

Rationality and the legal order

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Abstract:

While a constitution assigns the government the means to force others to comply, there is no outside enforcer who forces the rulers to play by the rules. In this paper we argue that the legality principle of the rule of law gives incentives for the rulers to accept the constitutional order. We develop a model where a short-lived government imposes a tax and may violate the constitutional order by redistributing property in order to gain a one-off prize in terms of political support. Under the rule of law, a constitutional government must not accept illegitimate ownership. If the future government is expected to act lawfully, illegitimate property owners curb effort and an expropriating government loses revenue. We give conditions under which there is a unique trembling hand perfect equilibrium where all governments are constitutional with a probability approaching one.

1 Introduction

1.1 Legal order and rational choice

In this paper we are concerned with the rational design of a legal system. This problem has been analyzed on a number of analytical levels: social choice theory asks how an assignment of rights can be achieved which is consistent with axioms such as liberty and Pareto-optimality (Sen 1970).¹ While Sen provided an impossibility result, it has since been shown that under a more extensive definition of rights his result can be substantially weakened (Van Hees 1999). But more obvious problems remain: Sufficiently extensive assignments of rights lack co-possibility and, therefore, it is not obvious how one would choose between different assignment of rights, given that each assignment is Pareto-optimal.

Normative constitutional economics seeks to answer the latter question. In an appropriately constructed hypothetical decision making situation and given certain restrictions on preferences a society may be able to unanimously agree on a range of otherwise contentious issues (see Harsanyi 1955, Rawls 1970, Buchanan 1975). By making specific assumptions one may arrive at specific constitutional rules. For example, if citizens are concerned about suffering exploitation at the hands of their rulers they may be able to agree on constitutional constraints on the power to tax (Brennan/Buchanan 1980). Positive constitutional economics, on the other hand, is concerned with the way constitutional rules affect choices and which choices over constitutional rules are actually made.²

This paper develops a positive analysis of the legal system founded in the constitution. We are interested in the incentives for the rulers which the legal system provides. In his constructive approach, Gersbach (2005) develops constitutional mechanisms to overcome asymmetric information problems found in the democratic process. What we are looking for are mechanisms ensuring the self-enforceability of the legal system. In analogy to Weingast's (1997, 2005) analysis of self-enforceable constitutions, self-enforceability of the legal order is understood as its stability in the view of possible transgressions by the ruler of the state. If citizens are concerned about transgressions by their rulers against the legal order, then in the spirit of the constitutional economics tradition, it can be argued that self-enforceability is in itself normatively desirable.

1.2 Self-enforceability of the constitution

Self-enforceability constraints in private contracts have been extensively analyzed. It makes sense to take account of such a constraint when there are limits to the legal enforceability of a contract.³ But if anything, such issues are more pressing when the social contract is concerned (see, for example, Merville/Osborne 1990). A contract which sets up a government, also assigns it the means to force others to comply, while there is no outside enforcer who forces the government to play by the rules. Even unseating it in elections or its compliance with court decisions needs at least some sort of consent on the side of the government. Once a ruler has decided to abandon constitutional rule, such checks and balances often pose very little real obstacles. So the public is ultimately left with revolution as a disciplinary device of last resort. This is a rather costly enforcement mechanism.⁴ A constitutional contract might, however, be self-enforcing if the following holds: Given the consequences (legal or other) which unfold after a violation of the contract by one party, each party to the contract at any point in time wants to abide by the contract. And where a consequence is threatened in the contract, it is in the interest of the party in charge of bringing about this consequence to actually do so.

The previous literature has treated self-enforceability problems of the social contract either in terms of broad co-ordination problems within society (Weingast 1997, 2005) or between different societies, one succeeding the other (Kotlikoff/Persson/Svensson, 1988). In a broader context, the question of what a sustainable - or self-enforcing - constitutional contract is, is not unlike asking about the sustainable - or time consistent - inflation rate (Barro/Gordon, 1983). In both cases, the asset under consideration - paper money or the constitutional contract - has no obvious intrinsic value. Its value is determined by the actions of political or economic agents in relation to the asset and expectations over those actions. Such actions may take the form of signing contracts which promise payments of money or challenging the actions of the sovereign. If agents interact repeatedly, many equilibria may be sustainable. Weingast (2005) in his analysis of constitutional history shows the importance of historical events in triggering the emergence of behavioral standards and shaping expectations.

Rules generate outcomes and such rules may be supported in dynamic equilibrium in which no party expects to obtain a better outcome if it defects. Lagunoff (2001) shows that this is the case for tolerant legal standards, Dixit/Grossman/Gul (2000) for the rights of legislative minorities and Gersbach (2003) for the one person one vote rule. Interdependent institutional arrangements have been analyzed by Bös/Kolmar (2003) for the combination of property rights and redistributive policies and Gibbons/Rutten (2004) for contract enforcement and public goods. Taking a slightly different route, Barbera and Jackson analyze voting rules which satisfy the property of self-stability, i.e. if a vote is taken over voting rules when applying the voting rule, the same rule is returned as a voting outcome. We agree with this literature on the importance of rules for generating sustainable outcomes. We ask ourselves under what circumstances will a ruler accept the constitutional rule book over no rule at all. To do so we view legal rules as elements which in their entirety establish the order of the state (Maddox 1982), which in turn creates certain incentives for the rulers. We focus on a particular rule, the rule of law, and its interaction with property rights. We show that a constitutional rule book containing the rule of law may be self-enforcing in that any potential ruler wants to accept it and in accepting it she makes sure that any defecting ruler gets punished. As a consequence, the rule of law creates incentives for the government not to overturn the allocation of property rights founded in the constitutional order.

