Legal Commitment Through the Rule-of-law Mechanism versus Transactional Governance*

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Abstract

May a government which is purely opportunistic, or transactional, in its approach to law still find it in its best interest to comply with the legal order? We show that the legality requirement under the rule of law implements an endogenous enforcement mechanism supporting lawful behavior: Under the rule of law, unconstitutional laws are not enforced. Assume a government considers acting outside the legal order but will reinstate the legal order if this better serves its objectives. Agents' non compliance negatively affects the government's objectives. Under the rule of law, returning to full constitutionality rules out enforcement. Hence, expecting such return may be self-fulfilling. We show that this mechanism is effective in deterring the government from violating legal constraints.

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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).

To which extent do institutions provide safeguards against abuse of power by rulers? James Maddison, in the Federalist Papers No 10 argues that a greater 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.

An alternative argument would then say that it is not the institutions but rather the willingness of citizens to put up resistance against any abuse of executive power which constrains the ruler. The role of institutions would merely consist in defining "red lines" which serve to coordinate opposition against violations by the executive (Weingast, 1997). 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 that was deemed unconstitutional. Ultimately, the Executive Order remained suspended and the government gave in, so that the rule of law was upheld.[1]

This example suggests that the rule of law is a tenet of the legal order in need to be defended against attempts to undermine it by governments wanting to throw off their shackles. Contrary to this, we argue that the rule of law also stabilizes the legal order and is a constituent part of what makes the legal order an asset in the hand of a law-abiding government. What we mean by this is best illustrated by way of another example: In the course of the 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.[2] This position is in line with an amendment to the code of conduct for US military personnel introduced under the Carter administration which states that soldiers have to execute only "lawful" orders.[3] 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.

[1]See, e.g., The Independent, "Trump's 'Muslim ban' block shows that he will not always get his own way", 5 February 2017.

[2]Financial Times, "US military chief rejects Donald Trump's anti-terror rhetoric", 18 March 2016.

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

In this paper we argue that in general form this rule-of-law mechanism is embedded in constitutional order: Under the rule of law, laws need to be adopted in formally correct ways and not be in contradiction to the constitutional order. As the introductory quote states, obedience with illegitimate laws is not enforced under a lawful order. Therefore, a belief in the permanence of constitutional order clearly supports disobedience with unconstitutional orders.[4]

Even if the unlawful order is not enforced under the constitution, it may be enforced in a state of lawlessness which makes non-enforcement contingent on "the law" ultimately prevailing. From this follow two possible objections to our argument: Firstly, if it is only being on the winning side - be it the law or be it unlawfulness - which determines the fate of any punishment or reward, the rule-of-law mechanism would be just another arbitrary contingent reward-mechanism. So in order for it to unfold its particular power, there needs to be the shared belief that in the long term the lawful order prevails.[5] Alternatively, we may assume that the set of legitimate lawful orders is a singleton and compare a particular commitment mechanism, i.e. the rule-of-law mechanism, to a form of transactional governance which is entirely opportunistic and rules out any commitment.

Secondly, the rule-of-law mechanism is only effective in bringing about law-abiding behavior by the government if non-compliance of agents is more likely under the rule of law and sufficiently costly to deter the ruler from trespassing. Because the rule-of-law mechanism is a contingent mechanism - i.e. it provides incentives for resistance only if the future government which would be in charge of carrying out any punishment is lawful - either we need to derive a policy rule by which future governments determine their lawfulness or we need to claim that after an initial trespass, a ruler is willing to return to full constitutionality after observing the level of resistance. Pech (2009) has explored the first possibility. This paper focuses on the second.

If all actors are rational and if the ultimate punishment from non-compliance exceeds the ruler's reward from trespassing, the rule-of-law mechanism deters a ruler from violating the lawful order. In this sense, the rule of law creates an order of the state (Maddox, 1982) which constitutes an asset for a law-abiding government.[6]

[4]It is in line with our model that the government - as in the introductory example - initiates a violation of the constitution on which it does not follow through. Because our model treats the pay-off of the government as uncertain this situation arises with non-zero probability.

[5]See the conclusion for empirical implications.

[6]While our stylized model uses "illegitimate government" and "illegitimate 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 extrajurisdictional internment camp of Guantanamo Bay. Although the original order was carried out, it incurred a cost for the successor government when it turned

1.1 Literature

It is an old question of how institutions support superior outcomes of the political process. Acemoglu (2003) shows 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 is more difficult if an alternative institution is not legitimized by the rule of law and institutions which commit rulers to a formal legitimization process are more stable than institutions based on transactional governance.[7]

Our contribution characterizes positive properties of the legal order. 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. Gans-Morse (2017) shows 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. Dixit, Grossman and Gul (2000) derive properties of a dynamic sharing equilibrium in two-party competition with an exogenous process by which political power is assigned. Lagunov (2001) establishes that tolerant legal standards can be supported in a legal-political game with errors in law enforcement. Acemoglu, Egorov and Sonin (2012) characterize dynamically stable states of collective decision processes which may result in Pareto-inferior outcomes. 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.[8]

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,

out to be impossible to get the same prisoners tried on the mainland of the United States.

