

The Political Economics of Non-democracy*

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Abstract

We survey recent theoretical and empirical literature on political economics of non-democracies. Dictators face many challenges to their rule: internal, such as palace coups or breakdown of their support coalition, or external, such as mass protests or revolutions. We analyze strategic decisions made by dictators — hiring political loyalists to positions that require competence, restricting media freedom at the cost of sacrificing bureaucratic efficiency, running a propaganda campaign, organizing electoral fraud, purging associates and opponents, and repressing citizens — as driven by the desire to maximize the regime’s chances of staying in power. We argue that the key to understanding the functioning and ultimately the fate of a nondemocratic regime is the information flows within the regime, and the institutions that govern these information flows.

Keywords: nondemocratic politics, authoritarianism, dictatorship, bureaucracy, electoral fraud, protests, revolutions, coup d’etat, media freedom, propaganda, censorship, repressions, institutionalized ruling party.

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Contents

1	Introduction	1
2	Direct Information Control	6
2.1	Censorship and Propaganda	6
2.2	The Costs of Information Control	9
3	Control over Collective Action	14
3.1	Protests and Revolutions	15
3.2	Authoritarian Elections and Electoral Fraud	17
4	Nondemocratic Coalition Formation	19
4.1	Support Coalitions and Ruling Parties	19
4.2	Disenfranchisement and Repressions	23
4.3	Divided Autocratic Government	28
5	Dynamics of Nondemocratic Power	30
5.1	The Challenge of Democratization	30
5.2	Path Dependence	34
5.3	Succession	37
6	The Challenge of Policy Implications	39
7	Conclusion	41

List of Examples

2.1	A Model of Censorship	6
2.2	An Informational Model of Loyalty	11
3.1	A Model of Revolution	15
4.1	An Informational Model of Ruling Party	21
4.2	A Model of Endogenous Protest and Repression	24
4.3	A Model of Repression and Propaganda	26
4.4	A Model of Coalition Formation in the Absence of Commitment	29
5.1	A Model of Inefficient Stability	31
5.2	A Model of Political Oligarchy	33
5.3	A Strategic Model of Path-Dependence	35
5.4	A Dynamic Model of In-party Leadership Replacement	38

“In war you can only be killed once, but in politics many times.”

Winston Churchill

“Mr. Churchill just cannot get it right.”

Joseph Stalin¹

1 Introduction

The 20th century ended with a collapse of most communist dictatorships amid predictions of “the end of history”, the final victory for liberal democracy as a political regime (Fukuyama, 1992). Yet, after thirty years of transition, many former socialist countries have transformed from aspiring democracies into imperfect democracies or full-blown dictatorships. Even countries that seemed to have established mature democratic institutions, such as Hungary and Poland, have been recently balancing on the brink of sliding back into authoritarian rule.

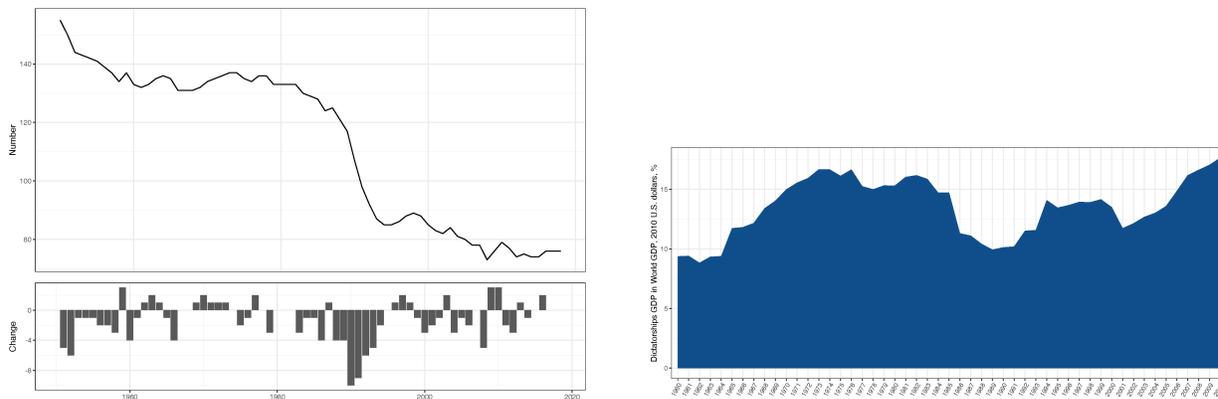
The phenomenon is hardly limited to post-socialist democracies: Turkey’s and Venezuela’s periods of competitive, democratic elections spanned decades, yet this did not prevent them from turning back. In China, the hopes that the pressure of the thriving economy and trade and the improving quality of life will lead to democratization have recently subsided as the government increased its control over media and eliminated restrictions on the paramount leader’s power. Around the world, the share of non-democracies has stabilized; their share of the world’s GDP has been increasing, largely due to China (see Figure 1).

Perhaps not surprisingly, nondemocratic politics has recently become an active area of research in economics, even if lagging behind studies of democratic processes and politics.² In this essay, we attempt to synthesize the growing literature on political economics of non-democracies, with the focus on information and information flows as the nexus of autocratic power and control.

Traditionally, a *non-democracy* is a regime defined by negation. In a democracy, the country leadership is accountable to the population; that is, people have a regular opportu-

¹Churchill: in a conversation with Harold Begbie, as cited in *Master Workers* (Begbie, 1906); Stalin: an interview in *Pravda*, March 8, 1946.

²Early analysis of dictatorships includes Olson (1965), Roemer (1985), Tullock (1987), Kuran (1989), Grossman and Noh (1990), Tilly (1993), Przeworski and Limongi (1993), McGuire and Olson (1996), Wintrobe (1990, 1998), and Geddes (1999). Acemoglu and Robinson (2005), which opened a new era for political economics of non-democracies, provides an excellent synthesis of the literature at the time of the publication.



(a) Number of dictatorships over time.

(b) Dictatorships' GDP as a share of the world's.

Figure 1: Dictatorships around the world, 1960 – 2016.

nity to replace the government by voting. In a non-democracy, this mechanism is absent - even if modern dictatorships learned to imitate, superficially, democratic institutions (Guriev and Treisman, 2019). Authoritarian regimes are defined by means that their leaders employ to deny citizens the opportunity to replace them. Dictators use state funds to pay their supporters, purge their would-be opponents, falsify election results, repress the populace, censor information, etc. In response, citizens participate in protests and revolutions. Vying for power themselves or just fearing that the dictator would consider them a threat, supporters organize coups d'état.

Even the most powerful of dictators have to weigh expected costs and benefits of their decisions, resolving numerous trade-offs. Executing predecessors or purging challengers raises stakes if the regime is eventually overthrown; censoring information and restricting media freedom result in suboptimal policy decisions and inefficient implementation; expropriating, in the absence of rule of law, businesses disincentivizes production; hiring competent subordinates increases the risk of betrayal, and so on. The key economic elements of these trade-offs are informational.

In Section 2, we start focusing on the economics of informational control that autocrats exert over their subjects. In Subsection 2.1, we discuss research on censorship and propaganda, the mechanisms that dictators use to shape people's beliefs about the quality of the government and its alignment with their interests. Although propaganda, and ideology more generally, has always been at the forefront of analysis of nondemocratic regimes starting with the classic work of Arendt (1951) and Friedrich and Brzezinski (1965), recent advances in

econometric inference and field experiments have elevated the discussion to a new level.

Yet propaganda is only one part of the informational trade-offs that every authoritarian leader has to resolve. A major prerequisite for efficient governance and, ultimately, for the dictator's survival is his ability to gather and process information. To keep power, even the most sultanistic of dictators need to know the ever-changing needs of their subjects. This makes it even more surprising that, almost as a rule, dictators end up in an informational vacuum, surrounded by loyal yet incompetent subordinates. Subsection 2.2 deals with this puzzle.

Though all the trade-offs above are, essentially, trade-offs between “informational openness” and “security,” they deal with different types of threats to the incumbent leader. The “loyalty vs. competence” model explains government structure as a survival strategy of a dictator who fights the coups d'état, an *internal* threat. The “media freedom” models deal with protests and revolutions, an *external* threat to the incumbent leader. Fearon (2011) treats the threat of protests as the only means for the society to enforce regular elections, which are in turn critical for accountability and public goods provision.

The main external threat to any dictatorship is a “revolution” (Subsection 3.1). Such a revolution might be largely peaceful as the Velvet Revolutions in Hungary, Czechoslovakia, Poland in late 1980s, may involve limited violence as in Iran in 1979 or during the Arab Spring in 2011, or may escalate into a full-blown civil war as in France in 1793, Mexico in 1910, or in Russia in 1917. Even if a revolution does not actually happen, a dictatorship might end by a voluntary devolution of power by the dictator under the shadow of a revolution (Acemoglu and Robinson, 2005; Aidt and Franck, 2015). To prevent mass protests and revolutions, dictators try to “project strength” by organizing faux elections and reporting vote shares unheard of in democracies (Subsection 3.2).

Regardless of whether the threat to the regime is internal or external, information is the core element. In December 1989, the Romanian leader Nicolae Ceausescu called a mass meeting to demonstrate the strength of his support; the video recording reveals that he was genuinely surprised to see the anger and frustration of ordinary people. Apparently, he also overestimated the level of his support in the Romanian military and security services. In February 2011, Hosni Mubarak, in his 22nd year as the leader of Egypt, appeared unaware of his unpopularity — both among ordinary citizens and the elite — the day before he was ousted from power and put under arrest.

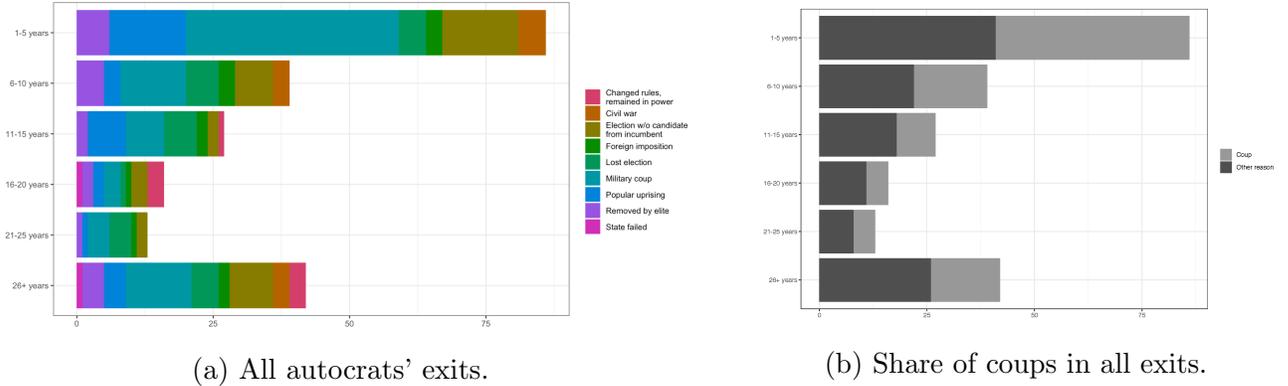


Figure 2: Autocrats' exits, 1960-2016.

Importantly, understanding the critical role of information in authoritarian politics was made possible by the development of modern contract theory and principal-agent models. Although *informational control* has arguably played as great a role for 20th-century caudillos as for modern dictators, they were not conceptualized as such. For a contemporary biographer of Juan Peron, censorship was a civil rights violation, which hurts peoples consumption of civil rights, not information management. For a classic 20th-century biographer of Stalin, propaganda was a mobilization tool of the regime, not a strategic instrument in power struggle. Histories and biographies that would explicitly analyze information management as a strategic tool that the political economists now consider the main mechanism of maintaining power are yet to be written. At the same time, modern economists approach repression, be it elite purges (Tyson, 2018), strategic mass killings (Esteban, Morelli and Rohner, 2015), deportations (Gregory, Schröder and Sonin, 2011), ethnic cleansing (Rozenas, 2020), or mere disenfranchisement (Acemoglu, Egorov and Sonin, 2015) as an informational problem. We hope that our approach will inform the broader historical discussion.