The difference between the analysis of isolated rules and the analysis of mechanisms built into the legal system is that the latter approach considers consequences which are intended by the legal order. Consider the following trivial example: A simple rule may state that "the president is elected by a simple majority of the votes". A complete mechanism would specify what this person can do when elected but also what happens if a person declares herself president without being elected. Say, this specification is that her words shall not be obeyed. This mechanism is self-enforcing if it is in the interest of the addressee not to obey and, therefore, no-one will seek to declare herself president without being elected.

1.3 Main argument and outline of the paper

The term rule of law is associated with different meanings. It may be understood as non arbitrariness of legal practice, a set of formal characteristics which the rules of the legal system have to fulfill or the subordination of administration and legislature to a law possessing higher authority (Phillips and Jackson 1987). In a constitutional system - with the possible exception of the British constitution - the constitution is a law of superior authority which puts limits to what legislation may be adopted. By what we shall call 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, chpt. 14). Unconstitutional laws do not bind a government if this government accepts the constitution. A constitutional government, on the other hand, guarantees the constitutional rights of its citizens. So understood the rule of law is a negative commitment for a constitutional government not to enforce laws which violate constitutional rights of its citizens.

We discuss the consequences of the legality principle under the rule of law in an application to property rights. There is a chain of successive governments, each with an exogenously fixed life-span. A government may win political support by redistributing property towards its cronies. Only the first government which engages in this activity can gain support by doing so. Otherwise, the government is only interested in its tax revenue. A constitutional successor government is prevented from honoring illegal redistributive measures and illegitimate property holders expect a reduction in their rewards from investing in the property if the successor government acts under the constitution. So whenever the tax base reacts negatively to an expected loss of rewards tax revenue tends to be smaller for an unconstitutional government. Essentially, we solve the problem of the missing enforcer by delegating the enforcement of rule compliance by the government today to its successor government. The choice of whether the future government is acting constitutionally or not is, however, for the future government to make. We therefore have to show that it is optimal for the future government to act constitutionally. Under certainty we find that defection and non defection are equilibria of this game. However, we provide conditions under which in the only trembling-hand perfect equilibrium of the game between successive governments and its citizens every government chooses to be legitimate with a probability approaching one. Under trembling-hand perfection no (unconstitutional) government can rule out the possibility that it might be succeeded by a constitutional government. In fact, if the punishment which a constitutional government exercises under the rule of law is sufficiently great, a defecting government will put the greatest possible weight on the possibility that it is succeeded by a constitutional government. As a consequence, if the prize is sufficiently small and the punishment under the rule of law greater than the greatest possible punishment when the government abides by the constitution, each government will abide by the constitution.

There are some assumptions in our paper most of which we make to facilitate our exposition. We assume that the government also dominates the legislature, so we do not distinguish between the legislative branch and the administration. Moreover, we do not model political constraints resulting from a re-election objective. The way we set up the problem, the distribution of property rights is historically given together with the constitution. Indeed, that there is only one legitimate constitutional order and that the legality of laws is derived from this order is necessary for the constitutional order to be self-enforcing under the rule of law mechanism. Our focus on a completely deterministic constitution ignores the possibility of constitutional reform. At certain points in history it might well be that a trade-off between (property) rights is considered. For example, when slaves were given liberal rights, this infringed on the property rights of slave owners (see Weingast, 2005). While we believe that allowing for constitutional reform would not pose a major problem to our approach, there are clearly important issues arising from the possibility of having competing concepts of a legitimate order. The theory we are developing in this contribution has applications to credibility problems in foreign direct investment (Pech 2007) and to the sustainability of fiscal rules (Neumärker/Pech 2002).

The following section sets up the model. Section 3 derives the main results. Section 4 extends the model in various directions and discusses the results. Section 4.1 discusses the effect of the rule of law understood as non arbitrariness. Section 4.2. introduces costs in law enforcement. Section 4.3. takes up the issue of competing concepts of legitimacy. Section 4.4. connects our findings to the discussion of self-governance. Section 5 concludes.

2 The model

2.1 Constitutional rules

The constitution has two elements.

(R1) The property rights of proper owners are guaranteed.

(R2) If a property right has been violated, the proper owner has claim to restitution.

Under the rule of law, a government which violates the constitution by expropriating property cannot establish property rights which bind a lawfully acting government.⁵ A lawfully acting government, on the other hand, cannot redistribute property when it deems this to be advantageous. However, the government has a choice of whether or not to act according to the constitution: During its fixed tenure it has the power to impose even its unlawful acts. So how does the constitution affect the government's decision to act lawfully?

It is important to emphasize the different role of the two constitutional rules: (R1) is a positive commitment to obey property rights. But it is well known that with no other provision such a commitment is typically not credible (see, for example, Persson/Tabellini 1990). Credibility problems are particularly severe if the government is short-lived. (R2) on the other hand imposes a negative commitment which prevents a lawfully acting government from honoring an unlawful distribution of property rights. A government might be willing to accept the second commitment while accepting the first commitment typically involves sacrificing an opportunity to advance its own interest. If some incoming government is expected to accept the constitution including (R2) after a period of unlawfulness, this may well affect the utility of an unlawful predecessor government.

As we have pointed out in the introduction, the rule of law does not only require legality of law but also its non arbitrariness. Non arbitrariness is sometimes believed to imply that laws should be generally followed. In this view, if the law establishes a right, such as a property right, the positive implication is that it will never be infringed. But in fact, an absolute guarantee of property rights is difficult to achieve. In practice, the boundaries between conflicting claims to property may be blurred. For example, the exact location of the border between adjacent farms may be disputed. The property right of a farmer may be curtailed by a right of way of the owner of a neighboring farm or the wider public but it may be uncertain whether anybody will actually make use of this right of way. In short, in the case of property rights the arguments of Dowding/Van Hees (2003) equally apply that we have to distinguish between a formal right and the degree by which it is exercised. From this perspective, constitutional rule (R1) is probably too strong if it is to be applied not only in the relationship between government and citizens, but also in those cases where the government adjudicates in conflicts between citizens. The following, weaker formulation, takes account of these arguments:

(R1') The government must not seize property of its proper owner.

