

Incumbency Advantage in Non-Democratic Elections*

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Abstract

In nondemocratic politics, incumbency advantage often manifests in the incumbent's ability to eliminate the opponent. We study the impact of this institutional imperfection on both the selection of politicians for office and accountability for those who were selected. In a career-concerns framework, citizens and politicians are symmetrically yet imperfectly informed about the abilities of the latter. The outcome of a contest between the incumbent leader and a challenger depends on the incumbent's ability to use violence (an institutional parameter) and resolve to resort to violence, which depends on strategic advantages of having reputation for violence. In equilibrium, the ability to eliminate a political opponent (the *non-democratic incumbency advantage*) has a negative effect on the incumbents' efforts in office. The impact of this ability on the pool of successful challengers, however, might be positive. Furthermore, strategic interaction between the incumbent and future leaders generates a natural path-dependence: elimination of a political opponent typically hurts the selection of competent politicians, which encourages further violence. The model is simple and admits extensions that may be used for comparative studies of political institutions and their consequences.

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Preliminary and Incomplete
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Comments are very much appreciated

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*“Repression is ... like making love -
it is always easier the second time.”*

Lee Kwan Yew, Singapore’s dictator, quoted in Minchin (1990:285)

1 Introduction

Scholars of democratic regimes recognized long ago the impact of political competition on both the policy pursued by elected individuals (Downs, 1957, Baron, 1994, Myerson, 1993, Persson and Tabellini, 2000) and characteristic traits of individuals that are elected (Besley, 2005, Acemoglu et al, 2010). However, political competition is extremely important, and in no way less fierce, in non-democratic regimes as well (Spearman, 1939, Tullock, 1987, Grossman and Noh, 1990, B.Bueno de Mesquita et al, 2003, Egorov and Sonin, 2010). We focus on major political decisions that separate the autocratic decision-making from the democratic one, and study consequences of political institutions that allow the incumbent leaders in non-democracies to act in the way that is not available to their democratic counterparts. Specifically, we investigate consequences of the *non-democratic incumbency advantage*, i.e. the ability of dictators to eliminate their political opponents by violent means.

In an electoral model (Ashworth and E.Bueno de Mesquita, 2008), incumbents have, on average, greater ability than challengers for two reasons: first, candidates with higher abilities win elections with higher probability (*electoral selection*, e.g., Ashworth, 2005), and, second, the presence of a high-ability incumbent deter challengers from seeking office (*strategic challenger entry*, e.g., Gordon, Huber, and Landa 2007). We show that though both mechanisms, the selection and strategic entry, work in non-democracies as well, the situation is drastically different when the incumbent can imprison, exile, or kill his would-be challengers. Even if the ability of the incumbent to suppress opposition by non-democratic means is limited, there are significant consequences. In equilibrium, a violent dictator exerts less effort, provide lower quality of service, and is, on average, of lower ability than his challengers. Empirical evidence on incumbency advantage in democratic regimes is solid (e.g., Ansolabehere, Snyder, and Stewart, 2000, Ansolabehere and Snyder, 2002). Implications of our model shall allow to test its predictions for non-democratic regimes.

Any political leader has to exert efforts to stay in power as his subjects evaluate his performance in office (Barro, 1973, Ferejohn, 1986, Rogoff, 1990). Any autocrat, unlike a democrat-

ically elected leader, faces the choice whether or not to use violence against their opponents. The degree to which autocratic leaders can kill or imprison their opponents vary. At the height of their power, Joseph Stalin or Mao Zedong were able to eliminate their would-be opponents at will. In other circumstances, even a strong dictator might fail to get rid of an opponent, or have to take into account political constraints that preclude an outright elimination of a challenger. Many of the 20th century leaders - including Stalin and Mao - have spent, before coming to power, time in prison or exile: their predecessors were unable to stop their accession to power by these means (on Stalin, see Gregory, 2004, Montefiore, 2003; on Mao, see Change and Halliday, 2005).

We assume that the leader's effort is chosen before the challenger's expected ability is realized, but the decision to eliminate the contender is made after this becomes known. This is natural, as we expect effort to be exerted over a large period of time, while we think of the elimination decision is more about a particular opponent rather than all possible opponents [although some regimes managed to do that]. This allows us to highlight the adverse selection done by incumbents: as more able contenders are more likely to win elections than incompetent ones, the incumbent will be more eager to eliminate the first rather than the latter. When voters play only partial role in the election, this makes incompetent contenders more likely to seize power.

Theoretical literature on the political economy of dictatorships is expanding fast. Starting with pioneering modeling technique, summarized in Acemoglu and Robinson (2005), Bueno de Mesquita et al. (2003), Acemoglu (2003), Acemoglu, Robinson, and Verdier (2004), Gallieo and Pitchik (2004), Svovik (2008, 2009) provided dynamic models of leadership contests in non-democracies. In Egorov and Sonin (2005) and Debs (2010) the winner of a power contest has to decide the fate of the loser. This generates a vicious cycle that breeds violence: the more you kill, the more dangerous is leaving office, the larger are incentives to kill once more. Economic consequences of dictatorial rule are explored in Przeworski et al (2000), Przeworski and Limongi (1993), Epstein and Rosendorff, Peter (2004), Acemoglu et al (2009).

