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Consolidated Democracy, Constitutional Stability, and the Rule of Law*

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Abstract

What sets a consolidated democracy apart? We argue that the expectation that under the rule of law a law-abiding government will not enforce the unlawful acts of its predecessor creates incentives for agents - such as members of the civil service or law enforcement agencies - not to comply with such acts. Thus, even an opportunistic government may find it in its best interest to abide by constitutional rules or, once it has been in violation, to reinstate the legal order. If so, the government contributes to its own punishment and agents' expectations are self-fulfilling. Thus the rule of law has instrumental value in stabilizing the constitutional order. We also provide a theoretical explanation of the empirical distinction between consolidated and transitory liberal democracies and we explain why consolidated democracies are likely to stave off populist challenges.

Keywords: *Constitution, dynamic policy constraints, enforcement mechanism, populism.* ***JEL codes:*** *D02, D78, K10, K42*

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1 Introduction

No one is bound to obey an unconstitutional law and no courts are bound to enforce it (American Jurisprudence, Second Edition, Volume 16, Section 177).

This paper develops a theory which explains the tenacity of institutions, in particular, the stability of the constitutional order of a nation state that is institutionally democratic. The paper specifically asks, what exactly is it about such a constitution that keeps it in force for prolonged periods of time, despite challenges that would subvert it in undemocratic directions? Insofar as liberal democracy is positively valued, stability of democratic order has positive instrumental value. Moreover, to the extent that sustainability of a valued order is itself valued, a society with a stable democratic constitutional order may be a valued end in itself. Stability of constitutional order can have the consequent influence of consolidating a democracy. In turn, agents' expectations of persistence of current order contribute to the stability or instability of the constitution, a relationship which is contingent on what we identify as a specific Rule-of-Law mechanism. In this paper, we provide a theoretical basis for distinguishing between consolidated democracies and transient ones. Stable constitutions thus characterize consolidated democracies; constitutional instability marks transient democracies. Unconstitutional executive orders overturned by courts, as witnessed in the Trump presidency in the United States, is an example of a consolidated democracy that resists populist challenges. By contrast, radical constitutional amendments in Turkey under the Erdogan leadership reflect a transient democracy.

In present-day consolidated democracies, the form that democracy takes varies considerably, including in substantive observable details of these countries' constitutions. However, one feature that characterizes the constitutions of all consolidated democracies is the foundation of legal order on the rule of law. In particular, we show that the rule of law contained in the constitutional order is a mechanism that implements the constitution over prolonged periods of time: by making unconstitutional acts of the government more difficult to enforce, the legality requirement under the rule of law imposes a cost on would-be violators of the constitution. In this sense, this paper makes a contribution to the understanding of what sustains the institution of democratic governance.

Our investigation identifies this instrumental value of rule of law in furthering the cause of stability of constitutional order. The rule of law has other instrumental virtues as well, as documented in the literature, including promoting a faster rate of growth of potential output if it implements property rights rigorously (Basu, 1989, and Naqvi, 1990, for instance), or in fostering social mobility if it implements non-discriminatory employment practices, among others. The positive instrumental value of the Rule-of-Law mechanism in promoting the stability of a constitution

appears, however, to have escaped attention thus far. A deliberate purpose of this paper is to fill this gap. The paper accomplishes this objective – at a more practical level – by providing a theoretical explanation of the empirical distinction between consolidated and transitory liberal democracies.

In constitutional liberal democracy,[1] institutions constrain the set of policies that a government may implement while they also bestow on the government executive powers which it could conceivably use to pursue its preferred policies in violation of legal constraints. The question, then, is whether institutions also provide safeguards against such an abuse of power by the rulers. While ultimately the legal order needs to be defended by actions, institutional safeguards can support constitutional outcomes. We show that in a consolidated democracy, that is a democracy which citizens expect to be there in the long run, the legality requirement under the rule of law creates incentives for lawful behavior of the government also in the short run: under the rule of law, a law-abiding government will not enforce unlawful acts. So a government which wants to ensure that its acts are enforced by a successor government has to abide by the legal order. Once it has been in violation, it may find it in its best interest to reinstate the legal order, contributing to its own punishment for the initial violation. Expectations of agents that the legal order will ultimately prevail may thus be self-fulfilling.

Our argument highlights the importance of a shared belief in the permanence of constitutional order for constitutional stability. Slovik (2008) has shown that the conditions for democratic survival are fundamentally different in a subset of democracies - consolidated democracies by induction - as opposed to unconsolidated or transitional democracies. Our paper offers a theoretical argument of what sets a consolidated democracy apart. It also explicates an institutional mechanism in support of constitutional stability in consolidated democracy. Would-be authoritarians who want to replace institutionally bound rule with personalized rule will find it harder to violate constitutional rules in a consolidated democracy, unless they manage to undermine the supporting expectations. Thus, the stronger the belief in the permanence of the constitutional order, the more stable and thus the more consolidated a democracy is. In a narrower sense our paper also contributes to the analysis of populist challenges in some mature democracies.[2]

The concern with how to implement constitutional constraints is not a new one. James Maddison, in the Federalist Papers No 10, argues that a greater

[1] For Huq and Ginsburg (forthcoming) the definition of constitutional liberal democracy includes elections, liberal rights and the rule of law, understood as the stability, predictability and integrity of institutions

[2] Following Müller (2016) we understand populism as the claim to draw authority directly from some popular will, implying the rejection of constitutionally imposed constraints. Absolute monarchy is another example of personalized rule, where it was generally understood that acts of a predecessor do not bind a monarch in any way.

number of veto-players reduces the risk that a single "faction" imposes their will on the people. In the case of the United States such veto actors are the chambers of Congress and the Supreme Court. Yet as recently seen in the Turkish Republic, the executive, acting under emergency law, may remove cumbersome members of the constitutional court or of parliament on made-up charges and, as a consequence, override the constraints imposed by these veto-players.

Although ultimately it is people who need to defend the constitution, institutions may support resistance against abuse of power. Weingast (1997) sees the role of institutions in defining "red lines" which serve to coordinate opposition against violations by the executive. An example is the stand-off between the 45th President of the United States and the judiciary over an Executive Order banning citizens from seven countries from entry to the United States even with valid travel documents. The Executive Order as it was initially issued was deemed unconstitutional and was overturned by the courts. In this case the government gave in - i.e., it did not challenge the ruling in the Supreme court - and the rule of law was upheld.[3]

This example suggests that the rule of law is a part of the legal order that needs to be defended against attempts to undermine it. We, on the contrary, show that the rule of law stabilizes legal order itself. This is best illustrated by way of another example: in the course of the 2016 presidential campaign, a statement was made that raised the specter of unlawful orders being given to the military. In response, a former senior military officer stated that the military would not carry out unlawful orders.[4] This position is in line with an amendment to the code of conduct for US military personnel introduced under the Carter administration in the US which states that soldiers have to execute only "lawful" orders.[5] Because military personnel cannot be punished - under the law - for not executing such orders, this rule implements a mechanism by which compliance with lawful, and non-compliance with unlawful, orders is enticed.

The rule of law, understood as the requirement that laws, or acts of the government, may not be in contradiction to constitutional norms is an integral part of the liberal constitutional order.[6] In our formal analysis, we treat the legal or-

[3]See, e.g., The Independent, "Trump's 'Muslim Ban' Block Shows that He Will Not Always Get His Own Way," February 5, 2017.

[4]Financial Times, "US Military Chief Rejects Donald Trump's Anti-Terror Rhetoric," March 18, 2016.

[5]We are grateful to Michael Chwe for making us aware of the relevance of this rule to our paper.

