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Prerequisites to Self-Enforcing Democracy

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A Theory of Autocratic Transition

Prerequisites to Self-Enforcing Democracy

Thomas Apolte

Abstract

This paper aims at contributing to a better understanding of the conditions of self-enforcing democracy by analyzing the recent wave of autocratic transitions. Based on a game-theoretic framework, we work out the conditions under which governments may induce the diverse public authorities to coordinate on extra-constitutional activities, eventually transforming the politico-institutional setting into one of autocratic rule. We find three empirically testable characteristics that promote this coordination process, namely: populism and public support, corruption, and a lack in the separation of powers. By contrast, low degrees of corruption and strongly separated powers can be viewed as prerequisites to self-enforcing democracy.

JEL-Codes: D02; D72; D74; P48

1 Introduction

The wave of democratization following the collapse of the Soviet Union and the Eastern-European communist world has shaped a remarkably optimistic view toward the future of democratic rule around the world. This notwithstanding, a non-negligible share of newly established democracies have not survived their first years of existence. The cases of failed democratic transitions have long been outshined by the success stories, particularly those in Middle and Eastern Europe. That only changed when even some of the early success stories turned dubious. While Belarus, Uzbekistan and Kazakhstan went more or less straight into plain dictatorship following the Soviet collapse, the other three Central Asian former Soviet republics—the countries of Caucasia as well as Ukraine and Moldova—remained partly democratic at best. On a worldwide basis, a number of countries that initially seemed to evolve into successful young democracies eventually backslid into autocratic structures. Perhaps the most prominent examples of this are Russia, Venezuela, Thailand, Turkey and potentially even Hungary and Poland.

On a rebased scale of the Freedom House democracy index[1] that ranges from 1 (pure dictatorship) to 10 (full-fledged democracy), Figure 1 gives an overview of those countries, since 1990, that lost more than three index points after having reached a maximum. The greatest loss was experienced by The Gambia, which was up at 9.25 in 1992, then dramatically dropped to 1.75 in 1994 and finally scored 2.5 in 2016. Most of the countries summarized in Figure 1 reached their maximum in the early and mid 1990s. Some of them—most notably perhaps Thailand—was able to stay there for some years, while others—like The Gambia but also Belarus—fell back to autocracy as fast as they had risen to democracy. [2]

A high rate of failure of democratic constitutions is by no means only a recent phenomenon. To the contrary, the history of modern-age democracy is

1. As an average of the subindices "policital rights" and "civil liberties".

2. Appendix A gives a more detailed description of countries that underwent at least a partial autocratic transition since 1990.

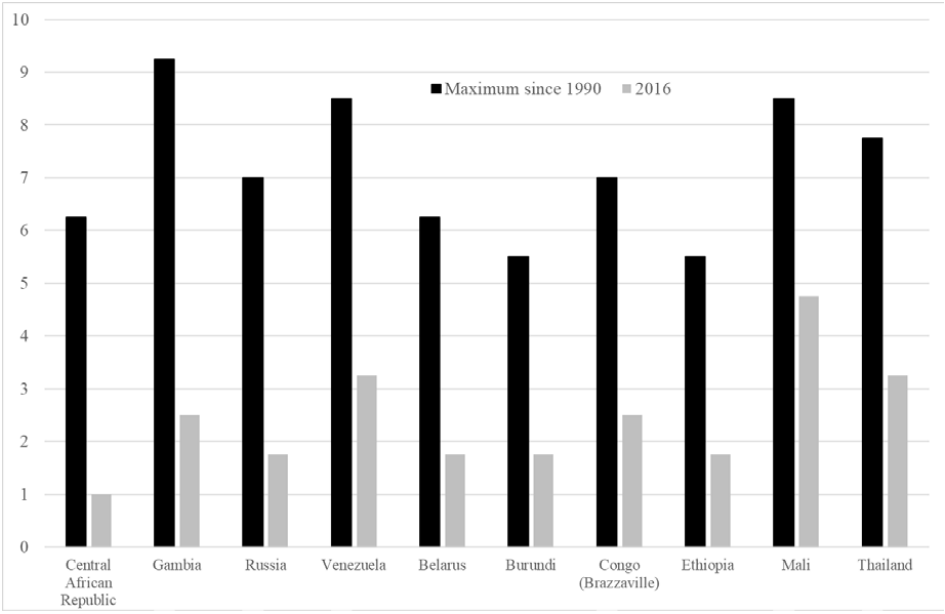

Figure 1: Autocratic Transition

full of failing endeavors to establish democratic constitutions. According to Ferguson (2001, Appendix E), more than 50 percent of the European interwar democracies failed (see also Weingast 2005, 89). Perhaps more surprising, then, is the development of seemingly established, though still young, democracies in Europe, like those in Hungary and Poland. Recently, however, their governments became notorious for openly challenging widely held convictions about indispensable institutional traits of democracy; remarkably, these governments have enjoyed extensive public support while doing so. This applies in an even more pronounced way to the government leaders of Turkey and Russia, who have already turned their countries into plain autocracies. These leaders started by attacking standard matters of course in established democracies, such as the freedom of the press and an independent judiciary. At the same time, these leaders denounced such components of democracy as instruments secretly established by some internal or external conspirators. Further, these autocratic leaders claim that these instruments are a threat to national values as well as to vital national interests and sovereignty. This, then, is the basis for how these governments justify restricting activities by national and international NGOs as well as by insubordinate media represen-

tatives. While some democracies have been able to sustain attacks like these, some others have already fallen victim to them. Russia and Turkey seem to be clear-cut cases of the fallen democracies while the fate of the Hungarian and Polish democracies is still open to date.

These observations represent the point of departure for this paper. Instead of determining what conditions promote autocratic takeovers, this paper derives empirically testable conditions under which democracies sustain or fall victim to autocratic transition. In doing so, the paper aims at contributing to the heretofore relatively narrow literature on self-enforcing democracy and self-enforcing constitutions as it has been developed by authors like Przeworski, Weingast, Fearon and others. Based on a simple game-theoretic analysis, we carve out the conditions under which a democratic constitution can be expected to sustain autocratic attacks by sitting government leaders. To be sure, we do *not* aim to explain how a democratic structure evolves into an institutional equilibrium on which at least the decisive individuals somehow coordinate. Rather, we take such an equilibrium as our point of departure in order to establish the conditions under which a government leader may be able to challenge the existing equilibrium. Also, we do not aim to analyze autocratic transitions pursued by the military. We rather contribute to the question of under what conditions governments will adhere to the constitutional rules by virtue of their individual incentives and, by contrast, under what conditions they may embark on a process toward autocratic transition.

Our central hypothesis rests on a strategic interaction between a government leader on the one hand and a number of other key government officials, like heads of executive offices, judges, chief commanders of the police or the military, and so forth. We do not assume the general public to be capable of credibly threatening the government with public uprisings or the like, mainly for reasons of their collective-action problems. However, in our model, their vote may nevertheless become potentially challenging to a government leader that aims at autocratic transition. This challenge rests on existing rules like the publicly known time schedule of public elections in combination with the

key government officials to mutually monitor each other.

The rest of the paper is organized as follows: We give a brief overview of the relevant literature in section 2. In section 3, we develop a limited version of the model. We expand the transition model to a full model in section 4. In section 5, we discuss our results and derive some normative implications as well as a set of empirical implications. We conclude in section 6.

