

Democracy, Dictatorship and the Cultural Transmission of Political Values*

Daide Ticchi
IMT Lucca

Thierry Verdier
PSE

Andrea Vindigni
IMT Lucca and Collegio Carlo Alberto

April 2013

Abstract

We develop a theory of endogenous regimes transitions (with a focus on democratic consolidation), which emphasizes the role of political culture and of its interaction with political institutions. Political culture reflects the extent of individual commitment across citizens to defend democracy against a potential military coup, and it is an endogenous state variable of the model along with formal political institutions. There are two agencies of political socialization which will play a complementary role in the model: the family and the state. Parents invest resources in order to transmit their own political values (commitment to democracy) to their children. The state invests resources in public indoctrination infrastructures. We show that consolidated democracy emerges when sufficiently many people are committed to democracy. Otherwise the model features persistent fluctuations in and out of democracy as well as cycles of political culture. Importantly, the politico-economic equilibrium can feature a persistent (although declining) incongruence between political institutions and political culture, which tends to evolve more slowly than formal institutions.

Keywords: political culture, socialization, democracy, military, nondemocracy, political economy, political transitions, institutional consolidation, path dependency.

JEL Classification: P16, H11, H26, H41.

*Daide Ticchi: IMT Lucca (Italy). E-mail: davide.ticchi@imtlucca.it. Thierry Verdier: Paris School of Economics. E-mail: thierry.verdier@ens.fr. Andrea Vindigni: IMT Lucca. E-mail: andrea.vindigni@imtlucca.it. We thank seminar participants at Bristol University, the Einaudi Institute for Economics and Finance, the European University Institute, the Free University of Amsterdam, University of Modena, University of Namur, University of Naples, Yale University, Oded Galor, Andrea Mattozzi, Giacomo Ponzetto, Robert Powell, Gérard Roland, Daniele Terlizzese, and Hans-Joachim Voth for useful comments and suggestions. We also thank Paola Varotto for excellent research assistance.

“In Russia the state was everything, civil society was primordial and gelatinous; in the West there was a proper relation between the state and civil society, and when the state tremble a sturdy structure of civil society was at once revealed.” (Antonio Gramsci, *Selection from Prison Notebooks*).

1 Introduction

There is now a relatively large literature in economics and political science focusing on the political economy of regime transitions (see for example Acemoglu and Robinson, 2006, and the references cited therein). A central question addressed by this literature is under what conditions a country transitions from some form of nondemocratic government (such as civilian oligarchy, kleptocracy, or military dictatorship) to democracy and vice versa. Two features characterize this literature. The first one is the importance of economic and institutional factors (income, wealth inequality, and the conflict of interest between various socioeconomic groups) in an environment where the government in power has limited ability to make policy commitments. Another aspect of this literature is the adoption of a *consequentialist* perspective according to which agents have only *induced preferences* over political institutions, namely they rank institutions according to the policy outcomes such institutions generate.

While the consequentialist approach to political institutions provides a very useful starting point to analyze complex phenomena such as political transitions, it is in contrast with a large literature in political science and political theory that emphasizes the role of *political culture* and ideologies in explaining the dynamics of political institutions, and in particular the emergence and consolidation of democratic institutions. The concept of political culture has been originally introduced in comparative politics by the works of Almond and Verba (1963) and Easton (1965). Specifically, Almond and Verba (1963) define political culture as “[...] the pattern of individual attitudes and orientations toward politics among the members of a political system. It is the subjective realm that underlies and gives meaning to political actions.” Similarly Easton (1965) defines political culture as a state of mind featuring a deep-seated set of attitudes which include the attachment to democracy as the “optimal” political institution, the belief in its legitimacy and attachment to its symbols. These pieces of work gave rise to an extensive literature in political sociology and comparative politics, which we will succinctly review below. This literature emphasizes the importance of “immaterial” factors such as values, ideologies and legitimacy as important determinants of the sustainability of specific political institutions. It also highlights the role of “socialization agencies” like the

state and the family in the transmission of these factors across generations.

In this paper, we attempt to bridge the gap between these two perspectives of political institutional dynamics. To do this, we develop a theory of political transitions which includes three main components. First, building on the consequentialist political economy tradition, we assume that individuals tend to evaluate institutional systems according to their induced costs and benefits. Second, we include political culture as an important factor playing a role for a variety of political, economic and institutional outcomes. Specifically, we emphasize political culture as a *commitment device* available to citizens to make credible commitments to defend or promote democracy in the event of a military coup.¹ Finally, we assume that political culture is acquired and transmitted by active political socialization over time and across generations. In this setting, we investigate how cultural and institutional factors interact and shape the endogenous dynamics of political regimes and policy outcomes in a society.

Our work has two main related motivations. The first one comes from the observation of several episodes of democratic transitions that suggest an important underlying role of political culture in the consolidation or not of a political regime. For instance, the process of democratic consolidation following the breakdown of Communism proceeded at a very different pace in different European countries. It was indeed rather rapid in countries characterized by relatively strong civil societies such as Estonia, Poland, Hungary, and the Czech Republic, where broad based and diffused pro-civic and pro-democratic beliefs had developed before the communist regime thanks to the existence of civic associations, trade-unions, the Church and family transmission across generations. Conversely, democratic consolidation seemed to be slower in countries such as Croatia, Albania, Belarus and Ukraine, endowed with weaker civil societies.²

The recent case of the “Arab Spring,” i.e. the sequence of rebellions occurred in 2011 in several Middle Eastern countries against incumbent authoritarian governments, is another example illustrating how cultural factors interact with institutional changes and developments of specific types of political regimes (see for example Bradley, 2012, and Noueihed and Warren, 2012). Indeed, the institutional transformations that occurred in countries such as Morocco, Tunisia and Egypt, appear to have caused the replacement of relatively secular autocracies

¹Bisin and Verdier (2000a and 2000b), among others, investigate the related issue of the role of “ideology” as a coordination device for social groups or classes, for *given* political institutions. In this paper, we do not address the related interesting problem of the role of political culture as a potential coordination device in order to focus on its role as commitment device, in presence of *endogenous* political institutions.

²See for instance on this point Bunce (1999), Kubik (2000), Haerpfer, Bernhagen, Inglehart and Welzel (2009).

with “democratic” regimes which have greatly empowered Islamist parties (partially repressed under the previous incumbent regimes). Such parties often endorse extremist ideologies which are the expression of systems of values, rooted in some interpretation of the Islamic religion, very different from those supporting the political culture of secular democracies.³ In countries where large segments of the population share beliefs-systems largely incongruent with liberal secular institutions, the Arab Spring might then rather lead to the emergence and eventually stabilization of some type of “Islamic Republic” rather than a form of Western-type democracy.

A second motivation for this paper comes from the large political sociology literature that emphasizes the role of the state and the family in the political socialization of agents, and investigate their reciprocal interactions.⁴ Galston (2001) and Sapiro (2004) for instance have recently noticed the importance of school and the media for political socialization, which are potentially controlled by the state. Skocpol (1996) also remarked the broad role of a variety of state organizations in giving legitimation to the status quo political order. The role of the state in molding a democratic society and its political culture has been as well emphasized by Baker, Dalton and Hildebrandt (1981) for the case of the Federal Republic of Germany and by Okamura (1968) for the case of post-war Japan. Similarly, Bennich-Björkman (2007a, b, c) discuss at length the impact of institutional change on early democratic socialization in Estonia.⁵ Conversely, several pieces of work in comparative history have demonstrated how totalitarian and authoritarian states such as North Korea (Koon, 1985), the Soviet Union (Keenan, 1986), Al-Quadhafi’s Lybia (Obeidi, 2001), and fascist Italy (De Grazia, 2002) made large ideological investments to indoctrinate their citizens and persuade them of the legitimacy of their rule.