The decisive point here is that the government does not try to intentionally redistribute property to itself or other citizens. While stopping short of establishing an absolute right, (R1') can still be seen as guaranteeing non arbitrariness in the exercise of government power.

2.2 Governments

We assume that the government in period t is interested in tax revenues R_t and that it may seize a prize Δ_t by violating the constitution and undertaking unlawful redistribution. If the government in t defects to the non constitutional state, indexed by n , its utility is $w_t^n = R_t^n + \Delta_t$. If it stays constitutional, it receives the pay off $w_t^c = R_t^c$. The prize may only be seized by the first government which violates the constitution. That is, $\Delta_t > 0$ after a history of compliance and $\Delta_t = 0$ for any history where defection has occurred before t . We are thinking of the prize as political support which is bought by distributing confiscated land to the government's clientele. It is quite plausible that the same trick cannot be played by a successor government, even if it did not care about property rights: once land has been distributed to the poor, there are presumably fewer landless people to be bought off and some of the landless people are likely to be the former legitimate owners. A government which wants to redistribute land towards them might as well do it by way of restitution and, thereby, act lawfully.

In order to seize the prize, the government has to expropriate a share of at least $x \geq x^{min}$ of its citizens. By (R1'), the latter measure puts the government in violation of the constitution. After an expropriation, a share $x' \geq x^{min}$ of citizens are new (and illegitimate) landowners. The index N designates decision variables of new landowners. A share $(1 - x')$ of citizens are old (and legitimate) landowners. We indicate those by the index L .

If the successor government of an unlawful government chooses to be unconstitutional - in which case it neither seizes a prize nor does it make any restitution - its property rights of legitimate owners are enforced with a probability of α^L and the property right of a land owner which has benefitted from seizures by the predecessor government with probability α^N . We

assume that a future unconstitutional government acts independently of its unconstitutional predecessor and sets $\alpha^N = \alpha^L = \alpha$. Furthermore, we assume that the unconstitutional government does not change the share of illegitimate ownership which it inherits from its predecessor.⁶ We assume that $\alpha \geq 1 - x^{\min}$, that is the redistribution necessary to seize the prize is at least as great as the implicit expropriation rate in the absence of a prize. All expropriation undertaken by a redistributing government results in a restitution claim. A constitutional government enforces property rights of legitimate owners with rate β . We assume that $\beta \geq \alpha$ and, in view of rule (R1'), β may be smaller than one.

2.3 Economic sector

Citizens live for two periods. The population is organized in family units or clans. At any given time, each unit consists of an old and a young household. If the family is not land possessing, it receives a subsistence income which we normalize to be zero. If the family is land possessing, it passes the land and any obligation connected with the land down the family line. The same goes for the restitution claim of an expropriated family. There is no operative bequest motive but at the beginning of each period the land is transferred to the young household. In return, the old household receives an income transfer within the family from the young household which depends on the value of the land transferred. This is a stylized version of an arrangement which is not uncommon in agricultural societies.

The young household in period t may undertake a costly effort e_t to improve the quality of the land. The return on land f depends on efforts in the current and previous period, so for the young household the production function is $f(e_t, \bar{e}_{t-1})$. In the beginning of period $t+1$, when the land is transferred, its value is $\delta f(e_t, \bar{e}_{t-1})$. We assume that $\delta f(0, e^*) \geq f(e^*, e^*)$ at the highest stationary value e^* which can be supported in this economy. The government imposes a tax on all output. We define θ the revenue maximizing tax rate.⁷ θ may be obtained from an underlying tax evasion or production decision.⁸ For simplicity, we assume that θ does not vary with the tax base.

Let C_t^1 be the consumption of a household which is young in t and C_t^2 the consumption of a household which is old in t . The utility function of a household i which is young in t is $U_t^i = C_t^1 + P^i u(C_{t+1}^2) - v(e_t)$. It discounts its old age utility with the probability P^i that the family still possesses the land in $t+1$. This probability depends on the legal status of the land owner.

We assume that land seizures do not affect the technical conditions of production nor the age of owners. As we show in the appendix, an increase in certainty of claims to property P increases effort, i.e. $\frac{de}{dP}$. In the following we treat an individual's tax base $f(e^i, \bar{e})$ as a choice variable ξ . Because ξ increases in e^i it corresponds to P^i : if $P^i > P^i'$, then $\xi > \xi'$. By our assumption on the utility function, $\xi = \xi(P^i)$. Given θ , government's tax revenue is $R_t = \theta [x' \xi_t^N + (1-x') \xi_t^L]$.

Note that the shift of ownership from a young household, who owes inter-generational transfers to a young household, who does not, does not change incentives to exercise effort. Regarding the timing, we suppose that in the beginning of each period the government

decides on its constitutional status. Accordingly, it may redistribute land or return land to households holding a restitution claim. Afterwards, any legitimate landowner who possesses land transfers it to the young household of its family. Subsequently, decisions on effort are made.

