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**The Supply of Democracy
Explaining Voluntary Democratic Transition**

Thomas Apolte

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Abstract:

The theory presented in this paper explains democratic transitions on the basis of rent-maximizing political leaders that aim at improving the credibility of post-constitutional policy making by way of introducing a decentralized democratic politico-institutional structure. They face an incentive for doing so if such a structure is a precondition for Schumpeterian growth processes, as this raises opportunities for trading a part of the political leader's power potential against future political rents stemming from an enhanced macroeconomic income base. While a differentiated and decentralized politico-institutional setting to unfold its desired economic effects requires the political leaders to effectively respect the independence of decentralized political agencies, announcements to do so may not be credible. Hence, the conditions under which credibility can be reached are analyzed. As far as political leaders have an incentive to formally introduce democratic institutions and, additionally, as far as they are able to credibly commit to the effective independence of decentralized governmental agencies, they can be expected to voluntarily supply democracy.

Keywords: Constitutional Economics, Political Economy of Democratization, Self-Sustaining Democracy.

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Westfälische Wilhelms-Universität Münster
CIW – Centrum für Interdisziplinäre Wirtschaftsforschung
Scharnhorststraße 100
D-48151 Münster

Tel: +49-251/83-25329 (Sekretariat)
E-Mail: clementine.kessler@uni-muenster.de
Internet: www.wiwi.uni-muenster.de/ciw

The Supply of Democracy

Explaining Voluntary Democratic Transitions

1. Introduction

There is an ongoing debate on two competing hypotheses of democratic transition. The modernization hypothesis by Lipset (1959) claims that democracy is promoted by the economic and political modernization of societies, whereas Moore (1966) holds that democracy in the Western world is the result of a historical evolution along some critical junctures. In the latter case, democracy evolved in some regions of the world but not in others, and it since promotes economic prosperity wherever it happened to evolve. Somewhat roughly, Lipset's modernization hypothesis views democracy as a result of economic prosperity¹ whereas Moore's critical-juncture hypothesis views economic prosperity as a result of democracy.

A more recent version of the critical-juncture hypothesis is the approach by Acemoglu and Robinson.² Initially autocratic governments that are confronted with revolutionary threats, as driven by grievance about the distribution of income or wealth, may try to conciliate the situation by announcing some redistribution, but they face the problem that such announcements may not be credible. A device for turning them credible, according to Acemoglu and Robinson, is the introduction of democratic institutions. Societies that historically happen to reach at a critical juncture where their political leaders are forced to introduce democratic institutions in such a way will, almost as a by-product, be provided with precisely that institutional setting that promotes Schumpeterian growth processes.

By contrast, a more recent version of the modernization hypothesis consists of approaches that view democracy as a normal or a superior good for which the public develops a certain demand that is driven by macroeconomic income (Huntington, 1991; Barro, 1996; Minier,

¹ Doing justice to Lipset's hypothesis requires to note that Lipset saw a complex structure of interacting characteristics of modernization behind democratic transitions; among these, economic prosperity was but one, albeit important characteristic, see Wucherpfennig/Deutsch (2009).

² See Acemoglu/Robinson (2000; 2001; 2006; 2012); Acemoglu/Johnson/Robinson (2001); Acemoglu/Johnson/Robinson/Yared (2008; 2009).

2001; Teorell, 2010). Hence, as income levels rise, so will the demand for democracy. Most of the publications on this hypothesis are based on empirical work.

The Acemoglu-Robinson version of the critical-juncture hypothesis has been criticized for mainly two reasons. The first holds that the empirical development into modern democracies is not well modeled by politico-institutional leaps such as revolutions but rather by a more continuous evolution (Congleton, 2011). The second claims that revolutions cannot consistently be modeled as the result of public grievance since improving the wealth or income position of a certain territory's residents is a public good, so that an unfavorable situation of the residents is not a sufficient and indeed not even a necessary condition for revolutionary threats (Apolte, 2012).

The demand-for-democracy approach is also not fully convincing. While such an approach may well explain why a public unfolds demand for political participation, it is naturally silent on the question as to whether the political leaders are willing to give room for political participation in the first place. After all, the political leaders in hitherto autocratic settings hold a monopoly on political power, and there is no reason for them to surrender that monopoly only because the public wishes them to do so.

Congleton (2011, pp. 27 – 183) develops a theory of democratic transitions that is based on voluntary agreements between political leaders and further groups in society. In doing so, he introduces a theory of political leadership that explicitly departs from the tradition of escaping the Hobbesian jungle by violence, as it is the basis for most of the modern contractarian theories of government (Buchanan, 1975; North/Wallis/Weingast, 2009; Konrad/Skaperdas, 2012). He does so in focusing on political entrepreneurs that organize team production in a setting of territorial monopolies with limited exit options for the respective residents. Parliaments, then, emerge when certain groups within the politico-institutional structure within a territory start negotiating over the distribution of governmental capacities, for example between a king and some political advisory councils that eventually evolve into parliaments with

rising degrees of constitutionally reserved rights. While this explains the non-violent emergence of parliaments on the basis of negotiations among selfish agents, however, it does not in itself explain a broad suffrage with respect to the election of the parliaments' representatives. Congleton thus has to refer to ideology in order to explain the emergence of parliaments plus a broad suffrage (Congleton, 2011, pp. 161 – 183)

Olson (1993) as well as McGuire and Olson (1996) develop a theory of political leadership that views an autocrat as the owner of a certain territory who, as such, holds a claim on the production within that territory. As compared to roving bandits, such autocrats have an incentive to invest a part of their territory's production into the territory's economic development; that is they invest into the physical survival of its residents, into peace among the residents, and even into public infrastructure and education. As any ordinary economic investor, then, the autocrat simply trades present against future personal income.

The latter approach also implies a political leader to invest in modern political institutions whenever this promises a sufficiently large rise in future personal income. This would be an investment in the sense of Acemoglu and Robinson's approach, as far as modern democratic institutions can indeed be viewed as the groundwork for the promotion of Schumpeterian growth processes. However, the costs a political leader has to pay when supplying democratic institutions are of a specific type. In Olson's world, the leader pays for his or her investment in terms of surrendering present income. By contrast, a leader who supplies democracy, as a set of modern economic institutions, pays by surrendering a part of his or her political power against a share in the economic returns to Schumpeterian growth processes.

This paper adds to the literature in presenting a theory of the voluntary supply of modern democratic institutions by rent-maximizing governments, where the latter are willing to trade political power against future political rents. In this sense, it views democracy not as the result of revolutions or threats thereof but rather as the result of a rent-maximization strategy of political leaders. The theory is related to Congleton's approach in explaining democratic transi-

tions as the result of voluntary interactions between rulers and the public. At the same time, it is related to Olson's approach in viewing a political leader as an investor into the public infrastructure of a territory. It is, however, different from Olson's approach in that it does not trade past against future consumption but that it trades parts of the political leader's political power potential against future economic rents. Finally, the theory presented here suggests a mutually reinforcing relation between the modernization hypothesis on the one hand and the critical-juncture hypothesis on the other rather than the dichotomist relation as it is suggested in much of the literature.

