UNDERGROUND INSURGENCY AND DEMOCRATIC REVOLUTION*

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January 28, 2009

Abstract

We propose a model of the transition from an autocratic regime to either a liberal democracy or a new autocratic regime (e.g. a communist government). An underground organization votes on whether or not to hold a mass protest. If a protest is held, the organization members decide whether to put effort into the uprising. Higher effort makes regime change more likely, but it is individually risky. This creates the possibility, in principle, of high and low effort equilibria. But we show, using weak dominance arguments, that only the high effort equilibrium is "credible." Thus, internal party democracy is shown to enhance the efficiency of political transitions. Finally, we show when the transition is likely to lead to the emergence of a democracy, and we derive conditions regarding the "quality" of that democracy. When a revolution succeeds, it leads to a constitutional design phase wherein revolutionaries and reformists of the old regime negotiate the constitutional rules of the democratic game. This then leads to a democratic consolidation phase wherein the two sides choose to abide or not to abide by the result of elections. Conditions for a successful transition to (and consolidation of) democracy incorporate both ex-ante and ex-post assessments of electoral prospects by the parties who participate in the process.

JEL Codes: C72, D72, D74. Keywords: Democracy, political game, revolution, transitions.

*We would like to thank Ernesto Dal Bo and seminar participants at University of California at Berkeley New York University, ESSET 2007 and III Workshop on Social Decisions at Universidad de Málaga. Moussa Blimpo and especially Sarah Weltman provided excellent research assistance.

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1 Introduction

Transitions from repressive authoritarian regimes to liberal democracies in Europe; Latin America; and, more recently, in Africa tend to be led by relatively small underground insurgent organizations such as communist or religious political groups. This was clearly the case in the democratic revolutions of South Africa, Poland, and El Salvador in 20th century, as well as in the French Revolution of the 18th century. However, as the contemporary political history of Russia and Iran suggest, communist or religious groups may take over revolutionary movements and generate new authoritarian regimes. When does underground political activism lead to a successful democratic revolution?

We investigate this question by stressing the importance of internal democracy in the opposition party and the party's organizational capacity to the success of the revolution. We show when a revolution is likely to lead to a democratic transition (and its quality) or to the emergence of a new autocracy. More specifically, we study a multistage game in which members of an underground organization who want to bring down an autocratic government have to take to the streets and lead the revolution. The regime falls and democracy may arise only if enough members of the opposition participate. However, participation is a coordination game and has multiple equilibria. This is a classical collective action problem that is pervasive (and only partially resolved) in most modern analyses of democratic transitions.[1] We show that internal democracy in the underground organization solves the coordination problem: the equilibrium where revolutionaries collectively undertake urban mass protest in the only one involving undominated strategies. That is, organizing a vote among clandestine activists over the option of an urban mass protest dramatically changes the strategic structure of the collective action problem. The reason is that voting in favor of collective action and then not joining the mass protest, if approved, is (weakly) worse than simply voting against the mass protest. In a sense, a "yes" vote on the mass-protest acts as a strategic commitment device, or as a behavioral signal of willingness to cooperate, which solves the coordination problem of the organizers. In essence, the internal organization of clandestine parties and their collective decision making procedures (here, internal democracy) are the key to solving the pervasive collective action problems in revolutions.[2]

When a revolution succeeds, it leads to a constitutional design phase, wherein revolutionaries and reformists of the old regime negotiate the rules of the democratic game. This gives rise to a democratic consolidation phase, where the two sides choose to abide or not to abide by the result of elections. We characterize conditions where there is a successful transition to democracy. The constitutional negotiation establishes the degree of freedom left to ruling parties under democracy.

[1] Acemoglu and Robinson (2006) discuss at length the potential collective action problems in organizing a revolution (p. 123 onwards). An exhaustive survey by Moore (1995) discusses how the free rider problem affects rebellions.

[2] As an anecdote, a well-known scene in "La Battaglia di Algeri" (Gillo Pontecorvo [1966]), shows a scene of FLN revolutionaries voting on unrest activities.

Ex-ante assessment of electoral prospects are a key determinant of the negotiated terms of the constitution. In substance, the faction with a higher long-term likelihood of being in office prefers a higher constitutional level of discretion, which conflicts with the objectives of the other negotiating party. The negotiation balances these conflicting aims, and also takes into account the threat of a reversion to social unrest and civil war if no agreement is reached. Additionally, we consider the conditions under which democracy lasts. These basically require that the agreed upon constitutional terms are incentive compatible ex-post, when the two parties re-evaluate the relative long-term likelihood of being in office based on the outcome of the first electoral contest of democracy. This brings a dynamic perspective into our model of creation and consolidation of democracy.[3]

Thus, we propose a model which embraces three important phases in transitions from dictatorship to democracy. First, the collective action problem of the revolution by the members of a clandestine group, whose solution relies on internal organizational features of the underground world. Second, the constitution results from explicit bargaining between the old regime autocrats and successful revolutionaries under the shadow of the mutual threat of civil war. Finally, we study explicitly the consolidation of democracy, by distinguishing between the ex-ante (at the constitutional negotiation stage) and the ex-post (after the first elections) perspectives of participating actors.

Our analysis identifies two sets of necessary and sufficient conditions under which democracy emerges from a revolution and lasts. The first condition, which we call *constitutional safeguard*, highlights the relative value (at different stages and for different actors) of democracy and autocracy. The second condition which we call *revolution by consensus* is more strategic in nature.

Our model captures key features of the revolutionary strategy developed by Lenin in his 1902 pamphlet, entitled “What Is To Be Done?”. Lenin argued that the basic prerequisite for a revolution was the creation of a “vanguard” party that would relentlessly work to educate, lead, and guide the working classes in their struggle against the Tsar. By vanguard party, he meant a centralized political group, organized around a small nucleus of professional revolutionaries with proved experience in underground political activism, who would be elected by the party congress. The internal structure of the party would be a network of underground cells, which were impenetrable to the police and could provide effective leadership and organizational capacity to trade-unions and other opposition groups.

It is quite clear that Lenin’s revolutionary strategy was not intrinsically communist or leftist. That is why it has been adopted by religious opposition groups in Iran in the 1970s, and even by anti-communist revolutionaries in Poland in the 1980s. (For details, see Parsa [1989] for the

[3]De Tocqueville ([1839] p.200) was already aware of this problem: “When elections recur only at long intervals, the state is exposed to violent agitation every time they take place. Parties then exert themselves to the utmost in order to gain a prize which is so rarely within their reach; and as the evil is almost irremediable for the candidates who fail, everything is to be feared from their disappointed ambition. If, on the other hand, the legal struggle is soon to be repeated, the defeated parties take patience.”

case of the Iranian Revolution and Ash [2002] for the Polish Revolution). Thus, our argument can been interpreted as a theory of transition to democracy, whether it is from right wing dictatorships (South Africa, Iran) or left-wing dictatorships (Poland).

Scope of the argument and literature review This paper contributes to the study of political competition under dictatorships, which is radically different from Downsian political competition under democracy. First and foremost, it is unregulated - i.e. opposition parties are illegal and are treated like criminal organizations. Citizens care both about policy outcomes and the institutions that implement those policies. For instance, citizens might prefer a bad policy under democracy to a good policy under dictatorship. Citizens don't vote. Instead, they do or do not participate in revolutionary actions (i.e. uprising). Political parties have preferences over both institutions and policies, but also have to choose organizational structures that will enable them achieve their political objectives. In other words, the strategy space of the political parties is composed of both the institutions and organizational structure necessary to make a revolution possible or to prevent a revolution from taking place.

There is large literature on revolutions as collective action problems. Roemer (1985) studies political competition between the Tsar and Lenin for support from citizens and derives Lenin's revolutionary ideology and the Tsar's tyrannical strategies as equilibrium behavior. Kuran (1989) seeks to explain revolutionary surprises: revolutions may appear unavoidable given a severe economic crisis in a country, and yet its occurrence might come as surprise to political actors. His argument focuses on the fact that citizens under autocratic regimes tend to misrepresent their preferences for political change out of fear of repression. Revolutions become possible only when leaders succeed in exposing the vulnerability of the regime and propose a credible alternative to the status-quo. In sharp contrast with Roemer and Kuran, our focus is (1) on the actions of the underground (communist) party members, not on the strategy of a revolutionary leader or on the determinants of citizens's decisions to support or oppose the autocratic government, and (2) the conditions of democratic change

Acemoglu and Robinson ([2000], [2005]) present a model in which a threat of revolution that will redistribute income from the rich to the poor induces the rich elite to extend voting rights to the poor, i.e. democratize. This is because democracy helps the elite to commit to future redistribution, since the poor majority has been granted the power to set the tax rate. In our model, which focuses on the power game rather than on distributive issues, the threat of a communist-style revolution induces democrats to become more militant and politically active. As a result, autocratic rulers decide to concede democratic reforms. In other words, democracy helps prevent a communist revolution.