3 Results

Let π^c/c_t be the probability that a constitutional government follows a constitutional government and π^c/n_t the probability that a constitutional government follows an unlawful one. A new landowner's property right is enforced by an unconstitutional government with probability α and by a constitutional government with probability 0 . For her, the expected return in the second period on her investment⁹ is

$$P^N/n_t = \alpha(1 - \pi^c/n_t). \quad (1)$$

An owner who holds on to her legitimate property right under the unlawful regime has a prospect of having her property right honored by a future unconstitutional government of α and of a future constitutional government with probability β , so her prospects are

$$P^L/n_t = \beta\pi^c/n_t + \alpha(1 - \pi^c/n_t). \quad (2)$$

Say that the prize is positive, i.e. $\Delta_t > 0$. A legitimate landowner under the constitutional regime in t anticipates $(1 - x')$ from an unconstitutional successor government which wants to seize the prize in the subsequent period and β from the constitutional future regime which gives

$$P^L/c_t = \beta\pi^c/c_t + (1 - x')(1 - \pi^c/c_t). \quad (3)$$

If the prize in t is zero, a legitimate landowner under a constitutional regime expects α from a future unconstitutional government. Therefore, instead (3) we have

$$P^L/c_t = \beta\pi^c/c_t + \alpha(1 - \pi^c/c_t). \quad (4)$$

Tax receipts for the constitutional government - with only legitimate landowners - in the current period is

$$R^c = \theta\xi(P^L/c_t). \quad (5)$$

The tax base of the non-constitutional government with a share x' of illegitimate land ownership is

$$R^n = x'\theta\xi(P^N/n_t) + (1 - x')\xi(P^L/n_t). \quad (6)$$

Figure 1: Game between subsequent governments and citizens

Figure 1 summarizes the possible game paths which a government in τ after a constitutional history can follow and the resulting pay offs. In view of the fact that we are dealing with an

infinite succession of self-interested governments it is perhaps unsurprising that few sequences of actions can be ruled out as an equilibrium outcome, even if we focus on subgame perfect equilibria: for a range of parameter constellations a government may defect immediately from the constitution, defection may be delayed or not occur at all. In fact, the only type of equilibrium which we can rule out is one where a government defects and a subsequent government switches back to the constitutional state. This kind of sequence is ruled out because it is not a Nash equilibrium: If a future government switches back, the previous government would not have wanted to defect. The crucial point why switching back can not occur along an equilibrium path is that under the rule of law the switching government imposes a punishment on the previous government. For this punishment to be effective, the lowest government income in the constitutional state, $\theta \xi^L(1-x')$, which is obtained if the next government is unconstitutional, has to be higher than income in the non constitutional state if the switch back occurs. If the switch back occurs, a share of $(1-x')$ land owners expect an enforcement rate of β while a share of x' landowners expect an enforcement rate of 0 . We focus on such equilibria where a defecting government selects the lowest expropriation rate, $x' = x^{min}$. The punishment is effective and the rule of law matters if $\xi(1-x^{min}) > (1-x^{min})\xi(\beta) + x^{min}\xi(0)$. If the rule of law matters and the prize is not too high, we can rule out that in equilibrium there a switch back. For the game, starting in $t=1$ the following proposition holds:

Proposition 1: Suppose that a defecting government selects $x' = x^{min}$. If $\xi(1-x^{min}) > (1-x^{min})\xi(\beta) + x^{min}\xi(0) + \theta^1 \Delta_1$ only the following paths are compatible with subgame perfect equilibrium in pure strategies: never defect $\{c_s\}_{s=1}^\infty$; defect and never switch back $\{n_s\}_{s=1}^\infty$; delay and for a subsequent government to defect $\{c_1, \dots, c_{\tau-1}, c_\tau, n_{\tau+s}\}_{s=1}^\infty$.

For the argument made in this paper it is important to note that although a switch back can not occur along an equilibrium path of the overall game, switching back is an equilibrium in the subgame which starts after a previous defection. In fact, the equilibrium strategy configuration supporting the constitutional path involves for the τ -government not to defect and for the $\tau+1$ -government to switch back in the event that a defection has taken place in τ . The argument we develop in the remainder of the paper is based on the fact that if a government cannot rule out that a switch back *may* happen in the case where it actually *does* defect, such an expectation will deter the defection in the first place.¹⁰

The condition $\xi(1-x^{min}) > (1-x^{min})\xi(\beta) + x^{min}\xi(0)$ under which the rule of law matters may or may not be fulfilled for an economy. For $\beta < 1$, weak concavity of ξ implies the condition. If ξ is convex and $(1-x^{min}) \ll \beta$ it may be violated. On the other hand, concavity is not necessary. In the limiting case $\beta \rightarrow \alpha \rightarrow (1-x^{min}) < 1$ the rule of law always matters:

Corollary 2: Suppose that $\alpha = (1-x^{min}) = \beta$ and that a defecting government selects $x' = x^{min}$. If $\Delta_1 < (1-\alpha) [\xi(\alpha) - \xi(0)]$ only the following paths are compatible with subgame perfect equilibrium: never defect $\{c_s\}_{s=1}^\infty$; defect and never switch back $\{n_s\}_{s=1}^\infty$; delay and for a subsequent government to defect $\{c_1, \dots, c_{\tau-1}, c_\tau, n_{\tau+s}\}_{s=1}^\infty$.

From the corollary it follows that if the constitutional government is free to pick the same enforcement rate α as the unconstitutional government then there is always an expropriation rate x' and a prize which are sufficiently small to satisfy the condition in proposition 1.

The two stationary equilibria of proposition 1 are "on a knife's edge" in that they rely on an infinite sequence of governments following a policy which accommodate those equilibria. Furthermore, on the constitutional path there are further defections which themselves can be part of a subgame perfect equilibrium. At the same time, the switch back after some defection is ruled out on the basis of saying that if this were part of an equilibrium, the government would not have wanted to defect in the first place. If strategies are so sensitive to what future governments are doing, it is sensible to undertake some sensitivity analysis. In the following we construct trembling hand perfect strategies which are based on the assumption that every strategy in a game is played with at least some small probability ε , i.e. we impose the constraint $\pi^c/\cdot \in (\varepsilon, 1 - \varepsilon)$.

First, we find that if the defecting government in τ puts positive weight on its successor government playing the constitutional strategy, it decides to defect with the minimal expropriation rate x^{min} .