Information is no less relevant for regimes dealing with *internal threats*. Svoblik (2009) estimates that between 1945 and 2002, out of 303, authoritarian rulers, 205 (more than two-thirds) were deposed by a coup (see Figure 2). The key element of survival in power is building a support coalition, which we discuss in Section 4. One form of organizing a machine of patronage and repression that keeps leaders in power is via an institutionalized ruling party such as the Communist Party of the Soviet Union, the Chinese Communist Party, or the Institutional Revolutionary Party of Mexico, each of which was the primary governing mechanism in their country for the large part of the 20th century. We build an

informational model of a ruling party, where the difference between the party members and the others is access to information (Example 4.1).

Subsection 4.2 deals with the related instruments of authoritarian control — repressions and disenfranchisement. Both serve the same goal, reducing the government accountability, and allow the leader to pursue his preferred, unpopular (or, at least, lacking a majority support) policy. If the dictator cannot repress the opposition, he would have to make policy concessions. In Example 4.3, we demonstrate the complementarity between propaganda and repression, using models of propaganda (Example 2.1) and repression (Example 4.2) as building blocks. They might be further combined with models of revolution (Example 3.1) and internal coups (Example 2.2).

Newson and Trebbi (2018) argue that the “winner-take-all” metaphor, often applied to brutal leadership battles in authoritarian regimes, is misleading. In many nondemocratic regimes, the typical state of affairs is not an unconstrained rule of a single individual, but a balance between different factions that are unable to defeat each other. In Example 4.4, we show that such an equilibrium balance might include many warring factions. In Example 5.2, we show that those who are in power, and even those who are just a part of the oligarchy, might prefer keeping their rents intact rather than challenging the system.

One distinct feature of political dynamics in non-democracies is that new authoritarian leaders more often than not come to power as a result of overthrowing the incumbent leader. This by itself creates path-dependent dynamics, whereby events that fail to occur and unfulfilled threats play a role as important as those that actually materialized (North, 1981; Acemoglu, Egorov and Sonin, 2020). In Section 5 we discuss both standard (Markov) approach to model political dynamics (Acemoglu and Robinson, 2001, 2005) and alternative approaches that allow for path dependence. By its nature, Markov games cannot account for any kind of path dependence, a very important feature when we deal with life-long, rather than term-limited, tenure and possibilities of violent comebacks. This contributes to the “succession problem”, an acute issue for any personalized authoritarian regime. In Example 5.4, we combine the static model of divided autocratic government with a model of path-dependent dynamics to analyze how institutionalized ruling parties manage to guarantee regular replacement of top leadership.

The survey of formal models in nondemocratic politics, Gehlbach, Sonin and Svobik (2016), emphasizes the critical role that institutions of nondemocratic government play. For a

survey on long-term institutional change, which necessarily deals with long-term institutions of non-democracies, we refer to [Acemoglu, Egorov and Sonin \(2020\)](#). In this essay, we focus on institutions that can be changed by strategic individuals — either by insiders such as the incumbent leader or members of the ruling oligarchy (Subsection 5.1), or by outsiders such as protesters (Subsection 3.1).

The rest of the paper is organized as follows. Section 2 deals with direct informational control such as censorship and propaganda. Section 3 focuses on the role of information in models of collective action such as revolutions and protests. In Section 4, we consider the structure of support coalitions of authoritarian rule. Section 5 discusses the issues of nondemocratic dynamics. Section 6 outlines the agenda for future research in political economics of non-democracies, and Section 7 concludes.

2 Direct Information Control

Any authoritarian leader faces at least two major problems related to information flows. First, he has to design the optimal propaganda structure that would determine how much and what kind of information should be available to citizens. Second, he needs to organize the information flow in the other direction so that he can gather information, be it by allowing a certain degree of media freedom or relying on secret surveys and opinion polls. We start with discussing the trade-offs an autocrat faces when manipulating people’s beliefs about his strength in Subsection 2.1. We will later use this propaganda model to augment other mechanisms of authoritarian control. In Subsection 2.2, we focus on mechanisms of gathering information.

2.1 Censorship and Propaganda

Consider a simple model of propaganda, which is a particular case of the “Bayesian persuasion” model ([Kamenica and Gentzkow, 2011](#); [Bergemann and Morris, 2019](#)). For authoritarian regimes, such a model was developed as a model of government censorship in [Gehlbach and Sonin \(2014\)](#). The persuasion model of this kind can be added, as a building block, to many models of nondemocratic politics that we discuss below.

Example 2.1 (A Model of Censorship) Consider an autocrat who is strong with probability θ and weak with the remaining probability. The people prefer to keep him in power if

he is strong, and prefer to remove him if he is weak. (Until Section 3 we assume that there is no collective action problem in a revolution.) There is an experiment that tests the leader’s strength, yet the leader is able to design, in advance, the signal that will be reporting the result of the experiment to the public. As [Kamenica and Gentzkow \(2011\)](#) demonstrated, the optimal persuasion mechanism for the leader is to commit to the following signal: to report “keep” if the outcome of the experiment is “strong”, and to report “keep” with some probability $\beta > 0$ if the outcome is “weak”.

Suppose further that the people get the utility of 1 if they keep the strong leader or remove the weak leader, and the utility of 0 otherwise. If $\theta < \frac{1}{2}$, then without a signal, people would remove the leader. With a signal of slant β , people would keep the leader if the signal is “keep” whenever it is incentive-compatible to do so, $\frac{\theta}{\theta+(1-\theta)\beta} \geq \frac{(1-\theta)\beta}{\theta+(1-\theta)\beta}$, or, equivalently, whenever $\beta \leq \frac{\theta}{1-\theta}$. As the leader is interested in as high β as possible provided that the incentive constraint is fulfilled, the optimal slant is given by

$$\beta^* = \frac{\theta}{1-\theta}.$$

If the slant β is too high, i.e., $\beta > \beta^*$, then following the signal is incentive-incompatible for citizens. They ignore the signal, and, if $\theta < \frac{1}{2}$, remove the leader. Conversely, if $\beta < \beta^*$, then the probability of survival is not maximized. With optimal slant, the leader survives with probability $\theta + (1-\theta)\beta^* = 2\theta$, which means that the propaganda is working. If $\theta < \frac{1}{2}$, then the propaganda gives the leader a chance to survive.

Taken literally, [Example 2.1](#) illustrates why there is no conceptual difference between propaganda and censorship. In any model with rational citizens and politicians, any information manipulation is essentially a truncation of some true signal. Citizens and other politicians act in reliance on this slanted information. The ability to manipulate information to such extent that it is still incentive-compatible for agents to follow the signals, even knowing that they are being manipulated (knowing the dictator’s equilibrium strategy), is the dictator’s power.

It is possible to base models of information manipulation in autocracies on other celebrated communication protocols such as cheap talk in [Crawford and Sobel \(1982\)](#), verifiable messaging in [Milgrom \(1981\)](#), and signaling in [Spence \(1973\)](#). In such models, the leader holds certain information and sends a message to citizens, who act based on their updated priors. Relative to other communication protocols, a Bayesian persuasion mechanism such

as the one used in Example 2.1 assumes more commitment power on behalf of the sender, which increases their persuasive power. At the same time, this is a realistic approach in most applications. Dictators do not edit news in real time: instead, they appoint biased editors or establish institutions of censorship to generate the slanted signal.³

In Shadmehr and Bernhardt (2015), the state does not censor moderately bad news to prevent citizens from making inferences from the absence of news that the news could have been far worse. Hollyer, Rosendorff and Vreeland (2018) model the autocrats' preference for transparency in a two-player bargaining model: the autocrat might want to increase transparency to reduce the risk of an inside challenge. In Boleslavsky, Shadmehr and Sonin (2020), the autocrat might prefer more transparency as it might help mobilize citizens to protect him (in turn reducing incentives for a potential inside challenge). Bueno de Mesquita and Smith (2017) make the broad point that an increase in the risk of removal of the incumbent dictator via one means results in increased risks of removal by other means. Guriev and Treisman (2020) suggest that violence is much less common in modern dictatorships than in those of the past, and analyze the impact of cooptation of elites and propaganda on a dictator's popularity.

Relying on extensive archival data and modern methods of econometric inference, Adena et al. (2015) studied the impact of Nazi propaganda. In particular, they found a significant effect of radio propaganda after consolidation of the Hitler's regime: it incited anti-Semitic acts and denunciations of Jews to authorities by ordinary citizens. Such propaganda was crucial for both targeting of regime opponents (see Subsection 4.2) and as an instrument of totalitarian mobilization (Arendt, 1951). Yanagizawa-Drott (2014) used the radio propagation in an uneven terrain to establish the causal impact of anti-Tutsi propaganda on violence in Uganda. (Zhuravskaya, Petrova and Enikolopov, 2020 survey empirical literature on political effects of internet and social media.)

Qin, Strömberg and Wu (2018), using the data on government-owned newspapers in China from 1981 to 2011, demonstrated that market competition has reduced the amount of political propaganda, confirming the theoretical prediction in Gehlbach and Sonin (2014). In earlier empirical analysis, King, Pan and Roberts (2013, 2014) unpacked the Chinese govern-

³There is another important reason to rely on the Bayesian persuasion mechanism in modeling propaganda: as demonstrated in the web-appendix to Kamenica and Gentzkow (2011), this mechanism results in larger effect of persuasion than *any* communication protocol. In other words, this approach provides the upper limit on the effect of any propaganda, censorship, or any other form of information manipulation.

ment’s strategic use of censorship. In particular, the government did not censor government criticism, yet blocked information that would allow citizens to coordinate their grievances. Using daily news reports from Russia’s largest state-owned television network, [Rozenas and Stukal \(2019\)](#) found that instead of simply censoring economic facts, the media attributes positive news to competence of government officials, while blaming bad news on external factors.

In [Example 2.1](#), the receivers of propaganda do not make a strategic choice whether or not to get the signal. If there is a cost of being a receiver — even as low as the opportunity cost of watching TV — this cost puts a limit on the amount of slant that the sender can use. Suppose that there is a cost of receiving information for citizens, $c > 0$. If $\theta < \frac{1}{2}$, the value of the information is $\theta - \beta(1 - \theta)$. Thus, the optimal slant is given by

$$\beta^* = \frac{\theta - c}{1 - \theta}.$$

Naturally, the optimal slant decreases with the opportunity cost of getting information: if citizens do not pay attention to what the government says, the latter survives for a smaller range of parameters. [Knight and Tribin \(2018\)](#) demonstrate, in the context of Venezuelan dictatorship, that availability of propaganda-free channels reduced the impact of state propaganda. [Glaessel and Paula \(2020\)](#) confirm that access to alternative sources of information limits propaganda with 1989 data on German Democratic Republic television: recipients disapproved of censorship if they were able to use Western television to detect misinformation.

Still, access to information is not sufficient unless citizens have incentives to consume information. [Chen and Yang \(2019\)](#) conducted a field experiment in China, giving citizens access to an uncensored internet. In a nutshell, the finding is that propaganda works: once citizens acquire new information, their knowledge, beliefs, attitudes, and intended behaviors change. At the same time, the demand for uncensored information is low; on their own, citizens do not look for additional information even if they have access.