The paper is organized as follows. In section 2, the basic model is presented and the conditions are developed under which a self-sustaining process of formal democratization results from the interaction between a rent-maximizing government and the public. The central idea is that the political leader accepts some *formal differentiation* and decentralization of the politico-institutional setting in order to enhance the degree of credibility of post-constitutional policy making (post-constitutional credibility) and thus paves the way for Schumpeterian growth processes in the economy. In section 3, the problem is explored that the desired effects of formal institutional differentiation can only unfold as far as the political leader credibly commits to the *effective institutional independence* of decentralized political agencies (constitutional credibility) which he or she may not be able to achieve. Section 4 briefly discusses the findings from section 2 and 3, and section 5 concludes.

2. *A model of voluntary democratic transition*

Consider a country the national income level of which depends, on the one hand, on traditional economic variables like factor endowment, technological standard as well as human capital and, on the other hand, on the quality of the politico-institutional setting. We assume that in a setting of full autocratic governmental centralization, all power is concentrated in the hand of what we refer to as "the executive". To the extent that the executive accepts some

reduction in the degree of centralization, it surrenders a part of its formal and effective control over government bodies or public institutions.

For capturing this idea, we define a variable $ID_t \geq ID^m$ that measures the degree of *formal institutional differentiation* as well as a variable $\delta_t \in [\delta^m, 1]$ that measures the degree of *effective institutional independence*. ID^m and $\delta^m \in [0,1)$ are defined as time-invariant technical minimum values, best understood as being somewhere slightly above zero. The variable ID_t measures the degree to which there is a structure of government bodies or institutions that are formally independent from the executive. By contrast, the degree of effective institutional independence δ_t , on top of formal independence, measures the extent to which the executive does effectively respect the independence of further government bodies and institutions for any given degree of formal institutional differentiation ID_t . Finally, we define $\delta e \in [\delta e^m, 1]$ and $\delta e^m \in [0,1)$ as *constitutional credibility*, which is the degree to which the public trusts in the executive to respect the independence of further government bodies and institutions or, in short, to respect the constitutional rules.

Note that a (next to) zero degree of formal institutional differentiation may still allow for the sheer existence of a certain variety of different government bodies or institutions. What it does not allow for, however, is any formal *independence* of one or more of these bodies or institutions. Rather, $ID_t = ID^m$ implies almost all government bodies and public institutions to be still – and formally – bound to one single central authority, namely the executive.

Hence, given $ID_t = ID^m$ and ID^m close to zero, the executive is endowed with both the formal and the effective capacity to legitimate and monitor almost all activities, to define both long-term guidelines and operative goals of any sort of public policy and, finally, to restructure the government bodies or redefine public institutions almost at will. Legislative, executive and judiciary power, the central bank as well as other specialized bureaucracies on both the central and the regional levels are all (almost) fully bundled in one hand, and so is the set of public institutions or rules. In brief, there is (almost) no scope for any sort of checks and

balances. Note that such a maximal degree of centralization is also incompatible with any sort of voter control, as public elections or polls arise from public institutions that must not be subject to opportunistic changes in the behavior of the executive.

As implied in the modern version of the critical-juncture hypothesis (Acemoglu/Johnson/Robinson/Yared, 2009, Acemoglu/Robinson, 2012), full centralization of power may indeed allow for some growth in per-capita income and in particular for catch-up growth driven by the adoption of world-wide available technologies. An innovation driven, Schumpeterian growth process, however, requires a more subtle interaction between factor endowment, progress in technological standard as well as knowledge on the one hand and a sophisticated and differentiated structure of public institutions on the other, thus presupposing a considerable variety of mutually independent authorities in both formal and effective terms.

Moreover, a Schumpeterian growth process does not only presuppose a formally differentiated structure of public institutions, but also a sufficient degree of credibility of governmental action of all sorts. Particularly, the public needs to be able to expect the executive as well as further government agencies to stick to their political promises and announcements within a given set of formal governmental differentiation. We hence define a variable $C_t \in [C^m, 1]$ and $C^m \in [0,1)$ that measures the degree of what we call *post-constitutional credibility* of government action.

Note that, by now, we have two concepts of credibility and that it is crucial for them to not being confused:

- The first is *constitutional credibility*, as measured by δe_t . This concept of credibility represents the degree to which the public trusts in the executive's willingness to respect the degree of formal institutional independence or, in short, the constitutional rules. We will explore the implications of constitutional credibility mainly in the next section.

- The second is *post-constitutional credibility*, as measured by C_t . Post-constitutional credibility is the degree to which all agents of public policy can be expected to stick to their respective promises and announcements within a given structure of formal institutional differentiation and effective institutional independence.

Finally, we normalize the size of the population to one and measure per-capita national income Y_t by the following production function:

$$Y_t = A_t \cdot (\delta e_t \cdot ID_t)^\alpha \cdot C_t^\beta, \text{ with } \alpha, \beta \in [0,1]. \quad (1)$$

The term A_t catches all traditional determinants of national income, such as factor endowment and the technological standard, while the rest of the function describes the influence of institutional determinants, as described above. For reasons of technical simplicity and without loss in generality, we set $\delta e^m = \delta^m = ID^m = C^m = 0$ in this section. While our framework allows for all sorts of determinants of growth, we are interested in the incentive of the executive to supply a modern differentiated structure of public institutions and to credibly respect their effective independence. In principle, the degree to which the executive is willing to allow for such a structure boils down to the supply of democracy.

We model a “Leviathan type” executive that maximizes political rents, defined as the expected value of a certain share in national income:

$$Z_t = \tau_t \cdot \pi_t \cdot A_t \cdot (\delta e_t \cdot ID_t)^\alpha \cdot C_t^\beta, \text{ with } \tau_t, \pi_t \in [0,1], \quad (2)$$

where π_t is the probability of the executive of surviving in office. We abstract from government services, so that Z_t does indeed denote pure political rents. We call $\tau_t \cdot \pi_t$ the “power potential” of the executive. For any given value of the power potential, the executive may trade a higher tax rate τ_t against a lower probability π_t of surviving in office. We assume the power potential to be explained by the degree ID_t of institutional differentiation, the degree of effective institutional independence δ_t , and, finally, by the degree of post-constitutional cred-

ibility C_t of all political agents. To be precise, we assume the following relation: A rising degree of institutional differentiation reduces the power potential of the executive for any non-zero level of effective institutional independence δ_t . The reason is straightforward: On the one hand, surrendering formal and effective influence over public institutions and reducing the executive's role to an integral part of a complex, self-regulating structure of checks and balances reduces the executive's capacity for pushing public policy at will, and it also implies a rise in the risk of losing power altogether. On the other hand, though, an increase in the degree of post-constitutional credibility C_t raises the trust of the public in the governmental agencies in general and the executive in particular. Hence, a rise in C_t raises the executive's power potential for any given degree of institutional differentiation.