Lemma 3: For all $\varepsilon > 0$, a defecting government wants to select the $x' = x^{min}$.

Proof: Because there is no strategic advantage of selecting a higher x' , it suffices to focus on the immediate pay off. Let $\pi^c/n_t = \gamma$. Given γ , a defecting government in τ maximizes its expected pay off $\gamma(1 - x')\theta\xi(\beta) + (1 - \gamma)\theta\xi(a) + \Delta_\tau$ s.t. $x' \geq x^{min}$. For all $\gamma > 0$ this expression is maximized when x' is minimized. ■

In order to construct trembling hand perfect strategies we can use (1)-(4) and impose the constraint $\pi^c \in (\varepsilon, 1 - \varepsilon)$. Under a condition slightly weaker than $\xi(1 - x^{min}) > (1 - x^{min})\xi(\beta) + x^{min}\xi(0)$ condition in proposition 1, in the period after a defection the government almost certainly is constitutional. As it cannot rule out that the successor government performs a switch back with positive probability, it is deterred from choosing the non constitutional state. Going back one stage further, we have to ascertain that a government does not want to defect if it foresees that its successor government almost certainly wants to be constitutional, no matter what happens after it plays constitutional itself. Here, we have to invoke the condition of proposition 1. If this condition holds, there is $\Delta_I > 0$ such that

$$\Delta_I < \theta[\xi(1 - x^{min}) - (1 - x^{min})\xi(\beta) - x^{min}\xi(0)] \quad (7)$$

is fulfilled and it is optimal for the government to act lawfully.

Proposition 4: If $\xi(1 - x^{min}) > (1 - x^{min})\xi(\beta) + x^{min}\xi(0) + \theta^{-1}\Delta_I$ in the unique trembling hand perfect equilibrium each government almost certainly chooses to be lawful.

Proof: Consider the situation after a defection of the government in τ . For $\pi^c/c_{\tau+1} = n^c/n_{\tau+1}$ it is immediate from using (1) and (4) in (5) and (6) that the government in $\tau+1$ wants to be constitutional. The critical case occurs if $\pi^c/n_\tau = 1 - \varepsilon$ and $\pi^c/c_\tau = \varepsilon$. For $\varepsilon \rightarrow 0$ we have $P^L/c_\tau \rightarrow \alpha$ and $P^L/n_\tau \rightarrow \beta$. Inserting in (5) and (6) shows that $(1 - x^{min})\xi(\beta) < \xi(\alpha)$ is a sufficient condition to have $\tilde{w}_{\tau+1}^c > \tilde{w}_{\tau+1}^n$ in the perturbed game with $\Delta_{\tau+1} = 0$ and the government in $\tau+1$ puts the maximum weight on the constitutional strategy.

Now consider the decision to defect in $\tau \geq 1$. Again, the critical case occurs for $\pi^c/c_\tau = (1 - \varepsilon)$. Given that $\pi^c/n_\tau = (1 - \varepsilon)$ and $\varepsilon \rightarrow 0$ the condition for the government in τ not to defect is $\xi(1 - x^{min}) > (1 - x^{min})\xi(\beta) + x^{min}\xi(0) + \theta^{-1}\Delta_\tau$. ■

Inspection of the conditions in proposition 1 and proposition 4 reveals that all trembling hand perfect strategies are also subgame perfect as one would expect (Selten 1975). In analogy to corollary 2 of proposition 1, we obtain the following corollary of proposition 4:

Corollary 5: Suppose that $\alpha = (1 - x^{min}) = \beta$. If $\Delta < (1 - \alpha) [\xi(\alpha) - \xi(0)]$ in the only trembling hand perfect equilibrium all governments are almost certainly constitutional.

From the corollary it follows that if $\alpha < 1$, the constitutional government is free to pick the same enforcement rate as the unconstitutional government, and if the prize and the expropriation rate are sufficiently small, then in the trembling hand perfect equilibrium of the game the rule of law serves as a defence of the constitution. To put this negatively, we may say that if the prize is great and if the prospect of the government going for the prize creates immense uncertainty, then the rule of law tends to be an insufficient defence of the constitution unless ξ is concave. The rule of law is a good defence, however, if defections by some government only involve minor deviations from the lawful path.

4 Extensions and discussion

4.1 Is generality harmful to stability?

Comparing our results of propositions 1 and 4 on the one hand with corollary 2 and 5 on the other hand, it appears that generality under the rule of law (i.e. a high β) weakens the defense of the constitution. Indeed, the rule of law, and in particular the generality of law, is often seen as disincentive for the government to act lawfully. In order to make the government deliver general law enforcement, the citizenry needs to have some threat against the government (see Weingast 1997). However, one would not expect that in a model where the driving force is citizens' trust in institutions, the expectation of general law enforcement can impede the emergence of the "good" institutional state. Closer inspection of the condition reveals that the problem is not the possibility of having a high rate of law enforcement after a switch back (this is the term $(1 - x^{min})\theta\xi(\beta)$) but the lack of such a high rate of law enforcement after staying constitutional for one period. The latter is expressed in the term $\theta\xi(1 - x^{min})$. Unfortunately, we cannot dismiss the possibility that the future government wants to defect even if the present government stays constitutional.

Our conjecture that generality should increase the threshold for defecting from the constitution is probably informed by a focus on stationary solutions. If we focus on the stationary subgame perfect equilibria of the game, the condition for defecting from the constitution is different from the one in proposition 4: A government which believes that a future government will employ the same threshold as itself may not defect if $\Delta < \theta[\xi(\beta) - \xi(\alpha)]$. Of course, it remains an equilibrium, that the government defects: a government which considers switching for some $\Delta > \Delta'$ and believes that a future government has the same critical level Δ' , may rationalize any such defection. All we can say is given that the "good" equilibrium prevails, its scope now increases with β for $\beta < 1$.