An important point missing in Acemoglu and Robinson (2005) is a deeper understanding of revolutions, which, in their model, are off the equilibrium path. Furthermore, the authors ignore the possibility of post-revolutionary dictatorships as well as the role of communist parties and regimes.

According to Spolaore (2007), this limits the ability of their model to capture "a number of political mechanisms and conflicts at work during the twentieth century". (p. 177). As Acemoglu and Robinson themselves acknowledge, developing a more thorough understanding of what happens in revolutions, and of how post-revolutionary institutions subsequently evolve, is a fascinating area of research that may generate new predictions about the creation and the consolidation of democracy (p. 357). Our paper is an attempt to fill this gap in the literature.

This paper is organized as follows: Section 2 presents the structure of the model, focusing on the collective choice and the mass protest stage. Section 3 describes and discusses the equilibrium outcome of the overall democratic transition game. Section 4 studies one extension of the model in which some members of the clandestine organization are shielded from the mass protest and derives how this would affect the outcome of the protest as well as democratic transitions. Section 5 concludes.

2 The Model

We consider a country governed by an autocratic regime. Its organized clandestine opposition is at a crossroads. They must decide whether to organize an urban mass protest type of rebellion (in the style of the French Revolution), or a rural kind civil war (in the style of Mao's Red March). We would like to understand the conditions under which urban mass protest takes place and sets the stage for a democratic transition. For this reason, we model the Red March kind of revolution in a relatively reduced form way.

The countryside uprising: A Red March revolution We consider a contest between a clandestine organization C, and a ruling elite E.

Suppose this clandestine organization decides to organize the revolution via a countryside uprising (possibly in the form of guerrilla wars, initially). In this case, the winner of the revolution is determined randomly.[4] The expected discounted payoffs for the winner (resp. loser) of the contest are w, (resp. $-l$), with $w > 0, l > 0, w - l > 0$.[5] The probability of C winning at this stage is p_C. Thus, payoffs for the member of C if the decision is made to undertake a countryside uprising are $z = p_C w - (1 - p_C)l$. The corresponding payoffs for a member of the elite are $\xi = (1 - p_C)w - p_C l$. Notice that the sum $\xi + z$ is a constant, denoted by $b = \xi + z$, which measures the net social surplus of war.

We write $z = \lambda b$ and $\xi = (1 - \lambda)b$, for an adequate $\lambda \in [0, 1]$, which is a linearly increasing function of p_C.

[4] Endogenizing the payoffs from this contest, for example along the lines of Skaperdas (1992) or Fearon (2005) would be a simple extension of our model. See also Chassang and Padró-i-Miquel (2005) for an alternative model of civil conflict.

[5] A simple generalization of the model allows for asymmetric payoffs for winning and losing between the players.

The city mass protest and the collective choice problem The members of the clandestine organization consider, as an alternative to a countryside uprising, the possibility to organizing a mass protest in the city. If successful, the mass protest can destabilize the current autocratic political regime and, eventually, lead to new political order (possibly a democracy, but not excluding a renewal of dictatorship). An unsuccessful mass protest, instead triggers a wave of intensified repression by the current autocratic regime against the clandestine underworld. The partially dismantled clandestine organization that remains after this failed mass protest, if still operative enough, will try to organize the Red March as the only remaining alternative to the failed urban movement.

We assume that all members of the clandestine organization participate in the final decision about whether to organize a mass protest. Such collective decision-making rules are in fact characteristic of communist clandestine organizations.[6]

Formally, a vote on the issue is organized. There are n members of the clandestine organization C. Each member $i \in C$ casts a vote v_i for or against the mass protest. A positive vote in favor of the mass protest is $v_i = 1$, a negative vote is $v_i = -1$. The collection of all votes is $(v_1, ..., v_n)$.

The outcome of this voting round is either to organize the mass protest, or to go forward with the Red March. The final decision is taken by majority voting. The outcome $\mathcal{O}$ of this voting stage is thus:[7]

$$\mathcal{O}(v_1, ..., v_n) = \begin{cases} \text{“Urban Mass Protest”, if } v_1 + ... + v_n > 0 \\ \text{“Red March”, if } v_1 + ... + v_n \leq 0 \end{cases}$$

The mass protest A successful mass protest is a revolution that creates a schism in the autocratic regime and opens the possibility of a negotiation round between the reformists within the old regime and the revolutionaries to set up a democratic constitution. The success of a mass protest depends on the level of involvement and participation of the clandestine opposition members. Indeed, a clandestine opposition member who quits the underworld and takes an active part in a public event signals to the rest of the population her willingness to bring to an end the civil unrest, as otherwise he will be facing a very high repression cost. This signal acts as a magnet that attracts a larger crowd to the mass protest - the attraction is greater the greater the number of clandestine opposition members joining the uprising.

For simplicity, there are only two actions available to each clandestine organization member, $a_i \in \{0, 1\}$. When member i contributes actively in the mass protest, and quits the clandestine underworld to take part in this event, we set $a_i = 1$. If instead member i is passive and chooses not to show up at the mass protest, we set $a_i = 0$. The collection of participation decisions is $(a_1, ..., a_n)$.[8]

[6] In the communist tradition, the vote could be limited to members of the central committee of the party, who are themselves elected to that position by the party's congress.

[7] The assumption of majority approval is not crucial for our analysis, which carries over to general $k-$majority approval. Qualitatively, our results are also immune to the details of the tie-breaking rule in the voting stage.

[8] We will see later, in the extensions, that organizational efficiency may dictate that some members do not par-

The outcome of the mass protest is either a successful revolution, or a failure which may then lead to a Red March type of revolution. We model this as a Bernoulli random variable, where the revolution succeeds with some probability $0 \leq \theta \leq 1$, and fails with complementary probability $1 - \theta$. The probability of success depends non-negatively on the participation decisions of the members of the clandestine opposition, $\theta (a_1, ..., a_n)$.

When the mass protest succeeds and the current political regime is jeopardized, each clandestine oppositor i who has joined the public event at a personal risk, $a_i = 1$, receives a return $d > 0$, which is endogeneized below. This value d reflects the payoffs for the activists of the successor political regime, depending on the outcome of the post-mass protest stage. We set to 0 the payoff to the passive clandestine activists who don't take part into the mass protest, $a_i = 0$.

When the mass protest fails, clandestine oppositors that are identified by the police face a repression cost $-r < 0$. We assume that active clandestine oppositors in the mass protest ($a_i = 1$) are always identified and face this cost. Passive clandestine oppositors ($a_i = 0$) are caught with some probability $0 \leq q \leq 1$ that reflects the possibility that they navigate the underworld (that they never quit) so as to escape police detection. Oppositors that escape police repression will organize a Red March. Payoffs to the Red March are, respectively z' and ξ' for the revolutionaries and autocrats, with $z' + \xi' = b$, $z' = \lambda' b < z = \lambda b$ and $\xi' = (1 - \lambda')b > \xi$. Since the failed mass movement would likely have entailed the loss of some worthy activists, there will be a lower probability of success p'_C in the Red March for revolutionaries, thus their lower expected payoff, $\lambda > \lambda'$ (recall that λ and λ' are a function of the success probability).