This literature as well points out the role of the family as a socialization agency of young people’s political attitudes and behaviors. This perspective indeed notes that by providing information, talking about political issues, engaging in political actions and providing children with a stable home environment, parents act as role models and facilitators for the acquisition of political values by their children.⁶ This highlights the importance of political socialization

³An exception to this might be the case of the Islamic Moderate Party or *PJD*, which has won the 2011 elections held in Morocco.

⁴Our paper thus emphasizes the political, rather than the economic role of the family, which is discussed for instance in Alesina and Giuliano (2010).

⁵We will discuss later in more detail some cases, including Estonia, the Federal Republic of Germany, and Japan, which illustrate how the implementation of democratic institutions can have a significant and persistent impact on the political culture of the new generations.

⁶See for instance Hyman (1959), Davies (1965), Langton (1969), Dawson and Prewitt (1969), Bronfenbrenner (1979), Jennings, Stoker and Bowers (2009), Sapiro (2004), Hooghe and Wilkenfeld (2008).

in the construction and consolidation of political systems, and therefore suggests that it may be worthwhile developing political economy theories including these dimensions.

In this paper, we provide a model of political transitions using a framework with non-overlapping generations living for two periods, which incorporates some relatively standard ingredients of the existing related literature. In particular, there can be two political regimes, democracy or military dictatorship, and formal political institutions correspond, as usual, to a state variable of the model. In the former case the (producer) median voter decides the fiscal policy, while this is set by the military (which is a self-interested agent potentially posing a coup-threat to an incumbent democratic regime) in the latter case. The agents differs for their occupation, producers or soldiers, and for their attitude towards democracy. In order to focus the attention on the role of political culture and to simplify the analysis, we abstract from the role of income inequality and the inter-class distributive conflict as determinants of institutional change.⁷

The non-standard features of the model include the presence of two novel variables. The first one is an (additional) endogenous state variable reflecting the fraction of citizens who are either potentially intrinsically motivated to defend democracy (the “committed” citizens) or not (the “uncommitted” citizens). In the sequel we will refer to this variable as the level of political culture of the society at a point in time. This variable evolves according to a process of cultural transmission across generations as in Bisin and Verdier (2001) in which preferences for intrinsic motivation for democracy are transmitted through political socialization by paternalistic parents, (each type making an *individual* investment in order to transmit their own preferences to their children).

The second variable is a control variable reflecting the *ideological investment in democratic indoctrination by the state* or, for short, the public democratic investment or democratic stock. Such a variable increases the value of political participation for those individuals that already have intrinsic preferences for democracy. Under democratic institutions, this indoctrination investment decision is taken by majority voting, and its outcome straightforwardly depends on which group is larger in society, committed citizens being always in favor of greater investment in civil virtues than uncommitted ones.

Uncommitted people never put individual effort to defend democracy from a military coup, whereas committed people put some effort provided that the level of democratic indoctrination is above a certain threshold value. The probability of success of coup depends negatively on

⁷This factor has been emphasized for endogenous political transitions by Boix (2003), Acemoglu and Robinson (2006), Acemoglu, Ticchi and Vindigni (2010, 2011) and Ticchi and Vindigni (2010).

the number of committed citizens who are willing to put effort in defense of democracy, and it determines the decision of the army to attempt to capture power in the first place. Similarly, under an incumbent non democratic (military) government, the probability of success of a rebellion depends positively on the number of committed agents and the (endogenous) level of repression that such government can impose. Yet, the decision to support democracy, (or to rebel against a military regime) is taken individually by each committed citizen, who obtains some utility (depending on the public democratic investment) and/or the cost (depending on military repression) from the act itself of a pro-democratic behavior. Anticipating the reaction of the citizens, in equilibrium, the army attempts to make a coup only when the opposition to it is expected to be relatively mild (i.e., there are relatively few committed citizens).

In this setting, a first contribution of the paper is to highlight how family political socialization interact with existing formal political institutions and state indoctrination. Our analysis emphasizes a degree of *complementarity* between family socialization and the structure of political institutions. The more prevalent a political culture favoring one type of political regime, the more likely the emergence and consolidation of that particular political system. Conversely, a given institutional system is more likely to promote the transmission of cultural values functional to that system. These two-way interactions between cultural and institutional factors then shape the endogenous dynamics of political regimes and policy outcomes in interesting ways.

Specifically we show that when the share of committed citizens is higher than a certain endogenous threshold, democracy is fully consolidated and military coups never occur along the equilibrium path. Conversely, when democratic political values are not sufficiently diffused, the model features potentially persistent transitions between democracy and military dictatorships along equilibrium paths emerging with positive probability. Along such paths, democracy is more stable (i.e., it persists over time with greater probability) when the committed, rather the uncommitted, citizens represent the majority, as the former have a greater incentive to make public investments in democratic socialization. The reason for this comes from the fact that committed citizens have both an *intrinsic* and a *functional* preference for democracy, whereas the uncommitted citizens have only the standard induced preferences over political institutions (i.e., they care of democracy *only* for the more favorable policy outcomes that it generates for them relative to a military regime).

A second contribution of our framework is to show that political culture is a persistent phenomenon over time and across political regimes. In particular, it can be maintained even

in the presence of “incongruent” formal political institutions. This is consistent with the idea that culture appears to be like a “slow-moving” variable relatively difficult to reshape (see Eckstein, 1988, and especially Roland, 2004). Specifically, the model generates at equilibrium a potentially persistent (but declining over time) *incongruence* between formal political institutions and political culture.⁸ It is possible for the number of citizens committed to democracy to remain relatively high for a long period of time, even under non democratic institutions, because of the private transmission of democratic culture by the family (i.e., the number of citizens intrinsically committed to democratic values). This phenomenon highlights therefore the contrast between political culture and formal political institutions. Empirically, this result is also important for two related reasons. First, it can help explain why democracy may endogenously emerge or not in countries with different latent democratic cultures, but otherwise similar in terms of observable fundamentals, such as the level of economic development, the nature of the civil-military relations and the relative power of the army. Furthermore, the same result can shed some light on why apparently similar countries can evolve along very different paths of political and institutional developments, conditional on an exogenous shock changing formal political institutions (e.g., the erosion of the power and eventual collapse of the Soviet Union for the countries formerly members of the Warsaw Pact).