4.2 Costly law enforcement

Say the enforcement of property rights in state i , $i \in \{c, n\}$ creates a cost $h^i(\phi)$ where ϕ is the degree of enforcement.¹¹ In general, we would expect that a constitutional government finds it

less costly to enforce its laws, because professional ethical standards and effects of negative commitment facilitate cooperation of civil servants and the judiciary. For example, bureaucrats or judges might be prepared to resist unconstitutional laws but also have concerns regarding their careers or liberty. Negative commitment mechanisms in the area of disciplinary measures in the public service would be likely to encourage such resistance and impose a cost on government (see Pech 2007). In the following we assume, however, that the enforcement cost function is the same for the constitutional and non constitutional regime.

We can define an optimal enforcement level if current revenue R_t depends not only on expected future enforcement but also on current enforcement of property rights, i.e. if we had $R_t(\phi_t, \phi_{t+1})$. So far, we have only analyzed the effect of expectations of future enforcement.

Say that a non constitutional government selects ϕ_t such as to maximize w_t^n and that $\phi_t^n = \alpha$. If the constitution imposes a binding constraint on government behavior, the constitutional government will select $\phi_t^c = \beta > \alpha$. For a constitutional government followed by an infinite sequence of constitutional governments we have $R_t^n = \theta \xi(\alpha, \alpha) - h(\alpha)$ and for a non constitutional government followed by an infinite sequence of non constitutional governments we have $R_t^c = \theta \xi(\beta, \beta) - h(\beta)$.¹² In order for our previous results to hold we have to require that $R_t^c \geq R_t^n$ and that the switch back pay off is smaller than the worst outcome under the constitution, i.e. that $\xi(\beta, 1 - x^{min}) > (1 - x^{min}) \xi(\alpha, \beta) + x^{min} \xi(\alpha, 0)$. We should stress here that each unconstitutional government maximizes only its own welfare when employing its instruments. Under positive commitment, constitutional governments may reach higher revenue along the constitutional path.

4.3 Singularity of the constitutional contract

We have essentially assumed that the constitution has arbitrarily assigned some property rights and backed them up with the force of constitutional law. Nevertheless, it is crucial for our argument, that the constitutional contract is not replaceable by anything else which induces legality of laws. If this were the case, arbitrary paths could be supported in an equilibrium. Therefore, it is necessary for our results that only one type of constitutional arrangement is conceivable. This is the case if the constitution is shaped by generally held ethical beliefs and if there is no obvious alternative order with which those beliefs are compatible. This dependency on ethical beliefs also seems to open the way for constitutional adjustments and a theory of constitutional evolution as the consent on what is desirable changes. This also includes the development of the constitutional order which is undertaken by the constitutional courts and, to the extent that this ensures continuing legitimacy of the constitutional order, this seems to be an entirely positive thing.

Our result that the constitution has to be a singular document strengthens a point made by Hayek (1960): "The rule of law is therefore not a rule of the law, but a but a rule concerning what the law ought to be, a meta-legal doctrine or a political ideal. It will be effective only to the extent that the legislator feels bound by it. In a democracy this means that it will not prevail unless it forms part of the moral traditions of the community, a common ideal shared and unquestionably accepted by the majority."

4.4 Legality of norms derived from the constitution versus legitimacy via self-governance

The findings of this article shed some new light on a long-standing debate in constitutional theory (see e.g. Kahn 1992): if the source of legitimacy is self-governance, then, so one argument runs, there is no reason why a historic document should in any way constrain the choices a society makes to settle issues among its citizens. The new perspective which our theory offers is this: Deriving decisions via a historically established process according to pre-defined notions about what is in accordance with the constitution may prevent the party empowered by the social contract from abusing its position. Under the conditions presented in this paper we can delegate to the future government the task of forcing the present day government to abide by the constitution. This, however, can only work if each government knows that the decisions of its successor government will be guided by the historically given constitution. Only such a document can specify legality or illegality of the present day government's actions and deprive an illegal act of its appearance of legitimacy - which it would otherwise have just because it is carried out by an entity called government.¹³ One can easily see that in the absence of such a document, not only could the present day society freely redistribute property, which one might argue it should when using some process considered legitimate on other grounds. But what the government as the empowered agent could be tempted to do is to redistribute property without relying on any other process than the exercise of its might.

5 Conclusion

This paper presents some first steps on the way to a theory of self-enforcing legal order. We have shown that the negative commitment of a constitutional government not to enforce illegal laws, which follows from the rule of law, is a powerful device in preventing violations of the constitutional order. We have analyzed the illegal redistribution of property rights under a constitution which prevents a constitutional successor government from honoring such illegitimate property rights. The rule of law may deter defections from the constitution if the government and the private sector believe that a switch back to the constitution eventually takes place and the tax base - which in part is provided by illegitimate landowners - reacts negatively to the expectation of a switch back. In that case the government will resist the temptation of defecting from the constitution if the political prize it secures by doing so is not too high. We have shown that the rule of law matters if either the tax base is concave in the probability of enforcement of property rights or if for a defecting government the necessary expropriation rate is sufficiently small. Together with the observation that the expectation of compliance with the constitution by future governments strengthens the incentive effect of the rule of law we may conclude that the stabilizing properties of the rule of law unfold in particular in a conservative environment where a government only considers small deviations from the constitutional order. If the rule of law matters, in the only trembling hand perfect equilibrium of the game the government following upon a defecting government is constitutional with a probability approaching one.

