CITIZENRY ACCOUNTABILITY IN AUTOCRACIES: THE POLITICAL ECONOMY OF GOOD GOVERNANCE IN CHINA

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

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Abstract

Do citizens have a role in constraining the policies of autocratic governments? Usually political and economic literature models autocracy as if citizens have no role in constraining a leader's behavior, when in fact autocratic governments are afraid of potential citizen revolts. In this paper we build a three player political agency model to study citizenry accountability in autocracies. We show that the citizens can effectively discipline the leader due to the threat of revolution notwithstanding the size of the selectorate, though this may result in a failed state when the costs of revolution and the size of the selectorate are small. Our model and results provide a useful framework for interpreting the political logic of the China's economic reform after the "Tiananmen incident".

JEL Codes: D02, H11, D74, P30

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

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"Of all China's problems, the one that trumps everything is the need for stability"[1] - Deng Xiaoping.

1 Introduction

In the chronicle of human civilization, non-democratic regimes have been dominant in most periods; even today, despite the advances in democracy in recent decades, more than one third of countries remain under the rule of autocratic governments.[2] Notwithstanding this fact, research into non-democratic institutions has remained stagnant for a prolonged period, possibly due to the fact that political economics has been caught in a "democratic prism", whereby scholars prioritize the study of those 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 forms of governance have produced poor economic outcomes.[3] Hence, understanding the characteristics and determinants of good governance in different institutional and political settings requires a theoretical framework that can be applied to large groups of countries over a relatively long period. To believe, as we do, that small, subtle institutional details significantly diversify the quality of policies implemented by different polities, even within general institutional frames such as democracy or autocracy;[4] then an alternative, complementary and effective empirical strategy is to provide an in-depth case study. This means that insights from a historical case study might be more valuable than those from the usual cross-national econometric studies. Hence, our strategy is to advance a case-based method of study which builds on a theoretical framework, and then proceed by analyzing a significant, successful autocracy, namely China. In this way, our method allows us to gain information on historical sequence and to do justice to the particular geographical, cultural and historical context of the factors we analyze. The results are a set of theoretical propositions that illuminate the case study we consider.

Of the most successful autocracies, the rapid economic development of China since the late 1970s is probably the most striking example. With a consistent annual average economic growth rate of about 9 percent for more than 30 years, China has emerged as the second largest economy in the world. In 2011, de-

[1] Deng Xiaoping, "China Will Tolerate No Disturbances," speech, March 4, 1989.

[2] For a discussion, see the Economist Intelligence Unit's Index of Democracy 2008.

[3] The literature on this topic is huge. For example, see Sirowy and Inkeles (1990); Bardhan (1993); Przeworski and Limongi (1993, 1997); Huber *et al.* (1993); Barro (1996); Rodrik (1999); Tavares and Wacziarg (2001); Almeida and Ferreira (2002); Baum and Lake (2003); Boix and Stokes (2003), Giavazzi and Tabellini (2004); Keepher and Vlaicu (2007); Papaioannou and Siourounis (2008); Acemoglu *et al.* (2008, 2009); Boix (2011); Benhabib *et al.* (2011); Treisman (2011).

[4] The crucial point is that democratic and authoritarian regimes exhibit a large variance in their 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.

spite the most serious global economic crisis since the Great Depression, China's economic growth was sustained at 9.2 percent. 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 divided up into two schools: the first attributes the success of Chinese economic reform to the country's fiscal and political decentralization,[5] something which is said to have generated incentives for the local governments to promote economic growth; the second attributes the success of Chinese economic reform to its adoption of a gradualist transition strategy under which it has pursued transition "without a blue print" or, to use the Chinese expression, "groping for stones to cross the river".[6] As such it contrasts with the "big bang" reforms experienced in Russia and Eastern Europe. However, as North has pointed out, the polity, as the enforcer of the rules of the game, is "the primary source of economic performance" (North 2005:57), the existing literature ignores the role played by the Chinese central government and the changes in the Chinese political system that were crucial in developing and implementing such economic policies. This paper investigates the institutional changes that have taken place in the Chinese political system after the Tiananmen incident, which were crucial for achieving good governance.

In a previous paper (Gilli and Li 2012), we focused on a specific aspect of a comprehensive explanation for the good leadership displayed by the Chinese government, namely the role of "reciprocal accountability" between leader and the selectorate. The "selectorate" refers to those elites who have the opportunity to depose a leader in any given political regime.[7] In that paper, we found that in order to restrain the opportunistic behavior of a leader, the size of the selectorate should be intermediate; if too small, the selectorate is dominated by the leader and has no disciplinary role; alternatively, if the selectorate is too big, the leader's incentives are diluted. Analyzing the Chinese situation, we also pointed out a risk associated with reciprocal accountability, whereby it is unsustainable when shrinking economic opportunities and exclusionary patterns of reward became a recipe for social unrest. At the end of the 1980s, rampant corruption combined with high inflation drove people onto the streets in the spring of 1989. After the Tiananmen protest and the subsequent repression, political reform was trapped as during this period the selectorate became subordinate to the central leadership, and was unable to carry out its disciplinary function. Nonetheless, after a short period of economic contraction in the two years that followed, the Chinese government continued to promote economic growth and to extend market economy reforms. Subsequently, governance improved and

[5] For a discussion, see Oi (1992); Montinola *et al.* (1995); Qian and Weingast (1996, 1997); Qian and Roland (1998); Xu and Zhuang (1998).