Under a mass protest event, individual payoffs are thus the following:

$$u_i (a_i, a_{-i}; \text{mass protest}) = \begin{cases} \theta (a_i, a_{-i}) d - (1 - \theta (a_i, a_{-i})) r, \text{ if } a_i = 1 \\ (1 - \theta (a_i, a_{-i})) [(1 - q) z' - qr], \text{ if } a_i = 0 \end{cases}. \tag{1}$$

In particular, given a participation decision a_{-i} for all but one member, activist i decides to participate to the mass protest if and only if $u_i (1, a_{-i}; \text{mass protest}) > u_i (0, a_{-i}; \text{mass protest})$,which is equivalent to:

$$\theta (1, a_{-i}) d - (1 - \theta (1, a_{-i})) r > (1 - \theta (0, a_{-i})) \left[(1 - q) z' - qr\right]. \tag{2}$$

In what follows, we take $\theta (\cdot)$ to be a non-decreasing function of the total number of clandestine participants $a = a_1 + ... + a_n$, that is, $\theta (a_i, a_{-i}) = \theta (a_i + \Sigma_{j \neq i} a_j)$. In particular, $\theta (1, a_{-i}) =$

ticipate in the mass protest even if they are in favor of it. This includes some of the top leaders or those in charge in charge of internal security of the clandestine organization or informants. In case the first mass protest fails, they need to prepare another one by keeping part of the network secret.

In that extension we also keep in mind that mass protest would not have been possible without internal organization capacity. Non communists choose to join the urderground party: labor unions, student organizations and other civic figures accept the leadership of the party because of its superior organizational capacity. In fact, those organizations become less vulnerable and more active as a result of their interaction with the underground party.

$\theta(1+\Sigma_{j\neq i}a_j) \geq \theta(\Sigma_{j\neq i}a_j) = \theta(0,a_{-i})$. Then, a sufficient condition for (2) is obtained when we replace $\theta(1,a_{-i})$ by $\theta(0,a_{-i})$ in the left-hand side of (2). This leads to:[9]

$$\theta(\Sigma_{j\neq i}a_j) > \underline{\theta}(d) = \frac{(1-q)(z'+r)}{d+(1-q)(z'+r)}. \tag{3}$$

The lower bound for participation $\underline{\theta}(\cdot)$ depends on the payoffs from attending the mass protest and, in particular, on the returns d from successful mass protest. Under (3), $a_i = 1$ is a best-response to a_{-i}.

Suppose that there exists some $\underline{a} \leq n-1$ such that $\theta(a) > \underline{\theta}(d)$ for all $a \geq \underline{a}$. Then, it is a best-response to participate in the mass protest for any clandestine organization member when at least $\underline{a}$ other players participate. The mass protest participation decisions define a coordination game similar to the collective action models with threshold participation levels in Granovetter (1978) and, more recently, Chwe (1999). We obtain the following result.

Remark 1 *Suppose that $\theta(n-1) > \underline{\theta}(d)$. Then, the mass protest participation game has exactly two pure strategy Nash equilibria. In one of those equilibria, all clandestine members participate; in the other equilibrium, no clandestine member participates.*

The old regime schism and constitutional design In the case of a successful mass protest, members of the elite E and of the clandestine organization C seat together to negotiate the terms of a democratic constitution.

The democratic regime has an associated average policy of value π to all contenders. The constitution fixes the latitude $\pm\Delta$ left to the ruling party in establishing its preferred policies above or below this average value π. The constitutional level of discretion Δ is the outcome of a negotiation between the parties. Under the constitutional democracy, the implemented policies are thus in $[\pi-\Delta, \pi+\Delta]$. We assume that the ruling party obtains a payoff of $\pi+\Delta$ while in office. This payoff reflects the discretion left to the ruling party to decide upon the policies applied within the constitutional limits. In a democracy, the opposition party obtains a payoff of $\pi-\Delta$ that reflects the political guarantees warranted by the constitution to everyone, including supporters of parties not in office. Holding π constant, a high Δ corresponds to a generic constitution that leaves a high level of discretion to the rulers, while a low Δ corresponds to a more interventionist constitution.

The old regime leaders and the revolutionaries undertake the democratic transition and the constitutional negotiations if the anticipated joint democracy payoffs (described in the next section) are higher than their joint stand-alone values. Failed negotiations lead to a Red March confrontation, which defines these stand-alone values. The payoffs to a Red March at this stage are respectively ξ'' and z'' with $z''+\xi' = b$. Since by coming into the open the revolutionary leaders may make

[9] Note that $\underline{p} < 1$ when $d > 0$.

themselves an easy target, the success probability of a Red March now is lower than without a mass protest. We thus set $z'' = \lambda'' b < \lambda b$.[10] Clearly, then $\xi'' = (1-\lambda'')b > \xi = (1-\lambda)b$. How expected payoff of a revolutionary for a Red March after a mass protest vary with or without repression is less clear. We thus do not impose an ordering between z' and z''.

We use the asymmetric Nash bargaining solution to characterize the negotiation outcome that fixes the value of constitutional government discretion Δ. The threat points of Nash bargaining are given by the stand-alone values. Bargaining powers are respectively β and $1-\beta$ for the revolutionaries and the autocrats, with $\beta \in (0,1)$. Payoffs from democracy are described below.

The first democratic elections and democracy consolidation Once a constitution is designed, an election takes place. The two candidate parties are emanations of the elite E and the revolutionaries C, but the actual formation of both parties does not rule out cross overs. We denote by O the party amalgamating mostly old regime members and some moderate revolutionaries, and by R the party constituted by revolutionaries and perhaps some sympathizing elite members.

The outcome of the first election is a Bernoulli process where R wins with probability p_R, and thus O wins with complementary probability $1-p_R$.

After the first election, once the winning party is determined, the country undergoes a regime consolidation phase. We model this as a two-by-two game where the players are the two parties, O and R, and the actions are $c_i \in \{0,1\}$, $i \in \{O,R\}$. When party i accepts to abide by the constitutional contract of the democracy and accepts the electoral results, we set $c_i = 1$. Otherwise, $c_i = 0$. This is a once-and-for-all decision taken after the first elections, and only then. If at least one party breaches the constitutional contract (i.e. $c_1 c_2 = 0$), a regime involution ensues with some probability $0 < \mu < 1$. With complementary probability $1-\mu$, democracy stabilizes forever. If, instead, both parties approve the consolidation of democracy (i.e. $c_1 = c_2 = 1$), this new political regime lasts.

If the democracy consolidates after this first election, the winner of every consecutive election is determined via some stochastic dynamic process from which the parties can compute their associated net present values (parties discount future payoffs by a factor $0 < \delta < 1$). The dynamic stochastic process for electoral runs is as follows.

Time is discrete $t = 1, 2, ...$ and each time period corresponds to an election. At the beginning of each period, an election takes place whose result is known at the end of the period. The outcome of date tth election is a random variable W_t with values in $\{0,1\}$. The case $W_t = 1$ (resp. $W_t = 0$) corresponds to party R (resp. party O) winning date tth election We follow the convention of representing random variables by capitol letters and realizations by small letters.

[10] A negotiation only takes place when the mass protest is successful, thus most members of the clandestine organization will have come into the open. However, because the negotiation round need not involve them all, even if their identity is now known, they can still, and in parallel to the negotiation, set up the conditions for a Red March in case the negotiations fail.

Thus, $h_t = (w_1, ..., w_t)$ is a realization of electoral outputs −an electoral history− up to (and included) the tth election, with values in $\{0,1\}^t$. Given an electoral history $h_t \in \{0,1\}^t$, the outcome of the $t+1$th election W_{t+1} is a Bernoulli process where R wins the election with (conditional) probability

$$\Pr\{W_{t+1} = 1 \mid h_t\} = 1 - \Pr\{W_{t+1} = 0 \mid h_t\}. \tag{4}$$

The first election Bernoulli process, together with the conditional Bernoulli processes (4) at every date t, unambiguously defines a probability distribution over the set of histories $\{H_t\}_{t=1}^{+\infty}$. We compute from this probability distribution the marginal (unconditional) probability $\Pr\{W_t = 1\}$ of party R winning the tth election. We denote $p_t = \Pr\{W_t = 1\}$ the winning probability for the tth election Bernoulli process.[11]

The sequence of Bernoulli random variables $\{W_1, W_2, \ldots\}$ comprise the stochastic process of electoral outcomes.

Let $\overline{p} = (1-\delta)\sum_{t=1}^{+\infty} \delta^{t-1} p_t$ be the discounted time average winning probability for party R evaluated at the beginning of period one. Thus, $1 - \overline{p}$ is the time average winning probability for party O.