Appendix

Appendix 1: The household's optimization problem

The young household's problem is

$$\begin{aligned} \max U_t &= C_t^1 + Pu(C_{t+1}^2) - v(e_t) \text{ s.t.} \\ C_t^1 &= (1-\theta)f(e_t, \bar{e}_{t-1}) - \bar{C}_{t-1}^2, \\ C_{t+1}^2 &= (1-\theta)\delta f(e_t, \bar{e}_{t-1}). \end{aligned}$$

The physical constraint $e_t \leq e^{\max}$ is assumed to be non binding. Standard assumptions ($v' > 0$, $v'' > 0$, $f' > 0$, $f'' < 0$, $u' > 0$, $u'' < 0$) apply. The first order condition for this problem is

$$\frac{\partial U_t}{\partial e_t} = f' + P\delta u' f' - (1-\theta)^{-1}v' = 0.$$

Totally differentiating this expression gives $\frac{de}{dP} = -f' \delta u' A^{-1}$ with $A = f''(1 + P\delta u') + (f')^2 P \delta^2 u'' - (1-\theta)^{-1}v''$. Using standard assumptions, $A < 0$ and $\frac{de}{dP} > 0$ as desired.

Appendix 2: Proof of proposition 1

Let σ_t/h_{t-1} be the strategy of the government in t dependent on the history up to $t-1$ and let $w_t(\sigma_t/h_{t-1})$ be the utility of that government. A history is a vector $h_{t-1} = \{\hat{\sigma}_0, \hat{\sigma}_1, \dots, \hat{\sigma}_{t-1}\}$ where $\hat{\sigma}_k \in \{n_k, c_k\}$ are strategy choices of the government in period k . We assume that $h_0 = \{c_0\}$.

$\xi_t^j | h_t$ is the strategy for a type j citizen. We assume that the history h_t only contains strategy choices of the government. Such an assumption appears appropriate because we have a chain of single period games where each government is matched with a cohort of citizens who invest during its reign. We can, therefore, use the concept of subgame perfect Nash equilibrium for solving this game. It is well-known that if strategies depend on a history of the game which includes decisions of the private sector, the appropriate concept is that of sequentially rational Nash equilibrium (see the discussion in Persson/Tabellini 1990).

Show that $\{c_s\}_{s=1}^{\infty}$ is compatible with equilibrium. Let $h_{\tau-1} = \{c_0, \dots, c_{\tau-1}\}$. Suppose that $\sigma_{\tau+1}$ specifies $\sigma\{c_{\tau} | h_{\tau-1}\} = c_{\tau+1}$, $\sigma\{n_{\tau} | h_{\tau-1}\} = c_{\tau+1}$. Then $\sigma|h_{\tau-1} = c_{\tau}$ is an equilibrium strategy: Citizens' equilibrium choices are $\xi^c(c_{\tau}) = \xi^c(n_{\tau}) > \xi^N(n_{\tau})$. Therefore, for $x' > 0$: $R_{\tau}^c > R_{\tau}^n$ and $w_{\tau}^c > w_{\tau}^n$. $\sigma_{\tau+1}$ is a best response if the same strategy (always play constitutional) is played in $\tau+2$ and, therefore, is an equilibrium strategy.

Suppose now instead that $\sigma_{\tau+1}$ specifies $\sigma\{c_{\tau} | h_{\tau-1}\} = n_{\tau+1}$, $\sigma\{n_{\tau} | h_{\tau-1}\} = n_{\tau+1}$. This gives $\xi^c(n_{\tau}) = \xi^N(n_{\tau}) \geq \xi^c(c_{\tau})$. Therefore, $R_{\tau}^n \geq R_{\tau}^c$ and $w_{\tau}^n \geq w_{\tau}^c$, so $\sigma|h_{\tau-1} = n_{\tau}$ is an equilibrium strategy. $\sigma_{\tau+1}$ is a best response if the same strategy (always play unconstitutional) is played in

$\tau+2$ and, therefore, is an equilibrium strategy. Consequently, $\{n_s\}_{s=1}^{\infty}$ is compatible with equilibrium.

We have to show that under the condition given in the proposition, it does not occur along an equilibrium path of play that some government plays n_t for $t>0$ given h_0 and a subsequent government, at $t'>t$, plays $c_{t'}$. Say a strategy $\sigma_{\tau+1}$ specifies $\sigma\{n_{\tau} h_{\tau-1}\} = c_{\tau+1}$. The pay off in n_{τ} is $(1-x^{\min})\theta\xi(\beta)+x^{\min}\theta\xi(0)+\Delta_{\tau}$. On the constitutional path, $\min_{\sigma\{n_{\tau}, h_{\tau-1}\}} w_{\tau}^c = \xi(1-x^{\min}) > w_{\tau}^n$ and the government in τ plays $\sigma\{h_{\tau-1}=c_{\tau}$ if $\sigma\{n_{\tau} h_{\tau-1}\}=c_{\tau+1}$. The argument does not depend on $c_{\tau+1} \in h_{\tau-1}$ so it holds for all histories $h_{\tau-1}$.

Under the same condition where a switch back is not an equilibrium, delaying defection is an equilibrium: Say a strategy $\sigma_{\tau+1}$ specifies $\sigma\{c_{\tau} h_{\tau-1}\}=n_{\tau+1}$ and $\sigma\{n_{\tau} h_{\tau-1}\}=c_{\tau+1}$. The condition that delaying in τ is optimal is $\xi(1-x^{\min}) > (1-x^{\min})\xi(\beta)+x^{\min}\xi(0)+\theta^1\Delta_{\tau}$. Defecting in $\tau+1$ is an equilibrium if the continuation strategies prescribe $\sigma\{c_{\tau+1}, h_{\tau}\}=n_{\tau+2}$ and $\sigma\{n_{\tau+1}, h_{\tau}\}=c_{\tau+2}$ which are equilibrium strategies as shown above. Therefore, $\{c_1, \dots, c_{\tau-1}, c_{\tau}, n_{\tau+s}\}_{s=1}^{\infty}$ is compatible with equilibrium.

