,1]$.

The following proposition sum up this discussion and the calculations:

PROPOSITION 3. *Suppose $\phi \leq \frac{X}{X+\pi\Delta} =: \Phi(X, \pi, \Delta)$, then we have the following Sequential Equilibria depending on the parameters values:*

1. *when $\mu \in [0, X - \Delta]$, there exists a unique Sequential Equilibrium where:*

$$\lambda^C(r_1) = 1, \lambda^N(r_1) = 0, \alpha(0) = 0, \alpha(\Delta) = 1, \rho(0) = 0, \rho(\Delta) = 1;$$

2. *when $\mu \in [X - \Delta, X - \pi\Delta]$, there exists a possibly mixed Sequential Equilibrium where:*

$$\lambda^C(r_1) = 1, \lambda^N(r_1) = \begin{cases} 0 & r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right) \\ 1 & r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}\beta\left(\overline{r} + \frac{X}{\phi}\right) \end{cases}$$

$$\alpha(0) = 0, \overline{\alpha}(\Delta) \in [0, 1], \rho(0) = 0, \rho(\Delta) = 1$$

where $\overline{\alpha}(\Delta)$ is implicitly defined by the equation $G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) + \overline{\alpha}(\Delta)\beta\left(\overline{r} + \frac{X}{\phi}\right)\right) = \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right);$

3. *when $\mu \in [X - \pi\Delta, +\infty)$ there exists a unique Sequential Equilibrium, where*

$$\lambda^C(r_1) = 1, \lambda^N(r_1) = \begin{cases} 1 & r_1 \leq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \\ \in [0, 1] & r_1 = \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \\ 0 & r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \end{cases},$$

$$\alpha(0) = \alpha(\Delta) = 0, \rho(0) = 0, \rho(\Delta) = 1.$$