These two aspects are captured in equation (3):

$$\tau_t \cdot \pi_t = \frac{1}{1 + \delta_t \cdot ID_t \cdot C_t^{-1}} \text{ with } \tau_t, \pi_t, C_t \in [0, 1]. \quad (3)$$

For any given degree of both C_t and δ_t , a reduction in ID_t raises the executive's power potential. A reduction in $\delta_t \cdot ID_t$ to zero and, hence, a move into a most centralized dictatorship, would even raise the power potential to one for any $C_t \neq 0$. On the other hand, a rise in post-constitutional credibility C_t would, for any given $ID_t, \delta_t \neq 0$, raise the power potential, and a reduction in C_t would lower the power potential for any $ID_t, \delta_t \neq 0$.

Combining (2) and (3) yields:

$$Z_t = \frac{A_t \cdot (\delta_t \cdot ID_t)^\alpha \cdot C_t^\beta}{1 + \delta_t \cdot ID_t \cdot C_t^{-1}}. \quad (4)$$

In what follows, we assume some limited control of the executive over ID_t . By limited control we define a capacity of the executive to implement stepwise or, to put it in *Karl Popper's* term, "piecemeal" changes in the degree of ID_t within each period t . Without losing power, however, the executive alone would, by our assumption, not be able to shift the degree of institutional differentiation all the way from very low to very high levels or vice versa.

On this basis, we can now explore the conditions under which a government would voluntarily accept steps into higher degrees of institutional differentiation. Different from the degree of ID_t , the level C_t of political credibility is assumed to be under no direct control of the government. It rather results from an evaluative judgment by the public of the following form:

$$C_t = f(\delta e_t \cdot \overline{ID}_t). \quad (5)$$

In particular, the public bases the evaluation of post-constitutional credibility on the observed history of institutional differentiation \overline{ID}_t as well as on constitutional credibility δe_t . We define the evaluation of the history of formal institutional differentiation as $\overline{ID}_t = \sum_{t-m} h_{t-m} \cdot ID_{t-m}$ with $\sum_{t-m} h_{t-m} = 1$. For our purposes, we may restrict the observed periods m to one in order to keep things simple, so that the history collapses into $\overline{ID}_t = ID_{t-1}$. We can hence write the evaluation function (5) as:

$$C_t = f(\delta e_t \cdot ID_{t-1}). \quad (5a)$$

Since a degree of institutional differentiation and/or of effective institutional independence of zero implies perfect centralization of power in the hand of the executive, there will be no checks and balances and no institutional control of the government whatsoever in this case. As a result, the public can find answers to the question as to whether public-policy agents will stick to any of their – post constitutional – promises and announcements only on the basis of the respective situational incentives, since there is no institutionally driven credibility incorporated in public policy. When having observed positive degrees of institutional differentiation over a longer period, so that $\overline{ID}_t = ID_{t-1} > 0$, and when the public has reason to trust in the executive's respect of the constitutional rules, so that $\delta e_t > 0$, then this gives rise to positive degrees of post-constitutional credibility (see Desai/Olofsgård, 2006).

The relation between institutional differentiation and post-constitutional credibility, however, will hardly be linear. Since degrees of differentiation just slightly above total centralization

would be associated with low costs of cooperation between the different government agencies, there will be strong incentives for cartelization when formal institutional differentiation is positive but low. As the degree of institutional differentiation rises, the number of partners needed to be included into cartels rises progressively, and so do the costs of building and maintaining political cartels. By contrast, there is no such effect for high initial levels when the stability of political cartels is already low. To the contrary: It is plausible that the marginal increase of C_t in $\delta e_t \cdot ID_{t-1}$ drops in rising initial degrees of $\delta e_t \cdot ID_{t-1}$. In sum, C_t rises first in a more than proportional and later on in a less than proportional fashion with rising levels of $\delta e_t \cdot ID_{t-1}$. We capture this by the following functional form of $C_t = f(\delta e_t \cdot ID_{t-1})$:

$$C_t = \frac{(\delta e_t \cdot ID_{t-1})^2}{a + b \cdot (\delta e_t \cdot ID_{t-1})^2}, \quad \text{with } a \in (0,1), \text{ and } b > 1. \quad (6)$$

Equation (6) can be viewed as a best-response function of the public to the executive's choice with respect to long-term institutional differentiation as well as to its respect to the constitutional rules:

$$RF_P: C_t = \frac{(\delta e_t \cdot ID_{t-1})^2}{a + b \cdot (\delta e_t \cdot ID_{t-1})^2}. \quad (7)$$

Differentiating the rent function (4) with respect to ID_t , in turn, provides the executive's best-response function with respect to the public's choice of C_t :

$$RF_E: ID_t = \frac{\alpha}{(1-\alpha) \cdot \delta_t} \cdot C_t \quad (8)$$

According to (8), the executive's willingness to accept higher degrees of institutional differentiation rises in rising degrees of post-constitutional credibility, as evaluated by the public. The reason is that higher degrees of post-constitutional credibility reduce the executive's cost of institutional differentiation in terms of a decreasing power potential while, at the same time, an increasing institutional differentiation raises political rents via rising Schumpeterian productivity in the economy. In short, a rise in post-constitutional credibility lowers the im-

PLICIT relative price of trading higher political rents against a lower power potential. Combining the two reaction functions (7) and (8) yields the following difference equation:

$$ID_t = \frac{\alpha \cdot (\delta e_t \cdot ID_{t-1})^2}{(1-\alpha) \cdot (a+b \cdot (\delta e_t \cdot ID_{t-1})^2) \cdot \delta_t} \quad (9)$$

By assuming $ID_{t=i} = ID_{t=j} \forall i, j \in \mathbb{N}$, combining (7) and (8) and solving for ID ,³ we find the following conditions for steady-state equilibria:

$$ID = \begin{cases} \frac{\alpha \cdot \delta e + \sqrt{(\alpha \cdot \delta e)^2 - 4 \cdot a \cdot b \cdot \delta^2 (1-\alpha)^2}}{2 \cdot (1-\alpha) \cdot b \cdot \delta e \cdot \delta} & \text{for } \frac{\alpha}{(1-\alpha)\delta} \geq \frac{2\sqrt{a \cdot b}}{\delta e} \\ 0 & \end{cases} \quad (10)$$

Figure 1 illustrates the results. For $\frac{\alpha}{(1-\alpha)\delta} < 2\sqrt{a \cdot b}/\delta e$ and, hence, relatively steep RF_{E-} curves (see (10) and RF_{E2} in figure 1), the degree of institutional differentiation will converge back into zero for any initial value of ID . The same is true for $\frac{\alpha}{(1-\alpha)\delta} \geq 2\sqrt{a \cdot b}/\delta e$ and, hence, less steep slopes of the RF_{E-} curve (see RF_{E1} in figure 1), but with initial values of ID of less than $ID = \frac{\alpha \cdot \delta e - \sqrt{(\alpha \cdot \delta e)^2 - 4 \cdot a \cdot b \cdot \delta e (1-\alpha)^2}}{2 \cdot (1-\alpha) \cdot b \cdot \delta e}$ (henceforth the “threshold value” or simply ID_1 , as in figure 1). Here again, ID will converge back into zero. As a result, for these parameter values, political systems with some institutional differentiation will not survive the process of mutual adjustments of policy and expectations between the executive and the public.