2.2 The Costs of Information Control

There are two very distinct broad types of information gathering mechanisms that autocrats use. First, the government can use public sources of information, relying on competitive media, both domestic and foreign, and social networks. Second, the government can rely

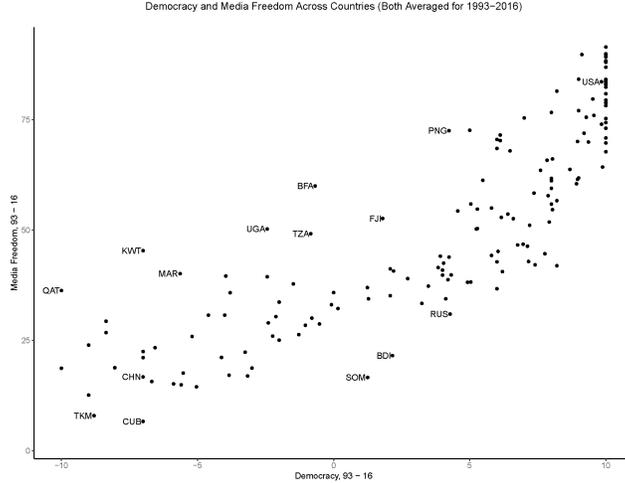


Figure 3: Media freedom around the world, 1993–2016.

primarily on information gathered by various secret services or new-era methods such as digital surveillance (Xu, 2020). With the former, the downside for the autocrat is that free media provides the same information to citizens, which reduces the impact of propaganda and might help to facilitate anti-government protest. With the latter, the problem is that relying on information from secret services is, effectively, sharing power and rents with them.

As Example 2.1 demonstrates, censoring media increases the chances of an autocrat’s survival. However, there might be efficiency costs associated with restrictions on media freedom. In Egorov, Guriev and Sonin (2009), a resource-poor dictator allows media freedom as he is concerned with providing his bureaucrats with proper incentives. The paper confirms empirically the relationship between oil wealth and media freedom: in dictatorships, more oil means less media freedom, whereas in democracies the effect disappears. An oil-rich dictator can afford to stay out of touch with reality, censoring media, and yet stay in power; an oil-poor dictator does not have this luxury. Similar efficiency vs. propaganda trade-offs appear in the model of strategic protest restrictions (Lorentzen, 2013) and censorship (Lorentzen, 2014). As a result, media freedom varies a lot across nondemocratic regimes, from levels comparable to mature democracies to that of totalitarian regimes (see Figure 3).

The most straightforward way to present the dictator’s informational dilemma is to consider the choice and promotion of subordinates (Besley and Kudamatsu, 2009; Egorov and Sonin, 2011; Jia, Kudamatsu and Seim, 2015; Zakharov, 2016). A dictator needs a competent agent that controls the information flow. A more competent subordinate is more likely to differentiate a real threat to the dictator’s power such as a change in public mood, a need

for an economic reform, an emergence of a new leader, or even a looming foreign invasion. At the same time, a more competent subordinate is more likely to side with the dictator’s enemies when the dictator is vulnerable, i.e., exactly when his loyalty is most critical. An insecure or cautious dictator will therefore choose incompetent loyalists as ministers because he fears that a competent minister will betray him more easily than an incapable one, and this cripples his control over the country he rules even further.⁴

Consider the following principal-agent relationship between an autocratic leader and a subordinate adopted from [Egorov and Sonin \(2011\)](#). While very simple, it highlights both the informational constraints on a dictator’s power and the critical difference between contracting with a third-party enforcement, a natural possibility in the presence of democratic institutions, and contracting in the absence of such enforcement.

Example 2.2 (An Informational Model of Loyalty) Consider a dictator who faces a potential challenge, an internal coup, or mass protests. With probability θ , the challenge is weak and will not succeed, so fighting this coup would be wasteful. With probability $1 - \theta$, however, the challenge is strong, but it will still fail if the key lieutenant of the dictator remains loyal, doing what is optimal for the leader. Only if the challenge is strong and the lieutenant betrays the dictator, the dictator is removed from power. In contrast to the standard contract theory, the contract between the leader and the subordinate cannot be conditional on all possible outcomes, even if the outcomes are fully observable: the agent is not punished for betrayal if the dictator is overthrown.

The dictator needs this lieutenant to judge the seriousness of the threat; however, the agent himself is imperfectly informed. Denote the challenge’s type, which might be either strong or weak, by $t \in S, W$ and the agent’s signal by $s \in S, W$ and assume that an agent of type λ is characterized by

$$\begin{aligned} \mathbf{P}(s = S|t = S) &= 1, \\ \mathbf{P}(s = W|t = W) &= \lambda. \end{aligned}$$

Thus, λ characterizes the agent’s competence: an agent with a higher λ has a higher ability to distinguish a strong enemy from a weak one. For simplicity, let us assume that a

⁴The “loyalty vs. competence” dilemma is present beyond the political world. In the corporate world, it may have been the fate of Jon Corzine, Goldman’s CEO, ousted in a “palace” coup by the firm’s board members in 1999, that made Richard Fuld, the CEO of Lehman Brothers, surround himself with incompetent cronies in the wake of the financial crisis.

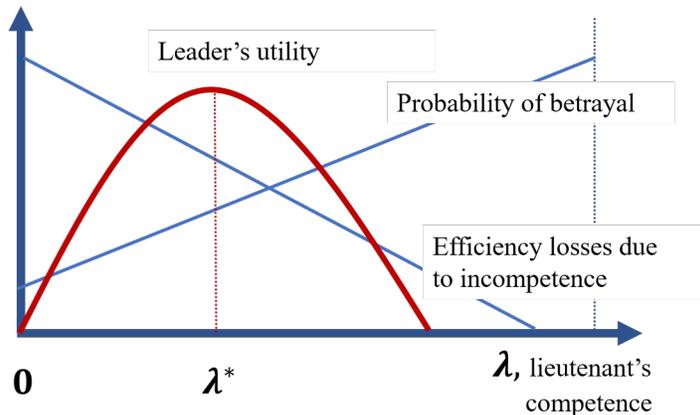


Figure 4: A model of endogenous loyalty: in equilibrium, a more competent lieutenant saves the dictator's money, yet is more likely to betray.

weak signal is a definitive signal of a weak enemy, whereas a strong signal is possible when the enemy is either strong or weak. This means that the agent who received a weak signal will never betray.

The advantage of having an agent with high competence is that the dictator does not need to spend resources on countering weak threats. For instance, an agent with low λ would always advise to spend resources on protective measures as he is unable to tell a serious threat from a weak one.

Now suppose that the agent received a strong signal. If he remains loyal, the dictator stays in power, and the agent collects some wage w , which we normalize to zero. If he betrays for some bribe b , then the enemy wins with probability $\mathbf{P}(t = S | s = S) = \frac{1-\theta}{1-\theta+\theta(1-\lambda)}$, in which case the agent collects rewards b and the dictator wins with the complementary probability, in which case the agent is punished with utility $-c$. Thus, the agent betrays if the rewards exceed

$$b > \bar{b}(\lambda) = \frac{\theta}{1-\theta}c(1-\lambda) \quad (1)$$

In other words, a more competent agent would betray for a lower reward. If the agent's rewards conditional on betrayal are a random variable from the leader's standpoint, and the enemy's ability to pay is taken from some distribution, *a more competent agent is more likely to betray*, so he is endogenously less loyal (see Figure 4).

The model in Example 2.2 might be combined with the propaganda mechanism of Example 2.1. Indeed, if θ is everyone's prior about the strength of the leader, then the leader could

use the Bayesian persuasion mechanism of Example 2.1 to have, effectively, the probability of 2θ of being strong. This will raise the bribe bar in equation (1); that is, propaganda will make betrayal by a subordinate less likely and thus increase the competence of the subordinate that the dictator hires.

Of course, hiring a more competent agent may have a direct utility: for example, saving resources on fighting weak or nonexistent enemies, not to mention other helpful advice a competent person may give. Thus, the dictator faces a trade-off between competence of his subordinates and their loyalty, and the way he resolves this trade-off depends on his utility when he survives, but it is also clear that the higher his disutility when overthrown and the higher is the probability that the enemy is strong, the higher are incentives to choose a less incompetent lieutenant. (In Egorov and Sonin, 2011, both enemy’s strategy and lieutenants’ compensation are endogenized.) This demonstrates an important endogenous constraint on the dictator’s power and ability to choose and implement good policies.

The informational model of loyalty and competence of Example 2.2 provides an explanation to the following puzzle. It is intuitive that countries that have frequent coups and recurrent revolutions exhibit poor economic performance. Yet why do countries that have the same leaders for decades provide a disproportional number of growth failures (Bueno de Mesquita et al., 2003; Jones and Olken, 2005)? Mancur Olson has offered a powerful metaphor of “roving vs. stationary bandit” (Olson, 1991), further developed in the concept of “encompassing interest” (McGuire and Olson, 1996). The power of this metaphor is in its consistency with a basic premise of economics: incentives matter. The higher the leader’s stake and the longer his horizon, the more interested he should be in the country’s prosperity.

A major problem with the Olson maxim is that it seemingly contradicts the accumulated empirical evidence on modern dictatorship. The dictators who have had the most power – Germany’s Hitler, Russia’s Stalin, China’s Mao – have led their countries to massive humanitarian disasters and destruction of social welfare on a historic scale. The longer a dictator’s tenure, the lower were economic and societal benefits of his rule (Bueno de Mesquita et al., 2003). The loyalty vs. competence model demonstrates, theoretically, that economic stagnation might be a likely flip-side of the prolonged political stability under dictatorship, and that loyalty at the expense of competence might be responsible for massive disasters such as the Great Famine in China (Meng, Qian and Yared, 2015) or Holodomor in the Soviet Union (Naumenko, 2020).

Bai and Zhou (2019) confirmed the existence of the loyalty vs. competence trade-off: during the Cultural Revolution in China (1966-1976), it was the most competent elite members who were purged and replaced by mediocre substitutes. Jia, Kudamatsu and Seim (2015) demonstrate empirically that the Chinese Communist Party has avoided the “loyalty vs. competence” trap through a system of job rotation and promotion within the party. In contrast, Shih, Adolph and Liu (2012) provide evidence that nepotism plays a major role in promotions within the highest tier of the CCP hierarchy.

Using a data set on over 1,400 of world leaders from 1848 to 2004, Besley and Reynal-Querol (2011) found that autocracies select leaders with 20% less education than democracies. At the same time, Franois, Panel and Weill (2020) established, employing a sample of 100 authoritarian regimes from 1973 to 2008, that more educated autocrats are better in, e.g., attracting foreign direct investment, a critical growth factor in the developing world. With autocrats having less education than democratically elected leaders, the performance, unsurprisingly, suffers. Jones and Olken (2005) demonstrated, using unexpected deaths of leaders in office as a source of exogenous variation in leadership, that leaders matter for growth, and negative effects of individual leaders are strongest for unconstrained autocrats.⁵

3 Control over Collective Action

Since the classic work of Mancur Olson (Olson, 1965), the problem of collective action is well-understood to be an important mechanism that protects authoritarian leaders.⁶ Even if most citizens want the dictator removed, in the absence of free elections, they might find it difficult to organize and coordinate protests and revolutions. The critical element of collective action is information aggregation. For a citizen who wants the leader removed, it is crucial to know how many others have the same preferences, what information others possess, and what actions they are planning to undertake.

All forms of censorship and propaganda discussed in Section 2 are relevant here as well. However, the problem of collective action is difficult to resolve even if the dictator does not directly manipulate people’s beliefs. In protests and revolutions (Subsection 3.1), citizens

⁵In a recent working paper, Easterly and Pennings (2017) replicated, using an expanded data set, the Jones and Olken’s results with respect to very high or very low growth episodes; they also confirmed that autocracies produce higher growth volatility than democracies as suggested by Rodrik (2000) and Besley and Kudamatsu (2009). See also Section 6.

⁶Tullock (1971) argued that the coups d’etat are more common in non-democracies than revolutions because the collective action problem is much less acute in the case of a coup.

need to know what other citizens plan to do: the payoff of an individual depends, critically, on actions of others. In authoritarian elections (Subsection 3.2), citizens use the official results to update their beliefs about other citizens' attitudes. In these situations, information control over collective action is about manipulating the process of information exchange, rather than about providing manipulated information or censoring media.

3.1 Protests and Revolutions

The critical element of every modern model of a revolution is the mechanism that translates information dispersed among multiple agents into collective action. Individually, participating in a revolution is costly. However, when a mass of citizens participate, the costs are substantially lower and the chances of success are higher.