Thirdly, our set-up offers a set of rich comparative statics on how changes in exogenous variables such as economic income, state fiscal capacity, natural resources rents or foreign aid affect the equilibrium dynamics of political institutions and political culture. Two effects in opposite directions are highlighted on the likelihood of democratic consolidation. Indeed, any positive change in one of these variables tends to increase the size of the resources that a government in power can potentially capture. On the one hand, this tends to increase the military incentives to attempt coups, which in turn requires higher levels of political culture for the existence of a consolidated democracy where no coup is undertaken. On the other hand, a democratic government has also higher incentives to increase public democratic investment. Along the transition path to consolidated democracy, this triggers an increase in the transmission of political cultural values functional to democratic institutions. This speeds up the rate at which a democratic regime can reach a state of consolidation. Hence to get to democracy consolidation, the system has to pass a more difficult threshold, but also disposes of a “more powerful engine” to get there. This logic explains why higher income or higher state

⁸This result is also somehow in contrast with the standard comparative politics perspective (reviewed below) which argues that formal political institutions and political culture cannot be persistently incongruent in a stable political system.

capacity may not automatically lead to democratic consolidation and therefore is consistent with Acemoglu, Johnson, Robinson and Yared (2008), who find no evidence supportive of (a variety of versions) of the modernization hypothesis originally formulated by Lipset (1959).⁹

The previous argument applies as well for natural resource rents and foreign aid as long as there is no governmental asymmetry across political regimes in the capacity to capture the related additional resources. Strong enough authoritarian military regimes may however have a higher centralized capacity to monopolize natural resource rents than democratic regimes where inefficient rent seeking behaviors can be more pervasive and decentralized. In such a case, our analysis shows that an increase in natural resource revenues has a negative impact on democratic consolidation and the sustainability of democratic cultural values. This illustrates therefore the existence of the possibility of a “political natural resource curse” affecting negatively political institutions and political culture. The same kind of logic indicates conversely that conditional foreign aid disbursed only to democratic regimes has positive effects, not only in the short time for its dissuasive effects on military coups, but also through the promotion of democratic values ensuring long term democratic consolidation.

Finally, the last part of the paper discusses some interesting case studies of democratization processes illustrating salient aspects of our theoretical framework. More specifically, we consider the experiences of Post World War II Federal Republic of Germany and Japan, as well as the historical case of Estonia during much of its 20th century history before and after the Communist regime. The first two cases are clear examples of major democratic reforms and civic socialization programs induced from the outside that contributed, jointly with inter-generational socialization, to the consolidation of democracy and the development of a specific political culture in these countries. The third case illustrates the persistence and partial malleability of democratic culture in an historical context characterized by various political regime transitions.

The paper is organized as follows. The next section reviews the related literature. Section 2 describes the framework and Section 3 describes the equilibrium across political regimes. In Section 4 we determine the optimal choice of transmission of political values. Section 5 describes the regime transitions and the dynamics of political culture. Section 6 reports the results of some comparative statics analysis and some extensions are contained in Section 7. In Section 8 we discuss some evidence related to our model and Section 9 concludes. Some proofs are omitted from the text and reported in the Appendix.

⁹See however Glaeser, La Porta, Lopez-de-Silanes and Shleifer (2004) for an alternative perspective.

1.1 Related literature

In the political economics literature, closely related to us is the recent paper by Persson and Tabellini (2009) who consider theoretically and empirically the nexus between political and economic development, through the accumulation of democratic capital. We depart from that piece of work in two ways. First, we present a dynamic political game where both the technology of production of political culture (by distinct agencies of socialization such as the state and the households) and the role of the army as a player of the game are endogenized. Second, in our setting political culture broadly defined (including investment in democratic infrastructure) acts as a commitment device, whereas in Persson and Tabellini (2009) works as a coordination mechanism in a global game structure. In this sense, political culture plays in our model a similar role to political institutions, in the first generation literature on political transitions. However, there are two important differences: first, in our model political culture is produced with a specific technology involving both the state and the family. Second, political culture is potentially more persistent than formal political institutions, since it does not change immediately (but adjusts endogenously over time), when the latter changes. In addition, we provide some novel results concerning the dynamics and stochastic steady states of our political game.

In the political science literature, our paper also relates to Gerring, Bond, Barndt and Moreno (2005) who argued that the growth of democratic stock has beneficial effects on the accumulation of physical, human and “political” capital, which fosters economic growth. This contribution differs from ours in two main respects: first, it is essentially empirical; second, it addresses the question, which we do not consider at all, of the relation between democracy (i.e., democratic stock) and subsequent macroeconomic outcomes such as growth.

More generally, our work connects to other important bodies of literature in political theory and political science, political economy, the economics of endogenous preferences transmission, and in the recent burgeoning field of behavioral political economy.

The first contribution in the political science and political theory literature, is probably the *Politics* of Aristotle. The great ancient Greek philosopher was perhaps the first author to recognize that a prerequisite for democracy is not only the existence of large middle class (i.e., of a relatively equal distribution of income), but also the sharing of an egalitarian participatory orientation among its citizens (Book IV, 1962 [352 BC]).¹⁰ Also, in his classic work *De la*

¹⁰Other classical authors who recognized the importance of political culture include Charles-Louis de Montesquieu, who in *De L'Esprit des Lois* (1989 [1748]) argues that the positive laws and institutions governing a society reflect its dominant mentality.

Démocratie en Amérique (1994 [1835]), Alexis de Tocqueville claimed that the emergence and flourishing of democracy in America reflects the political culture of its people, and in particular their liberal and participatory orientations. Similarly Lasswell (1951) claimed that the emergence and persistence of democratic regimes depends to a large extent on the nature of mass political beliefs, while Inglehart (1989) also note “political culture” as a crucial link between economic development and democracy.

As already mentioned, our theory is partially consistent with the *congruence doctrine* on institutional consolidation arguing that a political regime is stable only if it is *congruent* with the prevailing political culture among its people (Almond and Verba, 1963; Eckstein, 1966).¹¹ According to that perspective, authoritarian regimes are stable only when people believe that dictatorial powers are legitimate and, similarly democracy is stable when people are convinced to be the ultimate source of political power. While our model includes dynamic complementarities between political cultural values and political institutions that are consistent with this view, our analysis also illustrates the existence of equilibrium situations where the degree of latent incongruence between values and political regimes can persist for significant amounts of time.

In political economy and comparative political economy, the present paper is most closely related to the literature on political transition pioneered by Acemoglu and Robinson (2000, 2001, 2006) and Boix (2003). A few recent papers have also addressed the closely related question of what factors facilitate the endogenous transformation of a “transitional democracy” (under the threat of a regime change such as a potential military coup) into a consolidated democracy, where the median voter has full de jure and de facto power. In particular, Acemoglu and Robinson (2001) allows for bidirectional political transitions, and, for a range of exogenous parameters, features persistent transitions from democracy to oligarchy and the other way around. Acemoglu, Ticchi and Vindigni (2010) also considers unconsolidated or “transitional democracy” and show that can also potentially turn into a consolidated democracy along the equilibrium path of the political game. Neither of these two papers though considers the role of political culture and political socialization as a factor of regime consolidation, and the role of cultural legacies to explain the emergence and persistence of democratic institutions.

Our set-up of cultural evolution builds on the literature on cultural transmission and endogenous preferences formation as initiated in Bisin and Verdier (2000a, 2000b and 2001), and recently extended by Tabellini (2010), Greif and Tadelis (2010), and Acemoglu and Jackson

¹¹See also Hibbing and Theiss-Morse (1995), Norris (1999), Pharr and Putnam (2000), Mishler and Rose (2001), Hadenius and Teorell (2005) and Inglehart and Welzel (2005).