However, if $\frac{\alpha}{(1-\alpha)\delta} \geq 2\sqrt{a \cdot b}/\delta e$ (that is, if there is a sufficiently flat RF_{E-} curve like RF_{E1} in figure 1) and if, for whatever reason, the society had initially reached a value of $ID > ID_1$ in a previous period, the dynamic will drive the political system all the way up to high levels of ID , possibly into what can be called a full-fledged democracy, at least in formal terms.

³ For notational convenience, we suppress time indices here.

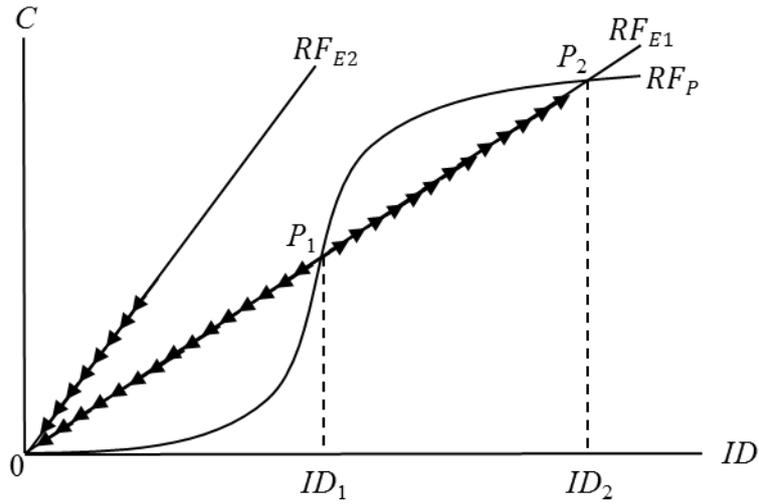


Figure 1: Institutional differentiation and governmental credibility

The drivers behind this dynamic can best be grasped by looking at the respective adjustment processes in discrete time. Look at figure 2 first, where the initial value ID_0 is assumed to be above the threshold value ID_1 . In that case, the corresponding post-constitutional credibility, as it is evaluated by the public, will go all the way up to the level in point P_2 . It will hence exceed the value in point P_1 , which was the level for which the executive's optimal degree of institutional differentiation was ID_0 . Now, given an increase in post-constitutional credibility to a level corresponding to point P_2 , the executive faces the opportunities for exploiting the higher level of credibility and for generating extra political rents, given their willingness to further raise the level of institutional differentiation. Particularly, a rent-maximizing executive would indeed raise this level to that in P_3 which, in turn, would once again raise the level of post-constitutional credibility, and so forth, until the intersection of the two reaction functions in P_5 will eventually be reached.

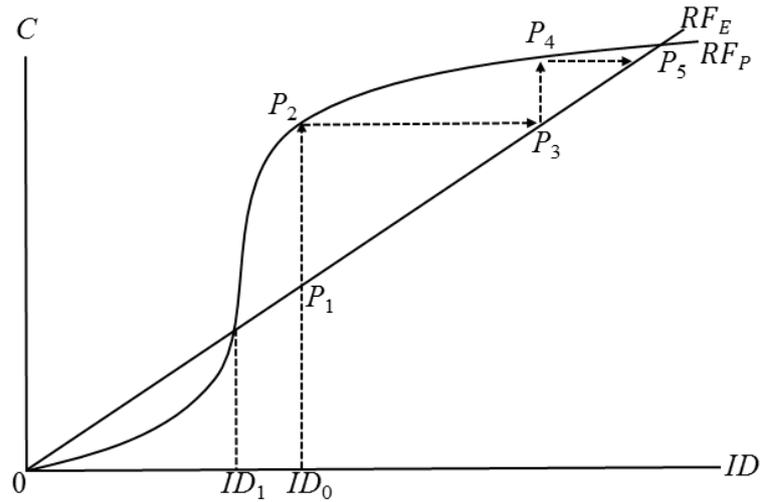


Figure 2: Progression into democracy

Correspondingly, figure 3 represents a process that starts with an initial value of institutional differentiation ID_0 below the critical value ID_1 . In that case, post-constitutional credibility drops from P_1 down to P_2 . With such a low level of post-constitutional credibility, however, ID_0 does no longer maximize political rents. The executive will hence reduce institutional differentiation to a level corresponding to point P_3 . This reduction, in turn, will prompt the public to further adjust the executive's post-constitutional credibility, and so forth, this time until $ID=C=0$ is reached and full autocracy is (re)installed.

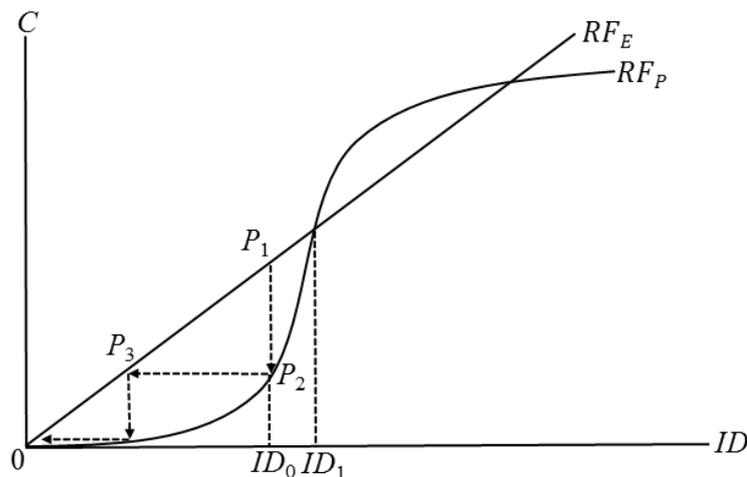


Figure 3: Fall-back into autocracy

One could say that for sufficiently flat reaction functions RF_E and for initial values of $ID > ID_1$, a virtuous circle will be set in motion, eventually leading a society to a full-fledged

democracy. By contrast, in all other cases, that is for too steep RF_E -curves and/or for initial values of $ID < ID_1$, a vicious circle will be set in motion that eradicates all possible former efforts aimed at installing a democracy.

What, however, is behind these initial values and parameters and what sense could they make in terms of real societies? According to (8), the slope of the RF_E -curve is $\alpha/(1 - \alpha)\delta_t$. Recall that, according to (2), α is the production elasticity of ID and of δe with respect to per-capita income. That is, the higher α , the more important are the degrees of institutional differentiation, times constitutional credibility. For convenience, let us call α the *returns to democracy*. The returns to democracy represent the implications of Lipset's modernization hypothesis in our approach, and the modernization hypothesis ironically is relevant precisely to the extent to which one accepts a central assumption of the critical-juncture hypothesis, namely the following: The more an economy rests on modern "Schumpeterian" production processes, the more productive is a non-zero degree of formal institutional differentiation, times any non-zero degree of constitutional credibility. The higher the productivity of institutional differentiation and constitutional credibility, in turn, the more does it pay for the executive to trade ID against some degrees of the power potential $\pi \cdot \tau$. This is what was meant by a mutually reinforcing relationship between the two seemingly contradicting hypotheses in the introduction of this paper.