The early models of protests and revolutions assumed away the collective action problem. In [Acemoglu and Robinson \(2001, 2005\)](#), potential dissidents (“the poor”) are able to overcome, from time to time, the collective action problem and coordinate on protests. As a next step, [Shadmehr and Bernhardt \(2011\)](#) model protests as a two-person coordination game and show that limiting public information available to citizens might increase the likelihood of protests as each individual citizen is forced to rely on others' information to a larger extent.

[Persson and Tabellini \(2009\)](#) departed from the no-collective-action assumption by using the global game approach to refine equilibria in a coordination model. In [Bueno de Mesquita \(2010\)](#), protests are modeled as a coordination game with multiple equilibria, and the vanguard of revolution moves first, thus altering the focal point for mass protesters. The vanguard does not have any informational advantage over the mass followers, and as such has no information revelation or signaling motive. Much like Vladimir Lenin's “revolutionary vanguard,” the vanguard in [Bueno de Mesquita \(2010\)](#) or [Apolte \(2012\)](#) is essentially a device to choose the focal point, the critical element in any model of collective action.

The following model of revolution is adopted from [Bueno de Mesquita \(2010\)](#) and [Shadmehr \(2018\)](#) to illustrate the main trade-off potential participants face.

Example 3.1 (A Model of Revolution) There is a continuum of citizens that decide whether or not to participate in a revolution, $r_i \in \{0, 1\}$, where $r_i = 0$ corresponds to non-participation. Suppose that the benefit from revolting is 1 if the revolution succeeds, 0 if the revolution is unsuccessful, and not participating in the revolution provides the payoff of

$a > 0$.

The citizen i 's problem is $\max_{r_i \in \{0,1\}} pr_i + (1 - r_i)a$, where the probability that the revolution succeeds, p , depends on the fraction of participants, $r = \int_0^1 r_i di$, and the strength of the regime $\theta \in (0, 1)$. Assume that

$$p(r, \theta) = \begin{cases} 1 & r \geq \theta, \\ 0 & r < \theta. \end{cases}$$

In the case of complete information when the strength of the regime θ is known, the outcome is deterministic. If $\theta \leq 0$, then there is a unique equilibrium, in which every citizen revolts, if $\theta \geq 1$, then there is a unique equilibrium, in which no citizen revolts, and if $\theta \in (0, 1)$, then both equilibria are possible.

Now, suppose that each citizen i receives a private signal $s_i = \theta + \varepsilon_i$ with ε_i s independently drawn from the same atomless distribution F with full support on \mathbb{R} . Now the decision whether or not to revolt r_i is a mapping $r_i : \mathbb{R} \rightarrow \{0, 1\}$.

It can be shown that there is a unique equilibrium in symmetric monotone strategies

$$r_i(s_i) = \begin{cases} 1 & s_i \leq s^*, \\ 0 & s_i > s^*, \end{cases}$$

where $s^* = 1 - a + F^{-1}(1 - a)$. Naturally, the participation threshold is monotone increasing in the opportunity cost of the revolution: the higher the a , the smaller is the share of agents who take part in the revolution, and the lower is the revolution's probability. Furthermore, $p(r, \theta) = 1$ if and only if $\theta \leq \theta^* = 1 - a$.

The model of revolution in Example 3.1 can be combined with the model of propaganda in Example 2.1. Indeed, suppose that prior to the revolutionary stage, the dictator has a chance to design an information experiment. As Example 2.1 demonstrated, this will increase, in expectation, the people's estimate of the dictator's strength, θ , which will result in a lower probability of a revolution at the revolution stage.

Example 3.1 makes use of the ‘‘global game’’ approach (Carlsson and Van Damme, 1993; Morris and Shin, 2001), a tool to select an equilibrium in a coordination game that would typically feature multiple equilibria.⁷ The idea of the refinement is to introduce some correlated asymmetric information and then select the risk-dominant equilibrium of the resulting

⁷An inherent feature of information-based models of collective action is multiple equilibria. The real-life counterpart of this phenomenon is that the same fundamental conditions are consistent with multiple drastically different equilibrium outcomes, with one equilibrium behavior possibly switching to another overnight. Kuran (1989) hypothesized the existence of ‘‘preference falsification,’’ which results in people

game. [Barbera and Jackson \(2020\)](#), [Casper and Tyson \(2014\)](#), and [Tyson and Smith \(2018\)](#) use this approach to model revolutions when citizens have private information on either the regime’s strength or the common benefits from changing the regime. In [Edmond \(2013\)](#), the dictator has a costly technology to jam the signal available to citizens who might want to protest.

[Boleslavsky, Shadmehr and Sonin \(2020\)](#) combine Bayesian persuasion with global games to model the possibility of protests both against and for the incumbent leader. The possibility of protests for the leader following his dismissal in an internal coup alters the pre-coup calculus, discouraging the plotters. In contrast, when the incumbent is unpopular, a coup d’etat might be organized by those who fear that they would go down with the leader dismissed by a popular uprising. [Dorsch and Maarek \(2018\)](#) investigated the connection between protests and coups using panel data on sub-Saharan Africa, and found that popular unrest causes an increase in the probability of a coup.

Instrumenting for the social media access with former classmates of a network founder, [Enikolopov, Makarin and Petrova \(2020\)](#) demonstrated that social media does help anti-government protest. The social media impact was through reducing the costs of protest coordination, rather than via spreading information critical of the government. Using high-resolution data on the expansion of cell phone coverage and protests in 2007–2014, [Christensen and Garfias \(2018\)](#) demonstrate that cell phone coverage increases the probability of anti-dictator protests by over half the mean. In a field experiment in Hong Kong, [Cantoni et al. \(2019\)](#) focused on incentives for people to participate in the protests as a function of information about others’ plans. The results suggest that agents might consider own participation as a substitute, rather than complement to others’ protest participation.

Even a threat of a protest might affect the policy. Using an online field experiment, [Chen, Pan and Xu \(2016\)](#) unpack the mechanism through which Chinese citizens can effectively pressure their local governments via threats of collective action.

3.2 Authoritarian Elections and Electoral Fraud

Another form of informational control in autocracies is electoral fraud. In a democracy, electoral fraud might tip the outcome of a close election. The idea is that citizens do not

drastically altering their behavior against the dictator. In the models that we describe in this essay, agents need not to falsify their preferences: the change in their behavior corresponds to switching to a different equilibrium. [Lohmann \(1994\)](#) pioneered application of information cascades to protests and revolutions.

know about the fraud, or consider its extent negligible; everyone considers the outcome to be legitimate. If the fraud goes undetected, it influences the outcome. In non-democracies, the electoral fraud is often so massive and violations of the due procedure so visible that it begs the question: why does it make sense to have fraudulent elections that citizens recognize as such? Why does it make sense to even organize such elections?

There is a substantial literature in political science that strives to explain elections held by autocrats (see [Gandhi and Lust-Okar, 2009](#) and [Miller, 2015](#), for recent surveys). [Przeworski \(2009\)](#) describes “plebiscitary elections,” which the regime uses to demonstrate that it can “force everyone to appear in a particular place on a particular day and perform the act of throwing a piece of paper into a designated box”. Collecting data from all over the world, [Simpser \(2013\)](#) suggests that electoral fraud can be used to demonstrate strength by showing the capacity to organize fraud. [Egorov and Sonin \(2020\)](#) model dictators “projecting strength” by organizing authoritarian elections to prevent a revolution.

At the same time, authoritarian elections might play another role – they may define and enforce power-sharing or rent-sharing agreements among the elites ([Boix and Svobik, 2013](#); [Gandhi and Przeworski, 2007](#); [Magaloni, 2010](#)). In some circumstances, such agreements might help the authoritarian elite to survive a transition to competitive elections ([Martinez-Bravo, Mukherjee and Stegmann, 2017](#)). Another explanation deals with gathering information and learning about local issues through elections. [Martinez-Bravo et al. \(2017\)](#) study the case of local (village-level) democracy in China to support this theory. Using a data base on world-leaders’ exits from 1975 to 2004, [Cox \(2009\)](#) argues that elections help autocratic regimes to gather information that is needed to optimize succession. [Miller \(2015\)](#) finds that a negative shock to the election results prompts autocracies to spend more on education and social welfare.

In a model in which both fraud and protests are decisions made by unitary actors, [Kuhn \(2010\)](#) argues that protests are only possible if the election is won by the incumbent by a narrow margin and there is evidence of fraud. In [Little, Tucker and LaGatta \(2015\)](#), the results of an election convey the same information to the dictator and the citizens, and the main question is whether or not the dictator agrees to step down voluntarily after losing. In [Little \(2012\)](#), electoral fraud is modeled as a jamming of the public signal about the outcome of elections. In [Gehlbach and Simpser \(2015\)](#), electoral fraud, modeled as Bayesian persuasion, is the instrument the dictator uses to manipulate bureaucrats’ incentives. Finally,

Wig and Rod (2016) document the risks associated with authoritarian elections: if the election outcome points to a possible revolution, it might trigger a preemptive coup.

Empirical literature on electoral fraud is growing fast, though most of the studies are focused on imperfect democracies rather than authoritarian regimes. Enikolopov et al. (2013) used a field experiment to estimate the extent of electoral fraud in the Russian parliamentary elections in 2011. Rundlett and Svolik (2016) used data from the same election to illustrate the mechanism of beliefs formation when citizens observe electoral fraud. Cantu (2019) described mechanisms of electoral fraud in a one-party dictatorship employing data on the Mexican presidential elections in 1988.

Broader empirical literature addresses other elements of dictators' tactics in authoritarian elections. Voigtlaender and Voth (2014) demonstrated that focus on building infrastructure helped Hitler and the National Socialists to get a higher vote share in the 1933 elections and the 1934 plebiscite (organized with heavily limited competition, yet not fully uninformative). Importantly, the main channel of influence was not the limited direct benefits such as employment in highway construction, but rather the propaganda effect.

4 Nondemocratic Coalition Formation

While assuming that there is always a single incumbent leader who makes the critical decision is analytically convenient, it is limiting. Many authoritarian regimes are ruled by a junta or rely on a broader structure such as a ruling party. In this section, we discuss political coalition-formation in a nondemocratic context, which is radically different from the democratic one. One important difference is that a dictator can share the country's resources with his supporters in ways, in which democratic leaders cannot (Subsection 4.1). In particular, many authoritarian regimes rely on institutionalized ruling parties as an instrument of maintaining support. Another difference is that autocratic leaders have a vast arsenal of repression and disenfranchisement at their disposal (Subsection 4.2). The final part of this section, Subsection 4.3, deals with the phenomenon of a "divided authoritarian government," when the government structure consists of competing antagonistic factions.

4.1 Support Coalitions and Ruling Parties

For an authoritarian leader, the most obvious way to build a coalition of support is to buy allegiance by sharing rents or making policy concessions. (We discuss repressions, a

complement and a substitute for rents and policy concessions, in Subsection 4.2.) [Gandhi and Przeworski \(2006\)](#) theorize that when a dictator faces a threat of rebellion, he makes larger policy concessions, but also shares more rents, and test this prediction statistically for all dictatorships that existed between 1946 and 1996. [Powell \(2013\)](#) analyzes a model of repeated bargaining between an autocrat and opposition, during which the autocrat also invests in increasing his powers. In equilibrium, the autocrat pays off the opposition in bad times, and tries to defeat it by force when there are plenty of resources.

Empirical research supports, broadly, the idea that autocrats buy their support. [Desai, Olofsgård and Yousef \(2009\)](#) use a panel of 80 non-democracies from 1975 to 1999 to demonstrate the existence of “authoritarian bargain”: autocrats pay off their citizens to surrender their political freedoms. Their bargaining model explains why non-democracies, in contrast with democracies, feature a negative correlation between welfare spending and political liberalization. [Caselli and Tesei \(2016\)](#) find that in moderately entrenched autocracies, windfalls significantly exacerbate the autocratic nature of the political system. [Brückner and Ciccone \(2011\)](#) used within-country variation in rainfall to confirm that transitory negative shocks can open a window of opportunity for democratic improvement. [Leon \(2014\)](#) demonstrates empirically that military coups are more likely in countries that spend a relatively low share of GDP on military.⁸ Using unique archival data on the allocation of cars for mid-level bureaucrats, [Lazarev and Gregory \(2003\)](#) analyze the microlevel of the dictator’s distribution of rents.