2 Self-Enforcing Democracy

The concept of self-enforcing democracy was introduced by Przeworski in a book on democratization in Eastern Europe and Latin America (see Przeworski 1991). According to this initial concept, a democratic constitution is self-enforcing if an incumbent expects to be better off when stepping down following a lost election rather than sticking with his position by force and, hence, breaching the rules of the constitution. If the incumbent has a sufficiently good chance of being reelected in the due course of a subsequent election and/or will be entitled to a sufficiently generous pension, then this condition is likely to be satisfied. If not, the constitution may lose its self-enforcing character.

Weingast (1997, 2005) models self-enforcing democracy as a game, whereby the players of the game are a group of citizens that face a government leader who may transgress against the citzens' constitutional rights. In a one-shot game, the citizens are trapped in a prisoners' dilemma situation that precludes coordinated action against the government leader. This is different in a sequence of repeated games, since a sequence allows for revolting behavior against the incumbent in equilibrium strategies (see also Mittal and Weingast 2011).

Some 15 years after having introduced his initial concept of self-enforcing democracy, Przeworski came up with an entirely different approach (see Przeworski 2005; Benhabib and Przeworski 2006). The point of departure was the observation of a narrow correlation between per-capita income and demo-

cratic resilience. At the heart of this approach is the assumption that per-capita income is subject to decreasing marginal utility, while utility of living in a democracy is assumed to be independent of income levels. Above some income level, then, marginal utility of the poor from income redistribution will drop below the utility of living under democracy. As a result, the poor will shy away from a revolt against the rich since there is a risk that such a revolt might terminate democracy. The rich, in turn, have an incentive to provide redistribution of income in order to reduce the incentive of the poor to revolt.

This more recent approach has not remained undisputed. Traversa (2015) argues that the results cannot be generalized because the model rests on too narrow a specification of the utility function of the poor. He demonstrates that the central finding disappears altogether when the utility function is slightly different.

Fearon (2011) introduced a model in which the general public implicitly threatens that it will revolt if the government transgresses against the constitutional rules of a democracy. Different from Weingast's approach, he assumes that the general public's strategic interaction with the government is a coordination game rather than a conflict game like the prisoners' dilemma. As a consequence, all the public needs to coordinate on a revolt equilibrium is a distinctive signal in combination with some "warm-glow benefits" of participation. In Fearon's view, a sufficiently distinctive signal might be electoral fraud.

Like Fearon, Przeworski's (2005) more recent approach reduces the issue to a coordination problem. It is indeed akin to approaches that explain institutional or constitutional stability by assuming that the population will coordinate on mutually consistent patterns of behavior (Calvert 1995; Hardin 2006; Przeworski 2006). Note, however, that coordination on a set of mutually benefiting constitutional rules is different from coordination on a rebellion equilibrium. This applies at least if there is a positive expected value of individual participation costs even when such a rebellion is successful. In a long-established democracy, participation costs might be negligible. Elec-

toral fraud is then very likely to spark an instant wave of protests that sweeps away the fraudulent government (Hyde and Marinov 2014). However, in the case of a democracy on the edge of autocratic transition, things are likely to be different. Electoral fraud may be perceived as a signal to rebel by only a part of the population, while another segment of the population might even appreciate when the security forces violently suppress protests. In such an environment, participation in rebellious activity implies a considerable risk of being injured or arrested; this turns a successful rebellion into a public good. Public resistance to an autocratic transition can then better be described as a prisoners' dilemma rather than as a pure coordination problem.

Weingast (1997) acknowledges the public-goods problem and solves it by referring to repeated games. However, almost any equilibrium can be generated in repeated games, and this is why we follow a different approach still. We model autocratic transition versus democratic stability within the structure of a game, the players of which are the government leader on the one hand and a number of key government officials on the other. Autocratic transition evolves within a certain time period. During this period, a government leader always faces the risk of being removed from office by constitutional means, be it on the basis of public elections or on the basis of court procedures. Both may well be accompanied or even initiated by public protests, but that does not need be the case. Indeed, the efforts of autocratic transition by the government leader may even be accompanied by considerable and visible support by at least part of the public. Hence, the public may either be supportive of or threatening to a government leader who pursues autocratic transition, depending on the government leader's popularity.

We depart from most of the literature around self-enforcing democracy in two ways. The first is that we do not model the strategic interaction between a political elite on the one hand and the citizens on the other. Rather, we analyze the micro-structure within the political and administrative elite of a country. Once a democratic equilibrium is established, each member of this elite finds himself trapped in a structure of mutually enforcing control mechanisms within the elite which does not make it worthwhile for each of

the individual elite members to depart from the established constitutional equilibrium strategy. As long as this equilibrium is stable, a government leader aiming at autocratic transition cannot expect the other key government officials to follow him on a path of extra-constitutional action. There are, however, conditions under which such an equilibrium is unstable.

In order to handle complexity, we split the analysis of the entire autocratic transition process into two sets of subgames that we later combine into a full picture. We refer to the first set of subgames as the *transition game* and the second set as the *post-transition game*. We will demonstrate that the players in the *transition game* are plagued by a time-inconsistency problem that they might or might not be able to solve in the *post-transition game*.

3 The Transition Game

Consider a country whose political system starts as a democracy and may eventually be subject to autocratic transition. All players are government actors, of which there is a *government leader* G as well as a mass M of other key government officials. We refer to the latter simply as the *government officials*. Among the government officials, we may consider the leading representatives of the different branches of government as well as leaders of the police, the military, or some secret service. We denote the government officials as a continuum $O_i \in (1, M)$ of individuals. While G is the formally inaugurated head of the country's government, it is the players O_i that effectively run the country; each of these players decides to do so strictly on the basis of the existing legal system and, within that restriction, on the basis of the government leader's orders. However, each of these players may also decide to transgress against some of these rules. Moreover, each of them can, at least to a certain extent, refuse to follow G, again either within or beyond the limits of the constitutional rules.

In our model, we assume the government leader to signal his intentions by either abiding to the constitutional rules or by violating them. Upon having

observed extra-constitutional conduct by the government leader, a share $h \in [0, 1]$ of the government officials follows G in violating the constitution, while a share $1 - h$ does not. A necessary condition for a full autocratic transition is that $h \geqslant h^c \in (0, 1)$. Note that h^c is equivalent to the critical mass in the multi-equilibrium setting of the "Granovetter type" (Granovetter 1978; Marwell and Oliver 1993), in which each additional participant beyond the critical mass attracts further participants.

At the end of a completed autocratic transition process, the government leader G will no longer be challenged in his position by democratic means, though he will at least potentially be challenged by the government officials, specifically the military or the police, for example. However, we assume the transition process to take some time until its full completion. During this time of autocratic transition, public elections do still take place. While these elections might not be binding with certainty, there will at least be a chance that some government authorities still enforce their results, possibly even against the will of some of their respective heads. Since there is a non-zero probability that public elections will be held during this time, we can safely assume a positive probability that the government leader will be deposed by legal means during the autocratic transition period. As his chance to survive the transition period in office hinges, *inter alia*, on his reelection probability, it is generally positively correlated with his public popularity.

If a government official follows along with the extra-constitutional activities of a government leader, he may gain career benefits, but he may also suffer significant costs, such as losing his job or facing additional formal penalties. Furthermore, in this situation government officials face two major sources of uncertainty. First, to determine what choices their colleagues are making, they must rely on sufficiently informative signals; second, they face a non-zero probability that the government leader will be deposed during the autocratic transition period, which may backfire on their decision to follow the government leader. Hence, a government leader who signals his intentions by purposefully violating the democratic rules of the game creates a delicate

environment full of ambiguities for the government officials.[3] We capture this aspect by assuming that any government official who plans to follow the government leader in violating the constitution does so with trembling hands. Thus, even if each government official aims to choose extra-constitutional activity, their individual uncertainty will hamper the government officials to coordinate on this strategy.