Recall that the ruling party in office obtains a contemporaneous payoff of $\pi + \Delta$, while the democratic opposition gets $\pi - \Delta$. The contemporaneous expected value of democracy at the beginning of period t (and before the tth election takes place) is thus:

$$\mathbb{E}_t[d_R] = p_t(\pi + \Delta) + (1 - p_t)(\pi - \Delta) = \pi + \Delta(2p_t - 1), \tag{5}$$

for party R, and

$$\mathbb{E}_t[d_O] = (1 - p_t)(\pi + \Delta) + p_t(\pi - \Delta) = 2\pi - \mathbb{E}_t[d_R], \tag{6}$$

for party O.

The expected discounted stream of payoffs from democracy for party R are then:

$$\mathbb{E}[d_R] = (1-\delta)\sum_{t=1}^{+\infty} \delta^{t-1}\mathbb{E}_t[d_R] = \pi + (2\overline{p} - 1)\Delta = 2\pi - \mathbb{E}[d_O]. \tag{7}$$

The term π corresponds to the expected discounted payoff of the average policy that accrues to every party in a long-lasting democracy. Besides, parties can get an extra positive or negative payoff depending on whether $2\overline{p}$ is higher or lower than $1/2$. Finally, the joint democracy gain flows are $\mathbb{E}[d_R] + \mathbb{E}[d_O] = 2\pi$.

[11] The probability distribution ν over $\{H_t\}_{t=0}^{+\infty}$ is defined recursively by simple Bayesian updating: $\nu((h_t, w_{t+1})) = \Pr\{w_{t+1} \mid h_t\}\nu(h_t)$, with $w_{t+1} \in \{0,1\}$ and $\nu(\varnothing) = p_R$. The unconditional winning probability for party R at the tth election is then:

$$p_t = \sum_{h_t \in H_t} \nu((h_t, 1)).$$

Example 2 *Suppose that the winner of every consecutive election is determined via a Markov chain. Let $m > 1/2$ be the conditional probability that the incumbent stays in office, that is,* $\Pr\{W_{t+1} = 1 \mid w_t = 1\} = m$*, for all* $t \geq 1$*. Then*

$$p_t = \frac{1}{2} + (2m-1)^{t-1}\left(p_R - \frac{1}{2}\right), \text{ for all } t \geq 1,$$

and thus:

$$\overline{p} = \frac{1}{2} + \left(p_R - \frac{1}{2}\right)\frac{1-\delta}{1-\delta\,(2m-1)}, \tag{8}$$

and increasing function of the incumbent advantage m, and of the winning probability p_R at the first elections.

The democracy transition game The game consists of four stages.

In the first stage, all clandestine organization members participate in the collective choice procedure. If the mass protest has not been approved in the first stage, a Red March ensues and the game ends. If, instead, the mass protest has been approved, we go into the second stage of the game. We call this first stage *the voting stage*.

In the second stage, all the clandestine organization members make their participation decision. If the mass protest is not successful, repression takes place, a Red March ensues, and the game ends. Otherwise, we go into the third stage of the game. We call the second stage *the mass protest participation stage*.

In the third stage, the old regime leaders and the revolutionaries negotiate a democratic constitution with each other to try to set up a transition to a new regime. If the negotiation ends in agreement, we go to the fourth stage. Otherwise, a Red March ensues and the game ends. We call the third stage *the old regime schism and constitutional agreement stage*.

The fourth stage starts with the first democratic elections taking place. Then, after the proclamation of the electoral results, the two parties decide whether to abide by the democratic constitution, or to unilaterally breach the constitutional contract. If both show allegiance to the constitution, the democracy is consolidated, it lasts forever and the regime goes through a succession of democratic elections. If instead some party opposes the election results, a Red March ensues with some probability, while the democracy is stabilized anyway otherwise. We call this last stage *the first elections and democracy consolidation stage*.

3 Equilibrium analysis

We solve the revolution and democracy transition using backwards induction.

3.1 The democracy consolidation stage

The democracy consolidation stage is a two-by-two game that takes place at the end of the first democratic election, once the winner of this first electoral contest is known. The result of the first democratic election is $w_1 \in \{0,1\}$, where $w_1 = 1$ (resp. $w = 0$) stands for party R (resp. party O) winning this first election.

Let $p_t^w = \Pr\{W_t = 1 \mid w_1 = w\}$, for all t and $w \in \{0,1\}$. This is the probability of party R winning the tth election conditional on the first electoral outcome being w. Then, $1 - p_t^w$ is the conditional probability that party O is, instead, the tth election winner. From period $t \geq 2$ onwards, the contemporaneous expected value of democracy before the tth election takes place is:

$$\mathbb{E}_t \left[d_R \mid w_1 = 1 \right] = \left(\pi + \Delta \right) p_t^1 + \left(\pi - \Delta \right) \left(1 - p_t^1 \right),$$

for party R, and

$$\mathbb{E}_t \left[d_O \mid w_1 = 1 \right] = \left(\pi + \Delta \right) \left(1 - p_t^1 \right) + \left(\pi - \Delta \right) p_t^1,$$

for party O.

Define:

$$\overline{p}^w = (1 - \delta) \sum_{t=2}^{+\infty} \delta^{t-1} p_t^w, \text{ with } w \in \{0,1\}.$$

This is the party R's discounted time average winning probability conditional on the electoral outcome of the first election being $w \in \{0,1\}$. By definition, $0 \leq \overline{p}^w \leq \delta$, for all $w \in \{0,1\}$. The conditional time average winning probability for party O is then simply $\delta - \overline{p}^w$.[12]

Consider first the case where party R is the first election winner, that is $w_1 = 1$ (an event with ex ante probability p_R). The ruling party R gets a contemporaneous democracy payoff equal to $\pi + \Delta$; while the opposition party O enjoys a contemporaneous payoff $\pi - \Delta$. Using (5) and (6), the net present value from consolidating democracy from period 1 onwards is:

$$v_R^1 = \pi + (1 - 2\delta) \Delta + 2\Delta \overline{p}^1 \tag{9}$$

$$v_O^1 = \pi - (1 - 2\delta) \Delta - 2\Delta \overline{p}^1, \tag{10}$$

respectively for party R and O.

Consider now the case where party O is the first election winner, that is, $w_1 = 0$ (an event with ex ante probability $1 - p_R$). Then, using (5) and (6), the net present value from consolidating democracy from period 1 onwards is:

$$v_O^0 = \pi + \Delta - 2\Delta \overline{p}^0 \tag{11}$$

$$v_R^0 = \pi - \Delta + 2\Delta \overline{p}^0. \tag{12}$$

[12]Noticing that $p_t = \Pr\{w_1 = 0, W_t = 1\} + \Pr\{w_1 = 1, W_t = 1\} = (1 - p_R) p_t^0 + p_R p_t^1$, for all $t \geq 2$, and summing across across all $t \geq 1$ we have $\overline{p} = (1 - \delta) p_R + (1 - p_R) \overline{p}^0 + p_R \overline{p}^1$.

It is clear from the previous expressions that $v_R^1 > v_O^1$ and $v_O^0 > v_R^0$, that is, the winner of the first election attaches a higher value to consolidating democracy than does the losing party.

The consolidation game after R wins the first election is thus (row payoffs correspond to party R and column payoffs to party O):

R,O	0	1
0	$(1-\mu)\, v_R^w + \mu z'', (1-\mu)\, v_0^w + \mu \xi''$	$(1-\mu)\, v_R^w + \mu z'', (1-\mu)\, v_0^w + \mu \xi''$
1	$(1-\mu)\, v_R^w + \mu z'', (1-\mu)\, v_0^w + \mu \xi''$	v_R^w, v_0^w

where $w = 1$ if party R is the first election winner, and $w = 0$ otherwise. The consolidation game after O wins the first election is constructed similarly.

With these payoffs, it is clear that the strategy profile $(c_1, c_2) = (1, 1)$ where both parties chose to consolidate the democracy is a Nash equilibrium in undominated strategies irrespective of the winner's identity (be it R or O) if and only if $\min\{v_R^1, v_R^0\} > z'' = \lambda'' b$ and $\min\{v_O^1, v_O^0\} > \xi'' = (1-\lambda'')\, b$. In words, democratic consolidation requires that both parties attach a higher net present value to democracy than to the Red March, irrespective of whether they win or they lose the first electoral contest.