In any case, however, what is needed for formally democratic institutions to be supplied is that ID has, for some reason, once passed the critical value ID_1 , since otherwise the system tends to degenerate back into autocracy. This holds at least as we maintain the assumption that the executive has only limited control over ID and will hence not be able to push ID from low or zero levels all the way up to a level above ID_1 . The question hence arises as to what it could be that may be behind an initial push of ID beyond the critical level? Here are some candidates from a historical point of view:

1. The German case: After having started and finally lost a devastating war that was followed by the collapse of a most brutal regime, the Western allies strictly monitored the restructuring process of Western Germany's institutions and made sure that the degree of Germany's formal institutional differentiation remained at high values for a while. The Americans urged Germany to include the principle of federalism into its constitution and to even give it the status of an "eternal rule"⁴. Austria is a similar example.
2. The Spanish case: After having been crowned as King of Spain, Juan Carlos stripped his position as monarch from that of the head of the Spanish government. He then surrendered his executive and legislative power in favor of democratically legitimated bodies and restricted his role to one of a constitutional safeguard. In that position, he was no longer limited to stepwise shifts in *ID*, since he himself was, in his new and restricted position, no longer threatened by a potential loss in his remaining power via elections. This, in turn, enabled him to shift *ID* (beyond the critical value ID_1) and launch the process of a virtuous circle. A similar way may have come to the mind of Mohammad VI, King of Morocco, when he faced the threat of the first wave of the "Arab-Spring Rebellion" and introduced decentralizing constitutional reforms.
3. The revolution case: The theoretical background behind revolutionary and, specifically, the public-good character of revolutionary uprisings is beyond the scope of this paper. Fortunately however, it is sufficient for our purposes to notice that they do indeed occur from time to time. As already mentioned, however, the sad empirical truth about revolutions is that the least of them have led to a more just society or to democracy, for that matter. Nevertheless, some of them are at least related to democratic transitions. The institutional dynamics of the formerly socialist countries in Middle and Eastern Europe may be an example at hand, but even here, the outcome

⁴ Eternal rules in Germany's constitution are rules that cannot even be changed by unanimous agreement of any decision body, as long as the constitution in its entirety is effective.

of a free and democratic society was restricted to only a fraction of the formerly socialist societies.

Because of its mixed picture, we will briefly elaborate on the revolutions in Central and Eastern Europe. Roughly speaking, we find three types of further developments after 1989. Practically all of those formerly socialist countries that have been observed by the European Bank for Reconstruction and Development (EBRD) in their Transition Reports since 1989 went through considerable reforms of their political institutions in the initial period following the collapse of their formerly communist systems. Formally, all of them raised the degree of democracy, as measured by typical democracy indicators, to a remarkable extent within two or three years from their political turnaround. From then on, however, few countries stabilized at that intermediate level. Rather, one group of countries went all the way up to well-established western-type democracies, whereas another group shifted back into either outright dictatorships or to some crypto-authoritarian forms of government with little efforts made in hiding the *de facto* dependence of decentralized political authorities – specifically the judiciary – from the executive. While practically all former Soviet countries in Middle Asia established more or less outright dictatorships, Russia and the Ukraine are illustrative examples for crypto-authoritarian structures, and there are more of them in the Caucasian region.

Particularly the third group of countries from the post-socialist world is an interesting case, since these countries maintain a noticeable degree of formal institutional differentiation, but what we also observe is that their executives do not bother too much with respecting effective independence of further government bodies or institutions. Rather, they frequently intervene into day-to-day decisions of all sorts of bureaucracies, they bypass the law, sometimes even threaten parliament as well as the media, and they even frequently communicate expected outcomes of ongoing law suits in public, thereby more or less openly infringing on the judiciary's independence.

If we widen our view to other regions of the world, we easily find that this is a pretty common practice among formally democratic countries all over the world. From the perspective of our model, this is not accidentally so, since the executive faces a problem with respect to constitutional credibility δe . To be specific, the perspective of higher political rents gives the executive an incentive to raise ID in order to enhance post-constitutional credibility and, further on, to initiate Schumpeterian growth. However, the post-constitutional credibility hinges upon the evolution of formal institutional differentiation, *times* effective institutional independence, and hence upon the constitutional credibility. In raising ID , the executive may, as shown, be able to solve the credibility problem on the post-constitutional level, but the credibility problem then reappears at the constitutional level via δe . In the following section, we will explore the problem of constitutional credibility and hence the conditions under which, on top of formal institutional differentiation, one can expect something like a self-enforcing full-fledged democracy to unfold.⁵

3. *Self-sustaining democracies versus crypto authoritarianism*

The following question is at the heart of this section: What are the conditions, if any, under which the executive will both respect the constitutional rules and be able to build, as well as maintain, a corresponding reputation, conditional on already having established a high degree ID of formal institutional differentiation? In order to explore this question, we consider an infinitely repeated game, starting in $t = 0$. We assume above-zero minimum values $\delta^m > 0$ for both δ_t and δe_t . However, we assume both the executive E and the public P to only have a binary choice over these variables, so that we have $\delta_t, \delta e_t \in \{\delta^m, 1\}$, respectively, with $\delta^m \in (0, 1)$. The executive's utility function represents the expected present value of all future political rents, as given by (4) and weighted by a discount factor d_t that may be subject to change over time:

⁵ See Przeworski (1991; 2005); Ordeshook (1992); Mittal/Weingast (2013); Weingast (1997; 2006); Fearon (2011).

$$U_t^E = \sum_t d_t^t \cdot Z_t \text{ with } d_t > 0. \quad (11)$$

The discount factor d_t represents the character of the executive against the background of the present status as well as the executive's expectations on the future development of its politico-economic environment. In particular, the executive can be of character $d_t \geq d^*$ or of character $d_t < d^*$, where d^* is a critical discount factor to be derived below.

The public, in turn, does not maximize the present value of a sum of future payoffs. Rather, we assume the public to aim at matching the executive's choice of δ_t period by period, which can simply be captured by the following utility function:

$$U_t^P = \begin{cases} 1 & \text{if } \delta_t = \delta e_t \\ 0 & \text{if } \delta_t \neq \delta e_t. \end{cases} \quad (12)$$

The game has three stages in each consecutive period, starting with period $t=0$:

1. In stage one of each period, nature updates the characteristics of the executive against its politico-economic background. In doing so, it gives reason for the executive to update d_t . We will refer to updates that lead to switches in the executive's character from $d_t \geq d^*$ to $d_t < d^*$ or vice versa as *major events*. Major events happen with probability $1 - \varepsilon_t$ in each direction. At least in principle, the probability $1 - \varepsilon_t$ may change over time and has to be evaluated anew in each period. The probability of a major event may either be known to both E and P , it may be known only to E (asymmetric information), or it may be unknown to both E and P .
2. In stage two of each period t , the public chooses δe_t . Note that the public has no direct information on the character of the executive at any time t .
3. In stage three, the executive decides whether it wants to respect the constitutional rules and set $\delta_t = 1$ or to infringe on the *effective institutional independence* of the decentralized government bodies and, hence, choose $\delta_t = \delta^m$.