[6]While generally the rule of law comprises the stability, predictability and integrity of institutions (see Footnote 1), specific elements include the non-arbitrariness of legal practice, a set of formal characteristics which the rules of the legal system have to fulfill and the subordination of administration and legislature to a law possessing higher authority, on which see Phillips and Jackson (1987). In a constitutional system the constitution is a law of superior authority which

der as consisting of two elements: an arbitrary constitutional rule, and the rule of law which limits the enforcement of contravening acts. We assume that the rule is immutable by legal means and that any violation of the legal order can be clearly observed, thereby ignoring legal avenues to constitutional regression and incremental retrogression undermining democratic norms.[7] We do allow, though, for imperfect predictions of the government's preferences for violating the legal order, both by the agents and the government itself. Thus, policy reversals - as in the example of the withdrawn Executive Order - are explicitly captured by our model.

In a political economy, we model government behavior and the behavior of agents who are necessary for achieving the government's objectives - to defect or not to defect from the constitution. Upon defection, the government could choose to return to original constitutionality in the next period. A government that seeks to defect expects to earn a rent, the magnitude of which it only learns in the next period, and which it earns only if it persists in its violation. Members of the civil service and law enforcement agencies - in short agents - can refuse to contribute but they may have to fear retribution. Because of the rule-of-law tenet in the constitution that says that no-one is bound to obey or enforce an unconstitutional law and because a law-abiding government will not enforce unlawful acts of its predecessor, both government and agent's expectations will discount the risk of retribution actually occuring.

If expectations that there will be a return to constitutionality upon defection are sufficiently strong, then that is, in fact, what will happen in a unique equilibrium of a political game under incomplete information that agents have about their assessment of the type of government they are facing, one that will defect or one that will not. If sufficiently strong, expectations become self-fulfilling, and effectively, a government which wants to ensure that its acts are enforced by a successor government has to abide by the legal order. Thus, once it has been in violation, it may find it in its best interest to reinstate the legal order, contributing to its own punishment for the initial violation by foregoing the defector's rent. Thus the protection from retribution granted by the rule of law combined with a strong expectation that a law-abiding government will not enforce an unlawful act of its predecessor, make a constitution stable, and together they consolidate democracy itself.

puts limits to what legislation may be adopted. Following from the legality principle under the rule of law, laws have to be legal, that is in accordance with the constitution and its principles or, even stronger, a political ideal (Hayek, 1960, Ch. 14).

[7]Huq and Ginsburg (forthcoming) suggest that clear violations of constitutional norms represent the exception in constitutional regression which to some extent is owed to the elasticity of actual constitutional norms. While the assumption of clarity on policy is an idealization of our paper, we allow uncertainty about consequences of individual decisions.

In our paper, an eternally lived government decides whether to abide by the legal order, or to defect. If it violates the order, it can earn a defector's rent, which follows a random process. The defector's rent reflects the government's perceived advantage of a violation which is exogenous to the model and depends on the government's preferences, the economic environment and the resistance against the policy by voters. Non-compliance by agents in the bureaucracy or law enforcement agencies is explicitly incorporated as an endogenous feature of our model. The government's defection starts with an announcement of intent. Subsequently, agents decide on whether to contribute to the government's objectives or not. They always contribute to a lawful government but their contribution to an unlawful government - that is a government announcing its intent to act unlawfully - depends on their preferences for constitutionality and the punishment for non-compliance. After observing agents' compliance, the government decides whether to see through its violation of the constitution or to return to the legal order. If it returns, it cannot collect its defector's rent but, because under the rule of law it is prohibited from punishing non-compliance when in the constitutional state, it saves the cost of carrying out the punishment.

If all actors are rational, and if the ultimate cost imposed by non-compliance exceeds the ruler's reward from a violation, the rule of law deters violations of the legal order. Law-abiding government behavior is supported by agents' expectations that ultimately the legal order will prevail and, as we show, there is a range of defector rents for which this expectation is self-fulfilling. As a consequence, the rule of law creates an order of the state (Maddox, 1982) which constitutes an asset a government that is law-abiding.[8]

The rule of law introduces an asymmetry in how agents' non-compliance with an unlawful act is treated, depending on the constitutional state of the government when the punishment may occur. By contrast, a government which is unconstrained by the rule of law is free to punish at any stage and, thus, will be more willing to violate the constitutional rule in the first place. Note that while in general multiple equilibria of this game can be supported, our assumption that government and agents act under uncertainty allows us to derive a unique equilibrium. Our modeling assumption that the government is eternally lived and may switch between different constitutional states is, naturally, an idealization. Yet it

[8]While our stylized model uses "illegitimate/unconstitutional government" and "illegitimate/unconstitutional order" largely synonymously, in practice the orders of a government may be illegitimate and this illegitimacy may carry a cost even if the overall legitimacy of the government is not in doubt. One recent example is the George W. Bush administration's decision to use illegitimate means to extract confessions from prisoners in the extra-jurisdictional internment camp of Guantanamo Bay. Although the original order was carried out, it incurred a cost for the successor government when it turned out to be impossible to get the same prisoners tried on the mainland of the United States.

allows for a pattern of experimentation with constitutional violations which has recently been on display in a number of relatively mature democracies with populist leaders (see, e.g., Levitsky and Ziblatt, 2018, Aziz and Ginsburg forthcoming). Pech (2009) obtains similar results in the trembling-hand perfect equilibrium of a game where each government in a sequence determines their constitutional state, thereby demonstrating that the stability-enhancing effects of the rule of law hold more generally.

1.1 Related Work

The question of how institutions constrain political leaders is an old one. Acemoglu et al (2012) provide a general framework in which dynamically stable states, interpreted as constitutions, can be analysed. Acemoglu (2003) demonstrates how different punishment mechanisms may deter rulers from opportunistic behavior and enforce second-best outcomes in the absence of commitment. Acemoglu and Robinson (2006) point out how political power is supported by the interplay of de jure power - which is institutionally legitimized - and de facto power - which is based on force. For example, the elite can credibly cede political power by making voting institutions more inclusive because it is costly to overturn institutions by force once they are put in place. Our own theory adds to their argument by pointing to a particular element of institutional stability: overturning institutions which are believed to prevail in the long term and commit future governments via the rule of law is more difficult than overturning institutions which are perceived to be transitional or do not include the rule of law.

Our contribution characterizes positive properties of the legal order. Therefore it is closely related to Weingast (1997, 2005) who derives self-enforcing equilibria in which social groups are able to coordinate against government transgressions. Weingast refers to constitutional standards as red lines for coordinating agents' actions against violations by the sovereign. Fearon (2011) further develops the idea that coordination on public discontent may act as a constraint on political power. Gersbach (2004) considers properties of a constitutional incentive contract. The constitutional choice problem has mostly been discussed from a normative angle although recent contributions have also focused on positive aspects.[9]

Our paper adds a new aspect to the analysis of populist rule as it explores institutional incentives for the bureaucratic elite to resist or coopt a populist government, where populism is characterized as the willingness to ignore the institutional constraints of the legal order (Müller, 2016). Here we do not focus on the

[9]See the overview in Voigt (1997). Examples of positive approaches are the empirical investigation by Aghion et al (2004), or Michalak and Pech (2013), who set up the constitutional choice problem in a model of autocratic-democratic succession.

preferences of the electorate over institutions - as do Acemoglu et al (2011) who show that electorates may accept the removal of institutional constraints on the government. We also do not ask why politicians may choose a populist platform as others have done: Acemoglu et al (2013) define as populist a platform which is extreme relative to the median voter and explore when politicians in a weak institutional environment choose a populist platform in order to signal that they will resist being bought out by the elite. Binswanger and Prüfer (2012) define as populist a policy choice in which a reelection-seeking politician puts positive weight on voter's opinions rather than only acting on his or her own information on the welfare maximizing policy. They analyze an environment with boundedly rational voters and slightly more sophisticated politicians and obtain populism in the limit for perfectly rational politicians and voters.

Self-enforcing institutional arrangements have been recently analyzed by Gans-Morse (2017), who shows in a transition country context that a firm's choice of legal strategies over illegal strategies of defending property rights depends on the propensity of other firms to choose legal strategies, giving rise to self-fulfilling expectations for intermediate ranges of institutional effectiveness. Technically, we introduce uncertainty over the state of the game in order to derive unique equilibrium applying results on global games (see Morris and Shin, 2000 and Frankel et al, 2003).