The rest of the paper is organized as follows. In Section 2 we provide a brief description of the use of physical elimination in political competition in the second half of 20th century. We describe the model in Section 3, and then analyze equilibria of the model and comparative statics in Section 4. In Section 5, we consider extensions of the model that are relevant to the

study of political struggle. Section 6 concludes. We relegate all proofs to (incomplete) appendix.

2 Modern Politics of Executions and Comebacks

Post-World War II political patterns provide a rich material for students of killings in leadership fights outside the developed world.¹ In October 1961, the 22nd Communist Party Congress Anastas Mikoyan, a top USSR leader, quoted Mehmet Shehu, the Albanian Prime Minister: “*Who disagrees with our leadership, will get a spit into his face, a blow onto his chin, and, if necessary, a bullet into his head.*” Twenty years later, on December 17, 1981, Mehmet Shehu was found dead in his bedroom with a bullet in his head, and officially declared to commit a suicide. In Togo, the leader of the 1963 coup, Colonel Eyadéma, who then became president in 1967 and held the post until his death in 2005, claimed to have personally fired the shot which killed the overthrown President Olympio.

Although there have been some very successful attempts to use regression analysis to get meaningful results in non-democratic politics (e.g., Longregan and Poole, 1995, on determinants of coups), there are some difficulties that make case studies and comparative analysis more fruitful. In particular, available samples of killed leaders and failed contenders are heavily truncated with respect to deliberate killings. Indeed, while deaths of leaders are typically well-documented, that of failed contenders are much less so. If such a death took place immediately after an alleged coup, then, even the ultimate circumstances of death are uncertain, it can be classified as a political killing. (The death of Lin Biao, Chairman Mao’s designated successor, in 1971 is such an example; Chang and Halliday, 2005) However, classification of a suspectible death of an opposition leader not connected to any noticeable political turmoil rests with the researcher’s judgement. (E.g., the death of Eduardo Frei, former President of Chile, who was voicing opposition against the Pinochet dictatorship in 1982 remains controversy until today. See Londregan, 2000; also, *The Santiago Times*, April 5, 2005).

In this section, we do not venture to write a comprehensive history of leaderships killings in modern politics. Such an attempt would have required a work of a different scope. The topic spreads wide from classics of Conquest’s “Big Terror” to books focused on very specific episodes of political killings. Rather, we try to look at the great variety of distinct episodes through a lense of our theory: a killer reputation on either the ruler or the unsuccessful contender part

¹Among our sources for this Section are the following: Blondel (1980), Linz and Stepan (1978), Finer (1997), Linz and Chehabi, (1998), Dominguez (1998, 2002), Cook (2004).

enhances the probability of a new killing; high stakes for the decision-makers forces them to put more emphasis on loyalty than on competence of their subordinates. What we emphasize is that political killings, which are often tended to be seen as idiosyncratic and isolated unless they are committed by the same ruler or regime, allow for singling out a number of strategic interdependencies.

Examples of countries that have witnessed at least two killings of the fallen leaders during the last 50 years include Afghanistan (Mohammad Daoud, 1978, Mohammad Taraki, 1979, Hafizullah Amin, 1979), Bangladesh (Mujibur Rahman, 1975, Khalid Musharaf, 1975, Ziaur Rahman, 1981), Iraq (Faisal II, 1958, Nuri as-Said, 1958, Abdul Karim Kassem, 1963), Nigeria (Abubakar Tafwa Balewa, 1966, Johnson Aguiyi-Ironsi, 1966, Murtala Ramat Muhammad, 1974), Comoros (Ali Soilih, 1978, Ahmed Abdallah Abderemane, 1989), and Liberia (William Tolbert, 1980, Samuel Doe, 1990).

Other rulers killed during this period include Melchior Ndadaye in Burundi (1993), Carlos Castillo Armas in Guatemala (1957), Thomas Sankara in Burkina Faso (1987), Long Boreth in Cambodia (1975), Sylvanus Olimpio in Togo (1963), François Tombalbaye in Chad (1975), and Nicolae Ceausescu in Romania (1989). A special list can be made of democratically elected leaders that were overthrown by a coup such as Salvatore Allende of Chile (1973); our model emphasizes an important incentive to kill a legitimate and popular leader as he or she is an obvious come-back threat. Finally, there have been violent deaths of leaders not connected to a serious attempt to change the political regime – though aimed to change specific policies associated with a particular leader – e.g., of Anwar as-Sadat in Egypt (1981), Indhira Gandhi in India (1983), René Moawad in Lebanon (1989), Yitzhak Rabin in Israel (1995), or Loran Kabila in Congo (2001). It should be noted that all these samples are heavily truncated since they do not take into account many unsuccessful contenders that were killed during a coup or executed thereafter.