(2012) to political and organizational contexts.¹² These papers, however are not concerned with explaining political transitions and institutional regime consolidation.¹³

More related to us, a recent interesting paper by Farvaque, Mihailov and Naghavi (2012) also adapts the cultural transmission model of Bisin and Verdier (2001) to explain the rise and fall of communism, exploring the interactions between economic incentives (capital accumulation) and social preferences transmitted by ideology. They introduce two types of agents (inequality-averse and inefficiency-averse) and analyze the socioeconomic dynamics of regime transition between liberal market economies and centrally-planned economies abolishing private ownership. Our paper is complement to theirs. Indeed, while Farvaque, Mihailov and Naghavi (2012) consider transitions between alternative economic systems, we focus on transitions between alternative political systems (democracies and authoritarian systems). The two aspects may not be independent but somehow highlight different perspectives of the role of culture. Farvaque, Mihailov and Naghavi (2012) consider the issue of ideological preferences on the standard economic inequality/efficiency trade-off. We emphasize the role of political culture as a commitment device to solve political collective action problems. Also, we introduce the Family and the State as two sources of political indoctrination that work in a complementary way. Finally our model has some endogenous stochastic dynamic features related to the uncertainty of political regimes transition.

We also have connections to the behavioral economics literature and the political economy of beliefs formation (Piketty, 1995; Lott, 1999; Alesina and Angeletos, 2005; Bénabou and Tirole, 2006; Alesina and Fuchs-Schündeln, 2007; Bénabou, 2008; Dessí, 2008; Saint-Paul, 2009; Alesina and Giuliano, 2011). In some of these models, individuals or governments make various kinds of investments, such as the strategic manipulation of information, in changing the future preferences and beliefs of themselves or of their citizens. This is related to our assumption that the state and the family may attempt, at some cost, to shape the political culture of further generations. Our focus however is different from these papers as we are concerned about the interactions and implications of these modes of investments in the emergence and stability of political regimes in a given society.

Finally, through some of our comparative statics, the paper relates to the literature on the political economy of the “natural resources curse” (e.g., Torvik, 2002; Robinson, Torvik and Verdier, 2006). With respect to that literature, we highlight a new “cultural channel”

¹²See Bisin and Verdier (2011) and the references cited therein for an extensive review of this literature.

¹³Recent work by Dixit (2009) also considers the issue of collective cultural socialization in “other-regarding” preferences to stimulate social cooperation and growth, but again does not address the issue of changes in political regimes and institutions.

through which natural resources may affect the functioning of political institutions in the long term. Although our focus is different, our comparative statics of economic income on political culture also connects indirectly to the literature on cultural diffusion and economic development (Ashraf and Galor, 2007; Spolaore and Wacziarg, 2009).

2 The basic setup

We consider an economy populated by a countable infinity of non-overlapping generations of agents living for two periods. Each generation is formed by a continuum of agents of measure one. Agents are identical but differ along two dimensions. One is their occupation, which can be either working as producer or being employed in the army. The military has measure $x < 1/2$ and must be formed at each point in time in order to provide basic goods such as national defense and law and order. We assume that forming an army is always optimal for every government in office, even though the army may use its *de facto* political power generated by the monopoly of the means of coercion in order to replace a civilian government with a military regime. Producers or citizens have size $1 - x > 1/2$ and productivity and income equal to A . Individuals also differ in their attitude towards democracy and will be distinguished between committed and uncommitted to democracy. The former derive utility from defending democratic institutions from military coups or from opposing to authoritarian regimes (revolution), while the latter do not. χ_c^i is an indicator function equal to 1 if the individual is committed, and 0 if he is uncommitted; $q_t \in [0, 1]$ will denote the share of committed citizens of generation t in the society.

The political regime of the country can be either a democracy ($s = D$) or a military dictatorship ($s = M$). In a democracy, collective decisions are made by a leader elected with majoritarian elections. In a military dictatorship instead the military commander is in power. Political transitions occur instantaneously and can take place due to the occurrence of either a coup (transition from D to M), or to a rebellion of citizens against a military regime (transition from M to D). We assume that regime changes can take place in the second period of life cycle only. Therefore, $s_t^1 = s_{t-1}^2$ denotes the political regime in the first period of life of generation t , which is inherited from the previous generation, and also corresponds to the regime at the beginning of the second period; the political regime that emerges in the second period of life will be denoted with s_t^2 . The political regime in place at beginning of each period, $s_t^i \in \{D, M\}$ with $i = 1, 2$, and the *political culture* of the society, corresponding to the “taste” for democracy, $q_t \in [0, 1]$, will be the two state variables of the game.

If the military attempts a coup, this is successful with probability 1 if there is no opposition by the citizens, while the coup fails when the share of committed agents in the society q is higher than a certain threshold $\bar{q} \in (0, 1)$. The threshold \bar{q} is stochastic and has a distribution $f(\bar{q})$. Therefore,

$$F(q) \equiv \Pr(q \geq \bar{q}) = \int_0^q f(\bar{q}) d\bar{q}$$

represents the probability that the coup is not successful. We will later assume that $F'(q) = f(q)$ is not too increasing. We also assume that each soldier bears a cost $T > 0$ when the military undertakes a coup.

The preferences of the producer i of generation born at time $t \in [0, \infty)$ can be represented as follows

$$U_t^i = u_{t,1}^i + \mathbb{E}_t \{u_{t,2}^i\} = c_{t,1}^i + \lambda G_{t,1} + \mathbb{E}_t \{c_{t,2}^i + \lambda G_{t,2} + \chi_o^i (\chi_c^i b_{2t} - \eta)\}, \quad (1)$$

where $u_{t,j}^i$ is the instantaneous utility in period $j \in \{1, 2\}$, \mathbb{E}_t is the expected value operator conditional on the information available at the first period of life and no discounting is assumed. Expression (1) reflects the assumption that the per-period utility function depends linearly on a set of arguments which include the private good consumption, $c_{t,j}^i$, and the potential consumption of a public good $G_{t,j}$; $\lambda > 0$ is the taste for the public good. In addition, when individuals oppose to a military coup or attempt a rebellion against a military regime they pay a cost $\eta > 0$. χ_o^i is an indicator function equal to 1 if the agents opposes to a coup, and it is 0 otherwise. However, individuals may derive utility from this opposition if they are committed to defend democracy ($\chi_c^i = 1$). This utility corresponds to the total level of ideological investment in democratic indoctrination by the state (or shortly, the public democratic investment)

$$b_{t,2} = b_t + \varepsilon_t,$$

where b_t is the level produced by the government at time t (first period of life), and ε_t is an exogenous shock to public democratic investment uniformly distributed between 0 and \bar{b} whose realization is known at the beginning of the second period of life. The cost of production of public democratic investment is $\tilde{C}(b)$, with $\tilde{C}'(b) > 0$, $\tilde{C}''(b) > 0$, $\tilde{C}'''(b) > 0$ and $\tilde{C}(0) = 0$. We will denote with $i \in \{c, u\}$ the committed and the uncommitted individuals respectively.

When the individual is in the army, he receives the wage w and does not get utility from the public good G (i.e., $\lambda = 0$). His cost of effort for the provision of national defense is $h > 0$; $e_{t,j}$ is an indicator function equal to 1 if the soldier puts effort, and it is equal to 0 otherwise.