We present the model in Section 2, including the decision problems of the agents and the government, and highlight the issue of timing of actions. Section 3 identifies the conditions under which a unique equilibrium exists under incomplete information in which the government returns to full legality upon violation of law. Section 4 is concerned with the decision of a government to defect from the constitution in the first place. Proposition 3 and a corollary contain our main result on the deterrence effect of the rule of law. Section 5 contains some concluding remarks.

2 The Model

2.1 Agents

Agents may be members of the civil service or of law enforcement agencies. They have a planning horizon of two periods: in the first period they contribute to the pay-off of the government by undertaking an activity in period t, in the beginning of the following period $t+1$ they potentially receive a punishment. [10] Over time,

[10] By this assumption we we rule out complex punishment strategies against transgressions of the government such as in Abreu (1988). Our argument is that the rule-of-law mechanism enforces superior outcomes in the absence of such complex punishment strategies. We can relax the

the mass of agents is stationary.

Assume the government has violated the constitution and an agent is asked to comply with an order to carry out a task. Agents have a preference for not complying with an illegitimate order that is expressed by $\eta^i \in (0,1)$. If she complies, she realizes 0. If she does not comply, she realizes a benefit of η^i and a subjective cost of $(1-P^i)S$ where S is the punishment and P^i the subjective probability that the government is not going to remain in the non constitutional state. An agent refuses to comply and, hence, is part of the set of non-compliers with mass θ if

$$\Phi^i \equiv \eta - (1-P^i)S \geq 0. \tag{1}$$

Note that for $P^i = 1$, no agent complies and for $P^i = 0, S = 1$, all agents comply. Now assume that the government has not defected. By assumption, all agents comply. Otherwise the tasks required by an illegitimate or a legitimate government are similar and provide a comparable pay-off to the government.[11]

We normalize the size of the population of agents to 1. By (1), after a defection of the government the share of non-compliers in the entire population is

$$\theta(\widetilde{P}, S, \widetilde{\eta}|k_t) = \int_{i|\Phi^i \geq 0} di \tag{2}$$

where $\widetilde{P}$ is the distribution of beliefs P^i held by agents, $\widetilde{\eta}$ denominates the distribution of the parameter η^i in the population and S is the government's choice of punishment. From (1), θ is non-decreasing as $\widetilde{P}$ or $\widetilde{\eta}$ shifts to a stochastically dominating distribution and is non increasing in S.

2.2 The Government

The government is forward looking and discounts future pay-offs with the discount factor $\beta < 1$. In each period it needs to decide on its legal status a_t and on an enforcement policy S.

The government receives a pay-off z from an activity for which it needs the collaboration of agents. As we had assumed that agents engage in this activity by default, if the government is acting within the legal order, a legal government realizes z and incurs no enforcement cost.

assumption of finite life spans and instead focus on Markov-perfect equilibrium as in Acemoglu et al (2012).

[11] For example, a law enforcement officer may be asked to enforce illegitimate or legitimate laws which both serve the same purpose. Any preference of the government for the illegitimate law is subsumed by the state variable k introduced below.

A government violating the legal order can secure a benefit in the form of a rent[12] k_t and is not bound by the rule of law. From the activity needing the compliance of agents it receives a pay-off $z(1-\theta)$ and it faces an enforcement cost $C(\theta, S) = \theta c(S)$ with $c(0) = 0$ and $c'(S) > 0$. For simplicity, we assume that the choice of S does not depend on the compliance level θ and that it is optimal for the government to set $S = 1$, ensuring full compliance if it is expected to persist. We also assume that a government that persists outside of the constitution always wants to enforce its policy for any positive θ.[13] A government that returns to full legality does not carry out its enforcement policy and incurs no enforcement cost

A straightforward motivation of our cost function is one where there is a cost to the government in political terms: prosecuting more opponents to its policy raises the political cost due to the greater visibility of the policy in the population at large. It is also plausible that a mainly political cost disappears once the government decides to return to full legality.[14]

The defector's rent k_t which accrues to a violating government in period t subsumes all advantages - or perceived disadvantages - from violating the constitution that are exogenous to this model. This rent k_t follows a stochastic process where k_t is distributed according to a distribution function $H(\gamma) = \Pr(k_t \leq \gamma)$ with a bell-shaped distribution function h which takes strictly positive values on the interval $(k_{t-1} - \Delta, k_{t-1} + \Delta)$ and conditional expectation $E(k_t|k_{t-1}) = k_{t-1}$.[15] Moreover, we require that the government's pay off is continuous at infinity which implies that given the current state, the present value of the expectation of k_T vanishes as T approaches infinity, i.e. for all finite k and $T \to \infty$, $\beta^T E(k_T|k)$=0.

Crucially, we assume that the government cannot realize the rent immediately but that it needs to keep violating the legal order for at least two consecutive periods. One interpretation is that it needs the collaboration of some agents outside the inner circle of the government in order to realize the rent. So each violation of the government consists of a period where the policy change is announced and a consecutive period where the benefits of this policy announcement accrues. In

[12]The rent may be the result of seizing property or, for populist politicians, it may be a political reward from pandering to the supporters.

[13]For example, a defecting government that does not enforce its policies may experience a reputational loss from being seen as weak which a constitutional government does not face. As this loss is only incurred out of equilibrium, we do not explicitly model it. Together, these assumptions ensure that it does not make a difference whether the government announces its enforcement policy S in the beginning of the period or whether citizens form their expectations and the government decides on enforcement after observing the level of non-compliance θ.

[14]An alternative interpretation is that C is due to the activity of a law enforcement agency which is not directly affected by the non-compliance problem and which adjusts its activities to the level of non-compliance, for example by working extra hours.

[15]I.e. we assume $H(k_{t-1} - \Delta) = 0$, $H(k_{t-1} + \Delta = 1)$, $h(k_{t-1} - \Delta) = 0$ and $h(k_{t-1} + \Delta) = 0$. This rules out the possibility of unbounded returns.

the intervening time, agents may refuse to cooperate: the variable z captures the cost of non cooperation. Thus, the government's objective function is defined recursively as

$$V_t = a_{t-1}a_t k_{t-1} + (1-\theta_{t-1})z - C(a_t S, \theta_{t-1}) \\ + \beta[a_t a_{t+1} k_t + (1-\theta_t)z - C(a_{t+1}S, \theta_t) + \beta^2 V_{t+2}], \quad (3)$$

where we have assumed that a violating government in t sets $a_t = 1$. Hence, a government which sets $a_t = 0$ realizes $C = 0$ and a government only earns its defector rent of magnitude k_{t-1} in t if a_{t-1} and a_t both have the value 1.

2.3 Timing

At the beginning of period t, the legal status of the government in $t-1$, a_{t-1}, is common knowledge. The government learns the true value of k_{t-1}. Agents receive a noisy signal of k_{t-1} with x^i the signal of agent i.

Based on x^i each agent decides on whether to comply with the illegitimate order of a government announced in $t-1$. Agents generally comply with the orders of a government which has been lawful in $t-1$.

If the government has been lawful in $t-1$ it decides on whether to remain lawful or whether to announce a defection. A government which has acted outside the legal order in $t-1$ observes the level of non-compliance θ. Next it decides on its legal status for t: if it persists, it incurs an enforcement cost $C(S_t, \theta_t)$ and appropriates the rent k_{t-1}. A government which returns to legality, neither appropriates the rent nor incurs an enforcement cost.

2.4 Strategic Complements

An increase in θ decreases the government's objective $z(1-\theta) - C(S, \theta)$, and it makes the alternative of returning to the lawful order more attractive relative to the alternative of persisting outside of it because returning allows the government to cut the cost C. Recall that C increases in θ and an increase in θ makes it more likely that the government abandons a non-legal status, i.e. $\tilde{P}$ shifts to the right. Moreover, from (1) and (2), θ is non-decreasing as $\tilde{P}$ shifts to the right. Thus, agents' decisions not to comply are strategic complements.