[6] For a discussion, see Perkins (1988); McMillan and Naughton (1992); Naughton (1995, 2007); Murrell (1991, 1992); Rawski (1995); Lin, Cai and Li (1996).

[7] Following Shirk (1993), we identify the selectorate at the beginning of the reform era with the revolutionary elders and top military leaders, while later, the selectorate was 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.

policies become more people-centered.

Therefore, in this paper we ask: how did the Chinese government remain accountable even when the selectorate's function was frozen? We suggest that the accountability of the Chinese government after the 1980s was due to pressures outside the regime, that is, from the citizens and their potential revolutionary threats. The Chinese government implemented congruent economic policies because they wanted 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 citizen accountability can restrain politicians from opportunistic behavior. As shown in Gilli and Li's (2012) exploration of reciprocal accountability, the size of the elite is the factor that determines the effectiveness of the selectorate's role, while in this more general setting the cost of revolution plays a more crucial role. Our model produces the clear result that revolutionary threats from citizens might restrain a 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 fact of potential revolt generates two possible political regimes: either an instability situation whereby a leader reacting to that instability 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's function is frozen. As the citizens will always avoid capture due to their size, a kleptocratic equilibrium is now impossible. However, as the size of the selectorate and the cost of revolt varies 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 the next section we present the model, which is analyzed in section 3. Section 4 applies the model and explains the political economy of good governance in China after the 1980s, before finally, the last section offers a conclusion.

2 The Model

2.1 The related Literature

The existing literature on the political economics of autocracies suggests that accountability in non-democratic regimes comes from the "selectorate" which comprises of insiders who have the ability to depose a leader. Bueno de Mesquita et al. (2003) were the first to model accountability under a non-democratic 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(2008, 2010, Smith 2008) extend their model to include three players, with the citizens now included as another player who might threaten the leader through revolution. However, their models do not consider incomplete infor-

mation which is extremely useful for model accountability, as shown by Besley (2006) and Besley and Kudamatsu (2008). Moreover by incorporating Padro-i-Miquel's (2007) 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 potentially important incentivizing role of the citizens. Although the citizens are excluded from political power, they are the majority and by coordinating their efforts they may be able to overthrow those who control politics (Acemoglu and Robinson 2006). Hence this threat of revolution can constrain the policies the ruling class would like to pursue, and the impact of possible social conflict on policy outcomes should not be neglected. Even if these conflicts are not actually carried out, it is their mere possibility which constraints the set of optimal policies implemented in equilibrium. This paper provides a model that incorporates both the incomplete information and the role of citizens' revolutionary threat as possible incentive tools 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 regarding the type of 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 non-congruent $T \in \{C, N\}$ with probability π, moves first, while the Citizens choose after the Leader and before 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 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 non-congruent 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 $E(r_t) = \overline{r}$, $G(\Delta) = 0$, 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 that 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.[8] 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's 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 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 into our specific problem, i.e. the constraint on the Leader's behavior due to the threat of revolution.

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 the 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's 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's public policy.

[8] Of course, this is just normalization.

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, and a payoff 0 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's 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's period two payoffs are realized and the game ends.

Hence the payoffs for the two types $T \in \{C, N\}$ of the Leader L, the Citizens Z and the Selectorate S are respectively:

$$V^C(\lambda_1^T(r_1), \alpha(\delta), \rho(\delta), \lambda_2^T(r_2)|T, r_1, r_2) = V^S(\lambda_1^T(r_1), \alpha(\delta), \rho(\delta), \lambda_2^T(r_2)|T, r_1, r_2) \tag{1}$$

$$\begin{aligned} & V^N\left(\lambda_1^T(r_1), \alpha(\delta), \rho(\delta), \lambda_2^T(r_2)|T, r_1, r_2\right) \\ = \; & \left(\Delta + \frac{X}{\phi}\right)\lambda^T(r_1) + \left(r_1 + \frac{X}{\phi}\right)\left(1 - \lambda^T(r_1)\right) + \beta(0 \times \alpha(\delta)) \\ & +\beta\left\{\left[\left(\Delta + \frac{X}{\phi}\right)\lambda_2^T(r_2) + \left(r_2 + \frac{X}{\phi}\right)\left(1 - \lambda_2^T(r_2)\right)\right]\rho(\delta) + 0 \times (1 - \rho(\delta))\right\}(1 - \alpha(\delta)) \end{aligned} \tag{2}$$