[Bueno de Mesquita et al. \(2003\)](#) organize their analysis of nondemocratic regimes using the “selectorate theory” (see also the discussion in [Besley and Kudamatsu, 2009](#) and [Gehlbach, Sonin and Svolik, 2016](#)). The *selectorate* are those who participate in choosing the *winning coalition*, a subset of the selectorate that guarantees power control. It might consist of a single person in a personalized dictatorship or of all citizens eligible to vote in a perfect democracy. Members of the winning coalition stick to the current leader as they are not sure they will be included in the winning coalition of a challenger. Thus, any challenger who wants to upend the *status quo* has to offer a premium over what the members of the winning coalition receive from the incumbent.

[Myerson \(2008\)](#) offers a game-theoretic model, in which supporting the leader is a focal

⁸We refer to [Geddes, Frantz and Wright \(2014\)](#) for an overview of modern political science research on military regimes.

point for his (would-be) lieutenants. Unless the leader agrees, *ex ante* to limit his authority, the lieutenants cannot be sure that he would remunerate them for the past support. As a result, in any renegotiation-proof equilibrium, the leader offers some constitutional restrictions on his power and the lieutenants' support is conditional on the leader observing these restrictions.

One important example of a government structure in a non-democracy is an institutionalized ruling party, a quasi-state body that is structured like a political party in a democracy, yet does not actually compete in elections. Instead, its main function is to maintain control over the rest of the society.

There have been relatively few attempts to build a model of an institutionalized ruling party. [Gehlbach and Keefer \(2011\)](#) suggest an informational approach toward understanding the size and scope of operation of a ruling party. Citizens are divided into two groups, the insiders and the outsiders. The difference between the former and the latter is that when the party leadership expropriates property from an insider, other insiders are informed. Therefore, they have incentives to protect each other against (disincentivizing) expropriation. In contrast, outsiders have their property expropriated with other agents unaware, thus creating a premium for belonging to the elite.

In [Example 4.1](#), we provide a simple model, where the leader determines the size of the ruling party. Those who are “in” receive information that helps them to make the correct investment decision; those who are “out” have to rely on publicly available information (prices). As Vladimir Lenin, the founder of the Communist Party of the Soviet Union, put it in 1921, the fourth year of the Russian Revolution: “We need full and truthful information. And the truth should not depend upon whom it has to serve. We can accept only the division between the unofficial information (for the Comintern Executive Committee only) and official information (for everybody).” Of course, an “investment” should be understood broadly — as any commitment of resources or efforts by a strategic individual in a situation when one choice is winning and the other losing. A choice of occupation or living location are standard economic examples of such investments.

Example 4.1 (An Informational Model of Ruling Party) There is a country with a unit continuum of citizens, and a leader who chooses the share of population that should be made members of the ruling party, γ .

There is a choice that every citizen has to make, to invest either in project A or B . One

of the projects succeeds, while the other fails. The *ex ante* probability that project A will succeed is θ . Without loss of generality, we assume that $\theta < \frac{1}{2}$. Every citizen invests a unit of wealth into either project A or project B . Citizens that invested in the losing project lose their investments; the ones that invested in the winning project receive their investment back plus their share of the losing project investment.

The difference between party members and the rest of the population is that the leader knows which project is winning and informs the party members. Non-members do not know which project is winning, and cannot directly observe the party members' choices. Still, there is a market for investments in A and B , so non-members can base their decision on the market prices.

So, suppose that share x of $1 - \gamma$ non-members invested in A . If the outcome is A , then each winner gets $\frac{1}{x(1-\gamma)+\gamma}$. If the outcome is B , each winner gets $\frac{1}{(1-x)(1-\gamma)+\gamma}$. Given the priors, the expected return of investing in A is $\theta \frac{1}{x(1-\gamma)+\gamma}$, and the expected return of investing in B is $(1 - \theta) \frac{1}{(1-x)(1-\gamma)+\gamma}$. In equilibrium, there should be no arbitrage, so the expected returns of the two projects should be equal:

$$\theta \frac{1}{x(1-\gamma)+\gamma} = (1-\theta) \frac{1}{(1-x)(1-\gamma)+\gamma}.$$

For any prior θ and choice of party structure γ , there exists a unique solution:

$$x^*(\theta, \gamma) = \frac{1}{1-\gamma} (\theta - (1-\theta)\gamma).$$

Critically, share x^* should satisfy $0 \leq x^* \leq 1$, which implies that

$$\gamma \leq \min \left\{ \frac{\theta}{1-\theta}, \frac{1-\theta}{\theta} \right\} = \frac{\theta}{1-\theta},$$

the last equality following from the assumption that $\theta \leq \frac{1}{2}$. If the above condition is not fulfilled, then the no-arbitrage condition cannot hold, which means that everyone, including non-members, knows which project is going to win. In this case, there is no advantage of being in the party, so the choice of γ above $\frac{\theta}{1-\theta}$ cannot be the optimal choice.

The total amount of resources that can be extracted from non-party members is $\gamma \frac{1}{\theta(1+\gamma)}$. If the leader were to maximize this amount, the optimal choice would be $\gamma^* = \frac{\theta}{1-\theta}$. At the same time, each party member gets $\frac{1}{\theta(1+\gamma)}$, and therefore prefers to be in as small a party as possible. Let us make additional assumptions that the leader appropriate share β of the surplus and that the cost of maintaining the party is c per member. Then the leader's

maximization problem is

$$\arg \max_{\gamma} \left\{ \gamma \frac{1}{\theta(1+\gamma)} - c\gamma, \right\}$$

and the optimal size of the party is

$$\gamma^* = \sqrt{\frac{\beta}{\theta c}} - 1.$$

Naturally, the party size increases with the leader’s bargaining power, β , and decreases with the informational advantage that the membership gives, θ , and the cost of maintaining the party, c .

Both models of [Gehlbach and Keefer \(2011\)](#) and that of [Example 4.1](#) are particular cases of the Coasean approach to modeling a political party. Ronald Coase’s celebrated theory of the firm puts emphasis on the distinction between in-house and outsourced production, the difference being attributed to “transaction costs” (the agency problems). Similarly, an optimal organization of a political party would allocate some tasks in-house (what is done by party members) and some to outside producers (what is done by party supporters). The agency problems within the party would define the hierarchy of authority within the party the same way they define it in a firm. The promise of the Coasean approach is that it potentially encompasses parties in both democratic and nondemocratic environments.

The model of [Example 4.1](#) focuses on a single aspect of party formation: the informational advantage that the insiders have over the outsiders. There is much more work to be done on analyzing the party structure and mechanisms that it uses to maintain discipline and cohesiveness inside and maintain control over the populace. In one of rare contributions, [Francois, Trebbi and Xiao \(2016\)](#) construct a hierarchical model of warring factions within the Communist Party of China. In [Subsection 5.2](#), we will use [Example 5.3](#) to discuss another important role that an institutionalized ruling party plays — that of a mechanism that ensures regular leadership replacement.

4.2 Disenfranchisement and Repressions

By definition, a nondemocratic government assumes that there are many citizens who are excluded from having say in political decisions. Dictators of the 20th century – Hitler, Stalin, and Mao, among others – and many less infamous ones purged the ranks of their political supporters and repressed millions of those who did not support their policies. In the extreme

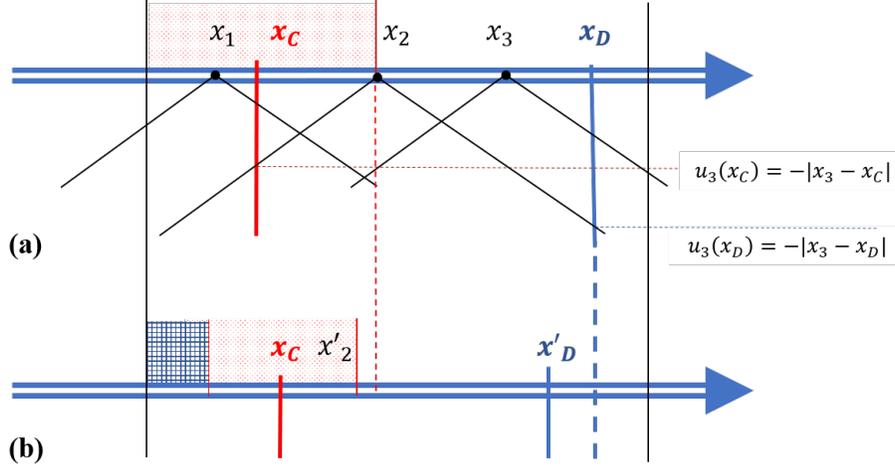


Figure 5: Spatial model of protest and repressions. (a): A protest against the dictator with policy platform x_D : Agent x_1 participates in the protest, x_2 is indifferent, while x_3 supports the incumbent; x_C is the expected position of the new leader. (b): A change of the dictator’s platform, from x_D to x'_D , which makes x'_2 the new indifferent agent, and repressions (the blue area) reduce the size of the protest and thus the threat to the incumbent.

case of totalitarian dictatorship in the Stalin’s Soviet Union or Mao Zedong’s China, the entire population was effectively disenfranchised, having no say in the policy choice or the choice of leaders. Many more dictatorships disenfranchised or purged whole social groups of population based, e.g., on wealth status, religious affiliation, or ethnicity.⁹

The simplest argument why disenfranchisement benefits an autocratic leader comes from the standard spatial (Downsian) model of elections.¹⁰ Unlike a democratic politician, the dictator might want to “trim the electorate,” thus making the move toward the median less necessary / less expensive, and to kill or exile his opponents. If those who are most opposed to the dictator’s preferred policy are repressed, it is easier to implement the desired policy. Consider the following example with the concept of protest on a one-dimensional policy space introduced by Dagaev, Lamberova and Sobolev (2019) and the effect of repression from Gregory, Schröder and Sonin (2011).

Example 4.2 (A Model of Endogenous Protest and Repression) There is a one-

⁹In this survey, we do not discuss the breakdown of democracy — it is an issue in the realm of *democratic* politics — yet it is worth noting that disenfranchisement or outright elimination of certain groups was a first step to autocratic power for many elected leaders. Acemoglu, Egorov and Sonin (2015) is one model of a democracy breakdown, with the ultimate winner not necessarily the one who started disenfranchisement.

¹⁰We spend little time discussing political positioning of leaders and challengers in non-democracies, though these certainly play a huge role. One reason for this is that basic cleavages, motivations, and tactics involved have certain resemblance — or at least important theoretical parallels — with those employed in democracies and are studied elsewhere (e.g., Persson and Tabellini, 2002; Duggan and Martinelli, 2017).

dimensional policy space, and citizens that have heterogeneous preferences over policy. Citizen i has an ideal policy $i \in [0, 1]$, and the utility function is $u_i(x) = -|x - i|$. Suppose that there is an autocratic leader who is expected to pursue policy $x_D \in [0, 1]$, $d > \frac{1}{2}$. Citizen i participates in protest P if her utility from the policy $x_C = x_C(P)$ that results from the successful removal of the dictator exceeds her utility from the status quo x_D plus the cost of participating in the protest c : $u_i(x_C(P)) - u_i(x_D) \geq c$. Define protest P as the set of all citizens who are willing to participate:

$$P = \{i \in [0, 1] | u_i(x_C(P)) - u_i(x_D) \geq c\}.$$

The simplest possible way to define $x_C(P)$ is to assume that it is the median of set P . Finally, let us say that protest P is successful, if share of participants in P exceeds some threshold γ .