As the executive incorporates any available information in its discount factor d_t in each period t , the executive always expects $E(d_t) = d_{t-1}$, which implies $1 - \varepsilon_t < 0.5$.⁶ This is known to both the executive and the public regardless of the distribution of information on $1 - \varepsilon_t$, since even with asymmetric information the public knows that the executive chooses its discount factor d_t in a way as to have $1 - \varepsilon_t < 0.5$ in any period t .

Following stage three, the game starts over again with nature's update of the executive's character, and then it continues running infinitely. The utility of the executive derived in each period equals its rents Z_t , as given by (4), which is:⁷

$$U_t^E = Z_t = \begin{cases} Z^{11} = \frac{A \cdot ID^\alpha \cdot C^\beta}{1 + ID \cdot C^{-1}} & \text{if } \delta e_t = 1; \delta_t = 1 \\ Z^{1m} = \frac{A \cdot ID^\alpha \cdot C^\beta}{1 + \delta^m \cdot ID \cdot C^{-1}} & \text{if } \delta e_t = 1; \delta_t = \delta^m \\ Z^{m1} = \frac{A \cdot (\delta^m \cdot ID)^\alpha \cdot C^\beta}{1 + ID \cdot C^{-1}} & \text{if } \delta e_t = \delta^m; \delta_t = 1 \\ Z^{mm} = \frac{A \cdot (\delta^m \cdot ID)^\alpha \cdot C^\beta}{1 + \delta^m \cdot ID \cdot C^{-1}} & \text{if } \delta e_t = \delta^m; \delta_t = \delta_t^m. \end{cases} \quad (13)$$

The game is visualized in figure 4, where it gives the payoffs of the public U_t^P and the executive U_t^E per period.

Two relations between the payoffs are of particular interest here. The first is that $Z^{11} < Z^{1m}$, and the second is that $Z^{m1} < Z^{mm}$. For a one-shot game this would imply the executive to have a dominant strategy $s^{E*} = \{\delta^m\}$. Being aware of that, the public would have $s^{P*} = \{\delta^m\}$ as its best response and the strategy profile $s^e = \{\delta_t = \delta e_t = \delta^m\}$ would result in a subgame-perfect Nash equilibrium. In other words, in a one-shot setting would a democracy not survive the incentive of the executive to infringe on the constitutional rules, and the public would rationally expect precisely that.

⁶ For a normal or at least a symmetrical probability distribution, it follows from $E(d_t) = d_{t-1}$ that $\Pr(d_t > d_{t-1}) = \Pr(d_t < d_{t-1}) = 0.5$, so that $\Pr(d_t < d^* | d_{t-1} > d^*) < 0.5$ and, likewise $\Pr(d_t > d^* | d_{t-1} < d^*) < 0.5$, which means that $1 - \varepsilon_t < 0.5$.

⁷ For notational convenience, we suppress time indices for A , ID and C in this section, so that variations in Z_t depend on δe_t and δ_t alone.

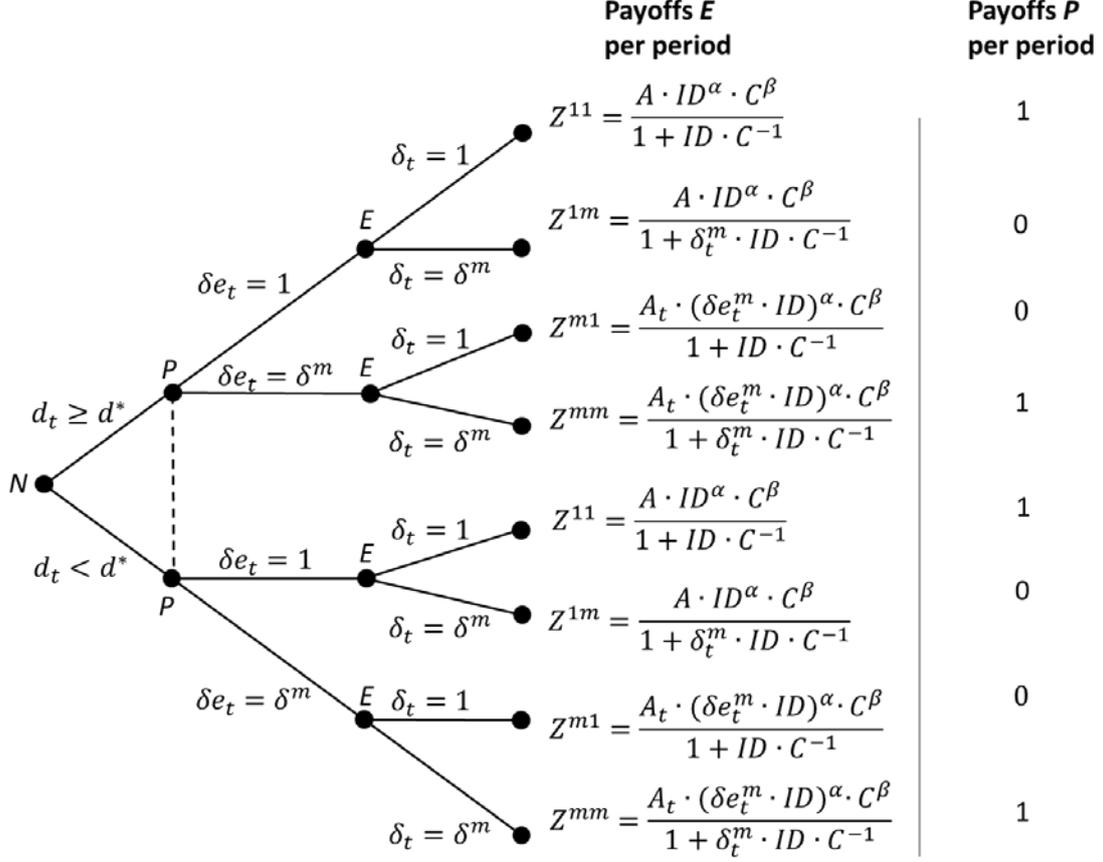


Figure 4: Structure of the game

This may be different in an infinitely repeated game. Assume, for that matter, that an observation δ_{t-1} by the public were understood as a signal for δ_t in the subsequent period, such that $\Pr(\delta_t = x | \delta_{t-1} = x) \geq 0.5$ and $\Pr(\delta_t = y | \delta_{t-1} = x) < 0.5 \forall t$ and $x \neq y$. Then the public's best response would be $s_t^P = \{\delta e_t = \delta_{t-1}\} \forall t$.