$$\begin{aligned} & V^Z\left(\lambda_1^T(r_1), \alpha(\delta), \lambda_2^T(r_2)|T, r_1, r_2\right) \\ = \; & \Delta \times \lambda^T(r_1) + 0 \times \left(1 - \lambda^T(r_1)\right) \\ & +\beta\left\{\frac{X}{1-\phi}(1-\phi)\alpha(\delta) + \left[\Delta \times \lambda_2^T(r_2) + 0 \times \left(1 - \lambda_2^T(r_2)\right)\right](1 - \alpha(\delta))\right\} \end{aligned} \tag{3}$$

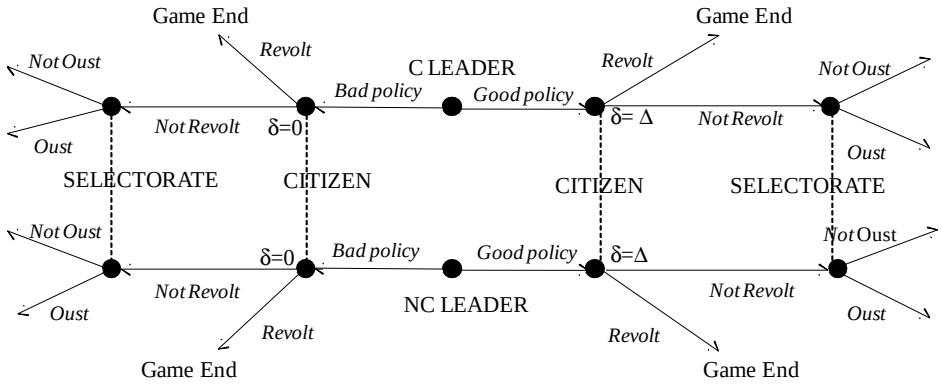

Figure 1: The first stage game

$$
\begin{aligned}
& V^S\left(\lambda_1^T(r_1), \alpha(\delta), \rho(\delta), \lambda_2^T(r_2) | T, r_1, r_2\right) \\
= \quad & \left(\Delta + \frac{X}{\phi}\right) \lambda^T(r_1) + \frac{X}{\phi}\left(1 - \lambda^T(r_1)\right) + \beta(0 \times \alpha(\delta)) \qquad (4) \\
& +\beta \left\{ \begin{array}{c} \left[\left(\Delta + \frac{X}{\phi}\right) \lambda_2^T(r_2) + \frac{X}{\phi}\left(1 - \lambda_2^T(r_2)\right)\right] \rho(\delta) \\ + \left[\left(\Delta + \frac{X}{\phi} \times \phi\right) \lambda_2^T(r_2) + \frac{X}{\phi} \times \phi \times \left(1 - \lambda_2^T(r_2)\right)\right] (1 - \rho(\delta)) \end{array} \right\} (1 - \alpha(\delta))
\end{aligned}
$$

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

The first stage's game structure is reported in "Figure 1".

<Figure 1>

The definitions used in the paper are summarized in "Table 1":

<Table 1>

2.3 Comments on the Model

The model aims to analyze accountability in autocratic regimes and from this specific focus derives many of its simplifications. As explained previously, it is a standard model in the tradition of Besley's principled agent models of political economics, even if we consider two common principals, the Selectorate and the Citizens. Hence, it inherits from the Besley's approach the fact of being simultaneously a screening and a moral hazard model, where paradoxically the incentive mechanism works when there is pooling. The problem is to understand under what conditions within the exogenous institutional parameters the incentive mechanism works, and from this point of view our model suits this problem since it allows a full characterization of its unique Sequential equilibrium as a one-to-one map of the exogenous institutional parameters.

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 non-congruent 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
$V^{C/N/S/Z}$	expected continuation payoff of the Leader/Selectorate/Citizens

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

1. the Leader cannot use redistributive policies to try to avoid citizen revolts. The reason for this assumption are two-fold: 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 for promoting growth, while the full analysis of redistributive policies would require the introduction of taxation and thus a 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 for the avoidance of 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 for aggregating different preferences;

3. the Selectorate and the Citizens share the same information on the policy outcomes and the same prior knowledge of 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 parameter's specification there is a unique Sequential equilibrium, hence we are able to make a meaningful comparative static analysis.