Communist-type dictatorships

Hundreds of monographs and thousands of articles have been written on the subject of communist dictatorships (see Gregory and Harrison, 2005, for an up-to-date account of economic literature on Stalin's dictatorship; Montefiore, 2003, for references to historical accounts). What the theory emphasizes is that the scale of high-profile executions, an easily observable variable,

might serve as a proxy for the degree of institutionalization of a regime, which is much less observable. There are ample reasons to take the end of the World War II as the starting point for the following reason: In the Soviet Russia, which was in many ways a source and an imposter of political patterns for newly emerging communist dictatorships, the war years marked – at least in a standard historic account – the ultimate accumulation of power in hands of one person, Joseph Stalin. However, it seems more instructive to focus on the “brinkmanship cases” of 1950s. Before that period, falling from power was all but a death sentence, and by early 1960s leadership execution all but stopped at least in European communist dictatorships.

While widespread repressions are usually aimed at reducing *ex ante* incentives to rebel (e.g., Conquest, 1968, Friedrich and Brzezinski, 1956), individual killings cannot be understood in the same fashion. When actors are endowed with reputation, and interaction between players is put in a dynamic perspective, even economic - that is, rational and selfish - agents are no longer involved in an anonymous game. The Hungarian example of 1956 is a case in point (see Remnisz, 2003, for a detailed historical account).

In 1956, after a decade of communist rule, an apparently disorganized uprising in Hungary led to removal of the ruling hard-liners. Shortly after the communists lost control in Budapest, Soviet troops took over and installed Janos Kadar, a former interior minister, as a head of the Hungarian state. Kadar’s rule started with the trial and execution of nearly two hundred democratic activists. The generally applied principle was that only those who were responsible for the deliberate killing of government and communist party officials were to be executed. These measures have been followed with a number of reforms aimed at broadening the political base for the Kadar’s government. In particular, a significant share of recently nationalized, especially agricultural, firms was returned to their previous owners. In 1958 the Kadar government, still reliant on Soviet troops. At this time, Imre Nagy, the political leader of the 1956 revolution, who had been held by Yugoslav and then Soviet authorities for two years, was given over to the Kadar government. After a show trial, he was executed. With Nagy alive or dead, the set of possible political coalitions would have been the same, but the absence of another focal person gave Kadar the time to solidify his grip on power.

In Romania, Nicolae Ceaușescu was the supreme leader since 1965. By academic standards, the history of his dramatic fall from power and death is a complete mystery. However, even the very scarce information, basically confined to the public events, allows to illuminate traces

of strategic reasoning. On December 21, 1989, after days of local and seemingly limited unrest in the province of Timishoara, Ceausescu called a grandiose meeting at the central square of Budapest, apparently to rally the crowds in support of his leadership. In a stunning development, the meeting degenerated into the anarchy, and the Ceausescu couple had to flee the presidential palace. The next day saw the announcement of death of Vasile Milea, the defence minister. Though there is very little doubt that he was killed and not committed suicide, the official version from the first day up until now, whether he was actually killed on Ceausescu's orders to prevent a coup, or by the emerging military leadership of these days out of fear that he may intervene on the Ceausescu side. The actual composition of pre-coup forces, at least at the personal level, is a subject of much controversy up until now. Anyway, the killing was strategic and apparently raised stakes for all the parties involved.

On December 25, Ceausescu and his wife were caught by a provincial military unit and executed by a firing squad after a two-hours trial in somewhat mystic circumstances. (E.g., though the proceeding and the execution were taped and later broadcasted, not all the participants of the court have been ever identified.) Still, there is ample evidence that the strategic reasoning behind the swift execution was exactly as predicted by our theory. In 1995, testifying before the parliamentary commission investigating the matter, General Gelu Voican Voiculescu, who in 1989 was appointed by the Romanian revolutionary government to supervise the trial and burial of the Ceausescus: "The decision to try the couple was dictated by desire to survive – either them, or us."

Third-world dictatorships

Until 1980, Liberia has had a century of relatively peaceful rule by the oligarchic True Whig party; presidents being typically replaced by their vice-presidents. This political "idyllic", which accompanied a century of economic prosperity (see, e.g, Acemoglu and Robinson, 2006), ended on April 12, 1980, when colonel Samuel Doe staged a military coup, killing President William R. Tolbert, Jr. and mass-executing members of the deposed government. A year later, a Doe's co-conspirator against Talbot, Thomas Weh Syen, was arrested along with four other members of the People's Redemption Council, the highest governing body under Doe, for allegedly plotting to assassinate Doe; they were executed in a matter of days. So, when in 1989 another former ally of Doe, Charles Taylor, started a guerrilla war against him, there was no chance for Doe to survive

the deposition. He was captured in the presidential palace in Monrovia on September 9, 1990 and killed immediately. This corroborates the model findings: once the peaceful equilibrium is no longer supported, the propensity to kill increases.