Lemma 1. *Agents' strategies are strategic complements.*

Proof. See discussion above. □

3 Government's Choice after Defection

Say, the government has defected from the constitution in $t-1$. In t it learns its true defector rent k_{t-1} which is there for the government to consume provided it continues to violate the legal order in t. As a persistent violator, it expects to receive the continuation pay-off $k_{t-1} + (1-\theta_t)z - C(S,\theta_t) + \beta E(V^{nc}_{t+1}|k_{t-1})$ where $E(V^{nc}_{t+1}|k_{t-1})$ is the continuation pay-off if in t it chooses the non constitutional state - symbolized by the index nc - with the expectation taken at the current information set k_{t-1}. If it reforms, it forsakes k_{t-1} and receives the pay off $(1-\theta_t)z + \beta V^c_{t+1}$ where $E(V^c|k_{t-1})$ is the continutation pay-off from selecting in t the constitutional state - symbolized by the index c. The government prefers the constitutional over the non-constitutional path beginning in t if

$$\beta E(V^c_{t+1}|k_{t-1}) - \beta E(V^{nc}_{t+1}|k_{t-1}) - k_{t-1} + C(S,\theta_t) > 0. \tag{4}$$

There is some $\underline{k}$ such that (4) is positive and the government reforms, i.e. returns to legality, even if the realization of non-compliance is at its lower boundary $\underline{\theta}$. On the other hand, there is $\overline{k}$ such that the government does not even reform if everybody evades taxes, $\theta = 1$. In the intermediate range $(\underline{k}, \overline{k})$, the switch back decision depends on non-compliance.

Consider a truncated version of the game where $T = t+1$ is the last period where the government carries out its announced policy and its enforcement policy is effective so that it realizes the lower boundary of θ, $\underline{\theta}$. The continuation pay-off is $V^c_T = z$ along the constitutional path and $V^{nc}_T = z(1-\underline{\theta}) - C(S,\underline{\theta})) + E(k_T|k_{T-1})$ along the non constitutional path where $E(k_T|k_{T-1}) = k_{T-1}$.[16]

Lemma 2. *In the truncated game, there is $\underline{k}$ such that a government wants to reform even if $\theta = \underline{\theta}$ and there is $\overline{k} > \underline{k}$, such that a government does not even want to reform if $\theta = 1$.*

Proof. See part 6.1 of the appendix □

In the proof of Proposition 4 we show that this lemma extends to the infinite horizon game.

3.1 Multiple Equilibria under Common Knowledge

Under common knowledge the parameter k_t can be perfectly observed by the agents. We construct a Nash equilibrium in the following way: given the strategies of the other agents and the government, no agent wishes to change her strategy.

[16] For our specification of $\tilde{\eta}$, $\underline{\theta} = 0$.

Given the strategies of the agents, the government wishes to carry out its policy. Focusing on equilibria in pure strategies we obtain:[17]

Proposition 1. *Under common knowledge, the following combinations of beliefs and strategies constitute an equilibrium in pure strategies: for $k \leq \underline{k}$ the first strategy profile is played: agents set $P = 1$, the share of non-compliers is $\overline{\theta}$ and the government returns to full legality. For $k \geq \overline{k}$ the second strategy profile is played: agents set $P = 0$, the share of non-compliers is $\underline{\theta}$ and the government persists outside of the constitution. For $k \in (\underline{k}, \overline{k})$: either the first or the second strategy profile is played.*

This result follows immediately from the definition of equilibrium and Lemma 2, noting that $\theta(P = 1) = \overline{\theta}$ and $\theta(P = 0) = \underline{\theta}$. For $k \geq \overline{k}$ a trespassing government persists if the maximum share of agents fail to comply. For $k \leq \underline{k}$ a trespassing government returns to full legality even with non-compliance at its lower boundary $\underline{\theta}$ and so only a share $\underline{\theta}$ of agents actually want to evade. If k_t is in the intermediate range $(\underline{k},\overline{k})$, the government's equilibrium strategy depends on P and the game has multiple equilibria.

3.2 Unique Equilibrium under Incomplete Information

The assumption of common knowledge is very strong and fails to capture the difficulty which agents would typically encounter in figuring out how other agents respond in a situation to which they would be unaccustomed and which involves some personal risk.[18] Technically, the assumption of common knowledge results in multiplicity of equilibria which prevents us from assigning in a systematic way probabilities to the events, i.e. whether the government violates the constitution or reforms. Relaxing the assumption of common knowledge removes the problem of multiple equilibria and allows us to treat the formation of expectations over possible events in a systematic way.[19] Rather than introducing uncertainty about the actions of other agents, we assume that agents recognize that other agents' actions are driven not only by their preference η but also by their assessment of the type of government they are facing, an assessment in which they commit small errors. That is, we assume that agents cannot perfectly observe k_t when they decide over non-compliance. Instead, each agent observes a distinct signal x^i of

[17] There is another, unstable equilibrium in which the government plays a mixed strategy, see a similar result in Verdier and Roland (2003).

[18] Clague et al (1996) provide a nice description of the considerations that an army officer has to go through when deciding on whether to challenge an autocratic regime.

[19] We draw on the results of the theory of global games, see Morris and Shin (2000) for an overview. The solution of a global game coincides with the risk dominant solution of the underlying game.

which we assume that it is uniformly distributed on $(k_t - \varepsilon, k_t + \varepsilon)$. Agents have a dominant strategy when they know that $k_t \leq \underline{k}$ or $k_t \geq \overline{k}$, which is true if they receive a signal which is less than $\underline{k} - \varepsilon$ or higher than $\overline{k} + \varepsilon$.

In order to derive equilibrium strategies in the intermediate range agents' decisions over non-compliance need to be strategic complements throughout as established by Lemma 1. Given k is below $\overline{k}$, non-compliance eventually forces government reform in (4) while the critical mass of non-compliers necessary to fulfill (4) increases in k_t:

Lemma 3. *In the incomplete information game there is a critical mass of non-compliers, $\phi(k_t)$, for which the government is indifferent between reforming and not reforming and which is strictly increasing in k_t with $\phi(\overline{k}) = \overline{\theta}$ and $\phi(\underline{k}) = \underline{\theta}$.*

Proof. See part 6.2 of the appendix □

Because non-compliance strategies are complements in the unstable region of k_t we can iteratively eliminate dominated strategies starting at the upper and lower boundaries of the dominance regions. An agent's strategy takes the form: do not comply if the signal x^i is smaller than a threshold ξ^i which in turn depends on her preference parameter η^i. We can show:[20]

Proposition 2. *In the incomplete information truncated game there is a unique equilibrium point k^* supported by a distribution of individual thresholds ξ^i, $\widetilde{\xi}$, such that $\underline{k} < k^* < \overline{k}$ and the government returns to full legality if $k_t < k^*$.*

Proof. See part 6.3 of the appendix □

4 Government's Choice to Defect or Not to Defect

Having established conditions under which a defector government wants to return to full legality we now analyze the decision to defect from the legal order in the first place. We determine the critical value of k_{t-1} for a defecting government in the case where the noise in the citizens' observation, ε, vanishes. As a benchmark, we first determine the critical k_{t-1} at which the government deviates from the constitution in the absence of the rule of law. Here, the government can freely choose its constitutional status and it always enforces its policy. The government stays constitutional if

$$z \geq (1 - \underline{\theta})z - \underline{C} + E(k_t|k_{t-1}) \tag{5}$$

[20] Frankel et al (2003) derive a uniqueness result in a setting with finitely many types and continuous actions for vanishing noise.

where we have used $\underline{C} = C(S, \underline{\theta})$. Because with an optimal enforcement policy $\underline{\theta}$ is realized with certainty, we can drop the expectations operator.

Let k^0 be the value for which (5) is binding. Clearly, $k^0 > 0$ for $\underline{\theta} > 0$. Also note that for $\underline{C} > E(k_t|k_{t-1})$ the government never violates the legal order irrespective of whether the rule-of-law is in place or not.