3 The Equilibria

The calculations and the specific details of the equilibria are reported in the Appendix, while here we sum up the main results briefly 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 encompasses the notion of consistency which implies that players' beliefs regarding 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 leader would pursue their own interest and both will be challenged by citizen 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 dominated by the leader, is not able to discipline her behavior. This case we call 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 leader would pursue their own interest and both will risk being overthrown from power: the congruent leader by citizen 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 dominated 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 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 non-congruent 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 a 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 a Partially Efficient Equilibrium (PEE) outcome, since the non-congruent leader has only partial incentives to behave correctly because with positive probability she will be removed by 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 a 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 an Efficient Equilibrium (EE) outcome, since the non-congruent 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 the selectorate: this is the case of a 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 an Efficient Equilibrium (EE) outcome, since the non-congruent leader has the maximum possible incentive to behave correctly. Note that in this case the Citizens are not active players;*

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 a Kleptocratic Equilibrium (KE). Note that in this case the Citizens are not active players.*

"Table 2 -5" synthetically illustrate how the possible regimes change as a consequence of the costs of the Citizens' threat of revolution, showing that the set of possible equilibria depends on the selectorate size and on the probability of first period private benefits.

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

<Table2>

Table 2: Small Cost of Revolution

	$r_1 \geq \Delta + \beta(\overline{r} + \frac{X}{\phi})$	$r_1 \leq \Delta + \beta(\overline{r} + \frac{X}{\phi})$
$\phi \geq \frac{X}{X+\pi\Delta}$	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: $\mu \in [X - \Delta, X - \pi\Delta]$

<Table 3>

Table 3: Intermediate Cost of Revolution

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

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

<Table 4>

Table 4: High Cost of Revolution

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

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

<Table 5>

These results significantly change the set of possible political regimes we analyzed when the citizens are not active players[9] (see "Table 5"). In particular, the Kleptocratic Equilibrium in the two-player 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

[9] For a detailed discussion of the game without the citizens, see Gilli and Li (2011).

Table 5: Enormous Cost of Revolution

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

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 depends primarily 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 achieving 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 important 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 a free ride on the incentives role of the Selectorate.

4 The link between China and the Theory

Section 3 explains the incentive mechanism that could make an autocratic leader accountable even when the disciplinary function of selectorate is crippled; that is the credible threat of a citizens' revolution operates as a substitute for the selectorate's disciplinary function provided the cost for citizens to initiate a revolution is not too enormous and not too small. Such theoretical insight offers a key to understanding improved government performance in China and the driving force behind the resolution of Chinese leadership to continue and extend the "reform and opening up" policy after the 1989 Tiananmen tragedy.

This section commences with a discussion of some major events during the 1980s and 1990s, demonstrating that the selectorate accountability channel became ineffective as a result of hampered political reform. In the second subsection we will show that as the protest role of citizens became effective, maintaining social stability became the top priority of Chinese leaders, who continue to pursue the general interest in spite of weakened selectorate control because they wanted to use high economic growth to maintain social stability. In the final subsection, we will argue that while the cost of revolution was enormous in the 1980s, it fell significantly in the 1990s, so to ensure the effectiveness of citizenry accountability.

4.1 Trapped Inner-party Democracy after the 1980s

As widely discussed in Gilli and Li (2012), the effective checks and balances placed on leader's power from the enlarged selectorate explains the accountability of the Chinese central government after Mao's death. The expansion of the size of the selectorate was the most important institutional change in the post Mao Chinese political system, as the top leader no longer held sole power as a one-man dictator, but rather needed the approval of members in the selectorate. Deng Xiaoping took measures at the beginning of the 1980s to prevent the over-concentration of power in too few hands and recruited new, better technically trained members into the party. In particular, Hu Yaobang and Zhao Ziyang sustained the push to liberalize polity in China through some broad, though tentative, measures which 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 government (Huang, 1998).

However, the gradual progress of political reforms became trapped after the repression of 1989 student movement. The Tiananmen tragedy, a watershed event in 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 coalition in support of reform virtually collapsed. Some people left China and others lost power, the selectorate stopped growing in size and power, and actually lost part of its relevance. In late June 1989, the Fourth Plenum of the Thirteenth Central Committee announced 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 showed that in that dangerous period the crucial decisions were made by a cabal of veteran revolutionaries at Deng's residence.

Attempts to create a more powerful Central Committee, to separate functions of the party and government, and ultimately to realize inner-party democracy, were prevented, since political competition and an even more powerful Central Committee were now considered threats to stability (Guo 2004). Consequently, power was concentrated in the Politburo, particularly in the Politburo Standing Committee. 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 Commis-

sion. This institutional arrangement weakens the ability of the selectorate to place checks and balances on the leader's power, as top party leaders have effective control over the nomination of the selectorate. This is exemplified by the selectorate's standard acquiescence once a general agreement is reached among the top leadership, as the selectorate's primary objective is to remain within the leader's coalition (Oksenberg 2001).