Figure 5 illustrates the basic logic of the model in Example 4.2. Suppose that the size of the protest in panel (a) (the red shaded area) is such that the dictator is overthrown. In panel (b), a group of citizens is repressed (the blue shaded area), which makes the potential protest smaller. In fact, there are two effects on the size of the protest, both negative. First, repression removes some potential protesters. Second, because of this, the expected outcome (the median) of a successful protest moves closer to the dictator’s policy x_D , which in turn reduces the number of potential protesters as the difference between the two outcomes shrinks. Finally, Figure 5 demonstrates that the dictator can complement repression with a policy adjustment from x_D to x'_D , which makes participation in the protest less attractive. This is where an authoritarian leader is different from a democratic one: for the latter, a policy adjustment is the only way to increase support.

The notion of “protest” in Example 4.2 allows to sidestep the problem of collective action. If the agents were asked to make a strategic decision on participation in the protest that brings them, at a cost, a leader with a more appealing policy position, there will be another equilibrium, in which everyone would prefer to free-ride and not participate in the protest. Still, it is possible to combine the model of Example 4.2 with a model of revolution (Example 3.1) that features a unique equilibrium in symmetric monotonic strategies. This combined model will retain the basic features of the spatial model, including the complementarity between repression and the dictator’s policy adjustment.

The first fully-fledged models of enfranchisement were introduced by [Acemoglu and](#)

Robinson (2001, 2005), featuring essentially two-agent (“rich” and “poor”) dynamic games. The inability of those in power, i.e., the rich, to commit to a certain policy necessitated extension of the franchise to prevent a revolution. Several papers analyze strategic disenfranchisement by pushing voters out of the district (the “Curley effect,” a feature of democratic politics, in Glaeser and Shleifer, 2005) or repressing them (Gregory, Schröder and Sonin, 2011; Bove, Platteau and Sekeris, 2017). In both cases the median voter of the remainder of the population is closer to the ideal point of the incumbent, which is good for both re-election prospects (or, in the latter case diminishes the attractiveness of a revolution) and utility derived from the policy.

The early economic theories of nondemocratic government (Wintrobe, 1990, 1998) focused on a simple trade-off: the dictator was deciding how to optimally allocate resources between “repression” and “benefits.” Modern theories of repressions assume strategic targeting and selection. Myerson (2015) shows that the best incentives for the autocrat’s supporters are provided via randomized purges, appropriately combined with rewards for service. Tyson (2018) and Dragu and Przeworski (2019) combine an agency model of a dictatorship with targeted repressions. Esteban, Morelli and Rohner (2015) consider the determinants of the extreme case of citizens’ disenfranchisement by an authoritarian government, the “strategic mass killings”. Their empirical results confirm the role that the relative abundance of natural rents plays both at the country level and the ethnic group level. Montagnes and Wolton (2019) and Rozenas (2020) use communist purges in Stalin’s Russia and Mao’s China to demonstrate the effect of violence on performance and selection of subordinates.

Guriev and Treisman (2019) consider propaganda as a substitute for repression. Example 4.3 below, which combines repression and propaganda modeled in Example 2.1, demonstrates that repression and informational control could complement each other. The main mechanism is that repressing those who are most skeptical of the regime allows to increase the volume of propaganda for the others. Initially, propaganda slant was limited by the incentive constraints of the “skeptics”. When the skeptics are repressed, the incentive constraint is relaxed, and the rest of the population receives more pro-regime information.

Example 4.3 (A Model of Repression and Propaganda) As in Example 2.1, suppose that we have a continuum of people with prior θ . The optimal slant is $\beta^* = \frac{\theta}{1-\theta}$, and the expected action is 2θ . Yet now let us allow for heterogeneous priors. Suppose that share α of people received a signal that changed their prior to $\theta' < \theta$, so they are more skeptical about

the regime. What is then the optimal propaganda strategy for the leader?

If the skeptics were alone, the optimal propaganda is

$$\beta'^* = \frac{\theta'}{1 - \theta'} < \beta^*.$$

If $\beta > \beta'^*$, then “skeptics” do not follow the signal. If “sceptics” are ignored, the optimal slant is β^* , and the total expected action is $2(1 - \alpha)\theta$.

If $\beta \leq \beta'^*$, then people of both groups follow the signal. Then the optimal slant is β'^* , and the total expected action, from the sender’s standpoint, is

$$\theta + (1 - \theta) \frac{\theta'}{1 - \theta'}.$$

The optimal choice depends on the share of skeptics: it is optimal to choose β^* (to ignore skeptics) if and only if

$$(1 - 2\alpha) \frac{\theta}{1 - \theta} \geq \frac{\theta'}{1 - \theta'},$$

and the total expected amount of support (action 1) is

$$\max \left\{ 2(1 - \alpha)\theta, \theta + (1 - \theta) \frac{\theta'}{1 - \theta'} \right\}.$$

Suppose that it is optimal not to ignore skeptics, so the optimal slant is $\frac{\theta'}{1 - \theta'}$ and the total expected action is $\theta + (1 - \theta) \frac{\theta'}{1 - \theta'}$.

Let γ be the required share of support for the leader to survive. We will focus on the situation when $\theta + (1 - \theta) \frac{\theta'}{1 - \theta'} < \gamma$, so the optimal propaganda is not sufficient.

Now, suppose that the leader is able to purge the share of λ (and the purges are efficient enough to focus exclusively on the skeptics. Now, the total expected amount of support is

$$\max \left\{ 2(1 - \alpha)\theta, (\alpha + (1 - \lambda)(1 - \alpha)) \left(\theta + (1 - \theta) \frac{\theta'}{1 - \theta'} \right) \right\}.$$

If λ satisfies

$$2(1 - \alpha)\theta \geq \gamma(\alpha + (1 - \lambda)(1 - \alpha)),$$

which is equivalent to

$$\lambda \geq \bar{\lambda}(\alpha, \theta, \gamma) = \frac{1}{1 - \alpha} - 2\frac{\theta}{\gamma},$$

then repression makes propaganda sufficient for the leader to survive. Naturally, the critical threshold $\bar{\lambda}(\alpha, \theta, \gamma)$ is increasing with α (a higher share of skeptics requires more repression) and γ (a higher level of support that is needed for survival requires more repression), and is

decreasing with θ , the ex ante level of support for the leader. The implication is intuitive: repressing the regime sceptics allows propaganda to switch to a higher slant, guaranteeing more support for the leader from non-skeptics. Thus, repression and propaganda are complements: a regime that is more capable of repression is also able to use more propaganda.

4.3 Divided Autocratic Government

A classic method of nondemocratic control is “divide-and-rule,” whereby the leader maintains control by playing different factions of the society against each other. Structurally, this is similar to the pork-barrel model of democratic politics, in which the agenda-setter might build a coalition that comprises a majority in the parliament, imposing a tax on the rest. [Roemer \(1985\)](#) is an early model of redistributive politics aimed at maintaining nondemocratic power.

Similarly, a dictator might use the threat of violence by one group over another to extract resources from both. In [Konrad and Skaperdas \(2007\)](#) and [Acemoglu, Robinson and Verdier \(2004\)](#), the leader uses his power to redistribute from those who would depose him to those who are supportive of the status quo. [Padró i Miquel \(2007\)](#) explores the politics of fear as a tool of dividing and ruling.

However, the “divide-and-rule” framework misses another, perhaps more salient, form of authoritarian government. [Newson and Trebbi \(2018\)](#), analyzing authoritarian elites in such diverse polities as Sub-Saharan Africa and China, conclude that “the prevailing view of winner-take-all contests can be clearly rejected.” In an authoritative study of the last decade of Stalin’s rule, historians conclude that the most appropriate model would be that of balance-of-power ([Gorzki and Khlevniuk, 2005](#)), in which no individual politician, even Stalin himself, is able to move without building a temporary coalition of support.

The essential difference between democracies and dictatorships is that models of the latter cannot rely on commitment ensured by democratic institutions, established procedures, independent courts, etc. In the most extreme case, no commitment is possible at all. [Example 4.4](#), which is based on [Acemoglu, Egorov and Sonin \(2008, 2009, 2012\)](#), analyze an environment with total absence of commitment in nondemocratic politics. In this extreme example, a coalition that has sufficient number of (weighted) votes can vote to eliminate the rest; there might be more than one round of eliminations. The process stops when the ultimate winning coalition is reached. This is a drastic departure from the theory of democratic

coalition formation, where coalitions can be perpetually formed and dissolved.

Example 4.4 (A Model of Coalition Formation in the Absence of Commitment)

There are N agents, each of which has “power” x_i , $\sum_{i \in N} x_i = 1$. We say that configuration (x_1, \dots, x_N) is *stable* if there exists no subset $M \subset N$ such that (i) configuration $(x_{i_1}, \dots, x_{i_M})$ is stable, and (ii) $\sum_{i \in M} x_i > \sum_{i \in N \setminus M} x_i$. By definition, all one-player power configurations are stable, and then all stable coalitions can be described by a recursive procedure.¹¹ This notion of stability is consistent with the following dynamic process. A group of agents, each of which controls a certain amount of “power”, decides to eliminate (or simply strip of any power), by majority, some of them. The elimination continues until a stable state is reached. Each time an agent is eliminated, his “power” is distributed proportionally among the remaining agents. When a stable configuration is reached, the remaining agents split the pie of 1 in proportion to their power shares. Now, any two-player configuration is unstable. Then $(\frac{3}{12}, \frac{4}{12}, \frac{5}{12})$ is stable, $(\frac{3}{22}, \frac{4}{22}, \frac{5}{22}, \frac{10}{22})$ is unstable, and $(\frac{3}{42}, \frac{4}{42}, \frac{5}{42}, \frac{10}{42}, \frac{20}{42})$ is stable again. A simple exercise is to demonstrate that $(\frac{1}{N}, \dots, \frac{1}{N})$ is stable if and only if $N = 2^K - 1$.

Example 4.4 demonstrates that nondemocratic stability might be an equilibrium outcome even if there is no single dominating force, e.g., a leader or an agenda-setter who punishes a deviator. In this equilibrium, the ruling coalition is not necessarily minimal, and the agent with the highest amount of individual power is not necessarily included in the ultimate winning coalition. Acemoglu, Egorov and Sonin (2008) use the $(\frac{3}{42}, \frac{4}{42}, \frac{5}{42}, \frac{10}{42}, \frac{20}{42})$ example to tell the story of Joseph Stalin’s succession fight. The coalition is stable, yet the demise of the strongest members with power $\frac{20}{42}$ (Stalin) makes the rest unstable. Then, three weakest members, $\frac{3}{42}, \frac{4}{42}, \frac{5}{42}$ (Khrushchev, Malenkov, and Bulganin), eliminate the strongest of the remaining members (Beria) and form a stable coalition $(\frac{3}{12}, \frac{4}{12}, \frac{5}{12})$. In Subsection 5.3, we make this model dynamic to account for the possibility of regular leadership turnover within the institutionalized ruling party.

Francois, Rainer and Trebbi (2015) show that African ruling coalitions are relatively large and ethnic groups are proportionally represented. Newson and Trebbi (2018) found similar results analyzing authoritarian elites in Sub-Saharan Africa.

¹¹The above definition does not allow for “ties” when two coalitions have equal power. Still, it is straightforward to extend the definition. Just say that (x_1, \dots, x_N) is stable if any $(x_1 + \varepsilon_i, \dots, x_N + \varepsilon_N)$ is stable for any small shock $(\varepsilon_i, \dots, \varepsilon_N)$.

5 Dynamics of Nondemocratic Power

In a democracy, elections are the means of political change. Elections stimulate building new coalitions, changing political platforms, bringing in new leaders, and, eventually, implementing reforms. The political dynamics in authoritarian regimes are no less interesting, featuring both periods of extreme stability, with the same leader or party staying in power for decades, and moments of extreme turmoil, with drastic institutional changes happening in a matter of months, if not weeks.

In this section, we start with democratizations, peaceful transitions of power that involve a change of the political regime (Subsection 5.1). As we will see, a major constraint for such a transition stems from “slippery slope” considerations: a transfer of political power might be impossible if the preferences of the current power-holder and the ultimate power-holders after transition diverge too much. In Subsection 5.2, we discuss the phenomenon of “path dependence”. In Subsection 5.3 we focus on succession, another major challenge in any nondemocratic regime. In particular, we combine the model of path-dependent dynamics with a static model of ruling party to offer a model of a regular change of leadership in a nondemocratic context.