Now assume that the rule of law is in operation and a government defecting in t based on k_{t-1} knows that it might want to return to full legality depending on the realization of k_t. If the error term in the signal vanishes, it follows from Bayes' rule that citizens' prior knowledge of k_{t-1} does not affect their expectations after receiving a signal of k_t:

Lemma 4. *For $\varepsilon \to 0$, the equilibrium point in the game with a prior k_{t-1}, $\widehat{k}_t^*$ and the equilibrium point in the game without a prior, k^*, coincide.*

The following lemma is useful for solving the dynamics of this game:

Lemma 5. *For $\varepsilon \to 0$, the share of non complying agents is $\overline{\theta}$ for $k_{t-1} < k^*$ and $\underline{\theta}$ for $k_{t-1} \geq k^*$.*

Proof. See part 6.4 of the appendix. □

Recall that a government which has been law abiding in $t-1$ decides over its constitutional state in t after it has realized pay-offs for t and before it observes the true value of k_t. Its continuation pay-off along the constitutional path is $\beta E(V_{t+1}^c|k_{t-1})$ and the continuation pay-off on the non-constitutional path is $\beta E(V_{t+1}^{nc}|k_{t-1})$. The government stays constitutional if at k_{t-1}

$$E(V_{t+1}^c|k_{t-1}) - E(V_{t+1}^{nc}|k_{t-1}) \geq 0. \tag{6}$$

Denominate k^{**} the critical value for which (6) is binding. Using k^* and the density function of k_t for given prior k_{t-1}, $h(k_t|k_{t-1})$, we can express the expected pay-off along the non-constitutional path recursively as

$$\begin{aligned} E(V_{t+1}^{nc}|k_{t-1}) = &\int_{k_t<k^*} h(k_t|k_{t-1})[(1-\overline{\theta})z + \beta E(V_{t+2}^c|k_t)]dk_t \\ &+ \int_{k_t\geq k^*} h(k_t|k_{t-1}) \left[k_t + (1-\underline{\theta})z - C(S,\theta) + \beta E(V_{t+2}^{nc}|k_t)\right] dk_t. \end{aligned} \tag{7}$$

The first term on the right hand side is the pay-off in case of a return to full legality and the second term is the pay-off in case the government persists on the non-constitutional path. Using the result of Lemma 4 for vanishing ε, the second term on the right-hand side of expression (7) is continuous in k_{t-1}. In order to

evaluate the pay-off along the constitutional path we need to know the decision criterion employed by future agents of the government in their decision to defect from the constitution. For now we assume that this decision criterion is given by the rule: defect in period s if $k_{s-1} > k^{**\prime}$ for $s > t$ and stay constitutional otherwise. Furthermore, we get

$$E(V_{t+1}^c|k_{t-1}) = z_{t+1}^c + \beta \left[\int_{k_t \leq k^{**\prime}} h(k_t|k_{t-1}) E V_{t+2}^c|k_t) dk_t + \int_{k_t > k^{**\prime}} h(k_t|k_{t-1}) E(V_{t+2}^{nc}|k_t) dk_t \right] \tag{8}$$

where z_t^c is the direct pay-off to the government on the constitutional path in t, the first integral gives the continuation pay-off under the constitution weighted with the probability of staying constitutional in $t+1$ and the second integral gives the contribution of income realized after defecting in $t+1$. Because $\beta > 0$, the critical value k^{**} is governed by the difference $D_{t+1}(k_{t-1}) = E(V_{t+1}^c|k_{t-1}) - E(V_{t+1}^{nc}|k_{t-1})$ in condition (6). We can write this difference for $k^{**\prime} \geq k^*$ recursively as

$$D_{t+1}(k_{t-1}) = \int_{k_t < k^*} h(k_t|\cdot) \overline{\theta} z dk_t - \int_{k_t \geq k^*} h(k_t|\cdot)[k_t - \underline{\theta} z - \underline{C}] dk_t + \beta \int_{k^*}^{k^{**\prime}} h(k_t|\cdot) D_{t+2}(k_t) dk_t. \tag{9}$$

The last term on the right-hand side can be interpreted as a lock-in effect into the non legal state: suppose that after a defection in the beginning of t the government realizes $k_t \in [k^*, k^{**\prime})$. In this range a constitutional government would not want to defect from the constitution but a government which had defected previously wants to continue violating because it is facing an enforcement cost (which is precise for $\varepsilon \to 0$ plus possibly some dynamic element) in excess of the rent k it can secure by violating the law.[21] In the range $(k^*, k^{**\prime})$, $D_{t+2}(k_t)$ is positive. So the lock-in-effect works as an additional deterrent against a defection.

Moreover, we can rule out the unstable case where $k^{**} < k^*$:

Lemma 6. *In equilibrium, the cut-off point k^* for a violating government to return to the legal order and the cut-off point k^{**} for a government to violate the legal order satisfy $k^* < k^{**}$.*

Proof. See part b) of the proof of Proposition 3 in part 6.5 of the appendix. □

[21] In this case k (minus a dynamic term) is not large enough for the government to continue violating with the hight cost $\overline{C}$ but would be large enough to continue with the small cost $\underline{C}$.

4.1 The Truncated Game

Consider the truncated game with a last period $T = 2$. In T, every government defects if (5) is violated. Therefore, we have $k^{**\prime} = k^0$, $E(V_T^{nc}) = z(1 - \underline{\theta}) - C(S, \underline{\theta}) + k_{T-1}$ and $E(V_T^c) = z$. Now it is straightforward to show when the rule of law economically matters. Comparing (5) and (6) for period $T - 1$, we find that the latter condition results in a higher cut off point as the government always perceives a positive risk of wanting to return to the constitution:

Proposition 3. *For Δ sufficiently great, the rule of law matters in the truncated game with $T = 2$: The critical value above which the government defects under the rule of law, k^{**} is greater than the critical value in the absence of the rule of law, k^0.*

Proof. See part 6.5 of the appendix. □

Proposition 3 shows that the rule of law has a deterring effect on a government willing to defect: the critical value of the government's temptation, the defector's rent k, is greater under the rule of law than in its absence. The condition for this relation to hold is that the volatility of the defector's rent, Δ, is sufficiently great. This is intuitive: if the government - after observing k_{t-1} cannot rule out the possibility that it wants to return to constitutional order once it learns k_t, it will be more cautious about a defection from the constitutional order. Note our simplifying assumption that citizens - who move after the government - decide on compliance based on k_t which they observe with vanishing noise.

4.2 The Infinite Horizon Game

We construct an equilibrium for the infinite horizon case in the following way: assume that all future governments follow a defection rule $k^{**\prime}$. Then determine a switch back point k^* and a defection value k^{**} for the current government. We show that there is a unique stationary value $k^{**} = k^{**\prime}$ where each government selects k^{**} assuming that subsequent governments will select k^{**} as well.[22]

Proposition 4. *In the infinite horizon game there is a unique stationary equilibrium with value k^{**} such that the government violates the constitution in t when $k_{t-1} > k^{**}$.*

[22]This equilibrium is Markov-perfect in the sense that the choice of the government in period t only depends on the pay-off relevant history as expressed in the state variable k_{t-1} and the inherited constitutional state in $t-1$. Both elements of the history are "pay-off relevant" because the government can appropriate k_{t-1} in t when the immediately preceding constitutional history is one of government defection.

Proof. See part 6.6 of the appendix. □

This equilibrium is a natural focal point of the infinite horizon game. As demonstrated in the proof of Proposition 3, its result extends to the infinite horizon case:

Corollary to Proposition 3. *For Δ sufficiently great, the rule of law matters in the stationary game: The critical value above which the government defects under the rule of law, k^{**} is greater than the critical value in the absence of the rule of law, k^0.*

The corollary shows that the deterring effect of the rule of law stated in Proposition 3 for a short planning horizon is replicated in the long run equilibrium of this game.