As the role of the selectorate as an effective incentive scheme for constraining the leader's behavior had subsequently been weakened, the Kleptocratic Equilibrium should in this case prevail, if the game is played between the leader and the selectorate only; and the leader had incentives to shift away from policies that enhance general interest, and instead to implement policies that maximize his own power and control over the economy. Compared to the market economy, which is associated with a booming private sector, enhanced competition, free flow of information and liberalization of ideology that could lead to democratization, the central planned economy does provide politicians the maximum power to control society and economy. Not surprisingly, the Chinese leadership recommitted to public ownership and central planning. Specific measures were carried out to curtail the growth of the non-state sector and to reverse price deregulation. As a result, the number of micro private business (private entities with seven or fewer employees) in China declined by 15 percent in 1989. The number of private enterprises (with more than seven employees) decreased by over 50 percent, from over 200,000 in 1988 to a little above 90,000 by the end of 1989. It remained at this level throughout 1990 and only rose slightly to 107,000 in 1991 (Coase and Wang 2012:105).

However, in spite of stalled political reforms and weakened restraints from the selectorate, Beijing renewed the commitment to market reform two years later. It seemed that the Chinese central leaders were still accountable to the general interest. We may wonder what held the Chinese leaders accountable and provided them with such faith in the market reform. We argue that this occurred because the citizens began to play an active role in the 1990s. Hence, the leaders pursued the general interest not because of selectorate's control, but rather because of their accountability towards the citizens.

4.2 Maintain Social Stability, a new Source of Accountability

In 1989, the Communist system in China almost ended by the massive nationwide protests, and remained standing only because workers and peasants had been largely absent from the demonstrations, whose lives had been improved greatly in the preceding decade of strong economic growth. However, the Chinese economy had been hit hard by retrenchment policies implemented by the central leaders. The GNP growth rate fell from 11.2 percent in 1988 to 3.9 percent in 1989. In small cities and towns, nearly 20 million industrial workers lost their jobs in 1989 and 1990 (Vogel 2011, p.660). In the same time, in rural areas, local governments were forced to issue credit notes to peasants in payment for grain, which caused widespread discontent. The potential threats of

labor unrest and rural unrest made the leaders extremely anxious because they viewed them as the most threatening form of protest. Thanks to their Marxist education, they expected workers to be the vanguard of insurgency. Reflecting on Chinese history, they saw rural areas as the birthplace of riots and rebellions (including the Chinese Communist revolution), which had toppled dynasties in the past.

Deng Xiaoping believed that to prevent political unrest, the party needed to maintain rapid economic growth. In March, 1990, Deng lectured Jiang Zemin, Yang Shangkun, and Li Peng about the importance of developing economy: "Why do the people support us? Because over the last ten years our economy has been developing. [...] If the economy stagnated for five years or developed at only a slow rate [...] what effects would be produced? This would be not only an economic problem but also a political one."(Deng 1993:342-343) In 1991, Deng reiterated what he had said in 1990 as Beijing leaders had not been moved by his previous warning. However, his efforts failed yet again. Consequently, in the spring of 1992, Deng made a dramatic move; he took his special train to the south to light a prairie fire for market reform, claiming that if China's economic reform was reversed, the party would lose the people's support and could be overthrown at any time. He repeated several times that "[w]hoever is opposed to reform must leave office". Deng's southern tour in 1992 proved to be a watershed event and led to the dramatic economic boom and building craze that characterized much of the 1990s.

From the beginning of 1990s onwards, the citizen accountability channel worked effectively as a substitute for the disabled checks and balances from the selectorate. The citizen accountability channel explains the Chinese leaders' continued commitment to economic growth and market reform, as they believed that stability would be threatened by social and political upheaval if economic growth slowed seriously.

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. As former premier Zhu Rongji stated in his March 2003 valedictory, "[d]evelopment 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.[10]. The 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 (Shirk 2007:55). These explicit growth targets to maintain social stability remain in the minds of all Chinese leaders as they develop domestic policies. From Jiang 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 have intended to improve the lives of Chinese poor citizens in general,

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

and poor farmers in particular, to avoid social unrest. More recently, the global financial crisis together with the Arab Spring triggered the excessive nervousness of China's leaders. In response, the Chinese government moved swiftly to inject hundreds of millions of dollars into the economy aimed at protecting jobs and maintaining stability. In the midst of the financial crisis, the West began to doubt the soundness of the free market and the global market order. China, however, stood firmly behind the market and economic globalization: China signed a free trade agreement between ASEAN which created the world's most populated free trade zone (1.9 billion), and the third largest in volume of production after the EEA and NAFTA. Although market reform has the potential to compromise CCP interests vested in the old central planning system, China's leaders have had the resolution to pursue a reformist agenda, as they link domestic stability, and thus their power, to the state of the economy.

4.3 The Reduced Cost of Revolution and Rising Social Conflict in China

Our model shows that in order to ensure the effectiveness of the citizen accountability channel, the cost of revolution should be intermediate, and thus neither too minimal, nor too great. If the cost of revolution is too small, the country will become a failed state, which is the situation in some Sub-Saharan African countries; if the cost of revolution is too great, there will be no willingness to revolt even if 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 leadership policies, which may 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. Once the changes in the cost of revolution are consolidated, policy outcomes are shaped according to the political game we have previously outlined.