To be precise, holding an office in a democratic constitutional environment provides a payoff of $U_G = U_i = 1$ to both the government leader and each of the government officials. The payoff can be broadly understood as an indicator of individual income or wealth. But it can also be understood as the level of influence one has on certain political programs or the like. On top of that, autocracy generates an additional pie R of payoffs for all government officials taken together, which we shall refer to as the autocratic rent. In the case where government officials equally share the autocratic rents, each of them would receive a share $\frac{R}{M+1}$ and hence an autocratic payoff of $U_{G,i} = s := \frac{R}{M+1}+1$. Payoff s is hence a multiplier of a government official's reservation utility. However, we also allow for an unequal distribution of the autocratic rents. Such an unequal distribution of the autocratic rent may, for example, end up in payoffs $U_i = 1 \ \forall i$ and $U_G = R + 1$.

Each player may either respect the (initially) democratic constitution, in which case his choice is referred to as $c_{i,G}$ (comply); or he might start mixing extra-constitutional measures into his activities, in which case his choice is referred to as $d_{i,G}$ (defect). Players O_i can observe $G's$ choice prior to their own choice, but they cannot mutually observe their respective choices.

Having chosen c_G leaves the government leader G with an expected payoff of $\omega \in (0, 1)$, which is his reelection probability under democratic rule. By contrast, upon having chosen d_G, he will be impeached unless at least a share h^c of the government officials O_i follows him in choosing d_i. Should that happen, however, the public is called for an election. As described above, the government leader may be outvoted and effectively forced to step down.

3. For an early but still instructive non-formal analysis, see Tullock (1987).

That happens with probability $1-\sigma$, so that his reelection probability in its broadest sense is σ. As O_i are not elected politicians but rather appointed civil servants, they will not necessarily be fired but rather tried for extra-constitutional activity and then dismissed with probability $1-\pi$.

In the reelection case, the autocratic-transition process is completed and the constitution loses all of its hitherto existing binding character, if any. No government activity will henceforth be restricted by constitutional rules of the game. In the limited scope of the transition game, we assume G to be capable of credibly committing to an announcement according to which he equally shares the autocratic rent with those hM government officials that had participated in the autocratic transition. That would imply payoffs $U_{G,i} = s^h := \frac{R}{hM+1} + 1 \geqslant s \ \forall i$. By contrast, we will endogenize the distribution of the autocratic rent R in the full model presented in the subsequent section.

Finally, should more than $(1-h^c)M$ government officials O_i fail to follow G in acting extra-constitutionally, the autocratic-transition attempt fails, G will be impeached and left with payoff zero. Those government officials that followed G will again be tried for extra-constitutional activity and fired with probability $1-\pi$. By contrast, those government officials that had refrained from extra-constitutional activity will stay in office with payoff $U_i = 1$.

The timing of the transition game is as follows:

1. Government leader G chooses among actions $\{c_G, d_G\}$. Should G choose c_G, he will be reelected with probability ω, the government officials remain in their respective position, and the game ends with payoffs $U_G = \omega$ and $U_i = 1 \ \forall i$.

2. Upon having observed choice d_G by G, players O_i choose among actions $\{c_i, d_i\}$.

3. If $h < h^c$, the autocratic-transition attempt fails. G will be deposed and the government officials O_i that chose d_i will lose their position with probability $1-\pi$. The game ends with payoffs $U_G = 0$, $U_i = \pi$,

and $U_{j\neq i} = 1$.

4. If $h \geqslant h^c$, a public election is called for. G will win with probability σ and effectively lose with $1 - \sigma$.

5. If G loses the election, the game ends with G being fired for sure, all O_i that chose d_i will be fired with probability $1 - \pi$, and all $O_{j\neq i}$ that chose c_j will stay in office, implying payoffs $U_G = 0$, $U_i = \pi \ \forall i$ and $U_j = 1 \ \forall j \neq i$.

6. If G wins the election, G equally shares the autocratic rent R with all O_i that chose d_i, implying $U_{G,i} = s^h$. By contrast, those $O_j \neq i$ that chose c_j will have $U_j = 1$.

This gives us the following payoff functions for G as well as for each O_i:

$$U_G = \begin{cases} \omega & for\ c_G; \\ 0 & for\ d_G \ \wedge \ h < h^c; \\ \sigma s^h & for\ d_G \ \wedge \ h \geqslant h^c; \end{cases} \tag{1}$$

and:

$$U_i = \begin{cases} 1 & for\ c_i; \\ \pi & for\ d_{G,i} \ \wedge \ h < h^c; \\ \sigma s^h + (1-\sigma)\pi & for\ d_{G,i} \ \wedge \ h \geqslant h^c. \end{cases} \tag{2}$$

This leads to:

Proposition 1. *There are two Nash-equilibria in pure strategies with actions*

$$a_{i,G} = \begin{cases} d_{i,G} & if \ \ \sigma > max(\frac{1-\pi}{s-\pi}; \frac{\omega}{s}); \\ c_{i,G}. \end{cases}$$

Proof: see appendix B ■

There is a problem of equilibrium selection whenever $\sigma > max(\frac{1-\pi}{s-\pi}; \frac{\omega}{s})$ (see Harsanyi and Selten 1988). To refine the equilibrium analysis, we introduce *trembling hands* of the government officials as described above. To that end, we assume a probability $1 - \epsilon$ for each O_i to accidentally choose c_i, given the equilibrium strategy $d_{G,i}$ $\forall i$. Then ϵ is the probability that each government official will chose d_i. Finally, the probability that a threshold of $h^c M$ government officials does not fail to choose d_i is $\epsilon^{h^c M}$.

Each O_i will then prefer action d_i over c_i if and only if:

$$\epsilon^{h^c M} \sigma s^h + (1 - \epsilon^{h^c M} \sigma)\pi > 1. \tag{3}$$

Based on condition 3, we can derive a critical value s_O^{hc} of the autocratic payoff s_O^h such that a government official wants to choose d_i if and only if $s > s_o^h c$. It is:

$$s_O^{hc} = \frac{1 - \pi}{\epsilon^{h^c M} \sigma} + \pi \tag{4}$$

In a likewise fashion, the government leader prefers action d_G over c_G if:

$$\epsilon^{h^c M} \sigma s^h > \omega. \tag{5}$$

The critical value of s that must be exceeded for the government leader to choose d_G is hence either s_O^{hc} or:

$$s_G^{hc} = \frac{\omega}{\epsilon^{h^c M} \sigma,} \tag{6}$$

depending on which one is higher. This leads to the following proposition:

Proposition 2. *An action profile $d_{G,i}$ is a trembling-hand perfect equilibrium, if and only if $s^h > s^{hc} := max(s_O^{hc}; s_G^{hc})$.*

Proof: see above ■

For both critical values s_G^{hc} and s_O^{hc}, we have the following partial derivatives:

$$s^{hc\prime}(\sigma, \pi, \epsilon) < 0, \; s^{hc\prime}(\omega, h^c, M) > 0. \tag{7}$$

As a result: The government leader and the government officials are more likely to coordinate on an equilibrium $d_{G,i} \forall i$, when

- there is a high probability σ that the government leader will survive the autocratic transition attempt in office, which is the more likely the more popular he is;
- there is a high autocratic multiplier $s = \frac{R}{M+1} + 1$ of the reservation utility, and hence autocratic rents R are high;
- there is a low reelection probability ω for G under constitutional rule;
- there is a low personal risk $1 - \pi$ that a government official will lose his job after having acted extra-constitutionally; and
- there is not much separation of powers, both formally and effectively, as indicated by M and h^c, respectively.