Afghanistan had been a hereditary monarchy until 1973, when Mohammed Daoud Khan seized power from his cousin King Zahir. In April 1978, Daoud Khan was overthrown by a revolution and executed, with most of his family, immediately thereafter. This mass execution, reported publicly as a “resignation for health reasons”, established a firm pattern for the next transitions of power. In April 1978, Nur Mohammad Taraki became the President of the Democratic Republic of Afghanistan and secretary general of the quasi-Marxist PDPA party. In September 1979, Taraki was killed in a military coup led by his prime-minister, Haffizulah Amin, who then became the second President of the Democratic Republic of Afghanistan. Three months later, in December 1979, Amin and many of his followers were killed in a revolt assisted by the Soviet military. Babrak Karmal, another member of the Taraki junta, became the next President. Being directly installed by the Soviets, he became the only leader of the communist Afghanistan to survive after being removed from power, when he was replaced by the Soviet authorities in 1981.

In the neighboring Pakistan, the recent political history has been very much consistent with our equilibrium story. It started with an execution of a replaced popular leader, the first President of the republic since the split with the East Pakistan in 1971, by the new military leader on charges of murdering an opposition politician – as if for a further illustration of our story. Then the ruthless leader died in an air accident, and the number of succeeding power transitions, not necessarily democratic, were peaceful, at least at the very top. The two immediate predecessors of the current dictator, Pervez Musharraf, are exiled rather than executed, and there are reasons to believe that this in part due to Musharraf’s concern about his own future: one of the predecessor is exiled after receiving several life sentences – including the one for ordering Musharraf’s assassination.

3 Model

Time is discrete and infinite, $t = 1, 2, \dots$. There is a society where all citizens have the same preferences about policy outcomes and possess the same information; thus all voting decisions are assumed to be made by a representative voter. The representative voter in period t votes to

maximize his discounted expected utility

$$U_t = \sum_{\tau=t}^{\infty} \beta^{\tau-t} u_{\tau}, \quad (1)$$

where u_t is an observable policy outcome, which captures the skills and efforts of the incumbent politician as well as some random noise, and β is citizens' discount factor.

There is also a pool of politicians; in each period, one of them is the incumbent, and he is contended by another one chosen from the pool. The outcome of the political struggle is modeled to capture the variety of real-world outcomes of power struggles. At a cost $k\psi(q)$, the incumbent can eliminate the opponent with probability q ; we lay the standard assumptions $\psi(0) = \psi'(0) = 0$, $\psi''(q) > 0$ for $q \in (0, 1)$ and $\psi(1) = \infty$.² The insitutional parameter $k \in (0, \infty)$ measures how easy it is to eliminate the opponent, with k close to 0 corresponding to the case of a peaceful environment and k large corresponding to the case of a brutal totalitarian regime. If the contender is not eliminated, then with probability $\alpha \in (0, 1)$ the outcome is decided by the representative voter, and with probability $1 - \alpha$ it is decided through a (potentially unfair) coin toss, with the incumbent keeping power with probability $p \in (0, 1)$ and the contender getting power with probability $1 - p$. Such contest function allows us to capture both the strength of democratic institutions (conditional on the survival of a contender), the impact of random factors on the election outcomes, but also the possibility that factors that we do not model explicitly, such as valence, influence the outcome.³ We assume that once a politician loses power, he is never chosen as a contender again (in an extension to the model, we relax this assumption and allow for the possibility of comebacks).

Policy outcome in period t , which is also the instantaneous utility of citizens, is given by

$$u_t = a_t + e_t + \varepsilon_t, \quad (2)$$

where a_t is the ability of the incumbent in period t , e_t is his effort (known to himself but not to the public), and ε_t is idiosyncratic noise, distributed as $\mathcal{N}(0, \sigma_{\varepsilon}^2)$; to save on notation, we do not include the index for the incumbent politician whenever this does not cause confusion. The cost of effort e_t is given by $c(e_t)$, with the standard assumptions $c(0) = c'(0) = 0$, $c''(e) > 0$ for any e and $c'(\infty) = \infty$.

²The incumbent can refrain from eliminating the opponent by choosing $q = 0$. In equilibrium, this will never happen.

³Another possibility to capture the same phenomena would be a probabilistic elections model; we opted to keep the game simpler and more transparent.

Building on career concerns models pioneered by Holmstrom (1999), we assume that this ability is known neither to the politician nor to the citizens, although they both make Bayesian updates based on the policy outcome u_t . We also follow Holmstrom (1999), in assuming that the ability of an incumbent politician a_t is not stationary, but rather follows a random walk process. Namely,

$$a_t = a_{t-1} + \eta_t, \quad (3)$$

with η_t independent from each other and $\{\varepsilon_t\}$ and distributed as $\mathcal{N}(0, \sigma_\eta^2)$. Consequently, while both the citizens and the politician himself update in each period he is in power the distribution of his ability, the random walk component η_t prevents them from learning it for sure in the limit.