Straightforward calculation shows that $v_R^1 \geq v_R^0$ if and only if $1-\delta \geq \left(\overline{p}^0 - \overline{p}^1\right)$, itself equivalent to $\overline{p} \geq \overline{p}^0$. Similarly, that $v_O^0 \geq v_O^1$ if and only if $\overline{p} \geq \overline{p}^0$.[13]

Suppose that the time average winning probability for party R is lower when they lose the first electoral contest. Then, democratic consolidation requires that both parties attach a higher net present value to long-lasting democracy than to the Red March when they have lost the first electoral contest. Suppose, instead, that the winning probability for party R increases after a first election loss. Then, consolidation requires that winning parties prefer democracy to Red March-style unrest.

Example 3 *Suppose that the winner of every consecutive election is determined via a Markov chain. Let $m > 1/2$ be the conditional probability that the incumbent stays in office, that is,* $\Pr\{W_{t+1} = 1 \mid w_t = 1\} = m$*, for all $t \geq 1$. In this case, the unconditional discounted time average for party R is given in 8. The conditional winning probabilities are:*

$$\overline{p}^1 = \frac{\delta}{2} + \frac{\delta}{2}\frac{(1-\delta)(2m-1)}{1-\delta(2m-1)} \qquad \textit{and} \qquad \overline{p}^0 = \frac{\delta}{2} - \frac{\delta}{2}\frac{(1-\delta)(2m-1)}{1-\delta(2m-1)}$$

One can readily check that $\overline{p}^1 > \overline{p}^0$, that is, winning the first election increases the time average winning probability. In this case, the first election winner gets a payoff $v_R^1 = v_O^0 = v + k$, while the first election loser gets a payoff $v_O^1 = v_R^0 = v$, where:

$$v = \pi - \frac{1-\delta}{1-\delta(2m-1)} \qquad \textit{and} \qquad k = \frac{2(1-\delta)}{1-\delta(2m-1)}.$$

[13] A sufficient condition for which is $\overline{p}^1 \geq \overline{p}^0$.

Since $\overline{p} > \overline{p}^0$ when $m > 1/2$, the conditions for consolidation to be a Nash equilibrium in undominated strategies then boil down to $v > b \max\{\lambda'', 1-\lambda''\}$, that is, the party losing the first election must value more democracy than the option of a Red March..

3.2 The constitutional agreement stage

We know from (7) that the net present value of democracy for the two negotiating parties at the constitution agreement stage are $\mathbb{E}[d_R] = \pi + (2\overline{p}-1)\Delta$ for the revolutionaries, and $\mathbb{E}[d_O] = \pi - (2\overline{p}-1)\Delta$ for the autocrats. As long as $\overline{p} \neq 1/2$, the two parties thus have conflicting views on the outcome of the process. In particular, when the expected discounted winning probability for the revolutionaries is high, $\overline{p} > 1/2$, they prefer a constitution leaving substantial discretion to the party in office (high Δ), while the old regime party prefers a constitution that narrows the degree of freedom given to the government in office. The preferences of the two parties over constitutional discretion switch when $\overline{p} < 1/2$.

In what follows, we assume that $\overline{p} \neq 1/2$.

Recall that we analyze the constitutional agreement stage by means of the asymmetric Nash bargaining solution with threat points given by the Red March payoffs, and bargaining power equal to $0 < \beta < 1$ and $1-\beta$ for the revolutionaries and the autocrats, respectively. The terms of the bargaining agreement are thus given by the solution to:

$$\max_{\Delta \geq 0} \left(\pi + (2\overline{p}-1)\Delta - z''\right)^{\beta} \left(\pi - (2\overline{p}-1)\Delta - \xi''\right)^{(1-\beta)}.$$

First-order conditions are:

$$\beta\left(\pi - (2\overline{p}-1)\Delta^* - \xi''\right) = (1-\beta)\left(\pi + (2\overline{p}-1)\Delta^* - z''\right).$$

Noticing that $(1-\beta)z'' - \beta\xi'' = (\lambda'' - \beta)b$, we obtain the following value for the agreed-upon constitutional terms:

$$\Delta^* = \max\left\{\frac{(2\beta-1)\pi + (\lambda''-\beta)b}{2\overline{p}-1}, 0\right\}. \tag{13}$$

Let $\sigma = 2\pi - b$ denote the joint net surplus from democracy (relative to the Red March). Clearly, for the bargaining game to be well-defined (in the sense of the threat point not being the trivial outcome), we require that $\sigma > 0$. Using (13), we can then conclude the following regarding agreed upon democracy payoffs for both parties. We distinguish two cases:

Suppose, first, that $\Delta^* > 0$. Then, agreed upon democracy payoffs can be written as follows:

$$\begin{aligned}
\mathbb{E}^*[d_R] &= \beta\sigma + \lambda'' b \\
\mathbb{E}^*[d_O] &= (1-\beta)\sigma + \left(1-\lambda''\right)b,
\end{aligned}$$

namely, the two bargaining parties obtain their stand-alone value plus a share of the net democracy surplus in proportion to their bargaining powers. Clearly, the agreement is efficient and payoffs add up to the joint democracy surplus, that is, $\mathbb{E}^*[d_R] + \mathbb{E}^*[d_O] = 2\pi$. Also, one can readily check that the party with the highest time average winning probability gets a higher democracy payoff. Indeed, notice first that the difference in bargaining payoffs is:

$$\mathbb{E}^*[d_R] - \mathbb{E}^*[d_O] = (2\beta - 1)\pi + \left(\lambda'' - \beta\right) b \tag{14}$$

Consider for instance the case where party R has the highest time average winning probability, that is $\overline{p} > 1 - \overline{p}$. Then, using (13) and (14), it is plain that $\Delta^* > 0$ is equivalent to $\mathbb{E}^*[d_R] - \mathbb{E}^*[d_O] > 0$. Symmetrically, party O gets a higher bargaining share when its winning probability is higher, $1 - \overline{p} > \overline{p}$.

Suppose now that $\Delta^* = 0$. Then, bargaining outcomes are as follows:

$$\begin{aligned} \mathbb{E}^*[d_R] &= \mathbb{E}^*[d_O] = \pi, \text{ when } \pi \geq \max\{1 - \lambda'', \lambda''\} b \\ \mathbb{E}^*[d_O] &= \lambda'' b, \ \mathbb{E}^*[d_O] = \left(1 - \lambda''\right) b, \text{ otherwise.} \end{aligned}$$

In words, the two parties agree on a half-half split of the democracy payoffs when this allocation Pareto dominates the threat point values. Otherwise, disagreement ensues and a Red March takes place. Notice that the condition $\pi \geq \max\{1 - \lambda'', \lambda''\} b$ is stronger than simply requiring that the democracy net surplus be positive, $\sigma = 2\pi - b > 0$.[14]

As one would expect, the utility delivered by the agreement depends on the bargaining power and disagreement point of both parties, and on the joint available surplus. These utilities also depend on stochastic processes governing elections through the sign condition in (13), but the actual payoffs do not include parameters related to this stochastic process, which are internalized in the terms of the agreement.

3.3 The voting and mass protest participation stages

We now move to the first and second stage game.

Denote by θ^* the success probability of the mass protest when a minimal winning majority of the clandestine oppositors participate. Given that the revolution success probability is a non-decreasing function of the participating crowd size, we have:

$$\theta^* = \begin{cases} \theta\left(n/2 + 1\right), \text{ if } n \text{ is even} \\ \theta\left((n+1)/2\right), \text{ if } n \text{ is odd} \end{cases},$$

where n is the number of activists.

[14] $\Delta^* = 0$ when β and λ'' are such that $\beta\sigma + \lambda'' b = \pi$. In particular, having $\beta = 1 - \beta = 1/2$ and $\lambda'' = 1 - \lambda'' = 1/2$ implies that $\Delta^* = 0$, in which case the Pareto dominance condition $\pi \geq \max\{\lambda'', 1 - \lambda''\} b$ boils down to net democracy surplus being positive, $\sigma > 0$. However, for asymmetric solutions (β, λ'') to the equation $\Delta^* = 0$, the Pareto dominance condition is stronger than simply requiring positive net democracy surplus.