The final criterion is of particular importance since the probability of government officials to coordinate on extra-constitutional action quickly drops in $h^c M$ for any given ϵ. Note that M indicates the number of further government officials, while h^c gives the critical share of government officials that need to support of the government leader. If h^c is low, then regardless of how many government officials there are only a few of them—say a single army commander plus a single commander of the police—would really count. Countries that exhibit little separation of powers face a higher risk of falling victim to autocratic transitions than do countries with a deeper-rooted separation of powers.

Note, however, that our results are preliminary since we operate within a model setting of limited scope. In particular, the government leader is assumed to be capable of committing to his promise of equally sharing the

autocratic rent with the government officials. We will argue below that this is far from realistic. In the following section, we relax this assumption.

4 The Full Game

In the full game, we endogenize the potential struggle for autocratic rents R among the government officials under the conditions of an abolished constitution. To that end, we add another set of subgames to the transition game as it was developed in the previous section. We aggregate this additional set of games to the *post-transition game*. As demonstrated in the previous section, the government leader's payoff will be s^h if he shares the autocratic-government rents with the government officials. But, if he fails to share and leaves the government officials with their initial payoff of $U_i = 1$, the government leader's payoff will instead be $S := R + 1 > s$. Hence, an announcement that the government leader intents to share the autocratic rents with the government officials lacks credibility. Indeed, in the environment of a freshly abolished constitution, it is not clear in the first place who would have the power to allocate government rents.

One might naturally think that this power would go to the government leader himself, since, after all, he is now the dictator. But the power of a dictator does not fall like manna from heaven. Rather, it rests with his capacity to play off the government officials against each other, particularly those who administer government decisions (Bueno de Mesquita et al. 2005; Svolik 2012; Tullock 1987). It is therefore crucial to add the post-transition game to the transition game, since rational actors will build expectations about their respective future positions in the post-transition struggle for autocratic rents when making their choices in the transition period.

In order to consider the post-transition interactions, we add the following steps to our game. Upon a successful transition, the government leader may decide to equally share the autocratic rents with the further government officials, thus raising the payoff of each of his followers along with his own

payoff to a level of $s^h > 1$. Alternatively, he may as well renege on his promise, leaving all further government officials with their initial payoff $U_i = 1$ and raising his own payoff to $S = R + 1 > s^h$.

If the government leader reneges on his promise, those hM government officials that chose d_i in the transition game may withdraw their support for G conditional on their expected capability to coordinate on disobedient behavior. If we define a share $\gamma \in [0, 1]$ of those hM that do indeed withdraw their support for G, then $g := \gamma h$ is the share of government officials that first follow the government leader by choosing extra-constitutional action in the transition game *and* then withdraw their support for the government leader in the post-transition game. In the post-transition game, the government leader will be deposed and substituted by some individual from outside if he reneges on his sharing obligation *and* if γ reaches at least some critical value $\gamma^c \in (0, 1)$. In the latter case, his successor will be forced to share all rents R equally with the gM government officials.

By contrast, should the government officials fail to mobilize a share $\gamma \geqslant \gamma^c$ against the cheating government leader, then the leader will stay in office along with those $(1 - \gamma)hM$ government officials that continued to support him. By contrast, the γM disobedient government officials will be removed from office and be replaced by newly appointed individuals from outside. The disobedient officials will be left with payoff zero, while G continues to claim all autocratic rents and hence a payoff $S = R+1$, so that all remaining government officials, along with the newly appointed ones, will be left with payoff $U_i = 1$.

In particular, the time line of the full game is as follows:

1. Government leader G chooses among actions $\{c_G, d_G\}$. Should G choose c_G, he will be reelected with probability ω, the government officials remain in their respective positions, and the game ends with payoffs $U_G = \omega$ and $U_i = 1 \; \forall i$.

2. Upon having observed choice d_G by G, players O_i choose among actions $\{c_i, d_i\}$.

3. If $h < h^c$, the autocratic-transition attempt fails. G will be deposed and those further government officials O_i that had chosen d_i will lose their position with probability $1 - \pi$. The game ends with payoffs $U_G = 0$, $U_i = \pi$, and $U_{j \neq i} = 1$.

4. If $h \geqslant h^c$, a public election is called for. G will win with probability σ and effectively lose with $1 - \sigma$.

5. If G loses the election, the game ends with G being fired for sure, all O_i that chose d_i will be fired with probability $1 - \pi$, and all $O_{j \neq i}$ that chose c_j will stay in office, implying payoffs $U_G = 0$, $U_i = \pi \ \forall i$ and $U_j = 1 \ \forall j \neq i$.

6. Upon having won the election, G chooses among actions $\{c_G, d_G\}$; c_G (comply) implies meeting his promise to equally share the autocratic rent with the hM officials that followed him in the transition. By contrast, d_G (defect) implies seizing all autocratic rents R so as to reap a payoff $S = R + 1$ and leave the government officials with their initial payoff $U_i = 1$.

7. In the case of G choosing c_G, the game ends with payoffs $U_G = U_i = s^h$ and $U_j = 1$ with $j \neq i$ indicating those government officials O_j that had failed to follow G in the transition game.

8. Upon having observed G to choose d_G, by contrast, each government official chooses among actions $\{c_i, d_i\}$, where c_i implies continuing support of G while d_i implies withdrawing support of G.

9. In the case of $\gamma \geqslant \gamma^c$, G will be deposed and substituted by an outsider G'. The game ends with payoff $U_G = 0$ as well as $U_{G',i} = s^g := \frac{R}{gM+1} + 1$.

10. In the case of $\gamma \in (0, \gamma^c)$, all rebelling government officials will be replaced by outsiders. The game ends with payoff $U_G = S$, $U_i = 0$ for all rebelling officials and $U_j = 1$ for all obedient government officials and all newly appointed government officials.

Note that steps one to five of this time-line are identical to those of the limited transition game. Each player i and G needs to decide over a sequence

$k \in \{1, 2\}$ of actions $a^k_{i,G} \in \{c_{i,G}, d_{i,G}\}$. For the government leader, the action profile is $a_G \in \{c_G, dc_G, dd_G\}$, while it is $a_i \in \{c_i, dd_i, dc_i\}$ for each further government official O_i. The payoffs are as follows:

$$U_G = \begin{cases} \omega & for\ c_G; \\ 0 & for\ d_G\ \wedge\ h < h^c; \\ \sigma s^g & for\ dc_G\ \wedge\ h \geqslant h^c; \\ \sigma S & for\ \ dd_G\ \wedge\ h \geqslant h^c\ \wedge\ g < g_c; \\ 0 & for\ \ dd_G\ \wedge\ h \geqslant h^c\ \wedge\ g \geqslant g_c. \end{cases} \tag{8}$$

$$U_i = \begin{cases} 1 & for\ c_i; \\ \pi & for\ d_i\ \wedge\ h < h^c; \\ \sigma s^g + (1-\sigma)\pi & for\ d_i\ \wedge\ h \geqslant h^c\ \wedge dc_G; \\ \sigma s^g + (1-\sigma)\pi & for\ dd_i\ \ \wedge\ g \geqslant g^c; \\ \sigma + (1-\sigma)\pi & for\ dc_i\ \wedge\ h \geqslant h^c \wedge\ dd_G; \\ (1-\sigma)\pi & for\ dd_i\ \wedge\ h \geqslant h^c \wedge\ \gamma < \gamma^c\ \wedge\ dd_G. \end{cases} \tag{9}$$