5 Concluding Remarks

The mechanism that drives the stability of a constitution in a consolidated democracy is the interaction between the legality requirement that results in a commitment by a future constitutional government not to enforce unconstitutional laws and the expectations of agents about (i) persistence of current order, and (ii) agents' resistance against constitutional violation. Thus, the interplay between the legality requirement under the rule of law on the one hand, and expectations of agents on the other, jointly produces a sufficiently high expected cost suffered by an offending incumbent government, such that it supports a stable dynamic constitutional equilibrium, in turn based on self-fulfilling expectations: a consolidated democracy, to wit. Unconstitutional executive orders overturned by courts, as witnessed in the Trump presidency in the United States, are a case in point. Equally, if agents' expectations favor complicity in constitutional violation – possibly, though not only, due to political history – then the rule of law mechanism will fail to enforce the constitution, a feature of a transitory democracy with an unstable constitution, as in Turkey under the Erdogan leadership.

An important assumption for the rule of law mechanism to be effective is that agents share the belief that the natural fallback position after a violation of the constitutional order is the pre-existing constitutional order itself. From this observation follow empirical predictions: greater confidence in the constitutional order by major societal players will clearly strengthen constitutional stability. Potential drivers of such confidence are a willingness not to obey illegal orders (η, in our model), a stronger belief that other players will not obey illegal orders,[23] or the

[23]That leaders with authoritarian tendencies care about these points can be seen from the various cases where purges of the bureaucracy, military and judiciary occured.

belief that the original constitutional order is the natural fallback position after any violation (i.e., agents believe that the model with the dynamic policy constraint correctly describes reality). For example, while in the Weimar Republic the rule of law was well established and thought to protect against government abuse (Levitsky and Ziblatt, 2018), it is likely that not only was the support of the constitutional order weak among civil servants and judges, but that many of them would have considered authoritarian government as a "natural" state of affairs.[24] In order to distinguish the different drivers of behavior we need an instrument which is directly related to the belief in the permanence of the constitutional order. It is natural to assume that the belief in the permanence of constitutional democracy increases with the length of constitutional history. Svolik (2008) shows that the greater the age of a democracy, the greater the confidence that the democracy is consolidated. He also shows that a military past is associated with non-consolidated democracy. A military past may be seen as a proxy for alternative sources of legitimacy. Also, a history of military intervention will undermine the belief that constitutional democracy is the natural fallback position. Hence, our results are consistent with both of Svolik's observations. More generally, if competing modes of governance are seen as legitimate by the agents, it will tend to weaken the self-stabilizing property of the rule-of-law mechanism in a liberal democracy, rendering it more prone to successful populist challenges as well as undemocratic subversion. The Spanish Republic before the civil war, where monarchy and fascism provided alternative legitimization models provided legitimate alternatives, is a case in point.

One issue that deserves attention is the robustness of the conclusions to weakening of the assumptions of our model. The infinite planning horizon is a mere convenience: nothing hinges on this, as shown in Pech (2009). A second, more substantive issue is that the expectations of agents are of: continued force of the current constitution, C, or government support of constitutional violation, V, or if violation does occur, there is a return to the original constitution, R. What is disallowed as a possibility, in our model, is a move to an amended constitution, A, after a violation of the original, V. This could be a shortcoming of our investigation. It is, however, not a serious shortcoming because repeated amendments after repeated violations of the original constitution have the markings of a transitory democracy, captured by V, in particular when they affect the "core" of the constitutional order.

What is needed is a model that would, for different configurations of expectations of the types of order that will prevail in future, and for distinct specifications

[24]MacElligott (1999) notes that the German judiciary in the 1930s overwhelmingly held an authoritarian and ultra-conservative world view and that this was instrumental in undermining resistance against fascism.

of legality under the rule of law mechanism, support stable dynamic equilibria of governance structures, among them, consolidated democracy, transitory democracy, and outright autocracy. In a related module, different kinds of political formations will, in turn, foster different patterns of economic growth and human development. Once theory is as well developed as that, it will be a lot easier to make sense of apparent association of attributes of different types of rule-of-law violations commonplace in some countries, and the related variation in deprivation of capability to function well suffered by the citizens of these nation states. While we be some ways from as complete a model as this, it is not difficult to imagine obtaining both the 'autocracy under property rights violations' result and the 'consolidated democracy based on rule of law abidance' from the same general model. This is an entirely tractable exercise, and would seem to be an appropriate line of work to pursue.

From an alternative perspective, there are models that explain – as satisfying incentive compatibility conditions – equilibria such as stagnant equilibrium, moderate-growth equilibrium, and rapid-growth equilibrium, as outcomes associated respectively with going from much circumscribed to increasing extent of protection of property-rights in business ownership. This is the connection between economic performance of a nation state and its rule-of-law abidance status, as in Basu (1989) and Naqvi (1990) among others. Instead, this paper reports on the link between rule-of-law abidance status of a nation state and its status as consolidated democracy versus transitory democracy or autocracy. This work is thus appropriately seen as dealing with the political economics of consolidated democracies that resist populist challenges.

6 Appendix

6.1 Range of k: Proof of Lemma 2

In order to derive dominance regions for the citizens we need to determine the range of k for which the decision of the government does not depend on non-compliance. Let $D_t(k) = (E(V^c|k) - E(V_t^{nc}|k))$. In the truncated game, the government reforms in $T-1$ if $z(1-\theta) + \beta D_T(k_{T-1}) > z(1-\theta) - C(S,\theta) + k_{T-1}$ where D_{T-1} decreases in k_{T-1} and $C(S,\theta)$ increases in θ. $\overline{k} = D_{T-1} + C(S,\underline{\theta})$ and $\underline{k} = D_{T-1} + C(S,\overline{\theta})$ with $C(S,\underline{\theta}) < C(S,\overline{\theta})$, hence $\underline{k} < \overline{k}$. .

6.2 Critical Mass of Non-compliers: Proof of Lemma 3

Let $\phi := \theta|\,(\delta(\theta,k_t) = 0)$. Implicitly differentiating $\delta(\phi) = 0$ gives $\frac{d\phi}{dk_t} = (1 - \beta\frac{\partial(V_T^c - V_T^{nc})}{\partial k_t})/(\frac{d\delta}{d\phi}) > 0$ where $\beta\frac{\partial(V_T^c - V_T^{nc})}{\partial k_t} < 1$ and $\frac{d\delta}{d\phi} > 0$. That $\phi(\overline{k}) = \overline{\theta}$ and

$\phi(\underline{k}) = \underline{\theta}$ follows from Lemma 1.

6.3 Proof of Proposition 2

6.3.1 Thresholds

Signal x^i of k_t which citizen i receives is equally distributed over $(k_t - \varepsilon, k_t + \varepsilon)$. A citizen i' strategy has the form: evade taxes if $x^i \leq \xi^i$ for some cut off point ξ^i. For the moment, assume that the distribution of cut off points is exogenously given according to $\widetilde{\xi}$ with $f(\xi) : \xi(i) \to \Re^+$. If k_t is the true state, then the probability that $x \leq \xi$ is given by

$$W(\widetilde{\xi}|k_t) = \int_{x=k_t-\varepsilon}^{x=k_t+\varepsilon} \frac{1}{2\varepsilon} \int_{\xi=x}^{\xi=\infty} f(\xi) d\xi dx. \tag{10}$$