[7]Attempts to formally legitimize rule may come in different forms which include history or religion as sources of legitimacy. The North Korean Juchte ideology may serve as an extreme example.

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

2000 and Frankel/Morris/Pauzner 2003).

Our paper is organized as follows: Section II introduces our model. In section III we consider the decision of a trespassing government to return to full constitutionality under common knowledge and under imperfect information. In Section IV we derive the critical value of the defector's rent in the decision to defect from the constitution and extend our results to an infinite horizon game. Section V summarizes and interprets our results.

2 The Model

2.1 An agent's problem

Agents play a role in providing a pay-off for the government. They may be members of the civil service or of law enforcement agencies. Agents undertake an activity in period t and potentially receive a punishment in the beginning of period $t+1$.[9] 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 η^i. 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, θ if

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

Now assume that the government has not defected. In this case, the benefit of an agent who does not comply is less than zero, the default pay-off from complying. Otherwise the tasks required by an illegitimate or a legitimate government are similar and provide a comparable pay-off to the government.[10]

Assume the size of the population of agents is normalized to 1. By (1), after a defection of the government the share of non compliers in the whole population is

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

[9] They may be thought of as short lived. This way we rule out complex punishment strategies against transgressions of the government as in Abreu (1988). Our argument is that the rule-of-law mechanism enforces superior outcomes in the absence of complex punishment strategies.

[10] 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.

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's Problem

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.

A government violating the legal order receives a pay-off $z(1-\theta)$ which depends on the compliance of agents 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. We also assume that a government that persists outside the constitution always wants to enforce its policy for any positive θ.[11] 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.[12]

The benefit for the government from violating the legal order accrues in the form of a rent k_t in period t which 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

[11] With these assumptions 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.

[12] 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.

Alternatively, a model of enforcement may take into account that the enforcement agency itself is subject to an enforcement problem. In this case, the cost of buying the loyalty of agents is likely to be greater, the greater the resistance within the agency is - although the linear relationship is an idealization.

expectation $E(k_t|k_{t-1}) = k_{t-1}$.[13] Moreover, we require that the government's pay off is continous 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 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" 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 illegitmate order of a government announced in $t-1$. Agents generally comply with the orders of a government which has been lawful in $t-1$.

The government which has been lawful in $t-1$ decides on whether to remain lawful or whether to announce a violating policy. 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.

[13] 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.

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 The government's choice after violating the law

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 $E(k_T|k_{T-1}) = k_{T-1}$.

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. Furthermore, given the strategies of the agents, the government wishes to carry out its policy. Focusing on equilibria in pure strategies we obtain:[14]

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.[15] 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

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

[15] 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.

of multiple equilibria and allows us to treat the formation of expectations over possible events in a systematic way.[16] 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 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 at most $\underline{k} - \varepsilon$ 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:[17]

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 The Decision to Defect from the Constitution

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

[16]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.

[17]Frankel, Morris and Pauzner (2003) derive a uniqueness result in a setting with finitely many types and continuous actions for vanishing noise.

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

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

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

$$E(V^{nc}_{t+1}|k_{t-1}) = \int_{k_t<k^*} h(k_t|k_{t-1})[(1-\overline{\theta})z + \beta E(V^c_{t+2}|k_t)]dk_t$$
$$+ \int_{k_t \geq k^*} h(k_t|k_{t-1}) \left[k_t + (1-\underline{\theta})z - C(S,\theta) + \beta E(V^{nc}_{t+2}|k_t)\right] dk_t. \quad (7)$$

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

$$E(V^c_{t+1}|k_{t-1}) = z^c_{t+1} + \beta \left[\int_{k_t \leq k^{**\prime}} h(k_t|k_{t-1}) EV^c_{t+2}|k_t)dk_t + \int_{k_t > k^{**\prime}} h(k_t|k_{t-1}) E(V^{nc}_{t+2}|k_t)dk_t\right] \quad (8)$$

where z^c_t 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 giving the contribution of income realized after defecting in $t+1$. Because $\beta > 0$, the critical value k^{**} is governed by the difference $D_{t+1}(k_{t-1}) = E(V^c_{t+1}|k_{t-1}) - E(V^{nc}_{t+1}|k_{t-1})$ in condition (6). We can write this difference for $k^{**\prime} \geq k^*$ recursively as

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

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.[18] 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 instable 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. □

4.1 The truncated game

Consider the truncated game with a last period $T = t+1$. 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: 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. □

It is intuitive that the condition of proposition (substantial) is fulfilled for sufficiently large values of Δ: 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 stationary value $k^{**} = k^{**\prime}$ where each government selects k^{**} assuming that subsequent governments will select k^{**} as well. This equilibrium is Markov-perfect in the sense that the choice of the government in period t only

[18] 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 $\underline{C}$.

depends on the pay-off relevant history as expressed in the state variable k_{t-1} and the inherited constitutional state in $t-1$.[19]

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

Proof. See part 6.6 of the appendix. □

This equilibrium is a natural focal point of the infinite horizon game. As the proof of proposition 3 demonstrates, the result on the truncated game 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.*

5 Discussion

In this paper we have analyzed one particular aspect of the rule of law - the dynamic policy constraint which results from the legality requirement - and have shown that it supports co-ordinated actions one the side of citizens and deters the government from violating the constitutional order. The rule of law can thus be seen as an element of an endogenous enforcement mechanism. It has a moderating effect on behavior because the government realizes that the actions of its future agent may contribute to its own punishment.