From equations 8 and 9, we can derive:

Proposition 3. *There are two Nash-equilibria in pure strategies with action profile*

$$a_{i,G} = \begin{cases} dd_i, dc_G\ \ if\ \ \sigma > max(\frac{1-\pi}{s-\pi}; \frac{\omega}{s}); \\ c_{i,G}. \end{cases}$$

Proof: see appendix B ■

As in the pure transition game, we consider trembling hands on the side of the government officials. Again, $1 - \epsilon$ is the probability that a member

O_i of the government officials fails to choose extra-constitutional activity. Additionally, we now define a probability $1 - \rho$ that a government official fails to choose action d_i in the post-transition game even if this were part of his best equilibrium. This means he fails to withdraw his support for the government leader, even though this would be necessary to keep him in check. The probability that a government official does *not* fail to play d_i (and thus withdraws his support for the government leader) in the post-transition game is thus ρ. Hence, the probability of a threshold share γ^c to play d_i in the post-transition game is $\rho^{\gamma^c M}$. Any government official will then prefer a sequence dd_i if:

$$U_i(dd_i) = \epsilon^{h^c M} \sigma \rho^{\gamma^c M} s^g + (1 - \epsilon^{h^c M} \sigma)\pi > 1. \tag{10}$$

As in the transition game, we define a critical value s_O^{cr} of the autocratic payoff that must be exceeded for condition 10 to hold. It is:

$$s_O^{gc} = \frac{1 - \pi}{\sigma \epsilon^{h^c M} \rho^{\gamma^c M}} + \frac{\pi}{\rho^{\gamma^c M}.} \tag{11}$$

For the government leader to prefer a sequence dc_G over c_G, it must be $s^g > s_O^{gc}$ in order for the government leader to expect the government officials to follow him. For making dc_G pay for the government leader himself, the following additional condition must also hold:

$$U_G(dc_G) = \epsilon^{h^c M} \sigma \rho^{\gamma^c M} s^g > \omega, \tag{12}$$

and that leads to the critical autocratic payoff:

$$s_G^{gc} = \frac{\omega}{\sigma \epsilon^{h^c M} \rho^{\gamma^c M}.} \tag{13}$$

Conditions 11 and 13 can be summarized in the following proposition:

Proposition 4. *An action profile* $(dd_i; dc_G)$ *is a trembling-hand perfect equilibrium, if and only if* $s^g > s^{gc} := max(s_O^{gc}; s_G^{gc})$.

Proof: see above ■

Finally, we have the following partial derivatives of the critical autocratic payoffs s_G^{gc} and s_O^{gc}:

$$s^{gc'}(\sigma, \pi, \epsilon, \rho) < 0, \;\; s^{gc'}(\omega, h^c, \gamma^c, M) > 0. \tag{14}$$

The difference in the result of the full model as compared to the transition model does not lie in the partial derivatives. Rather, it lies in the level of the critical payoffs s_O^{gc} in condition 11, and s_G^{gc} in condition 13. Formally, this is mainly due to the probability $\rho^{\gamma^c M}$ that appears in the respective denominator and that raises the critical values s_G^{gc} and s_O^{gc} of the autocratic payoff above those in the pure transition game. Materially, the difference arises because the government officials face problems in coordinating *twice* in the full model: first in the transition game where they need to coordinate on extra-constitutional activity, and second in the post-transition game where they need to potentially coordinate in order to credibly threaten to depose the newly established dictator for failing to share the autocratic rents.

What appears as a negligible modification of the conditions in the model may turn out to be decisive in reality. A potential autocratic government leader that signals his intention to switch to extra-constitutional activity is reliant on his cooperation with the government officials. They, in turn, have a coordination problem, since failing to unite to follow the leader may have painful consequences for each of them. Additionally, however, they need to trust in the government leader's promise to share the autocratic rents, although they do not have any natural reason to do so. Rather, they need to trust in their own capability to keep the government leader in check, which requires that they must solve a severe collective-action problem. Short of that, it is a better choice for each of the government officials to stick to constitution-abiding behavior.

In order to better grasp the intuition behind these results, we use the threshold values of $U_i(dd_i) = 1$ in equation 10 and $U_G(dc_G)$ in equation 12, respectively. Solving for ρ yields:

$$\rho(\epsilon) = \left[\frac{\pi}{s^g} + \frac{1-\pi}{\sigma s^g \epsilon^{h^c M}}\right]^{\frac{1}{\gamma^c M}} \quad and \quad \rho(\epsilon) = \left[\frac{\omega}{\sigma s^g \epsilon^{h^c M}}\right]^{\frac{1}{\gamma^c M}} \tag{15}$$

The functions represent combinations of probabilities ρ and ϵ beyond which the constitution ceases to be self-enforcing. Which one is relevant in a particular case depends on whether s_O^{gc} or s_G^{gc} is binding to the government leader in the sense of proposition 4. One such threshold is depicted in Figure 2. All points to the south-west of the solid line are associated with probabilities ρ and ϵ that do not make it worthwhile for either the government officials O_i or the government leader G or both to coordinate on extra-constitutional activities. Under these conditions, the government leader would prefer his chance ω to be reelected within the constitutional rules over any extra-constitutional adventure that would leave him with too high a probability of being ousted. As a result, all points to the south-west of the solid line indicate the democratic constitution to be self-enforcing.

By contrast, all points to the north-east of the solid line of Figure 2 are associated with combinations of the probabilities ρ and ϵ that make it worthwhile for both the government leader and the government officials to choose extra-constitutional activity. We hence have dc_G and dd_i $\forall i$ in this area. As a result, the democratic constitution is not self-enforcing at any point to the north-east of the solid line.

Recall that the two probabilities ρ and ϵ along the solid line of Figure 2 indicate that the government officials are able to coordinate on actions d_i, at first in the transition game and then in the post-transition game:

- Probability ϵ indicates the necessary capability of government officials to coordinate on extra-constitutional activity in the transition period. Failure of too many government officials to coordinate would end up in the others losing their government position with probability $1 - \pi$.

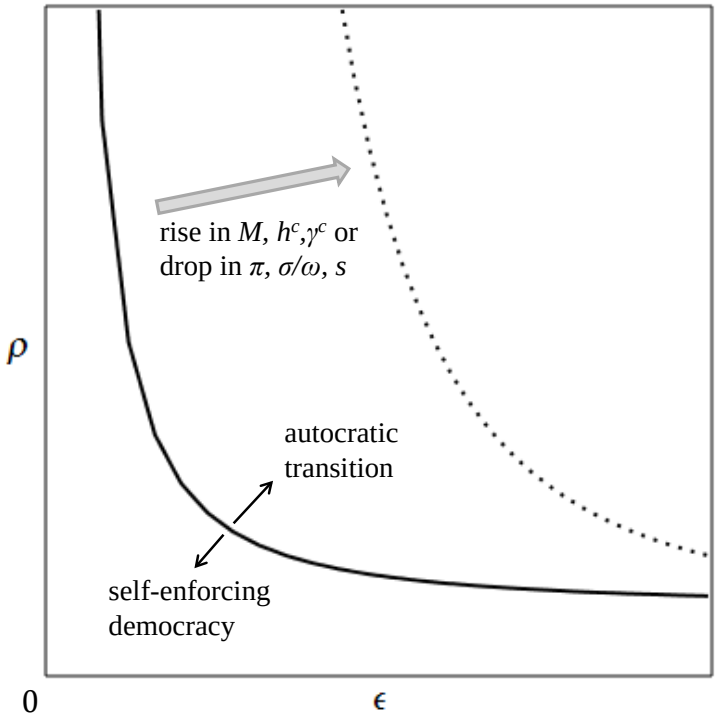

Figure 2: Stability Regions

- Probability ρ indicates the necessary capability of the government officials to coordinate on coup activities in the case where G reneges on his obligation to share R with the government officials. This capability constitutes the credibility of the coup threat which, in turn, is crucial for making $G's$ promise to share R credible; and only this credibility can motivate the government officials to follow the government leader in pursuing extra-constitutional activity in the first place.