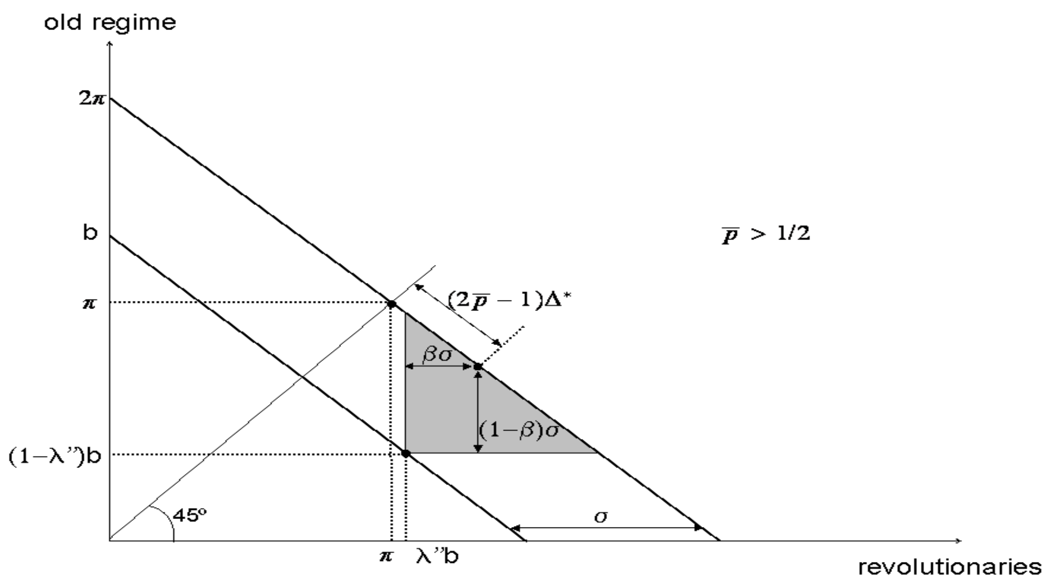

Figure 1: Nash bargaining

Denote by $\mathbb{E}u_i\left(a_i, a_{-i}; .\right)$ the expected payoff of revolutionary at the beginning of stage 2 conditional on the outcome of stage 1 being Red March or Mass Protest. We have

$$\mathbb{E}u_i\left(0, a_{-i}; \text{Red March}\right) = z, \text{ for all } a_{-i};$$

whereas,

$$\mathbb{E}u_i\left(0, a_{-i}; \text{Mass Protest}\right) = \left(1 - p\left(0, a_{-i}\right)\right)\left[\left(1-q\right)z' - qr\right] < z, \text{ for all } a_{-i}.$$

For all members of the clandestine organization, approving the Mass Protest and then choosing $a_i = 0$ is thus dominated by not approving the Mass Protest and then choosing $a_i = 0$. Therefore, any player who votes in favor of the mass protest will play $a_i = 1$.

Consider some collection of votes $(v_1, ..., v_n)$. Under majority approval, the mass protest is adopted if and only if $v_1 + ... + v_n > 0$. Assume that $\theta^* > \underline{\theta}\left(\mathbb{E}^*\left[d_R\right]\right)$,[15] where $\underline{\theta}\left(\cdot\right)$ is the lower bound for participation and the success probability evaluated at the democracy payoffs and whose expression is given in 3. Under this condition, the participation of a majority of activists in the mass protest is a Nash equilibrium in pure strategies of the mass protest game. Using (1) and given that $v_i = 1$ imply $a_i = 1$ as established above, a lower bound for the expected payoff in case of mass protest approval is $\theta^*\left(\mathbb{E}^*\left[d_R\right]\right) - (1-\theta^*)r$.

[15]Notice that this inequality implies Remark 1, and thus the participation game has two pure strategy equilibria.

The condition:

$$\theta^* \left(\mathbb{E}^* \left[d_R\right]\right) - (1-\theta^*) r > z \tag{15}$$

guarantees that all members of the organization prefer the situation where the Mass Protest is adopted to the alternative of a Red March. Since casting a yes vote in favor of the organization of the mass protest may be pivotal for this adoption, it is a dominant strategy to vote for this adoption (and then choose $a_i = 1$).

Thus, under conditions $\theta^* > \underline{\theta}\left(\mathbb{E}^* \left[d_R\right]\right)$ and (16), two rounds of deletion of weakly dominated strategies guarantee that Mass Protest is approved by organization members and all take active part in this event.

It turns, however that (16) is redundant under (15), which reduces the undominated equilibrium argument to a single condition, namely, (15). The argument runs as follows. We show that (15) implies $\theta^* > \underline{\theta}(d)$. For a contradiction, we suppose that (15) and $\underline{\theta}(d) \geq \theta^*$ hold simultaneously. Multiplying both sides of the last inequality by $(d+r)$ gives $(d+r)\underline{\theta}(d) \geq (d+r)\theta^*$. Combined with (15) we deduce that $(d+r)\underline{\theta}(d) > z+r$. Using the expression for (3), we then rewrite this last inequality as:

$$(d+r)\frac{(1-q)(z'+r)}{d+(1-q)(z'+r)} > z+r,$$

which is equivalent to:

$$d\left[(1-q)\left(z'+r\right)-(z+r)\right] > z(1-q)\left(z'+r\right).$$

The right hand side of this last inequality is positive. The sign of the left hand side is that of $(1-q)(z'+r)-(z+r) \leq z'-z \leq 0$, non-positive. We thus have a contradiction.

4 The main result

Recall that $\sigma = 2\pi - b > 0$ is the joint net surplus of democracy relative to its breakdown. Recall also that $\overline{p}$ (resp. $1-\overline{p}$) is the time average winning probability for party R (resp. party O), while $\overline{p}^w$ (resp. $\delta - \overline{p}^w$) is the time average winning probability for party R (resp. party O) conditional on the first election outcome being $w \in \{0,1\}$.

We next define the two following sets of inequalities.

First, *revolution by consensus:*[16]

$$\theta^*(\beta\sigma + \lambda'' b) - (1-\theta^*) r > \lambda b. \tag{16}$$

[16]The condition is:

$$\theta^*(\pi + \max\left\{\frac{\beta\sigma+\lambda''b-\pi}{2\overline{p}-1}, 0\right\}(2\overline{p}-1)) - (1-\theta^*) r > \lambda b.$$

Suppose first that $\overline{p} > 1/2$. Then, this inequality becomes $\theta^* \max\{\beta\sigma + \lambda'' b, \pi\} - (1-\theta^*) r > \lambda b$. Instead, when $\overline{p} < 1/2$, this inequality is $\theta^* \min\{\beta\sigma+\lambda'' b, \pi\} - (1-\theta^*) r > \lambda b$. Recalling that $\beta\sigma+\lambda'' b$ is the agreed upon democracy share for party R (when agreement is, indeed, obtained) and that this share is higher (resp. lower) than the half-half split π when $\overline{p} > 1/2$ (resp. $\overline{p} < 1/2$), we conclude that the first inequality can be simplified to (16).

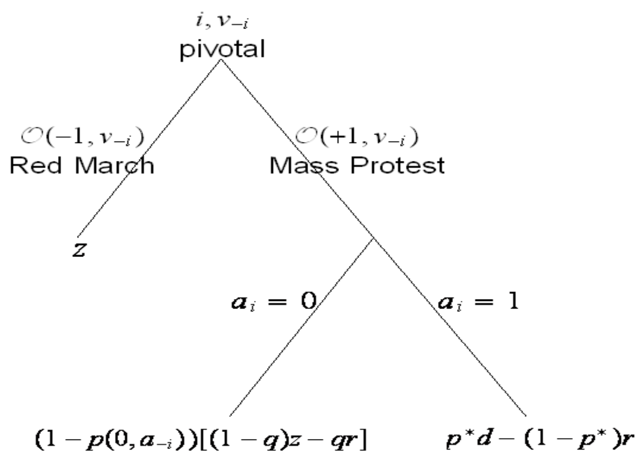

Figure 2: Game tree

Second, *constitutional safeguard:*

$$\pi + \max\left\{\frac{\beta\sigma + \lambda'' b - \pi}{2\overline{p} - 1}, 0\right\}\left(2\overline{p}^0 - 1\right) > \lambda'' b, \tag{17}$$

for party R, and:

$$\pi + \max\left\{\frac{\beta\sigma + \lambda'' b - \pi}{2\overline{p} - 1}, 0\right\}\left(2\left(\delta - \overline{p}^1\right) - 1\right) > \left(1 - \lambda''\right) b, \tag{18}$$

for party O.