We assume, for simplicity, that at the moment the politician come to power for the first time in period t , his ability is thought (by both the citizens and himself) to have a normal distribution $\mathcal{N}(\mathbf{E}a_t, \sigma_a^2)$, where the variance σ_a^2 satisfies

$$\frac{\sigma_\varepsilon^2}{\sigma_a^2} = \frac{\sigma_a^2}{\sigma_\eta^2} + 1 \quad (4)$$

(equation (4) has a unique solution for any σ_ε^2 and σ_η^2 , which is increasing in both of these variances). Such σ_a^2 ensures that if the incumbent stays in power for the next period, the expectation of his ability will change according to Bayes law, but the variance will remain σ_a^2 , and thus all differences between politicians in the model will be captured by a single parameter: the expected ability.

By the time of political struggle, both the citizens and the incumbent politician learn the expected ability of the contender, $\mathbf{E}a_t^c$ (where we use superscript c to denote the contender, and we will use superscript i to denote the incumbent; we will also use superscript w for the winner of the political struggle). This expected ability is assumed to be taken from a distribution $\mathcal{N}(\bar{a}, \sigma_0^2)$.⁴ The politician chooses effort e^t and the probability of eliminating the contender q^t so as to maximize

$$W_t = \sum_{\tau=t}^{\infty} \delta^{\tau-t} \mathbf{I}_{i_\tau=i} (A - c(e^t) - k\psi(q^t)), \quad (5)$$

where A is the benefit of being in power, $\mathbf{I}_{i_\tau=i}$ is the indicator that the incumbent i is also the incumbent in period τ , and δ is the politicians' discount factor.

⁴Implicitly, we assume that politicians are born with true ability a^* taken from $\mathcal{N}(\bar{a}, \sigma_*^2)$, and when the politician rises to the political scene for the first time, everyone gets a noisy signal $a = a^* + \zeta$ with $\zeta \sim \mathcal{N}(0, \sigma_\zeta^2)$, where $\sigma_0^2 = \sigma_*^2 \left(\frac{\sigma_\zeta^2}{\sigma_*^2 + \sigma_\zeta^2} \right)^2$ and $\sigma_a^2 = \frac{\sigma_*^2 \sigma_\zeta^2}{\sigma_*^2 + \sigma_\zeta^2}$. In that case, the posterior about the politician's ability will indeed be $\mathcal{N}(\mathbf{E}a_t^c, \sigma_a^2)$ with $\mathbf{E}a_t^c$ taken from $\mathcal{N}(\bar{a}, \sigma_0^2)$.

The timing of each period t is as follows.

1. Shock to the incumbent's ability, η_t , is realized but is unobserved.
2. Incumbent politician i chooses effort e_t .
3. Contender is chosen from the pool of politicians; his expected ability $\mathbf{E}a_t^c$ becomes known to everybody.
4. The incumbent determines the probability q_t that the contender is eliminated. With this probability, q_t , the incumbent stays in power.
5. Otherwise, policy outcome u^t , given by (2), is realized and observed by everyone. With probability α the representative voter decides whether to reelect the incumbent or elect the contender, and with probability $1 - \alpha$, the incumbent stays in power with probability p and loses power with probability $1 - p$.
6. Everyone gets their instantaneous utilities; the loser of the political struggle is eliminated from the game forever.

We also lay the technical assumption that σ_a^2 is not too small, so that there is sufficient uncertainty about the politicians' true abilities at the time of elections. This ensures that the certain maximization problems are concave. Throughout the paper, we focus on the Perfect Bayesian equilibria, in which voters use a threshold strategy (reelect the incumbent if the ability of the contender is below a certain threshold (the threshold may depend on the incumbent's ability)).

4 Analysis

The first step in the analysis is to simplify the problem. We therefore start with the behavior of representative voter. The next lemma shows that in any equilibrium, the incumbent is reelected in period t if and only if his expected ability (at the time of voting, given the available information about the polict outcome u_t) exceeds that of the contender. All proofs are in the Appendix (incomplete).

Lemma 1 *In any period t , the representative voter supports the incumbent if and only if $\mathbf{E}a_t^i \geq \mathbf{E}a_t^c$, where $\mathbf{E}a_t^i = \mathbf{E}(a_t^i \mid \mathbf{E}a_{t_0}^c, \{u_\tau\}_{\tau=t_0+1}^t) = \mathbf{E}(a_t^i \mid \mathbf{E}a_{t-1}^w, u_t)$, where t_0 is the period where the incumbent came to power.*

The Lemma may seem trivial, but it is not entirely so. Potentially, there could be two reasons for the voters to prefer a less competent candidate: first, a less competent candidate could exert a much stronger effort which would result in a superior policy outcome, and second, a less competent candidate could lead to a superior pool of challengers if he were less likely to eliminate the most competent of them. The Lemma essentially rules these possibilities out: while a higher effort by a less able incumbent is possible, it is never enough to offset the ability handicap; also, less competent candidates will be more, not less, likely to eliminate more competent contenders. The voter therefore has every incentive to choose the candidate which appears the most competent. It does not matter what he does when he is indifferent, as this is a zero probability event.