In both cases, a potential capability of government officials coordinating is a potential threat to a democratic constitution. Put differently, the solid line in Figure 2 can be viewed as some sort of a constitutional firewall. Any lack in the capability of government officials to coordinate, as it is illustrated in the lower left area, makes that firewall effective. The closer the probabilities

of coordination move toward the firewall, the less secure the constitution. Should the probabilities of coordination eventually pass the solid line, the democratic constitution will be swept away by some sort of collective action that the citizens should not want to see.

Some comparative statics can immediately be derived. According to equations 15, it is the following parameters that shift the solid line in Figure 2 outwards: the probability σ of the government leader to win the terminal election; the probability π of the government officials to remain in office in the case of a failed autocratic-transition attempt; and the autocratic multiplier s of the government official's reservation utility. By contrast, the following parameters shift the line inwards: the probability ω of the government leader to win an election under democratic rule; the number M of government officials; and the threshold shares h^c, γ^c necessary for the government officials to coordinate in both the transition game and the post-transition game. Note that an inward shift of the solid line in Figure 2 shrinks the "self-enforcement area" and enhances the "transition area".

5 Discussion

While none of the parameters that determine the likelihood of autocratic transition may appear particularly surprising in a mere technical sense, the parameters σ, ω, π, as well as M and h^c, γ^c deserve some closer inspection:

- The ratio $\frac{\sigma}{\omega}$ represents the relation between the probabilities of either winning an election under the conditions of autocratic transition or under those of democratic rule. It is hence an indication of how popular an autocratic or populist policy is in relation to a policy that is strictly grounded in the respect for democratic constitutional rules.
- One of the most important determinants of the probability π is corruption. In an environment of due process, government officials that had seriously transgressed against the constitutional rules will have to

be sued and typically found personally unsuitable for their government position. Corruption is among the most important diluting forces of this important principle and precisely so because corruption raises the probability that government officials will remain in office despite having transgressed against constitutional or legal rules.

- The number M of government officials is a proxy for the formal degree of the separation of powers, and the threshold values h^c and γ^c are proxies for the effective degree of the separation of powers. The higher both the formal and effective degrees of the separation of powers are on the horizontal and—in federations—on the vertical level, the more difficult it becomes for the government officials to coordinate with each other.

The ratio $\frac{\sigma}{\omega}$ indicates that it is not necessarily the personal popularity of some individual politician that counts. What rather counts is the policy such a politician pursues. Should the public prefer policies strictly based on democratic rule, then $\frac{\sigma}{\omega}$ should be low. By contrast, should the public call for some "strong" leader, possibly in times perceived as particularly threatening to the nation, then $\frac{\sigma}{\omega}$ should rise. Modern populists typically gain popularity by referring to loftier goals which they—and only they—are not willing to sacrifice for the sake of some "fussy" statutory stipulations in the constitution; or they gain popularity by pursuing an allegedly desperate battle against external conspirators who exploit constitutional rules for the sake of hollowing out the cohesive bonds of the nation. However, for such claims to resonate, specific institutional or political backgrounds are required.

Russia in the late 1990s may be an example. Vladimir Putin became President in 1999 following a rather chaotic period under Putin's predecessor. The privatization of former Soviet companies quickly spiraled out of control and led into an oligarchic structure that skyrocketed the wealth of a few but left the masses with virtually nothing. Corruption, crime, and Mafia structures flourished in parallel to rising poverty and unemployment. The face behind this undesirable development was that of then President Boris Yeltsin, whose character as *bon vivant*, and increasingly so as an alcoholic became symbols

of both his personal incapability and the chaos of the country he led. And, becoming more obvious was the deeper problem behind the transition from a former superpower to a socially dissolving country shaken by corruption, financial distress, crime, economic stagnation and inequality: the surrendering formerly honorable values to the primary antagonist of the now-perished glorious empire, namely to Western democracy.

Putin was the man to help right the ship, but he quickly made clear that his help would not be grounded in Western democratic rules. What is more, as the oligarchs, the corruption, the financial chaos and the lost empire came ostensibly out of Western democracy, a return to the *status quo ante* appeared almost natural to many. Indeed, Putin was able to curb the symptoms of many issues related to the allegedly decadent Western system: He stopped the disintegration of the Russian federation, he arrested prominent oligarchs, and he brought at least central parts of the economy back under his control. And he did all this with measures decidedly different from what Western consultants and representatives of liberal democracy repeatedly recommended. It was this policy that made him extremely popular with a large part, if not most, of the Russian population. This is what a high ratio for $\frac{\sigma}{\omega}$ catches in formal terms. A high $\frac{\sigma}{\omega}$ was hence an important precondition for Putin's path to autocratic transition, and it was high due to the particular unfortunate developments that Russia underwent during the 1990s under Boris Yeltsin.

That alone, however, was not sufficient for Russia; and it is generally not a sufficient condition for any country to embark on such a path. Rather, what is additionally needed is a high degree of mutual trust of the government elites regarding their ability to coordinate on a particular equilibrium; this factor relates to the degree of the separation of powers. Note that the separation of powers is important for two reasons. First, it exacerbates collusion of the government officials against the constitution in the transition game; second, it aggravates the collective-action problem that the government officials face if the government leader fails to share the autocratic rents. Hence, while a populist policy might be capable of safeguarding public support on the path

to autocracy, such a path might still remain impassable for the government officials if the degree of the separation of powers is too high.

Choosing to transgress or not to transgress against the constitution implies a far-reaching collective-choice problem for the government officials. They must chose between two competing provisions that could protect their wealth: one provision stems from the existing set of constitutional rules, at least as long as these rules remain self-enforcing; the other that stems from the presumed collective capability of the government officials to keep a future dictator in check by permanently threatening a coup in an environment lacking constitutional rules. If a sufficiently high share of the government official expects that a sufficiently high share of his colleagues will not cooperate in both stages of the game, then individually keeping clear of the autocracy path is each government official's best choice. At the collective level of all government officials, then, this implies that the entire government sector will remain within the boundaries of the existing democratic constitution. By contrast, should at least a share g^c of the government officials be expected to cooperate on both stages, then it is individually rational for each individual government official to embark on the autocratic path. The constitution will cease to be self-enforcing.