Hence, the expected utility of the military in the first period of life is

$$U_t^m = u_{t,1}^m + \mathbb{E}_t \{u_{t,2}^m\} = c_{t,1}^m + e_{t,1}h + \mathbb{E}_t \{c_{t,2}^m + e_{t,2}h\}.$$

We also allow the military to undertake investments that increase the cost of rebellion for the citizens when the army is in power. We assume that an increase $\Delta\eta > 0$ in the individual cost of rebellion implies a cost for the government equal to $\tilde{C}_M(\Delta\eta)$, with $\tilde{C}'_M(\Delta\eta) > 0$, $\tilde{C}''_M(\Delta\eta) > 0$ and $\tilde{C}_M(0) = 0$.

The fiscal instrument available to every government is proportional taxation of incomes; we assume that taxes generate no distortions as long as they are set at a level τ below some threshold $\hat{\tau}$ representing the potential “fiscal capacity” of the state, and distortions are prohibitively high for levels higher than $\hat{\tau}$. Moreover, we capture distortions generated by a military dictatorship by assuming that military government is potentially less “competent” than a civilian government in raising taxes. This means that if the army sets taxes at τ_t , it only collects revenues $\phi\tau_t$ per unit of tax base where $\phi < 1$ is a measure of the military appropriation capacity.

The government budget constraint in period j of life of generation t under democracy reads

$$w_{t,j}x + G_{t,j} + I_{t,j}\tilde{C}(b_t) \leq \tau_{t,j}A(1-x). \quad (2)$$

The left hand side are total expenditures, given by the wage bill of the army, the public good provision and the cost $\tilde{C}(b_t)$ to produce the level b_t of democratic capital. $I_{t,j}$ is an indicator function equal to 1 for the first period of life ($j = 1$) and equal to 0 in the second period ($j = 2$) since b_t is produced in the first period only. The right hand side of (2) represents the revenues and takes into account that a mass x of low-skill agents are part of the army and do not produce any output. The government budget constraint under dictatorship is still given by (2) with the exception that the expenditure on the public democratic investment is replaced by the cost of the additional repression $\tilde{C}_M(\Delta\eta)$.

Savings are not allowed and therefore private good consumption is always equal to the net disposable income for each agent, i.e., $c_{t,j}^i = (1 - \tau_{t,j})A^i$. We also assume that shirking soldiers are caught with a probability $\gamma \in (0, 1)$, and that there is limited liability so that the soldier caught shirking loses his wage for one period. The incentive-compatibility constraint, $w_{t,j} - h \geq (1 - \gamma)w_{t,j}$, leads to the following efficiency wage

$$w_{t,j} = h/\gamma. \quad (3)$$

Political culture represented by the commitment of the individuals toward democracy is transmitted from parents to child. In particular, we assume that the process of transmission of

political values is imperfect in the sense that parents are successful in transmitting their culture to offsprings only with some probability $\delta \in (0, 1)$. With the complementary probability $1 - \delta$, the offspring takes the values of a citizen chosen randomly in the population. This means that he will be committed with probability q and uncommitted with probability $1 - q$. The cost $H(\delta)$ for the parent of transmitting his political culture to the offspring is increasing and convex in the probability δ of being successful, i.e., $H'(\delta) > 0$, $H''(\delta) > 0$ and $H(0) = 0$.

The structure and timing of events of the political game played by the generation born at time t is as follows and is summarized in Figure 1.

[Figure 1 about here]

At the beginning of the first period of life of a generation t , political institutions are inherited from the previous period (i.e., $s_t^1 = s_{t-1}^2$) and political transitions are not possible. The government in office, chooses the following set of policy variables $\{\tau_{t,1}; G_{t,1}; w_{t,1}; b_t; \Delta\eta_t\}$, i.e., taxes, public good, military wages and the public democratic investment, or the investment in repression if the regime is nondemocratic. The policy chosen is implemented and the stage-game ends.

In the second period of generation t , political transitions are feasible, and events take place according to the following timing.

If the initial political state is democracy ($s_t^1 = D$), then:

1. The exogenous shock to public democratic investment ε_t is realized.
2. The army decides whether to attempt a coup or not.
3. The low-skill agents decide whether to mobilize in defense of democracy. In case of no mobilization, the coup is successful with probability 1 and a political transition to a military regime immediately occurs ($s_t^2 = M$). If there is mobilization, the coup fails with probability $F(q_t)$, so that $s_t^2 = D$, and succeeds with probability $1 - F(q_t)$, so that $s_t^2 = M$.
4. The pivotal agent, i.e. the median voter if $s_t^2 = D$ or the military commander if $s_t^2 = M$, decides taxes, public spending and military wages, and the game ends.¹⁴

If the initial political state is military dictatorship ($s_t^1 = M$), then:

1. The citizens decide whether to mobilize against the military or not (after ε_t is known).

¹⁴In principle, the military commander may want to give up power to democracy at the beginning of the second period. However, if this option is not exercised in the first period, then it is not exercised in the second one.

2. If there is no mobilization, the political regime remains a dictatorship ($s_t^2 = s_t^1 = M$). If there is mobilization, this is successful with probability $F(q_t)$ and determines a transition to democracy ($s_t^2 = D$), while the rebellion is unsuccessful with probability $1 - F(q_t)$, and the political system remains authoritarian ($s_t^2 = M$).

3. Again, the pivotal agent decides taxes, public spending and military wages, and the game ends.

3 Equilibrium across regimes

3.1 Preliminary results

The subgame perfect equilibria of the dynamic political game described above can be computed by solving the two-periods political game played by each generation. We make the following assumptions.

Assumption 1 : $\lambda > 1/(1 - x)$.

Assumption 2 : $(1 - \hat{\tau})A + \lambda\hat{\tau}A(1 - x) - \lambda xh/\gamma \leq (1 - \gamma)h/\gamma$.

Assumption 3 : $T \leq \phi\hat{\tau}A(1 - x)/x - h/\gamma$.

Assumption 1 ensures that the citizens always want to provide the public good G when in power. Assumption 2 guarantees that the participation constraint of soldiers is never binding under democracy (as we will show next, the left hand side is the per period utility of citizens and the right hand side is the utility of soldiers in a democratic political system). Assumption 3 implies that the military finds optimal undertaking a coup if no opposition is expected.

We solve the game by backward-induction starting from the analysis of the second period of the game for generation t , and then analyze the equilibrium in first period of life.

We first start describing the fiscal policies across regimes in the two periods of life.

The fiscal policy of a democratic government maximizes the per-period utility function of the citizens described in (1), subject to the government budget constraint (2) and to the incentive-compatibility constraint of the army (3). In the second period of the life cycle, this implies setting taxes at the maximum rate $\hat{\tau}$, paying the efficiency wage to the military and spend all remained revenues in the public good. In the first period, a democratic government has also to decide the public democratic investment b_t . Similarly, in the second period of life, a military government sets taxes at $\hat{\tau}$ and spends all revenues in military wages; the policy is the same in the first period except that it also decides the investment in repression $\Delta\eta_t$. The following proposition summarizes the optimal fiscal policy.