Lemma 1 allows us now to focus on the decisions made by the incumbent politicians. We have the following basic result.

Proposition 1 *In the environment above:*

1. *There always exists an equilibrium.*
2. *If either δ is sufficiently low or $c''(e)$ is sufficiently high, the equilibrium is unique.*

The proof of existence relies on applying the Arzelà-Ascoli theorem to compact segments of possible expected abilities. If the conditions in part 2 hold, then the iteration operator that maps incumbents' continuation utilities from the next period to the continuation utilities from the current period is a contraction, which establishes uniqueness. We are not aware of an example with multiple equilibria even if the assumptions in part 2 fail.

With Proposition 1 in mind, we can study the properties of equilibrium, which deliver the main predictions in our model. The following proposition studies the decisions of incumbent politicians as a function of their own and contenders' expected abilities.

Proposition 2 *In the equilibrium:*

1. In equilibrium, effort e_t has an interior maximum: it is highest when the incumbent has a certain above-average ability $\mathbf{E}a_{t-1}^w > \bar{a}$. It tends to 0 both when $\mathbf{E}a_{t-1}^w \rightarrow +\infty$ and when $\mathbf{E}a_{t-1}^w \rightarrow -\infty$. Nevertheless, $\mathbf{E}a_t^i + e_t$ is always increasing in $\mathbf{E}a_{t-1}^w$.
2. The incumbent always eliminates the opponent with positive probability $q_t \in (0, 1)$. This probability is higher if $\mathbf{E}(a_t^i | \mathbf{E}a_{t-1}^w) + e_t$ is low, and is lower if $\mathbf{E}a_t^c$ is low.

In this proposition, we did not use $\mathbf{E}a_t^i$ as it is not yet known at the time the decisions of period t are made: only the previous period's information is known to him when effort is chosen; at the time elimination decision is made, this effort is also known. Not surprisingly, if the incumbent chose a higher than equilibrium effort in the beginning of a period, he has a lower need to eliminate the opponent, as his chances to win democratic elections increase. For the same reason, eliminations are more likely when the contender is more competent and the incumbent is not. Indeed, an incompetent incumbent knows that a very high policy outcome, which will increase the posterior about his ability high enough, is not very likely, and this increases his desire to eliminate the opponent, especially a competent one.

To understand the intuition for the first part of Proposition 2, consider the incentives of a politician to exert a little extra effort and thus pretend to be more competent than he actually is. This incentive is stronger if such deception will help him win against a larger share of opponents, i.e., if $\mathbf{E}a_t^i$ is likely to be close to \bar{a} , which happens precisely when $\mathbf{E}a_{t-1}^w$, which the incumbent is aware of, is close to \bar{a} . This incentive is also stronger if, for the same increase in the likelihood of winning, the incumbent increases his continuation utility by a larger amount; this will be the case if his continuation utility is already high, which happens if his ability is high, and he has good chances to survive for many more periods. These two effects together imply that the interior maximum, if any, should be reached at a point greater than \bar{a} . At the same time, incumbents with either very low or very high ability should have low incentives to exert effort, as the chance to encounter a contender with similar ability is very low. Combined together, these considerations imply the first part of Proposition 2.

The results of Proposition 2 allows us to study the impacts of eliminations on subsequent development of the game. We have the following result.

Proposition 3 *The following results hold in equilibrium:*

1. Elimination of the contender and policy outcome are negatively correlated: in periods with

elimination of opponents, policy outcome is, on average, lower than in periods where elimination did not happen.

2. *For any expected incumbent's competence $\mathbf{E}a_t^i$ there is a constant $\Delta > 0$ such that: (a) If $\mathbf{E}a_t^i - \mathbf{E}a_t^c < \Delta$, then a successful elimination leads to lower politicians' quality and higher chance of elimination in the subsequent period, as compared with the case of an unsuccessful elimination; (b) If $\mathbf{E}a_t^i - \mathbf{E}a_t^c > \Delta$, then a successful elimination increases the quality of politicians and decreases the chance of eliminations.*

Proposition 3 captures the path-dependence result described above. For an outside observer, an elimination in a given period is a negative signal about the policy outcome in that period, and similarly, low policy outcome increase the chance that the contender was eliminated. Part 2 of Proposition 3 suggests that this correlation is not spurious. More precisely, it highlight, under what conditions a successful elimination of the opponent prevents further eliminations, and under what conditions it leads to further eliminations. In every period, the incumbent chooses q_t such that the contender may be eliminated and may survive with positive probabilities. Part 1 of Proposition 3 suggests that less competent players eliminate more often. Hence, if a highly competent incumbent eliminates an extremely incompetent one, this both increases the quality of the next period's incumbent and reduces the need for further eliminations. However, this case is rare. More often than not, the abilities of the incumbent and the contender will be similar, and in that case, an elimination hurts the chance that the voters will select the best of the two politicians. Thus, an elimination, if successful, will decrease the quality of the politician, which will lead to further eliminations. We see here an interplay between economical and political consequences of a political elimination: whenever this elimination prevents a competent politician from seizing power, further violence is more likely to follow. Quite evidently, these effects persist into further periods, thus capturing the path dependence of political violence, often associated with persistence of incompetent politicians in power.