A truly fateful historical example of how a collective choice beyond the limits of self-enforcing democracy can go wrong is that of the highest-ranking officials of the German army (Wehrmacht) in the early 1930s. Feeling deeply degraded and undervalued under the conditions of the first German democracy following the disastrous World War I, the army officials trusted in their own apparent capability to deliberately exploit the political movement of a devilishly charismatic leader whom they did not like either. Although they disrespected Hitler because of his lack in military rank and nobility, they nevertheless pursued a hands-off approach regarding the Nazi's path to autocracy following Hitler's appointment as chancellor of the Weimar Republic by president Hindenburg on January 30, 1933. The army officials' aim was clear: Let Hitler do the dirty work of destroying the hated Weimar Constitution, eventually removing the Nazis in general, and Hitler in particular,

from office, and then installing themselves to allegedly rescue the political culture of the German nation. In that way, they hoped for the resurrection of the pre-WW I German empire; or at least some successor that was adequate according to their elitist views.

But the army officials dramatically underestimated Hitler's capability to undermine their capacity to coordinate on coup activities following the destruction of the Weimar democracy. Para-military organizations like "SS" and "SA" under the firm control of the Nazi party enhanced the complexity of the newly established system of security forces. In combination with a set of additional measures, that split the security forces into numerous competing groups and subgroups. The result was a grossly reduced trust among a hitherto homogeneous elite of army commanders that were once bound by family ties and nobility membership.

After Hindenburg's death, Hitler urged the army commanders to transfer their vow of fidelity from the deceased president to Hitler himself. The binding power of that vow grossly added to the commanders' difficulties in conspiring against Hitler within the complexity of competing security forces, eventually resulting in the failure of each further coup event all the way up to the end of WW II. It is safe to say that the army officials would have likely been more reluctant to exploit Hitler for the sake of destroying the Weimar Republic if they realized they would not collectively be able to keep the dictator in check.

The most important normative implication of our analysis is this: Constitutional choice should pay particular attention to aspects like the formal and effective disentanglement of government authorities (separation of powers) as well as to federalism (Figueiredo Jr and Weingast 2005); competition among the different branches of government and among different federal levels; independent rules for appointing heads of the executive branch, the members of parliament and, most importantly, the judges of high-ranking courts. Failure to consider these factors may have been the most important driver of autocratic transition in the aftermath of the fourth wave of democratization. As such, many of the newly established democratic constitutions did not survive

attacks by leaders like Lukashenko in Belarus, Nazarbayev in Kazakhstan, Karimov in Uzbekistan or, more recently, Putin in Russia.

By contrast, the constitution of the United States, with its deeply rooted separation of powers in various dimensions, has survived numerous attacks from leaders that were certainly not democrats but that did not even dare to openly confess their reservations against the pluralist democratic system; this applies to even very recent developments. In a similar fashion, Hungary and Poland may have a much better chance of surviving as democracies despite the strong attacks by their government leaders and by further decisive politicians because these countries are members of the EU, which enhances the complexity of their separation of powers. This is admittedly somewhat speculative, but our analysis would at least support this supposition.

As the most important empirical implication of our analysis, we have identified three main characteristics that either make a democratic constitution vulnerable to autocratic transition or transition proof. These are both the formal and effective degrees of the separation of powers, the level of corruption, and the popularity of transgressions against constitutional rules by (populist) government leaders. The one characteristic that can best be influenced in constitutional choice is the degree of the separation of powers. While this is indeed not a new aspect, it has possibly attracted less attention as a fundamental characteristic of sustainable democracies than it deserves. The principle *divide et impera* was meant to protect autocratic leaders against competitors that strive to attack the leader's regency. Its capacity to protect democracy against attacks on their constitutions, however, appears to rest on precisely the same mechanism.

A normative implication of our model is that constitutions matter. In this regard, it departs from Przeworski (2005, 2006). To him, a "constitution is neither sufficient nor necessary for democracy to survive" (Przeworski 2005, 267). In this view, a constitution is not necessary because actors would agree to the constitutional rules if they were an equilibrium anyway; and it is not sufficient because actors would break the rules if they did not describe an equilibrium. This implication follows from a specific modeling in which

democracy is a unique equilibrium, conditional on the relevant parameters. Given these parameters, none of the relevant actors could be better off in any feasible alternative. Depending on the respective parameter setting, then, democracy is either a unique equilibrium or no equilibrium at all, implying in the latter case that democracy is not sustainable.

By contrast, our model rests on two equilibria of which democracy is but one, and not necessarily the one that is most preferred by the government officials. Conditional on certain parameter conditions, however, the government officials are trapped in this equilibrium, and mainly so because of mutually enforcing control mechanisms. But, these mutually enforcing control mechanisms operate in only one out of two possible equilibria, and it is the task of the constitution to select the equilibrium on which all actors shall eventually coordinate (Calvert 1995; Hardin 2013)—namely the democratic equilibrium. In that sense, then, a constitution can indeed be capable of making democracy "the only game in town" (Przeworski 2006, 324). Still, our theory is silent on the difficult question of how a proper constitution should be established. Rather, it defines the conditions under which democracy remains to be self-enforcing, once it has been established as one out of two possible equilibria; by the same token, our approach defines the conditions under which democracy loses the power to self-enforce its rules and hence ceases to be the established equilibrium.

Note that a deep and diverse separation of powers is key for these mechanisms to operate effectively; as such, we may refer to our model as a post-Montesquieu approach. Since the depth and diversity of the separation of powers is obviously correlated with the level of per-capita income, our model provides an alternative explanation of Przeworskis empirical point of departure, namely the startling correlation between per-capita income and the probability of democracy to survive. However, while per-capita income is doubtlessly strongly correlated with the survival of democracy, it is still not causal in our model. It is rather correlated with those forces that are indeed causal for the survival of democracy.

6 Conclusions

We have developed a model of autocratic transition pursued by a sitting government leader. The aim was to identify the conditions under which autocratic transition is likely and, conversely, under which conditions democratic constitutions are effectively protected by mechanisms of self-enforcement. As a key element, each government official needs to expect coordination in two critical stages of the transition process in order to find their own participation worthwhile: Firstly, in an early period of transition, each government official must expect a sufficiently large share of the officials to participate in extra-constitutional activity. Second, the further government officials must, if necessary, expect a sufficient share of the government officials to participate in a coup against the newly established dictator.

Failure of this second condition to be satisfied leads to the non-credibility of the government leader's initial promise to share the autocratic rents with the government officials. Put in general terms, if the government officials fail to establish a credible and permanent collective coup threat, then they will not see themselves as protected against the exploitative power of the government leader in an autocracy.

As a result, we have identified three major testable empirical implications of our analysis. In particular, the likelihood of an autocratic transition is higher when (1) both the formal and the effective degree of the separation of powers is low, (2) the degree of corruption is high, and (3) the government leader that transgresses against constitutional rules for the sake of some allegedly higher goal—like protecting the nation against external or internal enemies or creating some glorious empire or the like—is highly popular.

As a normative implication, we find that constitutional choice in young democracies should focus on measures that divide the different powers both personally and institutionally, including separating the procedures for appointing government officials in different branches of the government and—if possible—on different federal levels.