Proposition 1 *The fiscal policy of a democratic government is*

$$\begin{aligned}\tau_{t,1}^D &= \hat{\tau}, G_{t,1}^D = \hat{\tau}A(1-x) - xh/\gamma - \tilde{C}(b_t), w_{t,1}^D = h/\gamma, \\ \tau_{t,2}^D &= \hat{\tau}, G_{t,2}^D = \hat{\tau}A(1-x) - xh/\gamma, w_{t,2}^D = h/\gamma,\end{aligned}$$

and the dictatorial policy is

$$\begin{aligned}\tau_{t,1}^M &= \hat{\tau}, G_{t,1}^M = 0, w_{t,1}^M = [\phi\hat{\tau}A(1-x) - \tilde{C}_M(\Delta\eta_t)]/x, \\ \tau_{t,2}^M &= \hat{\tau}, G_{t,2}^M = 0, w_{t,2}^M = \phi\bar{w}^M, \bar{w}^M = \hat{\tau}A(1-x)/x,\end{aligned}$$

where b_t and $\Delta\eta_t$ will be determined below.

We now analyze the conditions under which the citizens undertake an opposition to a military coup. First note that each individual is atomistic and his behavior does not change the successful probability of the coup. Therefore, from (1) it is immediate that for a given level of public democratic investment $b_{t,2}$, committed agents oppose a coup if the level of democratic stock of committed agents is higher than a certain threshold, $b_{t,2} \geq \eta$. In this case, the coup fails with probability $F(q_t)$ and $s_t^2 = D$, while it succeeds with probability $1 - F(q_t)$ and the military dictatorship is established, $s_t^2 = M$. When $b_{t,2} < \eta$, the coup succeeds with probability 1. Similarly, when $b_{t,2} \geq \eta$ and the political regime is a military dictatorship ($s_t^1 = M$), there is a rebellion against this regime. With probability $F(q_t)$ this is successful and there is a transition to democracy ($s_t^2 = D$), while the rebellion fails with probability $1 - F(q_t)$ and the military remains in power ($s_t^2 = M$).

We here study under what conditions the military undertakes a coup and when it does not. Consider first the case where $b_{t,2} \geq \eta$, so that there is opposition by citizens. The military finds optimal to undertake a coup when its expected payoff from a coup is higher than the payoff from democracy, $u^M(\text{coup}) \geq u^M(D)$. From the military's expected payoff of a coup

$$u^M(\text{coup}) = F(q_t)u^M(D) + [1 - F(q_t)]u^M(M, \phi) - T,$$

where the utility in dictatorship is

$$u^M(M, \phi) = \phi\bar{w}^M - h = \phi\hat{\tau}A(1-x)/x - h, \quad (4)$$

and the utility in democracy

$$u^M(D) = w^D - h = \frac{1-\gamma}{\gamma}h, \quad (5)$$

follows that the military will attempt a coup when

$$u^M(M, \phi) \geq u^M(D) + \frac{T}{1 - F(q_t)}. \quad (6)$$

Since the left hand side of condition (6) is increasing in ϕ and the right hand side is increasing in q_t , condition (6) is equivalent to

$$q_t < \tilde{q}(\phi),$$

where $\tilde{q}(\phi)$ is the level of q satisfying (6) with equality. The interpretation is that the military undertakes a coup when the pervasiveness of “committed” individuals democratic institutions is below some threshold $\tilde{q}(\phi)$. This result is consistent with the claim by Juan Linz that authoritarian coups and regimes require the backing of “significant segment” of the mass population (Alexander, 2002, p. 5).

When $b_{t,2} < \eta$, coups are successful with probability 1 (as there is no opposition), and the condition for a military coup attempt, $u^M(\text{coup}) \geq u^M(D)$, becomes $u^M(M, \phi) \geq u^M(D) + T$, which corresponds to (6) with $F(q_t) = 0$. Assumption 3 ensures that this condition always holds and therefore that the military undertakes a coup when there is no opposition by the citizens. If such a condition did not hold, then this means that the military is so inefficient in extracting rents that it never finds optimal trying to get to power, which would easily lead to a consolidated democracy. Assumption 3 rules out this possibility as this is not an interesting case from the perspective of our theory.

The following proposition summarizes these results.

Proposition 2 *Independently on the presence of opposition, the military undertakes a coup when $q_t < \tilde{q}(\phi)$, where $\tilde{q}(\phi)$ is implicitly defined by the following condition $[1 - F(q_t)][u^M(M, \phi) - u^M(D)] = T$. When $q_t \geq \tilde{q}(\phi)$, the military never attempt a coup if opposition is expected ($b_{t,2} < \eta$).*

Proof. In the text. ■

3.2 Equilibrium public democratic investment

The optimal choice of the public democratic investment by the democratic government depends on the probability that the committed citizens will oppose to a military coup, which is given by

$$\Pr(\varepsilon_t \geq \eta - b_t) \equiv P(b_t) = \frac{\bar{b} + b_t - \eta}{\bar{b}}, \quad (7)$$

and on the probability of no opposition equal to $\Pr(\varepsilon_t < \eta - b_t) \equiv 1 - P(b_t) = (\eta - b_t)/\bar{b}$.

Assume that $\tilde{q}(\phi) > 1/2$ and let us first consider the case where the military undertakes a coup independently on opposition (i.e., $q_t < \tilde{q}(\phi)$ —see Proposition 2). When $0 < q_t \leq 1/2$, the uncommitted agents are the majority and choose the provision of the public democratic investment b_t that solves the following optimization problem¹⁵

$$\max_{b_t} U_t^u(D) = [a - C(b_t)] + (1 - \hat{\tau})A + P(b_t)F(q_t)[a - (1 - \hat{\tau})A], \quad (8)$$

where $C(b_t) \equiv \lambda\tilde{C}(b_t)$ and

$$a \equiv (1 - \hat{\tau})A + \lambda\hat{\tau}A(1 - x) - \lambda x h / \gamma \quad (9)$$

is the per-period total utility of the citizens under democracy (gross of the public democratic investment). The first component of (8) in square brackets is the utility in the first period of life, while the remaining part is the expected utility in the second period. This comes from the fact that there is no opposition to the coup with probability $1 - P(b_t)$, so that the military will be in power with certainty and the utility of the citizens is $(1 - \hat{\tau})A$. With probability $P(b_t)$, there is opposition to the coup; this fails with probability $F(q_t)$, the system remains democratic and the citizens' payoff is a , while it succeeds with probability $1 - F(q_t)$ and the citizens get $(1 - \hat{\tau})A$.

When instead $1/2 < q_t < \tilde{q}(\phi)$, the committed are in power. Their utility is the same as the uncommitted plus the net expected payoff from opposition, which is equal to

$$\mathbb{E}_t \{(b_t + \varepsilon_t) - \eta | b_t + \varepsilon_t - \eta \geq 0\} = \frac{(\bar{b} + b_t - \eta)^2}{2\bar{b}}, \quad (10)$$

where we have used the fact that ε_t is uniformly distribution between 0 and \bar{b} . Therefore, the committed optimization problem is

$$\max_{b_t} U_t^c(D) = a - C(b_t) + (1 - \hat{\tau})A + P(b_t)F(q_t)[a - (1 - \hat{\tau})A] + \frac{(\bar{b} + b_t - \eta)^2}{2\bar{b}}. \quad (11)$$

When $q_t \geq \tilde{q}(\phi)$, the committed are in power and the military does not attempt a coup with opposition, but undertakes it with no opposition, i.e. the following condition holds

$$u^M(D) + T/[1 - F(q_t)] \geq u^M(M, \phi) > u^M(D) + T.$$

The utility of committed and uncommitted citizens coincide, as there is never a coup *with* opposition in equilibrium, and the maximization problem is identical to (8) with $F(q_t) = 1$.