The above results about the properties of equilibria in the model allow us to establish interesting comparative statics results. We first assume that the ease of eliminations does not change (k is fixed), and then study what happens when it may vary.

Proposition 4 *For a given incumbent's expected ability, his effort e_t is an increasing function of α , the democracy parameter, the incumbent's chances to prevail in a democratic power contest,*

p , and incumbent's patience (when the discount factor δ is high).

The results of Proposition 4 are very intuitive and are in line with the existing literature. As α increases, having the reputation of a competent politician becomes more valuable, and politicians try to achieve it by exerting more effort. This increases e_t in equilibrium, even though in this career concerns model voters are not fooled in equilibrium. For a given α , a higher p means higher chances of staying in power in the following periods, conditional on staying in the current period. This also makes the politicians choose a higher e_t . The same logic applies to δ : when δ is high, the future matters more, and it is more important for the incumbent to keep power.

The impact of these parameters (α, p, δ) on the selection of politicians is somewhat different (and the intuition is different as well).

Proposition 5 *In every period $t > 1$, the expected ability of the incumbent, $\mathbf{E}a_t^i$, is higher if:*

1. *The incumbent is more likely to win a democratic power contest (p increases), provided that α is close to 1 or that δ is sufficiently low;*
2. *The incumbent is impatient (δ is low).*

Naturally, a higher p has two positive effects. First, the incumbent is more sure of winning, and is thus less likely to eliminate the contender, especially if the latter is competent. This increases the chance that a competent contender will come to power. Second, once a competent politician is selected, he is less likely to lose power to an incompetent one, so there is less chance of reversal to the mean. There is also a negative effect of p , which is the increases value of staying in power in the future, which makes the politician more likely to eliminate his contenders, and thus prevent the voters to choose politicians more competent than himself. The hypothesis in the first part of the proposition ensures that this negative effect does not counterweigh the positive two. Now, the comparative statics with respect to δ is straightforward: a higher δ makes power more valueable, which, as before, hurts the selection of politicians.

It may seem surprising that Proposition 5 does not contain a result about the impact of fairer elections, α . One might expect that higher α stimulates positive selection of politicians, as the voter is more likely to play a role in this choice. However, the very same effect induces politicians to eliminate competent politicians more often, thus increasing the negative selection of contenders by incumbent politicians. We summarize this result in the following proposition.

Proposition 6 *The expected quality of politicians may be nonmonotonic in α . In particular, it need not be minimized at $\alpha = 0$.*

If $\alpha = 0$, the performance of politicians would play no role for reelection, and in expectation, the ability of politician will be \bar{a} in every period. As α becomes higher, it is possible that on average, politicians will become less competent. Intuitively, this may happen because if α is higher, more competent contenders pose a more serious threat to the incumbent. The incumbent, therefore, responds by eliminating a disproportional share of competent contenders. While incompetent contenders will not be chosen by the representative voter, they may nevertheless come to power with probability $(1 - \alpha)(1 - p)$, i.e., when the democratic institutions fail. This negative selection by the incumbent politician may be stronger than the positive selection of politicians done by the voter. Overall, this may decrease the quality of politicians.

We now study the impact of the cost of violence, k . We show that it may have a nonmonotonic impact on the selection of politicians. Given the logic above, this result already seems intuitive.

Proposition 7 *1. The effort of a politician of any given ability increases with the cost of using violence, k .*

2. The effect of an increase in the cost of using violence, k , on the expected ability of politicians in future periods may be nonmonotonic.

The first part of Proposition 7 is very intuitive. A higher k means that eliminations are more expensive, and therefore the incumbent will choose a lower q^t . But this means that the representative voter has the decision-making power with a higher probability. This, in turn, increases the incumbent's desire to impress the voter by a high policy outcome, which leads to a higher effort e^t in equilibrium. However, the impact on the selection of politicians is ambiguous. Truly, if k is close to 0, almost all contenders are eliminated, and the incumbent is likely to stay in power for very many periods. Since the ex-ante expectation of his ability is \bar{a} , this will be close to the expected ability of a politician in equilibrium. As k becomes higher, the incumbent will start to eliminate contenders with high ability, but not incompetent ones. This makes it likely that a contender that survives and ultimately wins the struggle for power is less competent than the incumbent. Finally, if k is very high, almost all contenders survive and an actual power struggle happens; there, the representative voter will be able to run positive selection, even

though with probability α only, and this will in equilibrium lead to more competent politicians in power in subsequent periods.

5 Extensions (Incomplete)

Here, we explore several interesting extensions of the model.