We are now ready to state our main result:

Theorem 4 *Suppose that $\overline{p} \geq \overline{p}^0$. If both revolution by consensus (16) and constitutional safeguard (17),(18) hold, then in all strategy profiles that survive two rounds of deletion of weakly dominated strategies:*

(*i*) *the mass protest is approved,*

(*ii*) *all the clandestine oppositors take part in this mass event,*

(*iii*) *the old regime suffers a schism and a democratic constitution is negotiated,*

(*iv*) *the first elections are organized, and democracy lasts.*

In other words, the regime switches from dictatorship to a stable democracy when two sets of conditions hold.

The first condition, *revolution by consensus*, guarantees that the clandestine activists vote in favor of organizing the mass protest and, following this yes vote, participate in this collective event. Importantly, this condition is both necessary and sufficient. Note that, under this condition, at all equilibria where no actor uses weakly dominated strategies, it is weakly dominant for all to vote for the organization of the mass protest and to participate in it after the vote. Only two rounds of elimination of weakly dominated strategies are required for this to hold. Clearly, a high repression cost r goes against this condition. Instead, high agreed upon constitutional democracy proceeds $\beta\sigma + \lambda'' b$ for the revolutionaries favor this condition. Increasing the bargaining power, the disagreement point, or the surplus size relax (16).

As already mentioned, the valuation of democracy to revolutionaries (as well as to autocrats) is independent of parameters reflecting the electoral dynamics, whose impact is internalized in the terms of the agreement of the bargaining stage. Instead, the conditions for democracy to be consolidated (17) and (18) depend explicitly on the electoral dynamics, as we now discuss.

Consider now the second set of conditions, which we label the *constitutional safeguard*. When $\overline{p} \geq \overline{p}^0$, (17) and (18) require that the net present value of democracy to the loser of the first electoral contest be higher than its valuation of the Red March. Formally, $v_R^0 > \lambda'' b$ and $v_O^1 > (1 - \lambda'')\, b$. The ratios v_R^0/b and v_O^1/b measures the relative value of not being in office in a democracy versus the value of dictatorship behind a veil of ignorance. When this ratio is greater than one, the constitutional safeguard conditions are trivially satisfied. If one of the contenders can expect to get a big enough share of the social value of dictatorship b, democracy need not consolidate. This share depends on the success probability in a conflict, and thus reflects structural factors such as the loyalty of the army, the ruggedness and the contender's knowledge of the terrain, the guerrillas' power and so on.

The constitutional safeguard conditions guarantee that the old regime leaders and the revolutionaries negotiate together a democratic constitution which they both prefer to a civil conflict. It also implies that they revalidate this constitution after the first election, independently of electoral results. This condition is both necessary and sufficient. Note that under the constitutional safeguard condition, showing allegiance to the constitution after the first elections is a Nash equilibrium in undominated strategies (while rejecting the electoral results is a weakly dominated strategy for all possible values of the probability of political regime involution, $0 < \mu < 1$).

The constitutional agreement stage sets the net present value of democracy to both negotiating parties, $\mathbb{E}^*[d_R]$ and $\mathbb{E}^*[d_O]$. These values split efficiently the democracy gains among the two parties, $\mathbb{E}^*[d_R] + \mathbb{E}^*[d_O] = 2\pi$. It turns out that the constitutional safeguard condition (17) for party R can be reformulated in terms of the relative democracy value, $\mathbb{E}^*[d_R] - \mathbb{E}^*[d_O]$, that depends on the asymmetry in the bargaining stands of both parties:

$$\pi + \frac{1}{2}\left(\mathbb{E}^*\left[d_R\right] - \mathbb{E}^*\left[d_O\right]\right)\frac{2\overline{p}^0 - 1}{2\overline{p} - 1} > \lambda'' b.$$

Recall that we are working under the condition $\overline{p} \geq \overline{p}^0$. In the extreme case where $\overline{p} = \overline{p}^0$, the previous *constitutional safeguard condition* becomes simply $\mathbb{E}^*\left[d_R\right] > \lambda'' b$, which coincides with the *revolution by consensus* (16). However, when $\overline{p} > \overline{p}^0$, this condition imposes further (and different) conditions on parameters, which we now analyze.

We start by relating discrepancy in democracy valuations to *constitutional safeguard* equilibrium conditions (here, for party R).

Suppose first that $\mathbb{E}^*\left[d_R\right] = \mathbb{E}^*\left[d_O\right]$. Then, under a constitutional agreement, parties equally split the proceeds from democracy. They thus each obtain a value of π. The constitutional safeguard conditions in this case boils down to

$$\pi \geq \max\{1 - \lambda'', \lambda''\} b$$

That is, the equal democracy split Pareto dominates the disagreement point.

Assume, on the other hand that $\mathbb{E}^*\left[d_R\right] - \mathbb{E}^*\left[d_O\right] > 0$. Since $\Delta^* \geq 0$, this requires having $2\overline{p} - 1 > 0$. In other words, the party with higher ex-ante average discounted probability of winning has a bigger share of democracy proceeds (how much more depends on parameters, such as bargaining power and the disagreement values). Then, an increase in $\mathbb{E}^*\left[d_R\right] - \mathbb{E}^*\left[d_O\right]$ relaxes the constitutional safeguard condition (17) if and only if $\overline{p}^0 > 1/2$.

Now let us examine the effect of $\left(2\overline{p}^0 - 1\right) / \left(2\overline{p} - 1\right)$. When $\left(2\overline{p}^0 - 1\right) / \left(2\overline{p} - 1\right) = 1$, the condition (17) boils down to $\mathbb{E}^*\left[d_R\right] \geq \lambda'' b$. Given that this condition is symmetric for (18), both conditions simply that bargaining shares must Pareto dominate disagreement values. Which requires $\mathbb{E}^*\left[d_R\right] - \mathbb{E}^*\left[d_O\right] > 0$. Thus in this case the constitutional safeguard conditions are trivially satisfied. Consider now the case where the $\left(2\overline{p}^0 - 1\right) / \left(2\overline{p} - 1\right) \neq 1$. Since we are working with $\overline{p} \geq \overline{p}^0$, this implies that $\left(2\overline{p}^0 - 1\right) / \left(2\overline{p} - 1\right) < 1$. Hence these constitutional safeguard conditions are more demanding than the requirements for non-trivial bargaining agreements. Indeed, after having lost the first election each party, in this case the revolutionaries, reassess the time average probability conditional on this loss. And when $\overline{p} \geq \overline{p}^0$, this reassessment leads to a lower conditional winning probability. The net proceeds from democracy are discounted accordingly. The constitutional safeguard condition guarantees that this reassessment does not lead to a rejection of democracy.

Example 5 *Suppose that the winner of every consecutive election is determined via a Markov chain. Let $m > 1/2$ be the conditional probability that the incumbent stays in office, that is, $\Pr\{W_{t+1} = 1 \mid w_t = 1\} = m$, for all $t \geq 1$. Suppose that $\mathbb{E}^*\left[d_R\right] - \mathbb{E}^*\left[d_O\right] > 0$. Then, (17) becomes more stringent when p_R increases in $(1/2, 1)$, while it is relaxed when p_R increases in $(0, 1/2)$. Also,* *(17) becomes more stringent when m increases in $(1/2, 1)$ and $p_R > 1/2$, and when m decreases in $(0, 1/2)$ and $p_R < 1/2$, and symmetrically.*

The previous result, Theorem 4, encompasses only the case where losing the first election decreases the time average winning probability, $\overline{p} \geq \overline{p}^0$. We now consider the polar case. Define a second set of *constitutional safeguard* conditions:

$$\pi - \max\left\{\frac{\beta\sigma + \lambda''b - \pi}{2\overline{p} - 1}, 0\right\}\left(2\left(\delta - \overline{p}^1\right) - 1\right) > \lambda''b \tag{19}$$

$$\pi - \max\left\{\frac{\beta\sigma + \lambda''b - \pi}{2\overline{p} - 1}, 0\right\}\left(2\overline{p}^0 - 1\right) > \left(1 - \lambda''\right)b \tag{20}$$

Theorem 6 *Suppose that $\overline{p} < \overline{p}^0$. If both revolution by consensus (16) and constitutional safeguard (19) and (20) hold, then in all strategy profiles that survive two rounds of deletion of weakly dominated strategies, the regime switches from dictatorship to stable democracy.*

We now analyze what happens when either of the conditions of Theorem 4 or 6 fails.