¹⁵We are here implicitly assuming that soldiers do not vote. Allowing them to vote would only change the threshold below which the uncommitted are in power; rather than $q_t \leq 1/2$ this happens when $q_t \leq 1/2(1 - x)$, as the military always (weakly) prefer the uncommitted citizens' policy to the committed one.

The following Assumption ensures that the level of public democratic investment chosen by the government when $q_t \geq \tilde{q}(\phi)$ is such that there will be opposition to coups independently on the realization of the random shock ε_t (i.e., $b_t = b^* = \eta$).

Assumption 4 : $(1/\bar{b}) [a - (1 - \hat{\tau}) A] \equiv (1/\bar{b}) [\lambda \hat{\tau} A(1 - x) - \lambda x h/\gamma] \geq C'(\eta)$.

The following proposition characterizes the choice of public democratic investment by the democratic government.

Proposition 3 *Consider the case where $\tilde{q}(\phi) > 1/2$. The optimal public democratic investment under democracy ($s_t^1 = D$) is equal to*

1. $b_u^*(q_t) = \min \{b_u(q_t); \eta\}$, where $b_u(q_t)$ is defined by the following equation

$$-C'(b_t) + (1/\bar{b}) F(q_t) [a - (1 - \hat{\tau}) A] = 0, \quad (12)$$

when $q_t \in [0, 1/2]$ and the uncommitted citizens are in power;

2. $b_c^*(q_t)$ is defined by

$$-C'(b_t) + (1/\bar{b}) F(q_t) [a - (1 - \hat{\tau}) A] + (\bar{b} + b_t - \eta) / \bar{b} = 0. \quad (13)$$

when $q_t \in (1/2, \tilde{q}(\phi))$ and the committed individuals are the majority;

3. $b^* = \eta$ when $q_t \in [\tilde{q}(\phi), 1]$.

Moreover, $b_c^*(q_t)$ and $b_u^*(q_t)$ are both increasing in q_t , with $b_c^*(q_t) > b_u^*(q_t)$. When $\tilde{q}(\phi) < 1/2$, the policy at point (1) applies for $q_t \in [0, \tilde{q}(\phi))$ and point (3) for $q_t \in [\tilde{q}(\phi), 1]$.

Proof. See the Appendix. ■

The following features of the optimal public democratic investment are worth noting. First, also the uncommitted citizens are in favor of providing the public democratic investment (note that $b_u(q_t)$ is always strictly positive) and this comes from the fact that they find optimal inducing the committed to defend the threatened democracy. Second, committed citizens always want to provide a public democratic investment higher than the level preferred by the uncommitted ($b_c^*(q_t) > b_u^*(q_t)$) because they obtain a consumption value from it. Third, there is a complementarity between the political culture, transmitted by the family, and the public democratic investment provided by the state. This complementarity arises from the fact that higher provision of public democratic investment increases the probability that the

committed oppose to the coup ($P(b_t)$ is increasing in b_t) and more political culture increases the probability that coup fails when the committed oppose to it ($F(q_t)$ is increasing in q_t). In other words, more political culture increases the returns of the democratic government from the ideological investment in democratic indoctrination.

Figure 2 reports some examples for the level of provision of public democratic investment for all values of q .

[Figure 2 about here]

3.3 Political equilibrium in democracy

The following proposition describes the political equilibrium when the initial political regime is democratic.

Proposition 4 *Consider the case where $\tilde{q}(\phi) > 1/2$. The equilibrium under democracy ($s_t^1 = D$) is the following.*

1. *If $q_t \in [0, 1/2]$, the military always undertakes a coup, and the committed citizens oppose when $\varepsilon_t \geq \eta - b_u^*(q_t)$, which happens with probability $P(b_u^*(q_t))$ determined by (7) with $b_u^*(q_t)$ defined in Proposition 3. When citizens oppose, coup attempts fail with probability $F(q_t)$ and the political system remains democratic ($s_t^2 = s_t^1 = D$), and succeed with probability $1 - F(q_t)$ and the system transition to dictatorship ($s_t^2 = M$). When citizens do not oppose (i.e., $\varepsilon_t < \eta - b_u^*(q_t)$), dictatorship is established with probability 1. Therefore, the per-period probability that democracy persists is $P(b_u^*(q_t)) F(q_t)$;*
2. *if $q_t \in (1/2, \tilde{q}(\phi))$, the equilibrium is the same as the one described at point (1) except that the committed citizens oppose when $\varepsilon_t \geq \eta - b_c^*(q_t)$ and the corresponding probability is $P(b_c^*(q_t))$; therefore, the per-period probability that democracy persists is $P(b_c^*(q_t)) F(q_t)$;*
3. *if $q_t \in [\tilde{q}(\phi), 1]$, the military never undertakes coups (since there is always opposition by the citizens, $\varepsilon_t \geq \eta - b^* = 0$) and the political system remains democratic.*

When $\tilde{q}(\phi) < 1/2$, point (1) applies for $q_t \in [0, \tilde{q}(\phi))$ and point (3) for $q_t \in [\tilde{q}(\phi), 1]$.

Proof. Straightforward from the text. ■

The political equilibrium under democracy can be summarized as follows. When political culture is lower than a certain threshold, $q_t < \tilde{q}(\phi)$, the military always attempts a coup. The probability that the coup succeeds and that the political system transition to dictatorship is negatively related to the level of political culture in the society and to the level of public democratic investment chosen in the previous period. When political culture is sufficiently high, $q_t \geq \tilde{q}(\phi)$, the military never attempts a coup (as the committed would always oppose to it), and there are never transitions to military regimes.

3.4 Equilibrium investment in repression

When the military is in power ($s_t = M$), it always chooses the maximum tax rate $\hat{\tau}$ and no provision of the public good G and revenues are spent in military wages. In the first period of life, the military also chooses the investment in repression $\Delta\eta_t$ which reduces the probability that citizens will rebel against its rule in the following period. The maximization problem of the military reads

$$\begin{aligned} \max_{\Delta\eta_t} U_t^M(M) &= [\phi\hat{\tau}A(1-x)/x - C_M(\Delta\eta_t)] \\ &+ P(\Delta\eta_t) [F(q_t)u^M(D) + (1-F(q_t))u^M(M, \phi)] + (1-P(\Delta\eta_t))u^M(M, \phi), \end{aligned} \quad (14)$$

with $C_M(\Delta\eta_t) \equiv \tilde{C}_M(\Delta\eta_t)/x$. The first component of (14) is the utility of the military in the first period of life and the remaining part of this expression is the expected utility in the second period. This takes into account that rebellions take place with probability

$$P(\Delta\eta_t) \equiv \Pr(\varepsilon_t \geq \eta + \Delta\eta_t) = \frac{\bar{b} - (\eta + \Delta\eta_t)}{\bar{b}} = 1 - \frac{\eta + \Delta\eta_t}{\bar{b}}, \quad (15)$$

and succeed with probability $F(q_t)$; the per-period utility of the military under democracy and dictatorship $u^M(D)$ and $u^M(M, \phi)$ are given by (5) and (4) respectively.

The following proposition defines the optimal investment in repression.