5.1 The Challenge of Democratization

There are many reasons why an authoritarian regime might turn to democratization. Over the last two decades, the “modernization debate” — does democracy follow economic development or vice-versa? — has tilted towards the “democracy causes growth” answer.¹² Democratizations themselves do produce growth benefits in both short- (Rodrik and Wacziarg, 2005) and long-run (Papaioannou and Siourounis, 2008). Even if he does not care about broad prosperity, a dictator might want to democratize to avoid facing mass protests or internal coups, which are costly even when unsuccessful (Balima, 2020). Partial democratization might be desirable if it provides a commitment device to protect property rights and thus improve agents’ incentives (Acemoglu, 2003; Acemoglu and Robinson, 2005; Myerson, 2008).

Acemoglu, Egorov and Sonin (2012, 2015) analyze a general model of strategic enfranchisement and disenfranchisement with forward-looking agents. In the general model, the

¹²The literature on the modernization debate, both historical and recent, is voluminous. See, e.g., Acemoglu et al. (2019) for a survey and new results.

current decision-maker, e.g., a unitary dictator or the median voter of the enfranchised coalition, makes two decisions. First, she chooses this-period policy. Second, she determines who is going to be the decision-maker in the next period. As it turns out, there is a number of reasons to pass the political power to someone else, a representative of another social group or class. One reason is that someone else's rule in the future might be preferred by the current decision maker. This is a major general rationale for enfranchisement: e.g., with a king in power, the middle class fears expropriation, thus providing low efforts and generating small surplus. When enfranchised, the middle class has its property rights protected better, exerts high efforts; for the king, the result is beneficial as he gets a smaller share of a larger pie.

Example 5.1 models the same dynamic force that creates an obstacle to partial democratization. The current decision maker, who considers enfranchisement, might be willing to abide by policy decision made by the median voter of the extended franchise. However, she might dislike the consequences of the political choices of this median voter. As a result, the country is stuck with an inefficient autocratic rule despite the fact that the autocrat herself would prefer partial democratization.

Example 5.1 (A Model of Inefficient Stability) Consider an autocratic leader, A , considering a reform that gives power to M , the middle class, a more democratic arrangement. There are three possible states of the world: the *status quo*, autocracy a , in which A rules, limited franchise f , in which M has greater security and is willing to invest; and democracy (full franchise) d , where M becomes more influential and privileges of A disappear. Stage payoffs satisfy

$$\begin{aligned} w_A(d) &< w_A(a) < w_A(f), \\ w_M(a) &< w_M(f) < w_M(d), \end{aligned}$$

that is, A prefers limited franchise to autocracy as greater investments by M increase tax revenues, and M prefers democracy to autocracy; M is least well-off under autocracy. Both parties discount the stage payoffs at rate $\beta \in (0, 1)$. States a , f , and d do not only determine payoffs, but also specify decision rules. In autocracy, A decides which regime will prevail tomorrow; in both f and d , M decides the next period's regime.

There are two possible long-term equilibria in this model. First, d is such a state: d is optimal for the decision-maker in d . In contrast, f cannot be a long-term equilibrium,

because, if the society ends up in f , the decision-maker in f will move to their most-preferred state, d . Therefore, if, starting in state a , A chooses the political reform towards f , this will ultimately lead to d in the following period. Thus, the reform gives A a discounted payoff of

$$U_A(\text{reform}) = w_A(f) + \frac{\beta}{1-\beta}w_A(d).$$

If A decides to stay in a forever, its payoff is $U_A(\text{no reform}) = \frac{1}{1-\beta}w_A(a)$. If β is sufficiently small, then $U_A(\text{no reform}) < U_A(\text{reform})$, and the reform takes place. However, when players are sufficiently forward looking (β is large), then $U_A(\text{no reform}) > U_A(\text{reform})$.

So, the initial state a is made stable by the instability of the limited franchise state, f , which is preferred by those who are powerful in a . Note that both A and M would be strictly better off in f than in a , so the stable state starting from a is Pareto inefficient. It also illustrates that the reform is *less likely* when players are forward-looking (when β is small, only d is stable; when β is large, both a and d are stable).

Example 5.1 explains why a rational dictator would not want to partially relinquish his power, fearing that this will lead to his ouster through the “slippery slope” (Schwarz and Sonin, 2008; Acemoglu, Egorov and Sonin, 2015). Then why do democratizations happen at all? Treisman (2020), examining all episodes of democratization since 1800, offers an ingenious answer: there are indeed cases of deliberate democratization, but they happen by mistake more than two thirds of the time. These mistakes might be agreeing to run in an election, losing a military conflict of choice, ignoring civil or military context, making a wrong succession decision, or simply “choosing the wrong combination of carrots and sticks against potential opposition”.

Myerson (2010) and Ellis and Fender (2010) identify conditions under which a peaceful transition to democracy is possible. Giavazzi and Tabellini (2005) demonstrate, using difference-in-difference estimates, that countries that first liberalized their economies and then become democracies do much better than countries that pursue the opposite sequence. Using Hofstede data on individualism/collectivism and a panel covering 1980–2010, Gorodnichenko and Roland (2020) provide evidence that countries with collectivist cultures are more likely to experience autocratic breakdowns that do not result in a transition to democracy.

In the “selectorate model” (Bueno de Mesquita et al., 2003), members of the winning coalition are unwilling to support a challenger as they are uncertain about being included

in the winning coalition of the challenger. As the next Example 5.2 demonstrates, members of a ruling oligarchy might be unwilling to challenge the nondemocratic regime, because competing in elections would result in dissipation of their rents.

Example 5.2 (A Model of Political Oligarchy) Consider a polity with a limited number of politicians who can get power, N , and a continuum $[0, 1]$ of citizens. Each politician in the office gets the rent $R > 0$ and ego boost $B > 0$.

Before the contest, each politician decides, whether to compete in open elections, or within the elite. Open elections happen if a single politician decides to enter the process. Within-party competition is a lottery with equal chances. In open elections, politicians spend money to buy votes. Politicians do not have money of their own, so they buy votes by promising patronage out of R . For simplicity, they cannot renege, once in office, on the patronage promises. The process is a Bertrand competition between politicians: each voter supports the contender who promises her the most.

In an equilibrium that we are interested in, every contender promises the whole rent R to $1/2$ voters. (The focal equilibrium will be in mixed strategies.) The winner's payoff is then B .

No politician competes in the open when $\frac{1}{N}(R + B) > B$ or, equivalently,

$$\frac{1}{N-1}R > B, \tag{2}$$

i.e., when the (material) rent R is large, the ego boost B is small, and the number of contenders, N , is limited.

The model of Example 5.2, though very simple, produces some natural implications. For example, the condition $\frac{1}{N-1}R > B$ explains how a party dictatorship might switch to democracy: when the amount of rents R falls (e.g., oil rents when the oil price falls), the condition (2) is violated, and oligarchs are no longer interested in protecting their rents. The Mexican transition from a one-party dictatorship to a competitive democracy in the 1990s amid the collapsing oil prices, is a good example.

Example 5.2, continued. Observe that the N politicians in the model have strong preferences in limiting the number of entrants to their “club”: for each politician, the lower N , the better. Yet it does not mean that the club will necessarily be small. Suppose that we augment Example 5.2 with the possibility to exclude, by majority vote, some of the oligarchs.

The clubs of size 1, 2, or 3 oligarchs are stable, but ones of 4 or 5 are not. Indeed, as a club of size 3 is stable, any three members of a club of size 5 could exclude the other two. In this example, clubs of size 2^k and $2^k + 1$, $k \in \mathbb{N}$ are stable, while clubs of all other sizes are not. In particular, there might be large “elites”, which are, nevertheless, stable. Of course, the incentive compatibility condition (2) must be fulfilled, so there are only finitely many stable oligarchies.

In Example 5.2, there is neither upside, nor downside in the political competition between the oligarchs. There might be an upside, if political competition results, e.g., in better selection of leaders (Besley and Reynal-Querol, 2011). There might be a downside in resource loss when politicians kill each other or repress each other’s supporters. Even a larger problem is a loss of future benefits, when political uncertainty results in under-investment and sub-par efforts because several parties are stuck in a “prisoners’ dilemma”-type equilibrium. Greif (1998) analyzes *podesteria*, the institute of delegation of power by a group of competing oligarchs in medieval Venice, as an instrument to resolve this problem. Yet Guriev and Sonin (2009) argue that even if oligarchs are interested in appointing a leader who can contain destructive rent-seeking, they would more often opt for a weak dictator fearing that a strong one will end up expropriating their property.

5.2 Path Dependence

The extent to which current developments are predicated on the history is a subject of ongoing debate. How does nondemocratic past of a country affect the democracy prospects in the future? Does a history of military coups make new coups easier? Do past protests predict unrest under a new regime? Douglass North has pioneered the idea of institutional path-dependence; we review the recent literature in Acemoglu, Egorov and Sonin (2020). In this essay, we focus on strategic decisions that individual actors take: in nondemocratic politics, history might play a critical role.

Since Acemoglu and Robinson (2001, 2005), Markov games have become a major tool in modeling political dynamics. A standard model has at least two states of the world that alternate following a Markov process: the probability with which a state occurs in the next period depends on the current state and actions that agents undertake in the current period, but not on what happened before the current period. For example, economic shocks alter the payoffs of economic agents, and they have stronger incentives to revolt in a crisis. If they

revolt under a dictatorship, the next state is a democracy.

While analytically convenient, the Markovian property is a significant restriction. In particular, it does not allow to model any path dependence: to be Markov, a strategy cannot rely on the game history. At the same time, allowing players' actions to depend on full histories leads to another modeling problem: the Folk Theorem guarantees that if players are sufficiently forward-looking, *any* static outcome might be realized as a subgame-perfect Nash equilibrium. (See [Acemoglu, 2003](#), for a discussion in the context of nondemocratic political dynamics.)

Example 5.3 features a non-Markov dynamic model that allows to illustrate path-dependence but preserves the basic insights of Markov dynamics as well.

Example 5.3 (A Strategic Model of Path-Dependence) Consider an infinite sequence of potential leaders $i \in \mathbb{N}$; a leader receives a positive payoff for each period in power. In each period t , there is an incumbent $i_t \in \mathbb{N}$, and there might be a challenger $c_t \in \mathbb{N} \setminus \{i_t\}$; If there is a challenger, the battle for the throne in period t is modeled as a lottery in which the probability that the incumbent defeats the challenger is θ . After the lottery, the winner has to decide whether to execute the loser or to spare him. If the loser is executed (he receives a negative payoff), then there is no challenger in period $t + 1$, and $c_{t+2} = i_t + 1$. If the loser is spared, then the loser becomes the new challenger in $t + 1$. So, the winner has incentives to kill the loser: this allows to survive the next period with probability 1.

We allow strategies to depend on the “reputation”, the number of killings that have been ordered by the loser in question during his tenure in power. The welfare-maximizing equilibrium is such that each winner spares the loser. On the equilibrium path, the first two leaders replace each other. However, there is another, “killing” equilibrium in the game, where the winner always (or above a certain threshold of loser’s killings) executes the loser. The mechanism at work is as follows. If dictator X executed his predecessor, then dictator Y if and when he eventually takes over power from X , will have higher incentives to kill X since he cares about the reputation of X . And the reason why Y will care about X 's reputation is that if X is spared by Y , he might come back and decide, in turn, Y 's fate. And it is the fear that X , who has a reputation for cruelty, will execute Y in the future that makes Y , the current decision maker, be more inclined to kill X rather than spare him. One step back, this affects X 's motivations in dealing with his unsuccessful challenger: if X executed his predecessor and is now deciding Y 's fate, the fact that the marginal impact on

reputation of the second executions is lower than that of the first one makes him more likely to execute again.