In this subsection, we argue that in China the cost of revolution has decreased from "enormous" in the 1980s to "large" in the 1990s as a result of changes in attitudes toward social conflicts by the Chinese leadership. The attitude of Chinese authorities towards social conflicts continues to evolve 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 simply organically emerge, but rather they must be instigated. Therefore, any kind of unrest was 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. For example, a surprising number of analysts in the public security system displayed open sympathy for the worker and peasant protestors, who the police were supposed to suppress. They frankly conceded that many protestors were victims of crooked managers who drove their factories into bankruptcy through illicit dealings or who absconded with company assets

(Tanner, 2004).

More importantly, Chinese authorities began to recognize that it was no longer convenient to fully repress all kinds of protest, and consequently began to adopt a paternalistic attitude towards limited protests which did not threaten stability. 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 (Tanner, 2006). In 2003 the newly appointed leadership under Hu Jintao and Wen Jiabao was at pains to portray themselves as more open, efficient and concerned about the plight of the poor. In the past the 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 news of local protests in Shishou City (Shirk 2010:24-26). In the eyes of many, Jiang represented the interests of China's new economic and coastal elites, yet even in the latter years of Jiang's administration there was increasing concern about inequality and the potential threat that rising disparity might be pose to stability.

As a result of the shifts in the leaders' attitudes toward social unrest, the cost of revolution in China has been decreasing. Consequently, there has been a huge rise in social unrest. Although there are no reliable official statistics, recent trends show that social conflicts are increasing in number and size and are becoming better organized. Having compared the number of "mass incidents" reported in different sources, the number has surged from 8,700 in 1993, to 32,000 in 1999, 58,000 in 2003, approximately 74,000 in 2004, and rocketed to 180,000 in 2010[11]. 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 (Shirk 2007:56). 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 conflict and riots.

The decreased cost of revolution has assured the effectiveness of citizenry accountability in China since the beginning of the 1990s. Nonetheless, the cost of revolution in China still remains very high, and is far from falling into the range of the "too small" category associated with a failed state regime. When any major social unrest occurs that might jeopardize social stability and challenge the rule of the CCP, the government resorts to tight controls and repression. However, the cost of revolution is no longer enormous, and thus the government makes concessions and responds to citizens' demands, especially when these are seen to be popular nationwide.

[11] The sources of these numbers include: Tanner (2004), Keidel (2005), Shirk (2007) and Bloomberg News, May 27, 2011.

5 Conclusion

At the beginning of this paper we asked how it was that the Chinese government remained accountable even when the selectorate was dominated and controlled by the leader. 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 means for inducing the Efficient Equilibrium, as the leader wants 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 has been satisfied in China since the 1990s. Hence, we conclude that while prior to the Tiananmen incident, China fits the pattern whereby a successful autocracy arises because of accountability towards the selectorate, after the Tiananmen incident we should instead 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 would solve other social problems and that improvements in living standards would quell people's desire for democracy. So far this strategy has worked well, as high economic growth has indeed helped to generate social stability, and social stability in turn has 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 dominated by an aging population, which will be 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 long neglected political reforms could prove a reasonable alternative.

A Appendix

Proof of Proposition 1. 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 :

$$V^S(\rho = 1|\delta) \geq V^S(\rho = 0|\delta) \tag{A1}$$

i.e.

$$P^S(C|\delta)\Delta + \frac{X}{\phi} \geq \pi\Delta + \phi\frac{X}{\phi} \iff P^S(C|\delta)\Delta + \frac{1-\phi}{\phi}X \geq \pi\Delta. \tag{A2}$$

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

$$V^S(\rho = 1|\delta) \geq V^S(\rho = 0|\delta) \iff \frac{1-\phi}{\phi}X \geq \left(\pi - P^S(C|\delta)\Delta\right)\Delta \tag{A3}$$

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:

$$P^S(C|\delta = \Delta) = \frac{\pi \times \overline{\lambda}^C \times (1 - \alpha(\Delta))}{\left[\pi \times \overline{\lambda}^C + (1-\pi) \times \overline{\lambda}^N\right] \times (1 - \alpha(\Delta))} \tag{A4}$$

$$P^S(C|\delta = 0) = \frac{\pi \times \left(1 - \overline{\lambda}^C\right) \times (1 - \alpha(0))}{\left[\pi \times \left(1 - \overline{\lambda}^C\right) + (1-\pi) \times \left(1 - \overline{\lambda}^N)\right)\right] \times (1 - \alpha(0))} \tag{A5}$$