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A Appendix A

Country	Year of Highest Value	Highest Value	Value 2016	Change	Highest Status	Status 2016	Status steps
Gambia	1992	9.25	2.50	-6.75	free	not free	-2
Venezuela	1990	8.50	3.25	-5.25	free	not free	-2
Russia	1991	7.00	1.75	-5.25	partly free	not free	-1
CAR*	1993	6.25	1.00	-5.25	partly free	not free	-1
Thailand	1990	7.75	3.25	-4.50	free	not free	-2
Congo	1992	7.00	2.50	-4.50	partly free	not free	-1
Belarus	1992	6.25	1.75	-4.50	partly free	not free	-1
Mali	1996	8.50	4.75	-3.75	free	partly free	-1
Burundi	2005	5.50	1.75	-3.75	partly free	not free	-1
Ethiopia	1998	5.50	1.75	-3.75	partly free	not free	-1
Nicaragua	1998	7.75	4.75	-3.00	free	partly free	-1
Jordan	1992	7.00	4.00	-3.00	partly free	partly free	0
Kyrgyzstan	1992	7.00	4.00	-3.00	partly free	partly free	0
Gabon	1991	6.25	3.25	-3.00	partly free	not free	-1
Libya	2012	4.75	1.75	-3.00	partly free	not free	-1
Yemen	1993	4.75	1.75	-3.00	partly free	not free	-1
Eritrea	1995	4.00	1.00	-3.00	partly free	not free	-1
Hungary	2004	10.00	7.75	-2.25	free	free	0
Solomon Islands	1990	10.00	7.75	-2.25	free	free	0
Ecuador	1990	8.50	6.25	-2.25	free	partly free	-1
Bangladesh	1991	7.75	5.50	-2.25	free	partly free	-1
Honduras	1990	7.75	5.50	-2.25	free	partly free	-1
Zambia	1991	7.75	5.50	-2.25	free	partly free	-1
Turkey	1990	7.00	4.75	-2.25	partly free	partly free	0
Guinea-Bissau	1994	6.25	4.00	-2.25	partly free	partly free	0
Maldives	2009	6.25	4.00	-2.25	partly free	partly free	0
Algeria	1990	5.50	3.25	-2.25	partly free	not free	-1
Mauritania	2007	5.50	3.25	-2.25	partly free	not free	-1
Uganda	1996	5.50	3.25	-2.25	partly free	not free	-1
Kazakhstan	1991	4.75	2.50	-2.25	partly free	not free	-1
Azerbaijan	1991	4.00	1.75	-2.25	partly free	not free	-1
Bahrain	2002	4.00	1.75	-2.25	partly free	not free	-1
Chad	1998	4.00	1.75	-2.25	partly free	not free	-1
Tajikistan	1991	4.00	1.75	-2.25	partly free	not free	-1
South Sudan	2011	3.25	1.00	-2.25	not free	not free	0
Turkmenistan	1991	3.25	1.00	-2.25	not free	not free	0
Uzbekistan	1991	3.25	1.00	-2.25	not free	not free	0
Average	1995	6.25	3.19	-3.06			

* CAR: Central African Republic; ** Congo (Brazzaville)

Source: Freedom House; own calculations.

Figure 3: Autocratic Transitions

B Appendix B

Proof of Proposition 1

Player G will play d_G if and only if he expects $h \geqslant h^c$, *and* if and only if $\sigma s > \omega$.[4] Since players O_i can observe player $G's$ choice prior to their respective choice being due, their choice problem reduces to the question as to whether at least $h^c M$ of them coordinate on d_i upon having observed d_G.

Now suppose that $h \geqslant h^c$. Upon having observed d_G, government official O_i has $U_i = 1$ if he chooses c_i but $U_i = \sigma s^h + (1-\sigma)\pi$ if he chooses d_i. He hence prefers $(d_i|d_G, h \geqslant h^c)$ over $(c_i|d_G, h \geqslant h^c)$ if and only if $\sigma s^h + (1-\sigma)\pi_1 > 1$ or $\sigma > \frac{1-\pi}{s^h-\pi}$. At the same time, G has $U_G = \sigma s^h$ if he chooses d_G but $U_G = \omega$ if he chooses c_G. He hence prefers $(d_G|h \geqslant h^c)$ over $(c_G|h \geqslant h^c)$ if and only if $\sigma > \frac{\omega}{s^h}$. As a result, an action profile $\{d_i, d_G\}$ is a Nash-equilibrium if and only if $\sigma > max(\frac{1-\pi}{s^h-\pi}, \frac{\omega}{s^h})$. Note that $h = 1$ in a Nash-equilibrium, which implies $s^h = s$ and hence $\sigma > max(\frac{1-\pi}{s-\pi}, \frac{\omega}{s})$.

Alternatively, suppose that $h < h^c$. Upon having observed d_G, government official O_i has $U_i = 1$ if he chooses c_i but $U_i = \pi$ if he chooses d_i. He thus always prefers $(c_i|d_G, h < h^c)$ over $(d_i|d_G, h < h^c)$. The government leader G, in turn, has $U_G = 0$ if he chooses d_G but $U_G = \omega$ if he chooses c_G. He thus always prefers $(c_G|h < h^c)$ over $(d_G|h < h^c)$. As a result, an action profile $\{c_i, c_G\}$ is always a Nash-equilibrium ■

Proof of Proposition 3

Suppose that G chooses a sequence dc_G and a share $g \geqslant g^c$ of the further government officials chooses $= dd_i$. A player O_i will then have $U_i(c_i|g \geqslant g^c; dc_G) = 1$ as well as $U_i(dc_i|g \geqslant g^c; dc_G) = \sigma s^g + (1-\sigma)\pi$ and $U_i(dd_i|g \geqslant g^c; dc_G) = \sigma s^g + (1-\sigma)\pi$. O_i will then prefer both $(dd_i|g \geqslant g^c; dc_G)$ and $(dc_i|g \geqslant g^c; dc_G)$ over $(c_i|g \geqslant g^c; dc_G)$ if and only if $\sigma s^g + (1-\sigma)\pi > 1$ or if $\sigma > \frac{1-\pi}{s^g-\pi}$. Suppose now that $g \geqslant g^c$. Then G will have $U_G(dc_G|g \geqslant g^c) = \sigma s$

4. By convention, $d_{i,G}$ is chosen $iff \;\; U(d) > U(c)$.

as well as $U_G(dd_G|g \geqslant g^c) = 0$ and $U_G(c_G|g \geqslant g^c) = \omega$. Player G will hence never choose $(dd_G|g \geqslant g^c)$, and he will prefer $(dc_G|g \geqslant g^c)$ over $(c_G|g \geqslant g^c)$ if and only if $\sigma > \frac{\omega}{s^g}$.

On the other hand, G has $U_G(dd_G|h \geqslant h^c; \gamma < \gamma^c) = \sigma S$, but he will only have $U_G(dc_G|h \geqslant h^c; \gamma < \gamma^c) = \sigma s^g < \sigma S$. His announcement to play a sequence dc_G is hence only credible in the case that $g \geqslant g^c$. As a result, an action profile $\{dd_i, dc_G\}$ is a subgame-perfect Nash-equilibrium if and only if $\sigma > max(\frac{1-\pi}{s^g-\pi}, \frac{\omega}{s^g})$. Note that $g = 1$ in the subgame-perfect Nash-equilibrium and hence $s = s^g$, so that the condition for a subgame-perfect Nash-equilibrium can also be written as $\sigma > max(\frac{1-\pi}{s-\pi}, \frac{\omega}{s})$.

Alternatively, suppose that $h < h^c$. Then each O_i has $U_i(dd_i|h < h^c) = U_i(dc_i|h < h^c) = \pi$ and $U_i(c_i|h < h^c) = 1$, so that each O_i prefers $(c_i|h < h^c)$ over any alternative.

G, in turn, has $U_G(dd_G|h < h^c; dd_G) = U_G(dc_G|h < h^c) = 0$ and $U_G(c_G) = \omega$ and will thus prefer $(c_G|h < h^c)$ over any alternative. As a result, an action profile $\{c_i, c_G\}$ $\forall i$ is always a Nash-equilibrium in pure strategies ■

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