Assume now that the public had observed $\delta_{t=0} = 1$, so that the maximal payoff can be expected from choosing $\delta e_{t=1} = 1$. Having observed that, the executive could realize political rents of $Z^{1m} > Z^{11}$ by choosing $\delta_{t=1} = 0$ instead of $\delta_{t=1} = 1$. The public would then, however, set $\delta e_{t=2} = 0$. After having been punished that way, the executive has two options: It could either switch back to $\delta_{t=2} = 1$ (one-time defection), or it could go on with $\delta_t = 0$ for all future periods (all-time defection). If the executive left it with a one-time defection and set $\delta_{t=2} = 1$ in the next period, the public would also switch back to $\delta e_{t=3} = 1$, after having observed $\delta_{t=2} = 1$. Both P and E could then continue with $\delta_t = \delta e_t = 1$ forever. The present

value of all future political rents in the case of a one-time defection strategy would be equivalent to the present value in the case of a never-defect strategy (i.e. $\delta_t = \delta e_t = 1 \forall t$) if and only if the executive were characterized by a discount factor d_o^* , such that:

$$\sum_t d_o^{*t} \cdot Z^{11} - (Z^{1m} + d_o^* \cdot Z^{m1} + \sum_{t>1} d_o^{*t} \cdot Z^{11}) = 0, \text{ which implies that:}$$

$$d_o^* = \frac{Z^{1m} - Z^{11}}{Z^{11} - Z^{m1}}. \quad (14)$$

The all-time defect strategy, by contrast, would induce the public to set $\delta e_t = 0$ for all $t \geq 1$. Given $\delta e_t = 1$ in the first period, the present value of all future political rents in the case of an all-time defect strategy would be equivalent to the present value in the case of a never-defect strategy if and only if the executive were characterized by a discount factor d^* , such that:

$$\sum_t d^{*t} \cdot Z^{11} - (Z^{1m} + \sum_{t>0} d^{*t} \cdot Z^{mm}) = 0, \text{ which implies that:}$$

$$d^* = \frac{Z^{1m} - Z^{11}}{Z^{11} - Z^{mm}}. \quad (15)$$

As a result, for the executive to abstain from an all-time defect strategy, conditional on the public's strategy $s_t^P = \{\delta e_t = \delta_{t-1}\} \forall t$, the executive needs to be of character $d_t \geq d^*$. Furthermore, since $Z^{mm} > Z^{m1}$ and hence $d^* > d_o^*$, an executive that has an incentive to defect once has an incentive to defect always.

This is the basis for defining our critical discount factor d^* . It is the discount factor that equilibrates the present value of all future political rents following from either a strategy pair ($\delta_t = \delta e_t = 1 \forall t$) or a strategy pair ($\delta_t = \delta e_t = 0 \forall t$). Inserting the payoffs from (13) into (15) yields:

$$d^* = \frac{1 - \delta^m}{(1 - \delta^{m\alpha}) \cdot C \cdot ID^{-1} + \delta^m - \delta^{m\alpha}};$$

$$\text{with: } d^{*'}(ID \cdot C^{-1}) = \frac{(1-\delta^m)(1-\delta^{m\alpha})}{((1-\delta^{m\alpha}) \cdot ID^{-1} \cdot C + \delta^m - \delta^{m\alpha})^2 \cdot (ID^{-1}C)^2} > 0; \text{ and } \lim_{\delta^m \rightarrow 0} d^* = ID \cdot C^{-1}. (16)$$

Following (16), the critical discount factor strictly increases in the ratio $ID \cdot C^{-1}$. Moreover, for very small minimum values δ^m , the critical discount factor does even converge into that ratio. The reason is that the critical discount factor is indeed an implicit price that the executive has to pay for each unit C of post-constitutional credibility in terms of concessions to the degree of formal institutional differentiation ID . Any rise in that price makes a world with $\delta_t = \delta e_t = 1 \forall t$ less attractive to the executive than a world with $\delta_t = \delta e_t = \delta^m \forall t$. Only executives that have sufficiently high discount factors $d_t \geq d^*$ would find the former world (weakly) more attractive than the latter.

As a result, a character $d_t \geq d^*$ implies a best response $s_t^E = \{\delta_t = 1\} \forall t$ of the executive to a strategy $s_t^P = \{\delta e_t = \delta_{t-1}\} \forall t$ by the public. The latter, however, to be a rational strategy for the public requires the choice δ_{t-1} by the executive to be a credible signal for δ_t , such that $Pr(\delta_t = 1 | \delta_{t-1} = 1) \geq 0.5$ and $Pr(\delta_t = \delta^m | \delta_{t-1} = \delta^m) \geq 0.5$. Although there is no direct way for determining $Pr(\delta_t = 1 | \delta_{t-1} = 1)$, there is an indirect path, leading over the conditional probabilities $Pr(d_{t-1} \geq d^* | \delta_{t-1} = 1)$, $Pr(d_t \geq d^* | d_{t-1} \geq d^*) = \varepsilon_t$, and $Pr(\delta_t = 1 | d_t \geq d^*)$. Combining the first and second of these conditional probabilities and using Bayes' rule, the public can calculate the probability that the executive is of character $d_t \geq d^*$ in t , conditional on $\delta_{t-1} = 1$ as:

$$Pr(d_t \geq d^* | \delta_{t-1} = 1) =$$

$$\frac{Pr(\delta_{t-1} = 1 | d_{t-1} \geq d^*) \cdot Pr(d_{t-1} \geq d^*) \cdot \varepsilon_t}{Pr(\delta_{t-1} = 1 | d_{t-1} \geq d^*) \cdot Pr(d_{t-1} \geq d^*) + Pr(\delta_{t-1} = 1 | d_{t-1} < d^*) \cdot Pr(d_{t-1} < d^*)}.$$

(17)

From our considerations on the critical discount factor we know that, irrespectively of the public's choice of δe_t , $\delta_{t-1} = 1$ is never rent-maximizing as long as the executive is not of character $d_{t-1} \geq d^*$. Hence, $\Pr(\delta_{t-1} = 1 | d_{t-1} < d^*) = 0$ and (17) reduces to:

$$\Pr(d_t \geq d^* | \delta_{t-1} = 1) = \varepsilon_t \geq 0.5. \quad (18a)$$

Hence, $\delta_{t-1} = 1$ is a truthful signal of its character $d_{t-1} \geq d^*$ in $t - 1$ and it indicates a character $d_t \geq d^*$ for t with probability ε_t . Given that $\delta_{t-1} = 1$ is a truthful signal for $d_t \geq d^*$, that both E and P know that even a one-time defection in t by setting $\delta_t = \delta^m$ would yield a lower present value of future rents than no-time defection with $\delta_t = 1$, the public can infer that an executive of character $d_t \geq d^*$ would not choose $\delta_t = \delta^m$, so that it must have been of character $d_{t-1} < d^*$ when having chosen $\delta_{t-1} = \delta^m$. Hence, we also have $\Pr(d_{t-1} < d^* | \delta_{t-1} = \delta^m) = 1$ and:

$$\Pr(d_t < d^* | \delta_{t-1} = \delta^m) = \varepsilon_t \geq 0.5. \quad (18b)$$

The conditional probabilities in (18a) and (18b) represent a weakly consistent belief of the public regarding the character of the executive in t . The public's expected payoffs are then:

$$U_t^P = \begin{cases} \varepsilon_t & \text{for } \delta_{t-1} = 1 \cap \delta e_t = 1; & \text{or for } \delta_{t-1} = \delta^m \cap \delta e_t = \delta^m \\ 1 - \varepsilon_t & \text{for } \delta_{t-1} = 1 \cap \delta e_t = \delta^m; & \text{or for } \delta_{t-1} = \delta^m \cap \delta e_t = 1. \end{cases} \quad (19)$$