Corollary 7 *If either revolution by consensus or constitutional safeguard fail to hold, the clandestine organization rejects the alternative of an urban mass protest, and organizes a Red March.*

To summarize, it is only when the two conditions hold that democracy can emerge. The constitutional safeguard condition is basically structural in nature. It highlights the relative value of democracy and autocracy, as well as the balance of power of the two natural actors under a dictatorship, the ruling elite and the clandestine oppositors. The revolution by consensus condition, instead, is more strategic in nature and, at the same time, reflects the fact that the mechanism for collective decisions, here internal democracy, plays a central role in attaining a regime change. Notice that even when the social value of a democracy is unambiguously better than that of a dictatorship, it may fail to arise only because of a failure of revolution by consensus. We can call this an inefficient political regime trap, reflecting a pure problem a collective action.

5 Discussion

5.1 An extension: Internal organization

The model we just presented highlights the importance of decision mechanisms to obtain "good" outcomes in collective action problems. It, however, abstracts from a crucial factor in the history of revolutions and democratic transitions; namely, the role of internal organization in the development of the process. There is one simple extension that would capture some of these issues.

Remember that the parameter $1 - q$ determines the probability of surviving repression if the mass movement fails. Call this parameter $(1 - q)$ the resilience of the organization. Suppose now that q depends on the internal organization of the revolutionary movement (we make this explicit by writing $q(\mathcal{I})$). For example, an organization could choose (in its written bylaws or internal unwritten rules of operation) that the secretary general and various logistically important affiliates (i.e. high officials infiltrated in the Ministries who provide intelligence on the regime) would choose action $a_i = 0$. This clearly reduces a and thus $\theta(a)$, but could increase the utility of agents in case the mass uprising fails (by raising the resilience $1 - q(\mathcal{I})$), with a slight adjustment of payoffs:

$$u_i(a_i, a_{-i}; \text{mass protest}) = \begin{cases} \theta(a)\, d + (1-\theta(a))\left[\alpha(1-q(\mathcal{I}))\, z' - r\right], \text{ if } a_i = 1 \\ (1-\theta(a))\left[(1-q(\mathcal{I}))\, z' - q(\mathcal{I}) r\right], \text{ if } a_i = 0 \end{cases} . \tag{21}$$

In this new version of payoffs, $q(\mathcal{I})$ affects the utility of the agents even if $a_i = 1$, albeit at a reduced rate from $a_i = 0$ (i.e. we assume $0 \leq \alpha \leq 1$). The reason is that repression hits participants in the uprising hardest (one could even think that in the case of failure they are caught with probability 1), but they nevertheless care about a possible success of the Red March, which is made easier if $q(\mathcal{I})$ is low. The organization designer has several problems on her hands. On the one hand, she has to optimally trade-off the lower value of $\theta(a)$ with the lower $q(\mathcal{I})$. In other words, she has to balance the reduced odds of success with the higher chance of surviving repression in the case of failure. In addition, she has to take into account that her efforts in designing the organization have effects on the equilibrium condition.

Define now $\theta^{**} = \min\{\theta(m); nq(\mathcal{I})/2 < m \leq nq(\mathcal{I})\}$ the success probability of the mass protest when a minimal winning majority of the clandestine oppositors that are not excluded from the action participate. Then we can define:

$$\theta^{**}(\beta\sigma + \lambda'' b) - (1-\theta^{**})\left[r - \alpha(1-q(\mathcal{I}))\lambda' b\right] > \lambda b \tag{22}$$

We call this condition *revolution by consensus under internal organization*. Then we get the following result.

Corollary 8 *Suppose that $\overline{p} \geq \overline{p}^0$. If revolution by consensus under internal organization (22) constitutional safeguard (17),(18) hold, then in all strategy profiles that survive two rounds of deletion of weakly dominated strategies the regime switches from dictatorship to a stable democracy.*

Proof. The proof follows *mutatis mutandis* from that of Theorem 4 with the new payoffs (21). Note, simply, that the new threshold (3) is:

$$\frac{(1-q(\mathcal{I}))\left((1-\alpha)\, z' + r\right)}{\beta\sigma + \lambda'' b + (1-q(\mathcal{I}))\left((1-\alpha)\, z' + r\right)}, \tag{23}$$

which corresponds to $\underline{\theta}(\beta\sigma + \lambda'' b)$ when $\alpha = 0$. Noting that (23) is a decreasing function of $0 \leq \alpha \leq 1$, we can conclude. ■

Condition (22) involves θ^{**} rather than θ^* because only $q(\mathcal{I})n$ clandestine activists are now prone to participate, as the other $(1-q(\mathcal{I}))\, n$ are excluded from action given the group internal organization characteristics. Condition (22) presumes that only potentially active oppositors vote for the organization to the mass protest prior to taking their participating decision (if the mass protest is approved). We could, instead, allow all members to vote, even the non-active ones. Notation would be a bit more cumbersome, but nothing would change qualitatively in the discussion that follows. Notice that the left hand side of (22) is increasing in the resilience of the organization $(1 - q(\mathcal{I}))$. So excluding some members of the organization from the mass movement has some potentially positive effects on collective action. On the other hand, excluding people from the action has a similar effect on θ^{**} as the potential number of clandestine oppositors taking part in the mass protest decreases. So, the net effect of the reorganization on the equilibrium is unclear. In words, by taking some people away from the mass movement, the designer makes the costs of repression lower, which is good for obtaining the "good" equilibrium; but she also makes success of the action less likely, which is bad for that same purpose. The shape of the function $\theta(a)$ will determine which one dominates, and the designer has to take this into account.

5.2 Concluding Remarks

In this paper, we argue that urban underground uprisings can lead to democracy if the underground party is internally democratic and invulnerable to repression so that it could effectively lead the revolution. However, the party should not be so powerful that it is unwilling to enter into a democratic compromise with non-communist opposition groups and more moderate segments of the old regime. Such political compromises could involve substantive issues such as security guarantees for the members of the inner circle of the president, or moderate land reform. However, for a substantive compromise to be credible, it has to be supported by constitutional or other institutional safeguards As Przeworski wrote "the only effective guarantee that interests of the forces associated with dictatorship would be protected under democratic conditions is that, those forces develop a significant political presence under democracy (p. 71)."[17]

The key to the argument is obviously not the ideology adopted by the party, but instead organizational capacity and strategy as well as its willingness to accept a democratic compromise. The theory could apply to democratization in Poland, and could also be adapted to account for the successful role of communist insurgency in anti-Nazi resistance movements during World Ward II

The willingness of underground organizations such as communist parties to seek and to secure a democratic compromise may crucially depend on the plurality of political interests and ideological attributes within the party. In particular, the historical evidence suggests that a significant segment of those parties - such as moderate socialists - join because of the parties' leadership in the resistance

[17]Drazen (2007) finds the claim made in Acemoglu and Robinson (2005), that constitutional provisions that protect the military during the transition to democracy may also help democratic consolidation, a bit counter-intuitive. Our theory, especially our bargaining and consolidation conditions provide an explicit mechanism by which these provisions facilitate democratic consolidation.

against the autocratic government, not because they share the communist ideology (Ponomarev and Rothstein [1960]). In fact, those elements participate in the revolution with the hope that it will not lead to a communist take-over and that they (the moderate socialists) will control of the outcome. Under these conditions, the cost of the revolution is shared collectively across factions, but only moderate socialists would benefit from it.[18] Knowing this, those hard-line communists may try to eliminate these moderate socialists during or in the immediate aftermath of the revolution, thereby making its success less likely or paving the way of a return of the old regime or to civil war. This was the case in Russia in February 1917, In future work, we intend to endogenize this internal factional conflict in the party and explain conditions under which it does not prevent the emergence of democracy.

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[18] This is because in the post-revolution democratic election, voters are more likely to prefer, say moderate socialists, to hard-line communists.

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