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

$$P^S(C|\delta = \Delta) = \frac{\pi \times \overline{\lambda}^C}{\pi \times \overline{\lambda}^C + (1-\pi) \times \overline{\lambda}^N} = P^Z(C|\delta = \Delta) \tag{A6}$$

$$P^S(C|\delta = 0) = \frac{\pi \times \left(1 - \overline{\lambda}^C\right)}{\left[\pi \times \left(1 - \overline{\lambda}^C\right) + (1-\pi) \times \left(1 - \overline{\lambda}^N\right)\right]} = P^Z(C|\delta = 0) \tag{A7}$$

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

$$P^S(C|\delta = \Delta) = P^Z(C|\delta = \Delta) = \frac{\pi}{\left[\pi + (1-\pi) \times \overline{\lambda}^N\right]} \tag{A8}$$

which implies

$$\forall \lambda^N(r_1) \in [0,1] \qquad P^S(C|\delta = \Delta) = P^Z(C|\delta = \Delta) =: \Pi(\overline{\lambda}^N) \in [\pi, 1] \tag{A9}$$

with

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

Moreover

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

which implies

$$\forall \overline{\lambda}^N \in [0,1) \qquad P^S(C|\delta = 0) = P^Z(C|\delta = 0) = 0. \tag{A10}$$

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[12] 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

$$\forall \overline{\lambda}^N \in [0,1] \qquad P^S(C|\delta = 0) = P^Z(C|\delta = 0) = 0. \tag{A11}$$

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

$$P^S(C|\Delta)\Delta + \frac{(1-\phi)}{\phi} X \geq \pi\Delta, \tag{A12}$$

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.

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

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

$$\frac{(1-\phi)}{\phi} X \geq \pi\Delta, \tag{A13}$$

which might be satisfied depending on the parameters.

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

A.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:

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

[12] For example we can apply Cho and Kreps's (1987) intuitive criterion.

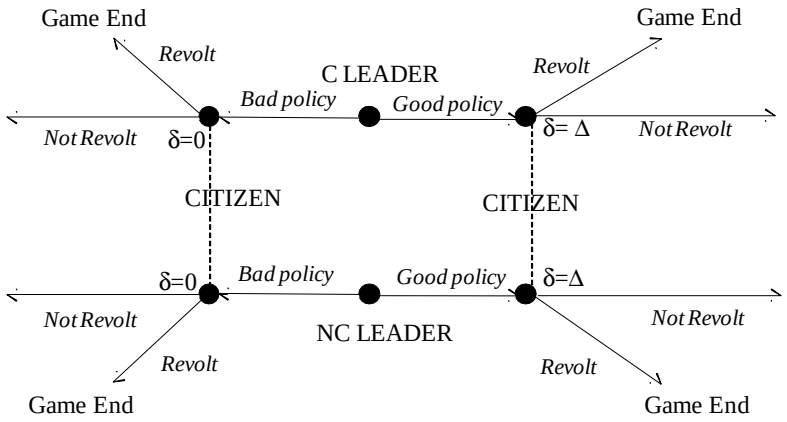

Figure 2: The *de facto* reduced game when the Selectorate is captured.

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.

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

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

A.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 "Figure 2" shows.

<Figure 2>

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 :

$$V^C(\alpha = 1|\delta) \geq V^C(\alpha = 0|\delta). \tag{A14}$$

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

$$V^Z(\alpha = 1|\delta) = (1 - \phi) \times \frac{X - \mu}{1 - \phi} + \phi \times 0 = X - \mu, \tag{A15}$$

while without revolution is:

$$\begin{aligned} V^Z(\alpha &= 0|\delta) = \rho(\delta)P^Z(C|\delta)\Delta + (1 - \rho(\delta))[\phi(\pi\Delta + \frac{X}{\phi}) + (1 - \phi)\pi\Delta] = \\ &= \rho(\delta)P^Z(C|\delta)\Delta + (1 - \rho(\delta))\left[\pi\Delta + X\right] \end{aligned} \tag{A16}$$

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:

$$X - \mu \leq P^Z(C|\delta)\Delta; \tag{A17}$$

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 (2012).

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

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

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:

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

Hence we conclude that

$$\alpha(\Delta) = 1 \Longleftrightarrow \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right). \tag{A18}$$

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

A.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 $\mu \geq X - \pi\Delta$

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

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

$$EU^N(\lambda(r_1) = 1) = \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \tag{A19}$$

and

$$EU^N(\lambda(r_1) = 0) = r_1 + \frac{X}{\phi} + \beta \times 0 = r_1 + \frac{X}{\phi}. \tag{A20}$$

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

$$EU^N(\lambda(r_1) = 1) \leq EU^N(\lambda(r_1) = 0) \tag{A21}$$

that is,

$$r_1 + \frac{X}{\phi} \geq \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \Longleftrightarrow r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \tag{A22}$$

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

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

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

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

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

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

$$EU^N(\lambda(r_1)=1) = \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \tag{A23}$$

and

$$EU^N(\lambda(r_1)=0) = r_1 + \frac{X}{\phi} + \beta \times 0 = r_1 + \frac{X}{\phi}. \tag{A24}$$