$W(\widetilde{\xi}|k_t)$ is the share of citizens who have received a signal falling below their individual cut off point ξ given that $\widetilde{\xi}$ is distributed according to f. The term on the right hand side gives the probability that ξ is higher than the signal in the interval $[k_t - \varepsilon, k_t + \varepsilon]$. Now, if the true state is k_t, then the government reform with probability one if $W(\widetilde{\xi}|k_t) > \phi(k_t)$. The minimum k_t for which the government does not reform is uniquely given by

$$k_t' = \min\{k_t | W(\widetilde{\xi}|k_t) \leq \phi(k_t)\}.(teta1)$$

Now, the probability which an agent who receives the message x^i assigns to the event that the government reforms is

$$\psi^i(W(k_t, \widetilde{\xi}^{-i}), \phi(\theta)|x^i) = \int_{x^i-\varepsilon}^{\min(k_t', x^i+\varepsilon)} \frac{1}{2\varepsilon} dk_t$$

where $\frac{1}{2\varepsilon}$ is the density of the distribution of k_t and $\widetilde{\xi}^{-i}$ is the distribution of ξ without the agent i (which coincides with $\widetilde{\xi}$ because the agent is atomic). We get ψ by integrating over all k_t which are in accordance with a violation by the government and relating them to all k_t which are possible from the observation which has measure 1. Let ξ^i be the highest signal x^i which elicits the reaction of an agent, i.e. for which $\psi^i(W(k_t, \widetilde{\xi}^{-i}), \phi(k_t)|x^i)$ satisfies (critical) as an equality or where P^i assumes its critical value P^{i*}:

$$\xi^i = Max\{x^i | \int_{x^i-\varepsilon}^{\min(k_t', x^i+\varepsilon)} \frac{1}{2\varepsilon} dk_t \geq P^{i*}\}. \tag{11}$$

We obtain k^* and $\widetilde{\xi}(k^*)$ as the limit of iteratively eliminating weakly dominated strategies starting at the interval borders with $\widetilde{\xi}_0^b = \underline{k} - \varepsilon$ and $\widetilde{\xi}_0^u = \overline{k} + \varepsilon$.

6.3.2 Uniqueness of k^*

First, we establish that for any cut off point k^* there is a unique distribution $\widetilde{\xi}$ such that (11) holds for every agent. Note that $f(\xi)$ is common knowledge. Let $F(\xi)$ be the cumulative distribution of $f(\xi)$ so that (4) can be represented as $W(\widetilde{\xi}|k) = \int_{x=k_t-\varepsilon}^{x=k_t+\varepsilon} \frac{1}{2\varepsilon}(1-F(x))dx$. Let ξ fulfill (11). Suppose there is $\widetilde{\xi}'$ and agent i^L such that $\xi'(i^L) > \xi(i^L)$. In order to fulfill $W(\widetilde{\xi}'|k^*) = \phi(k^*)$ at the new distribution, $F(x)$ and $F'(x)$ must cross at least once for some $\xi(i) < \xi^{\overline{\eta}}$. Say i^L is on the left hand side of the first such crossing so at the crossing, $F(\xi')$ cuts $F(\xi)$ from below. Let i^C be the agent located at the crossing (i.e. for whom $\xi'(i^C) = \xi(i^C)$ and i^R an agent on the right hand side of the first and to the left of a second crossing (if it exists) with $\xi'(i^R) < \xi(i^R)$. Assume that (11) holds for i^C. From (11), $\psi(\xi'(i^L))/\psi(\xi'(i^R)) < \psi(\xi(i^L))/\psi(\xi(i^R))$. Because $\widetilde{\xi}$ satisfies (11) for i^L and i^R, $\widetilde{\xi}'$ does not.

To proof uniqueness of k^*, suppose there is another cut off point $k' < k^*$ with $\phi(k') < \phi(k^*)$. We construct the new (and unique) system of threshold values $\widetilde{\xi}'$ in two steps: First, calculate $\widetilde{\xi}''$ as an exact translation of $\widetilde{\xi}$ by letting $\xi'' = \xi - k^* + k'$.

Calculate the subjective probabilities with ξ'' assuming that the critical value is as before $\phi(k^*)$, i.e. $\psi^i(W(k', \widetilde{\xi}''), \phi(k^*)|\xi^i) = \int_{\xi^i-\varepsilon}^{k'} \frac{1}{2\varepsilon} dk$. By construction, this system of probabilities satisfies again (11) for each i. Because $\phi(k') < \phi(k^*)$ we know that

$$\psi^i(W(k', \widetilde{\xi}''), \phi(k')|x^i) > \psi^i(W(k', \widetilde{\xi}''), \phi(k^*)|x^i),$$

for all x^i. In order to fulfill (11) with the true values ξ' and $\phi(k')$, ψ^i needs to be lowered, i.e.

$$\psi^i(W(k', \widetilde{\xi}''), \phi(k')|\xi^{i\prime\prime}) > \psi^i(W(\theta', \widetilde{\xi}'), \phi(k')|\xi^{i\prime})$$

Because ψ^i decreases in ξ^i it must be that $\xi^{i\prime} > \xi^{i\prime\prime}$ for all i. Now suppose that k' is the true value. Then the set of non-compliers $\theta(k')$ has increased compared to the system $\widetilde{\xi}''$. With $\widetilde{\xi}''$ we have $\theta(k') = W(\widetilde{\xi}''|k') = \phi(k^*) > \phi(k')$ because $\widetilde{\xi}''$ is an exact translation of $\widetilde{\xi}$. With $\widetilde{\xi}'$, we have $W(\widetilde{\xi}'|k') > W(\widetilde{\xi}''|k')$ because all individual cut off point have moved to the right and more agents refuse to comply for any given signal. Thus $\theta(k') > \phi(k')$ contradicting that k' is a switching point.

6.4 Proof of Lemma 5

Before we proof the proposition, the following lemma is useful:

Lemma 7. *(Approximate observations) Citizens correctly forecast the share of non-compliers if the noise in the observation vanishes* ($\varepsilon \longrightarrow 0$).

Proof. From (10) we know that the share of agents who receive a signal short of their threshold or - equivalently - the amount of non-compliers is $W(\widetilde{\xi}|k) = \int_{x=k-\varepsilon}^{x=k+\varepsilon} \frac{1}{2\varepsilon} \int_{\xi=x}^{\xi=\infty} f(\xi)d\xi dx$ if the true value is k. Now $\Omega(\widetilde{\xi}|x) = \int_{x-\varepsilon}^{x+\varepsilon} \frac{1}{2\varepsilon} W(\widetilde{\xi}|k)dk$ is the expected share of non-compliers if the observation is x. Taking the limit for vanishing ε gives $\lim_{\varepsilon \to 0} \Omega(\widetilde{\sigma}|x) = W(\widetilde{\sigma}|k)$. □

Given S, agent i refuses to comply if

$$\eta^i \geq (1 - P^i)S. \tag{12}$$

Let $\underline{\eta} = 0$ the preference of the agent for whom (12) is fulfilled as an equality for $P^i = 1$. The threshold for this agent must be $\underline{\xi} = k^* - \varepsilon$: If she gets a signal $x^i \leq \underline{\xi}$ she sets $P^i = 1$ and refuses to comply.

Define $\overline{\theta}$ the share of citizens with $\eta' \geq \underline{\eta}$. If (12) is fulfilled for the agent with $\underline{\xi}$, it is also fulfilled for agents with $\eta' > \underline{\eta}$ and $\xi' > \underline{\xi}$.

Now let $\varepsilon \to 0$. Lemma 6 establishes that $\underline{\xi} \to \bar{\xi}'$ and all agents with $\eta^i \geq \underline{\eta}$ refuse to comply.

6.5 Proof of Proposition 3

a) The Relationship between k^* and k^0 for $T = 2$.

Note that in both periods, $k^0 = \underline{\theta}z + \underline{C}$ and in the penultimate period, $t = T-1$, $k^{**\prime} = k^0$.

From (4) we have

$$\begin{array}{lll} k - \overline{C} + \beta[-\underline{\theta}z - \underline{C} + k] < 0 & for & k < k^* \\ k - \underline{C} + \beta[-\underline{\theta}z - \underline{C} + k] \geq 0 & for & k \geq k^* \end{array}$$

Assume $k^0 > k^*$.

In this case we have for $k \in (k^*, k^0)$: $k - \overline{C} + \beta D \geq 0$ with $D = k - k^0 < 0$ and for $k = k^0$: $k^0 \geq \overline{C}$. At k^0 we have also: $k^0 = \underline{\theta}z + \underline{C}$. Hence, $\underline{\theta}z \geq \overline{C} - \underline{C}$ is compatible with $k^* < k^0$.

Now assume $k^0 < k^*$.