This basic logic of Example 5.3 provides an immediate path-dependence: the current winner values his options differently depending on the type of his fallen enemy.¹³ If somebody takes over from a bloody dictator, he is more likely to become a bloody dictator himself than if he comes to power after a natural death of the previous ruler. Thus, the new ruler cannot switch to another equilibrium path, even though he knows that he would be better off in a “peaceful” equilibrium path. In many circumstances, the loser might be willing to commit not to be a contender in the future as such commitment would spare his life. Such commitment might be impossible for a dynastic ruler, whose rights to contend the throne are “divine” and thus virtually indispensable. Not surprisingly, countries with a limited and clear-cut set of contenders such as dynastic monarchies are more likely to witness executions of predecessors than, e.g., military dictatorships.

The model of Example 5.3 can be combined with the informational control models of Examples 2.1 and 2.2 as well as with regime change models (e.g., Example 3.1). A model of information control becomes a stage in the dynamic game, and the regime change model determines the probability of losing power. Each period, the incumbent might face a challenge with some odds to survive. For example, allowing more media freedom increases the probability to lose as the opponents have a better chance to organize a revolution.

Though equilibria of this game may lead to a variety of different paths, it is possible to single out three substantially different paths that correspond to different equilibria in Example 5.3. The first is the “Pareto optimal” path: if a winner with a reputation for benevolence spares a loser who also has a reputation for benevolence in equilibrium, these two actors remain the dictator and the challenger forever, swapping from time to time until one of them dies. On this equilibrium path, the “information parameter” is chosen to be high: bureaucrats are provided with good incentives, electoral fraud is limited, and propaganda is contained. In a “bloody path” equilibrium, every time a fight occurs, the loser is executed. Every incumbent limits media freedom, sacrificing efficiency, and the social welfare is minimized along this path. Finally, “the mixed path” allows for situations, in which a lucky string of outcomes switches the bad path to the Pareto optimal one (Egorov

¹³The “killing game” in Egorov and Sonin (2015) is a complete information game; it is straightforward to extend the logic to a model of commitment-type-based reputation in an imperfect information game (Kreps et al., 1982).

and Sonin, 2015).

With path-dependent dynamics, the initial conditions do matter. Overland, Simons and Spagat (2005) argue, theoretically, that dictators with a low level of starting capital tend to plunder the economy, while those with abundant capital invest in growth.

5.3 Succession

The “succession problem” is something that each autocrat, unlike a democratically elected leader, has to face (Herz, 1952; Konrad and Mui, 2017; Bueno de Mesquita and Smith, 2017). One critical difference is the loyalty problem: the power that an appointed successor will possess over the dictator’s fate makes his loyalty most important. At the same time, not having a successor has always been considered a destabilizing factor, threatening the incumbent regime. Studying 961 monarchs who ruled 42 European countries between 1000 and 1800, Kokkonen and Sundell (2014) argue that primogeniture has a significant advantage as a tool of building a strong state. Using data on coups against Danish monarchs between 935 and 1849, Kurrild-Klitgaard (2000) demonstrated that establishing “automatic hereditary succession” reduces the number of coups.

Not surprisingly, few dictators have truly solved the succession problem. Most recently, the aging leaders of Egypt, Tunisia, Yemen, Libya, Turkmenistan, Uzbekistan and other countries for years failed to delegate any power to designated successors; ultimately, their succession plans failed. In Egypt and Libya, rumors of possible succession by a son had long circulated, yet no real power was ever transferred.

Besley and Reynal-Querol (2017) assemble a data set on leaders between 1874 and 2004 in which the leaders were classified as hereditary or non-hereditary based on their family history. One finding is that economic growth is higher in polities with hereditary leaders but only if executive constraints are weak.

One governing mechanism that does solve the succession problem is an institutionalized ruling party. The model of path-dependence allows us to extend the discussion of such a party that we started in Example 4.1. In a static setting, the difference between a party member and a non-member is access to information that allows the former to accumulate rents at the expense of the latter. In a dynamic environment, an important function of an authoritarian party is to provide a mechanism of leadership replacement. As we discussed in Subsection 2.2, long tenures of authoritarian leaders result in deteriorating quality of

governance and poor economic performance. Authoritarian parties that were able to ensure regular rotation at the top such as Mexico’s PRI in 1930-1994 or the Chinese Communist Party since Mao Zedong’s death in 1976 were able to avoid this trap.

The following example of successful ruling party dynamics combines the features of Example 4.4, in which the autocratic government is divided yet short-term stable, and Example 5.3, in which the dynamics is history dependent. Naturally, the model of leadership replacement, which had no return option in both PRI and CCP cases, requires history to play a role in decisions about the future.

Example 5.4 (A Dynamic Model of In-party Leadership Replacement) We have a ruling party that consists of N factions of possibly different sizes that play repeatedly the following game. Each period starts with each agent having the power of x_{it} . First, factions decide whether or not they want to eliminate some agents by “majority voting” by sums of their power. They eliminate until they reach a stable configuration as in Example 4.4. If a faction is eliminated, its payoff is 0 for the rest of the game. Second, factions decide whether or not they want to keep the current leader, who represents one of the factions. If the majority wants to replace the leader, every faction pays a cost of some ε , $0 < \varepsilon < 1$. Third, proceeds of the current period are distributed proportionally to the powers of the factions. Finally, the leader’s faction adds Δ to its power; that is, the new powers are $x_{it+1} = \frac{x_{it}}{1+\Delta}$, if the leader does not belong to i , and $x_{kt+1} = \frac{x_{kt}+\Delta}{1+\Delta}$ if the leader belongs to faction k .

Consider the following stable three-faction configuration, $(\frac{3}{12}, \frac{4}{12}, \frac{5}{12})$, let faction with power $\frac{5}{12}$ be in power, and let $\Delta = 1$. Then in period $t = 2$, the new power configuration, $(\frac{3}{13}, \frac{4}{13}, \frac{6}{13})$ is stable. However, the configuration $(\frac{3}{14}, \frac{4}{14}, \frac{7}{14})$, which will occur in $t = 3$, is not stable, as $\frac{7}{14}$ can defeat $(\frac{3}{14}, \frac{4}{14})$ (or vice versa — it does not matter here as the latter coalition is also unstable). Therefore, in period $t = 2$, the two smaller factions will vote to replace the leader.

In general, if the game starts with (x_1, x_2, x_3) with $x_i < \sum_{j \in -i} x_j$, then the (welfare-maximizing) equilibrium strategy is to make changes a period before leader k has $x_k = \sum_{j \in -k} x_j$ and to make $\min_i \{x_i\}$ the new leader. Why make the player with the minimum power the new leader? The rationale is that it minimizes the cost of replacements over the life-time.

The simple model of dynamics of inside-party succession in Example 5.4 ignores a number of important elements of the full model that was discussed before. It does not account for

how the party controls the rest of the society or how it extracts rents from it. Nor does it account for hierarchical relationship within the party itself, or the quality of leaders it puts forward. Still, it elucidates the basic mechanism of how antagonistic factions can coordinate on rotating power, avoiding leadership stagnation. Other important elements can be added to these basic dynamics.

6 The Challenge of Policy Implications

In this section, we outline challenges that lie ahead for scholars of non-democracies. The main challenge, as we see it, is how to translate the knowledge about the structure of autocratic power into better understanding of policies and their consequences. Indeed, models and empirical evidence point out to the dramatic differences in the way politics operates and countries are governed in democracies and non-democracies. And still, it is sometimes a challenge to spot a difference in terms of policy as significant as the difference in the underlying political process.

For example, the view that democracy is good for growth and development is now prevalent (see [Acemoglu et al., 2019](#), and references therein). At least there is little doubt that non-democracies exhibit more volatile growth than democracies.¹⁴ (See Figure 6 that replicates the figure from [Besley and Kudamatsu, 2009](#), using a longer time period.) Above, we discussed that non-democracies tend to appoint less competent and less educated ministers. However, there is neither theoretical nor empirical research focusing on specific mechanisms, which make incompetence result in poor performance. For example, [Mulligan, Gil and Sala-i Martin \(2004\)](#), using data on 142 countries over the years 1960–1990, concluded that democracy has not affected policies of redistribution or enhanced efficiency.

Consider another classic example. In a democracy, the central bank’s independence is an institution protected by laws, constitutional checks and balances, and a competitive political equilibrium. In contrast, in many non-democracies, leaders have, essentially, full control over personal appointments. A naive theory would predict that democracies and non-democracies would exhibit drastically different inflation patterns. Indeed, absent institutional protection, the dictator is free to succumb to the same time-inconsistency temptation as the politician in [Kydland and Prescott \(1977\)](#). In the long-run, this should result in suboptimally high

¹⁴[Luo and Przeworski \(2019\)](#) attribute autocratic “growth miracles” to the fact that to grow very fast, a country needs to have a low starting point, and poor countries are typically autocratic.

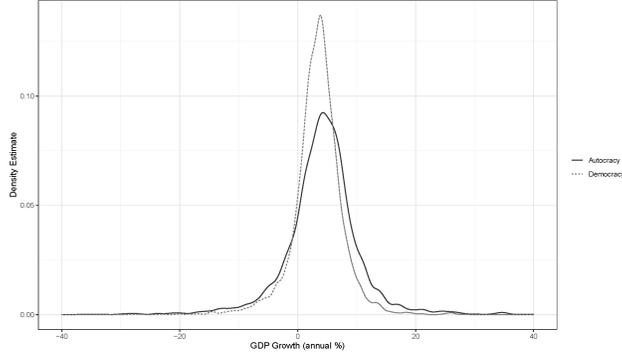


Figure 6: Economic Growth in Autocracies vs. Democracies, 1950-2018.

inflation. Yet in fact, in the 21st century, the difference in inflation under democracies and non-democracies is small, or non-existent.

In another underexplored application, there is ample anecdotal evidence that autocracies discourage innovation along a variety of dimensions. [Acemoglu and Robinson \(2005\)](#) argued that the concerns about losing control slowed down the embrace industrialization and railroads by the absolutist Russian and Hapsburg Empires in the early 19th century. [Lamberova and Sonin \(2018\)](#) show that an autocrat prefers to appoint an incompetent crony who would discourage market competition, fearing that a rules-based regime would result in new businesses supporting regime opponents.

The hypothesis that non-democracies stifle innovation gets a new relevance now that the Chinese economy, after forty years of rapid growth under an authoritarian regime, becomes close to the technological frontier. For decades, the Chinese growth exploited the advantage of technological backwardness and access to the enormous reserves of cheap labor. By the third decade of the 21th century, both resources have been depleted. Could China count on productivity-led growth without dramatic expansion of democratic institutions?

An additional twist to the “China’s technological frontier without a democracy” challenge comes from the fact that the recent political developments are the opposite of democratization. Recently, the Chinese government abolished term limits for the country’s leader; the country seems to be shifting from a regime structured around an institutionalized ruling party to more personalistic, archaic regime. If there is an accumulated wisdom in the literature on nondemocratic politics, it is that the emerging regime is inconsistent with fast growth and development. Academically, what could be more exciting than having a natural experiment in a country that comprises a quarter of the world population and produces a

fifth of the world GDP? In real life, we hope, the comparative lessons of the past will be taken into account.

7 Conclusion

In this paper, we surveyed recent literature on political economics of non-democracies, focusing on information control mechanisms such as censorship and propaganda, authoritarian elections, manipulation of information exchange, and strategic disenfranchisement. All these mechanisms — together with old mechanisms of authoritarian control such as repression, purges, and other forms of violence — allow dictators to choose policies that would not be supported by citizens in open and competitive elections, be it a personal enrichment or an ideological quest. The collateral damage of mechanisms of authoritarian control is the erosion of incentives to innovate and grow, which, together with unpopular policies of dictators, result in protests, coups, and revolutions. The resulting dynamics are more volatile and unpredictable than those of mature democracies. Recent advances in theoretical modeling and the technique of econometric inference have helped to clarify, refine, and understand many phenomena in nondemocratic politics. Yet there is still a lot to learn here.

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