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

$$EU^N(\lambda(r_1)=1) \leq EU^N(\lambda(r_1)=0) \tag{A25}$$

that is,

$$r_1 + \frac{X}{\phi} \geq \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \Longleftrightarrow r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \tag{A26}$$

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 $\overline{\lambda}^N = \int_{-\infty}^{\Delta+\beta\left(\overline{r}+\frac{X}{\phi}\right)} G(r_1)dr_1 = G\left(\Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right)\right)$. 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

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

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 $\alpha(\Delta)\in[0,1]$:

$$\begin{aligned} EU^N(\lambda^N(r_1),\alpha) &= \left[1-\lambda^N(r_1)\right]\left(r_1+\frac{X}{\phi}\right)+\lambda^N(r_1)\left[\Delta+\frac{X}{\phi}+\beta\left(1-\alpha(\Delta)\right)\left(\overline{r}+\frac{X}{\phi}\right)\right]= \\ &= -\lambda^N(r_1)\left[r_1-\Delta-\beta\left(\overline{r}+\frac{X}{\phi}\right)+\alpha(\Delta)\beta\left(\overline{r}+\frac{X}{\phi}\right)\right]+r_1+\frac{X}{\phi}. \qquad \text{(A27)}\end{aligned}$$

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 A1 *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*

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

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

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

A.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 2012) 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.

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

A.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:

$$V^Z(\alpha = 1|\delta) = (1-\phi) \times \frac{X-\mu}{1-\phi} + \phi \times 0 = X - \mu, \tag{A28}$$

while without revolution is:

$$\begin{aligned} V^Z(\alpha &= 0|\delta) = \rho(\delta)P^Z(C|\delta)\Delta + (1-\rho(\delta))[\phi(\pi\Delta + \frac{X}{\phi}) + (1-\phi)\pi\Delta] = \\ &= \rho(\delta)P^Z(C|\delta)\Delta + (1-\rho(\delta))\left[\pi\Delta + X\right] \end{aligned} \tag{A29}$$

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

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

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

$$X - \mu \leq X + \pi\Delta \tag{A30}$$

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:

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

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:

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

Hence we conclude that

$$\alpha(\Delta) = 1 \Longleftrightarrow \overline{\lambda}^N \geq \frac{\pi}{1-\pi}\left(\frac{\Delta}{X-\mu} - 1\right). \tag{A31}$$

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

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

A.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 (2012): 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

$$EU^N(\lambda(r_1) = 1) = \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \tag{A32}$$

and

$$EU^N(\lambda(r_1) = 0) = r_1 + \frac{X}{\phi} + \beta \times 0 = r_1 + \frac{X}{\phi}. \tag{A33}$$

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

$$EU^N(\lambda(r_1) = 1) \leq EU^N(\lambda(r_1) = 0) \tag{A34}$$

that is,

$$r_1 + \frac{X}{\phi} \geq \Delta + \frac{X}{\phi} + \beta(\overline{r} + \frac{X}{\phi}) \Longleftrightarrow r_1 \geq \Delta + \beta\left(\overline{r} + \frac{X}{\phi}\right) \tag{A35}$$

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

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

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

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

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

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

$$EU^N(\lambda(r_1)=1)=\Delta+\frac{X}{\phi}+\beta(\overline{r}+\frac{X}{\phi}) \tag{A36}$$

and

$$EU^N(\lambda(r_1)=0)=r_1+\frac{X}{\phi}+\beta\times 0=r_1+\frac{X}{\phi}. \tag{A37}$$

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

$$EU^N(\lambda(r_1)=1)\leq EU^N(\lambda(r_1)=0) \tag{A38}$$

that is,

$$r_1+\frac{X}{\phi}\geq\Delta+\frac{X}{\phi}+\beta(\overline{r}+\frac{X}{\phi})\Longleftrightarrow r_1\geq\Delta+\beta\left(\overline{r}+\frac{X}{\phi}\right) \tag{A39}$$

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

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

is part of a unique Sequential Equilibrium when $\mu\in[X-\Delta;X-\pi\Delta]$, 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 $\rho(\Delta) = 1$:

$$\begin{aligned} EU^N(\lambda^N(r_1), \alpha) &= \left[1-\lambda^N(r_1)\right]\left(r_1+\frac{X}{\phi}\right)+\lambda^N(r_1)\left[\Delta+\frac{X}{\phi}+\beta\left(1-\alpha(\Delta)\right)\left(\overline{r}+\frac{X}{\phi}\right)\right] = \\ &= -\lambda^N(r_1)\left[r_1-\Delta-\beta\left(\overline{r}+\frac{X}{\phi}\right)+\alpha(\Delta)\beta\left(\overline{r}+\frac{X}{\phi}\right)\right]+r_1+\frac{X}{\phi}. \end{aligned} \quad \text{(A40)}$$

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 A2 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

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

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

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