5.1 Heterogenous aversion to violence

In the model, politicians differed by their ability only. Suppose that for some politicians, eliminations are harder than for others. We capture that by assuming that in addition to ability a_t , politicians vary by the cost of elimination of opponent k . This cost is constant over time; for each politician, $k \in \{k^l, k^h\}$ with $k^l < k^h$, so k^l corresponds to low cost of elimination and k^h corresponds to high cost of elimination, and politician's k is public knowledge. We may think of k^l and k^h as sufficiently different; e.g., so that a politician with cost k^l eliminates, with a high probability, almost all, except the least competent, contenders, and for politician with cost k^h political eliminations would be very costly.

In this case, the representative voter will no longer vote for the most competent incumbent in equilibrium. Consider, for instance, two politicians whose perceived abilities are close to average (\bar{a}) but slightly different, but one has $k = k^l$ and the other has $k = k^h$. When voters face such a choice, they are better off electing the politician with $k = k^h$. Intuitively, the politician with $k = k^l$ will be hard to vote out of office if he turns out to be incompetent, and in addition he will strategically select incompetent contenders. The politician with $k = k^h$ will rarely eliminate contenders, and may be easily replaced with a better one, if necessary.

However, voters will not always prefer less violent politicians, for a fixed ability. Suppose that they are choosing between two politicians with very high perceived ability. It is unlikely that they will become incompetent in the near future, so voting them out of office is not a major concern. What worries the voters in this case is that an incompetent contender comes to power, which is possible with probability $(1 - \alpha)(1 - p) > 0$, unless he is eliminated. Since this concern is first-order, the voters may prefer to have a cruel politician to a peaceful one, provided that the perceived ability is sufficiently high.

Proposition 8 *For a low level of ability, voters prefer a peaceful type of politician to a cruel one. For a high level of ability, however, voters prefer a cruel type of politician. This last effect*

holds for a larger interval of abilities if α is low or if p is low.

In other words, the last effect holds only if voters have little ability to defend the able politician through democratic procedures, and the chance of a random politician coming to power is high. In this case, voters may be better off with a cruel politician, and would be thus more tolerant to political eliminations of contenders. This obviously introduces room for signaling and manipulations with voters' beliefs, which we leave for future research. Perhaps paradoxically, these effects may make the cruel politician exert more effort than a peaceful one would, because (a) voters value cruelty in competent politicians and ability in all politicians, and (b) the expected tenure of a cruel politicians is higher. These effects might or might not offset the incentive to lower the effort, as a cruel politician is able to eliminate a contender.

5.2 Asymmetric information

Using this framework, we can explore the possibility that only politicians possess information about their cost of elimination k , but citizens only have prior, and update on the incumbent's performance. In that case, every elimination carries an element of signaling: all things equal, an elimination increases the posterior that the incumbent has $k = k^l$, and an absence of elimination decreases this probability. In this case, the incentives of highly competent and incompetent politicians are opposite: an incompetent one would like, all things equal, to be portrayed as a peaceful one, while a competent politician would prefer to be seen as a cruel one. We can therefore expect that, as compared with the previous subsection, incompetent politicians will eliminate less, and competent politicians will eliminate more often.

5.3 Comebacks

We have assumed so far that a politician losing power struggle, be it the incumbent or the contender, is eliminated from the game forever. We could extend the analysis to incorporate the possibility of comebacks. One way to do this is to modify the last stage of the game in the following way. A politician losing political struggle is eliminated from the game only if he was the contender. If the incumbent lost power, he automatically becomes the contender for the next period. For simplicity we can assume that his ability is not changed during the period he is out of power.

The forces that make an incumbent more likely to eliminate a contender who had already

earned a reputation for eliminating contenders in the past were studied in our earlier work (Egorov and Sonin, 2005). Here, these forces interact with the variation in politicians' abilities, and thus the likelihood of coming to power. In the previous environment, competent contenders were more likely to be eliminated. Here, if the contender had already earned the reputation for being cruel, it affects the incumbent's decision to eliminate him differently. In a more democratic (constrained dictatorship) case, incompetent contenders are particularly dangerous, as if they manage to get power, they are more likely to eliminate. We leave studying this effect for future research.

6 Conclusion

In the paper, we consider the impact of the ability to eliminate opponents on outcomes of political struggles, on selection of politicians, and on incumbents' incentives to exert efforts. Our main results are that (a) this nondemocratic incumbency advantage decreases politicians' efforts, and (b) it may or may not worsen the selection of politicians. Partial incumbency advantage may have adverse effects on the selection of politicians as the incumbent will engage in adverse selection of contenders so as to maximize his chances to stay in power; this may, in turn, make the next period's incumbent worse, on average, than the current incumbent, who would stay in power if the incumbency advantage were unlimited. The model exhibits path-dependence: whether or not a contender is eliminated changes the expected quality of future politicians, and thus affects the likelihood of future eliminations. The model is relatively simple, and admits interesting extensions which we leave for future research.

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