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¹ For a treatment of legal norms along these lines see Van Hees (2000).

² See Voigt (1997) for an overview. Aghion/Alesina/Trebi (2004) compare the importance of normative versus positive factors for explaining the formation of constitutional rules.

³ See, for example, Thomas/Worrall (1988) on collective wage agreements and Thomas/Worrall (1994) on foreign direct investment.

⁴ See Acemoglu and Robinson (2006) and Filipovich/Sempere (2006) on institutional stability supported by the threat of revolution or counterrevolution.

⁵ One example is the expropriation of property by the government of the German Democratic Republic.

⁶ For a succession of unconstitutional governments, not differentiating between L and N is an equilibrium policy. If a government anticipates a constitutional successor and wants to increase the share of legitimate owners it chooses to be constitutional itself.

⁷ As all income is immediately consumed, income and consumption tax are equivalent in this economy. We have to assume that expropriation is not a perfect substitute for tax which is quite plausible as government would find it difficult to turn a non negligible amount of seized property into money.

⁸ For details see section 4.2.

⁹ A constitutional government might grant the new landowner some compensation for his expenses if she can claim that she had acted in good faith. It will not, however, grant the full market value of the return on the investment which is sufficient for our argument to hold.

¹⁰ Neumärker/Pech (2002) construct an incomplete information game where a switch back may occur and a government anticipating this event is deterred from defecting from the constitution.

¹¹ ϕ may be interpreted as the provision of law and order but may as well be the after tax recovery rate $\phi = I - \theta$ with h the revenue loss due to tax avoidance.

¹² On conditions for the existence of equilibria for a similar class of games see Leiningger 1986.

¹³ In fact, this argument is far from theoretical. Many states have to carry the burden of external debt accumulated by former governments whose only legitimacy resulted from their position of power.

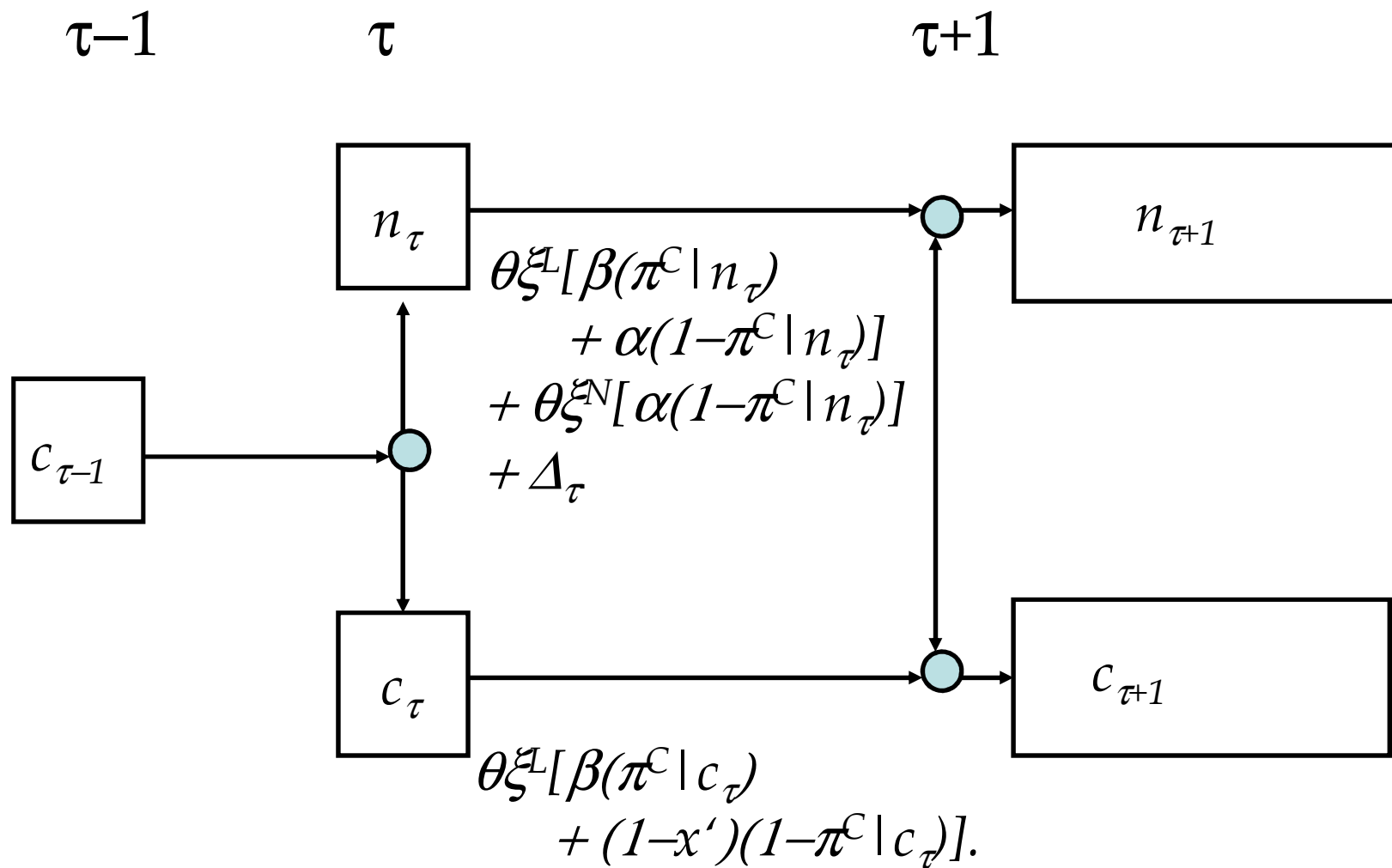


figure 1