Our analysis demonstrates that under the legality requirement of the rule of law an opportunistic - or transactional - decision maker who contemplates a violation of legal rules but also realizes that she may want to change this decision in the future should realize that this possibility of policy change creates a cost in the form of detrimental incentives for agents in the public sector. Naturally, the analysis is predicated on rational beliefs while the long planning horizon is an idealization which can be abandoned without overturning the basic result (see Pech, 2009). An important assumption, however, for this mechanism to be effective is that agents share the belief that the natural fall-back position after a violation of the constitutional order is the pre-existing constitutional order.

From this observation follow empirical predictions of our model. The strength of shared beliefs in the constitutional order by major societal players or the lack

[19] 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.

thereof may be directly observable.[20] Such beliefs will clearly strengthen constitutional stability, yet these beliefs may be reflected in a willingness not to obey illegal orders (η, in our model), or they may have the form of (directly) believing that the constitutional order is the natural fall-back position after a violation (i.e., agents believe in the general form of our model). For example, it is likely that in 1930s Germany not only the willingness to defend the constitutional order was weak among many civil servants but that many would have considered authoritarian government as a "natural" state of affairs. In order to distinguish these different drivers of behavior, we would maintain that, other things being equal, the longer the history of compliance with an inherited constitutional order, the more commonly held will be the belief that the constitutional order will ultimately prevail. Greater resilience associated with more mature constitutional democracies would, therefore, directly support our model.[21]

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[21] Clague et al (1996) provide a test of the claim underlying this hypothesis by showing that belief in the stability of institutions is strengthened with the duration of democratic rule. We would contend that for our purposes constitutional history may have to be interpreted in a wide and narrow sense: Chile is the American country with the second-longest constitutional history but a history which was broken - with massive force - in the military coup of 1973. Yet the military dictatorship eventually handed down a novel constitution which ultimately constrained the dictatorship and which, including guarantees for the junta, has been upheld since 1989. This compares to constitutions of countries such as Egypt which, although nominally in force, never constrained the government and lacked the credibility to serve as a basis for constitutional order when the Mubarak regime was overturned (see Michalak and Pech, 2013).

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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 $\underline{\xi} \to \overline{\xi}'$ 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.

Note that in both periods, $k^0 = \underline{\theta}z + \underline{C}$ and, in particular, $k^{**\prime} = k^0$.

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

From (4),

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

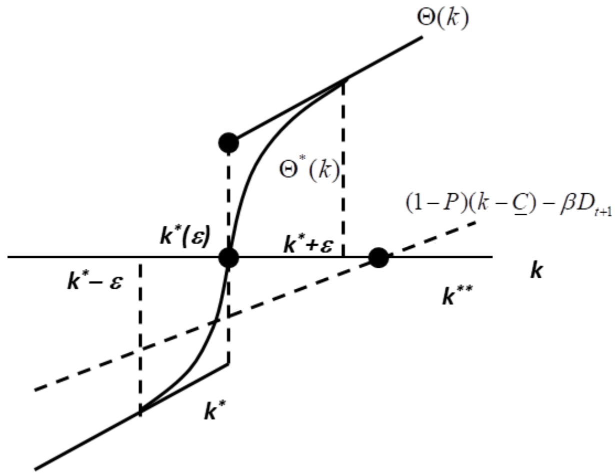

Figure 1: The graph of $-E\theta z + (1-P)(k-\underline{C}) - \beta D_{t+1}$ intersects with the 0-line on the right-hand-side of the intersection of $\Theta^*(k)$. Hence, $k^{**} > k^*$

.

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 $\epsilon > 0$, $\Theta^*(k)$. 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 $\epsilon > 0$, $k^*(\epsilon) > k^{**}$. As this holds for all $\epsilon > 0$, there is a sequence such that $lim(\epsilon \to 0)[k^*(\epsilon)] < k^{**}$.

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

Suppose $k^0 \geq k^{**}$. We can use $\underline{\theta} z \leq E\theta z$ and, for the truncated game, $D_{t+1} \leq 0$, so $k^{**} = \frac{1}{1-P}[E\theta z - \beta D_{t+1}] + \underline{C} > \underline{\theta} z + \underline{C} = k^0$ 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 $\frac{\int_{k_t<k^*} h(k)dk_t}{dk_{t-1}} < 0$.

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.