The public hence finds its sequentially rational strategy simply as:

$$s_t^{P*} = \{\delta e_t = \delta_{t-1}\}. \quad (19)$$

As all information used so far is known to the executive, too, the executive can form its expectations on the behavior of the public directly from (19) and derive its sequentially rational strategy as:

$$s_t^{E*} = \begin{cases} \delta_t = 1 & \text{if } d_t \geq d^* \\ \delta_t = \delta^m & \text{if } d_t < d^*. \end{cases} \quad (20)$$

From the perspective of the beginning of each period, then, the strategy profile s_t^e in a *Perfect Bayes Equilibrium* (PBE) will be:

$$s_t^e = \begin{cases} \delta_t = \varepsilon_t + (1 - \varepsilon_t) \cdot \delta^m; \delta e_t = 1 & \text{if } \delta_{t-1} = 1 \\ \delta_t = \varepsilon_t \cdot \delta^m + (1 - \varepsilon_t); \delta e_t = \delta^m & \text{if } \delta_{t-1} = \delta^m. \end{cases} \quad (21)$$

Upon realization of probability ε_t , the possible outcomes are:

$$s_t'^e = \begin{cases} \delta_t = 1; \delta e_t = 1 & \text{if } \delta_{t-1} = 1 \cap d_t \geq d^* \\ \delta_t = \delta^m; \delta e_t = \delta^m & \text{if } \delta_{t-1} = \delta^m \cap d_t < d^* \\ \delta_t = \delta^m; \delta e_t = 1 & \text{if } \delta_{t-1} = 1 \cap d_t < d^* \\ \delta_t = 1; \delta e_t = \delta^m & \text{if } \delta_{t-1} = \delta^m \cap d_t \geq d^*. \end{cases} \quad (21)$$

Note that the existence of a PBE presupposes the knowledge of the probability $1 - \varepsilon_t$ of a major event at least by the executive. It implies that the executive will respect the constitutional rules whenever it is of character $d_t \geq d^*$, and that it will infringe on these rules whenever it is of character $d_t < d^*$, and that this will be correctly translated into the future character of the executive by the public with probability ε_t .

The outcomes in the lower two rows of (21) rest on expectation errors about the future character of the executive, which are, of course, the more likely the closer the probability ε_t is to 0.5. That is, it will be difficult to establish a stable equilibrium when there is little knowledge about the future character of the executive. In an extreme case, the probability ε_t is not even known by the executive, so that δ_{t-1} would lose its function of a signal altogether, so that the public cannot learn anything from the executive's choice in the respective previous period anymore. In that case, $\delta_t = \delta^m$ would be a dominant strategy, that is the best strategy independently of the public's choice δe_t and independently of the executive's character in each period, so that the game collapses into a series of single-shot game with the subgame-perfect equilibrium at $\delta e_t = \delta_t = \delta^m$.

4. Discussion

An executive can be expected to respect the constitutional rules of a highly differentiated institutional structure if it has a sufficiently long time horizon, if the probability of a change in its time horizon, that is a major event, is known at least to the executive, and if this probability is not too close to 0.5.

The sufficiently long time horizon implies that the respective executive is sufficiently self-reliant with respect to its ability to stay in office and reap political rents within a competitive environment that permanently challenges the executive with deselection in the case of a loss in confidence on the side of the public. The less an executive is self-reliant in that respect, the less will it be able to commit to its promise to respect the constitutional rules. This aspect suggests that it would make sense to take a closer look at the internal structures of the executive, since it will hardly ever consist of a single person. An institutionalized structure of the executive, consisting of a permanent bureaucracy on the one hand and a temporarily selected political head on the other hand, may be grossly more able to commit to constitutional rules than some newly established group of governors, possibly recruited from some revolutionary group, the future of which is at least insecure. In the former case, most of the political rents will flow into the permanent structure of the executive and that structure has, by its very nature, a long time horizon. In the latter case, however, the opportunities for drawing high short-term rents are high and, additionally, the future is insecure.

That may explain why we rarely can observe stable democracies that directly result from revolutions, although the picture has obviously so much appeal. As in Congleton (2007; 2011), our result suggests that democracies that evolve within a setting of a more or less large number of small steps into ever more differentiated institutional structures have a much better chance to survive, and that is what, for the most part, fits into the observable history of Western democracies.

A sufficiently long time perspective, however, is only one of the conditions for an executive to be constitutionally credible. Another is that the probability of remaining of that character needs to be known by the executive, and that probability needs to be sufficiently high. For the executive itself, of course, this is hardly more than the flipside of the coin of a sufficiently long time-perspective, since such a long time-perspective presupposes a not too high probability of what we have called major events. In any case, however, will an executive not be able to signal a long time-perspective to the public if the public is aware of either an unknown or a high probability of major events that may turn the currently observable character of the executive upside down. Here again, institutionalized structures of the executive are advantageous since they allow for an insecure future of the political head of an executive while, at the same time, they guarantee a long-term horizon of the executive's permanent bureaucratic structure.

5. Conclusions

This paper has presented a model of non-revolutionary transitions into modern differentiated structures of democratic political institutions. It rests on the idea that, upon reaching a certain technological standard of the economy, an initially fully centralized government may discover the opportunity to reap higher political rents by supplying a modern differentiated structure of political institutions. In such a situation, the executive faces a trade-off between retaining its centralized political power on the one hand and exploiting opportunities for higher political rents where, in the latter case, they would have to be willing to transfer some of its power to newly established and independent political agencies. In opting for a higher degree of institutional differentiation, the executive induces higher degrees of what we have called post-constitutional credibility within the setting of political institutions, since institutional differentiation allows for a system of checks and balances as well as of voter control.

A result of the model is that for sufficiently high macroeconomic returns to post-constitutional credibility or, in short, for sufficiently high returns to democracy, a mutually

reinforcing process may be set in motion. That process induces the executive to raise its supply of institutional differentiation in rising degrees of post-constitutional credibility, and it induces the post-constitutional credibility in rising degrees of institutional differentiation. Such a mutually reinforcing process, however, presupposed a certain initial degree of institutional differentiation and sufficiently high returns to democracy. The latter may be viewed as a variant of Lipset's modernization theory.

The ability of democracy to produce post-constitutional credibility, however, requires the executive to be able to credibly commit to its rules. The problem is that the executive may not be able to do so since, for the executive, the introduction of a differentiated structure of political institutions comes at the cost of giving up centralized political power. Since the executive faces the incentive to take both the higher political rents from differentiated political institutions and the power of a centralized political structure, a commitment to the constitutional rules of democracy may, in itself, not be credible. It is shown that, in a one-shot setting, such a commitment is indeed not credible. In a more realistic setting of a non-terminated repeated game, however, an executive may be able to credibly commit to the constitutional rules of democracy, but that requires the executive to have a sufficiently long time-horizon, that the probability of a change in that time horizon is known at least to the executive and that this probability is not too high. Only then will an executive have an incentive to respect the constitutional rules of democracy and the ability to signal that incentive to the public.

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Herausgeber:
Westfälische Wilhelms-Universität Münster
CIW – Centrum für Interdisziplinäre Wirtschaftsforschung
Scharnhorststr. 100
D-48151 Münster

Tel: +49-251/83-25329

Fax: +49-251/83-28429

www.wiwi.uni-muenster.de/ciw