In this case we have for $k \in (k^0, k^*)$: $k - \overline{C} + \beta D < 0$ with $D = k - k^0 > 0$ and for $k = k^0$: $k^0 < \overline{C}$. At k^0, by definition $k^0 = \underline{\theta}z + \underline{C}$. Hence, $\underline{\theta}z < \overline{C} - \underline{C}$ is compatible with $k^* > k^0$.

b) The Relationship between k^{**} and k^*.

Note that using (6) at k^{**} we have

$$0 = -E\theta z + (1 - P)[k - \underline{C}] - \beta D_{t+1}(k) \tag{13}$$

where we have used $E\theta z = \int_{k<k^*} h\overline{\theta} z dk + \int_{k\geq k^*} h\underline{\theta} z dk$ and $P = \int_{k<k^*} h dk$. Also note that the right-hand-side of this equation increases in k.

From (4),

$$\begin{aligned} k - \overline{C} - \beta D_{t+1}(k) &< 0 \qquad for \qquad k < k^* \\ k - \underline{C} - \beta D_{t+1}(k) &\geq 0 \qquad for \qquad k \geq k^* \end{aligned} \tag{14}$$

Define for $\epsilon \to 0$: $\Theta(k) = k - \overline{C} - \beta D_{t+1}$ for $k < k^*$ and $\Theta(k) = k - \underline{C} - \beta D_{t+1}$ for $k \geq k^*$. The graph of Θ is monotonically increasing in k and upper-semicontinuous.

In order to determine the location of k^*, define for $\epsilon > 0$, $\Theta^*(k) = k - C(S,\theta) - \beta D_{t+1}$. At $k^*(\epsilon)$, the relationship $k^*(\epsilon) - C^* - \beta D_{t+t}(k) = 0$ holds. Comparing with $-E\theta z + (1-P)(k - \underline{C} - \beta D_{t+1}(k)$ shows that at k^* the latter expression is smaller than zero. Hence, for $\epsilon > 0$, $k^*(\epsilon) > k^{**}$. This relationship holds for all $\epsilon > 0$.

Moreover, $k^* \to k^*(\epsilon)$ as $\epsilon \to 0$: Because agents have certain expectations for $k \notin [k^*(\epsilon) - \epsilon, k^*(\epsilon) + \epsilon]$, $\Theta^*(k)$ coincides with $\Theta(k)$ for $k \notin [k^*(\epsilon) - \epsilon, k^*(\epsilon) + \epsilon]$ with Θ^* increasing in the interval as non-compliance θ increases, crossing the zero-line in k^* (see figure 1).

Hence, there is a sequence such that $k^* \to lim(\epsilon \to 0)[k^*(\epsilon)] < k^{**}$.

c) Show that $k^0 < k^{**}$

Suppose $k^0 \geq k^{**}$. We can use $\underline{\theta} z \leq E\theta z$. For the truncated two-period game, we have $D_T \leq 0$ at k^{**} because D_T is increasing in k and $D_T(k^0) = 0$ as $k^{**\prime} = k^0$. Therefore, $k^{**} = \frac{1}{1-P}[E\theta z - \beta D_T] + \underline{C} > \underline{\theta} z + \underline{C} = k^0$ for $P > 0$, contradicting our assumption that $k^0 \geq k^{**}$.

In the stationary game we have $D(k^{**}) = 0$, hence $k^{**} = \frac{1}{1-P} E\theta z + \underline{C} > \underline{\theta} z + \underline{C} = k^0$ for $P > 0$.

So the the rule of law is effective if $P > 0$ which is fulfilled for $k \in (k^* - \Delta, k^* + \Delta)$ and, hence, for Δ sufficiently great.

6.6 Proof of Proposition 4

In this proof we proceed as follows: Lemma 8 and 9 extend the uniqueness result on k^* of Lemma 1 to the infinite horizon model. Subsequently we show that there uniquely exists a fixed point $k^{**} = k^{**\prime}$ for which $D(k) = 0$. This proves the proposition.

Note that with $\varepsilon \to 0$, x^* does not depend on the initial condition k_{t-1}.

Lemma 8. *$D(k)$ is non-increasing in k.*

Proof. For $k < k^* - \Delta$, $\frac{dD(k)}{dk} = 0$ and for $k \geq k^* + \Delta$, $\frac{dD(k)}{dk} = -1$. So consider a right-ward shift from k_{t-1} to k'_{t-1} $k \in (k^* - \Delta, k^* + \Delta)$. Because the distribution function H' stochastically dominates H, we have $\frac{\int_{k_t<k^*} h(k) dk_t}{dk_{t-1}} < 0$.

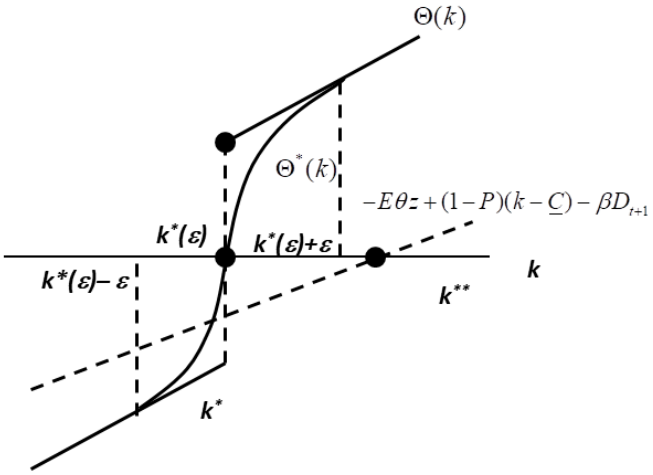

Figure 1: The graph of $-E\theta z + (1-P)(k-\underline{C}) - \beta D_{t+1}$ intersects with the 0-line on the right-hand-side of the intersection of $\Theta^*(k)$. Hence, $k^{**} > k^*$

.

Moreover, because $E(k_t) = k_{t-1}$, $\frac{d\int h(k)dk_t}{dk_{t-1}} = 1$, $\frac{d\int_{k_t \geq k^*} h(k)dk_t}{dk_{t-1}} > 0$. We also observe that for $k_t \geq k^*$ we have $k \geq \underline{C} + \beta D$ with $D \geq 0$ for $k_t \in (k^*, k^{**})$, hence $k \geq \underline{C}$ must also hold for $k_t > k^{**}$. Hence, there is always $\underline{\theta}$ small enough, such that the bracketed term in (9) is positive and $\frac{\partial D}{\partial k_{t-1}} < 0$

□

Lemma 9. *In a stationary game the switching point k^* is unique.*

Proof. By Lemma 8, $D(k)$ decreases in k. We have to show that $\overline{k} > \underline{k}$. Suppose that $\overline{k} \leq \underline{k}$. Because $D(k)$ is non-increasing in k, $D(\overline{k}) \geq D(\underline{k})$ follows. But in that case, by Lemma 1 it must be $\overline{k} > \underline{k}$, a contradiction. Therefore, $\overline{k} > \underline{k}$ and k^* is a switching point by Proposition 2 and this point is unique. □

Let $X = k^{**\prime}$ and $Y = k^{**}$. Using (9) and (8a) we can now implicitly define the mapping Γ: $R \to R$ as follows:

By Lemma 6 we can focus on the case $X > k^*$, $Y > k^*$. Observing $Y = \mu = \int^{k^*} hk_t dk_t + \int_{k^*} hk_t dk_t$ we can write:

$$D_{t+1}(Y) = E\theta z + \int_{k^*} h\underline{C} dk_t - \beta \int_{k^*}^{X} hD_{t+2} dk_t - Y + \int^{k^*} hk_t dk_t = \varphi(X, Y) = 0. \tag{15}$$

$\frac{dY}{dX} = \frac{-\varphi_X}{\varphi_Y} = \frac{hD}{-1} \leq 0$ for $X > k^*$ with $D \geq 0$ so φ intersects the $X = Y$-line from above. As $\varphi(X, Y)$ is also continuous, in particular as $X \to k^*$, the mapping has a unique fixed point.

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