Proposition 5 *The optimal investment in repression by the military government ($s_t^1 = M$) is $\Delta\eta_t^* = \min\{\Delta\eta_t^M; \bar{b} - \eta\}$, where $\Delta\eta_t^M$ is implicitly defined by the following condition*

$$-C'_M(\Delta\eta_t) + (1/\bar{b})F(q_t)[u^M(M, \phi) - u^M(D)] = 0. \quad (16)$$

Proof. Equation (16) is the first order condition of problem (14).¹⁶ Since there is no rebellion when $\bar{b} \leq \eta + \Delta\eta_t^M$ independently on the realization of ε_t , it is never optimal to set $\Delta\eta_t^M > \bar{b} - \eta$, which leads to $\Delta\eta_t^*$. ■

¹⁶Note that the second order condition of problem (14) is always satisfied given that $C''_M(\Delta\eta_t) < 0$.

3.5 Political equilibrium in military dictatorships

When $\Delta\eta_t^* = \bar{b} - \eta$, the military finds optimal to invest so many resources in increasing their repressive apparatus that rebellions are never possible, and dictatorship consolidates. When instead $\Delta\eta_t^M < \bar{b} - \eta$, there is always a positive probability, given by (15), that the (committed) citizens attempt a rebellion (i.e., that $\varepsilon_t > \eta + \Delta\eta_t^M$). This implies that a transition to democracy will take place at some point. Since $\Delta\eta_t^M$ is increasing in q_t ,¹⁷ there is a unique level of $q = \bar{q}_M$, such that $\Delta\eta_t^M(\bar{q}_M) = \bar{b} - \eta$. For all $q_t > \bar{q}_M$, $\Delta\eta_t^M(q_t) > \bar{b} - \eta$ and $\Delta\eta_t^* = \bar{b} - \eta$, while $\Delta\eta_t^* = \Delta\eta_t^M(q_t) < \bar{b} - \eta$ for all $q_t < \bar{q}_M$. If $\bar{q}_M < \tilde{q}(\phi)$, then the military dictatorship becomes permanent when $q_t \in [\bar{q}_M, \tilde{q}(\phi))$ because the military regime invests a large amount of resources in repression, while dictatorship never consolidates when $\bar{q}_M > \tilde{q}(\phi)$.

The following condition ensures that there is always a positive probability that rebellions take place and that the political system transitions to democracy independently on the level of political culture in the society since it implies that $\Delta\eta_t^M < \bar{b} - \eta$ for all $0 \leq q_t \leq \tilde{q}(\phi)$.

Condition 1: $\bar{q}_M > \tilde{q}(\phi)$.

The following proposition summarizes the political equilibrium in military dictatorship.

Proposition 6 *If Condition 1 is satisfied, the committed citizens undertake a rebellion when $\varepsilon_t \geq \eta + \Delta\eta_t^*$, which happens with probability $P(\Delta\eta_t^*)$ determined by (15). The rebellion succeeds with probability $F(q_t)$ and the political system transitions to democracy ($s_t^2 = D$), while it fails with probability $1 - F(q_t)$ and the system remains a dictatorship ($s_t^2 = s_t^1 = M$). Therefore, the per-period probability that dictatorship survives is $1 - P(\Delta\eta_t^*)F(q_t)$. If Condition 1 is not satisfied, $P(\Delta\eta_t^*) = 0$ for all $q_t > \bar{q}_M$ and military dictatorship survives with probability 1 once it is established when $q_t \in [\bar{q}_M, \tilde{q}(\phi))$.*

Proof. In the text. ■

4 Transmission of political values

We here analyze the dynamics of the political culture in the society. To simplify the analysis, we assume that parents are naive in the decision of transmitting their cultural traits, in the sense that they do not take into account the variation across generations in the composition q .

¹⁷Differentiating (16) with respect to q_t , we obtain that

$$\partial\Delta\eta_t^M/\partial q_t = F'(q_t)[u^M(M, \phi) - u^M(D)]/[\bar{b}C_M''(\Delta\eta_t)] > 0.$$

The maximized altruistic expected utility of children for each committed parent is

$$\max_{\delta_c} [\delta_c + (1 - \delta_c) q_t] V_{t+1}^{cc} + (1 - \delta_c) (1 - q_t) V_{t+1}^{cu} - H(\delta_c), \quad (17)$$

where $H(\delta_c)$ is the cost for the parent of transmitting his political culture to the offspring, while V_{t+1}^{cc} and V_{t+1}^{cu} denote the utility that a committed parent derives respectively from a committed and from an uncommitted child. The probability that the child is committed is the sum of the probability δ_c that he gets the same social values of the parent, and the probability $(1 - \delta_c) q_t$ that he will be committed by getting his values from the society. With probability $1 - \delta_c$ the parent fails in transmitting his social values and the child gets them from society, so that he will be committed with probability q_t and uncommitted with probability $1 - q_t$.

The first order condition of (17) defines the optimal transmission probability δ_c chosen by a committed parent¹⁸

$$(1 - q_t) \Delta V_{t+1}^c = H'(\delta_c), \quad (18)$$

where $\Delta V_{t+1}^c \equiv V_{t+1}^{cc} - V_{t+1}^{cu}$.

Similarly, the maximized altruistic expected utility of children for each uncommitted parent is

$$\max_{\delta_u} [\delta_u + (1 - \delta_u) (1 - q_t)] V_{t+1}^{uu} + (1 - \delta_u) q_t V_{t+1}^{uc} - H(\delta_u),$$

where δ_u is probability that the uncommitted parent is successful in transmitting his political culture to the offspring, and V_{t+1}^{uu} and V_{t+1}^{uc} denote the utility that a uncommitted parent derives respectively from an uncommitted and from a committed child. The first order condition defining the optimal transmission probability δ_u is

$$q_t \Delta V_{t+1}^u = H'(\delta_u), \quad (19)$$

where $\Delta V_{t+1}^u \equiv V_{t+1}^{uu} - V_{t+1}^{uc}$.

The share of committed individuals in the generation $t + 1$ is

$$q_{t+1} = q_t [\delta_c + (1 - \delta_c) q_t] + (1 - q_t) (1 - \delta_u) q_t, \quad (20)$$

where $\delta_c + (1 - \delta_c) q_t$ is the fraction of children from committed parents that become committed, and $(1 - \delta_u) q_t$ is the share of children from uncommitted parents getting the committed political values.¹⁹ Therefore, the change in the share of committed individuals in the society

¹⁸ $H''(\delta) > 0$ guarantees that the second order condition is satisfied.

¹⁹ With probability $1 - \delta_u$ each uncommitted parent is unsuccessful in transmitting his political values, and the child gets the same values of a citizen randomly chosen in the population, so becoming committed with probability q_t .

from the generation at t and $t + 1$ is defined as

$$\Delta q_{t+1} \equiv q_{t+1} - q_t = q_t (1 - q_t) (\delta_c - \delta_u). \quad (21)$$

The steady state level of the composition of society under no change in the political regime, $\Delta q_{t+1} = 0$, implies that $\delta_c = \delta_u$ and, therefore, $H'(\delta_c) = H'(\delta_u)$. Using (18) and (19), this leads to the following steady state condition

$$\frac{\Delta V_{t+1}^c(q_t)}{\Delta V_{t+1}^u(q_t)} = \frac{q_t}{1 - q_t}. \quad (22)$$

4.1 The conditional dynamics of political culture

When $q_t \in [\tilde{q}(\phi), 1]$, there are no military coups against democracy when there is opposition, and Assumption 4 guarantees that this is always the case. Since the committed citizens never enjoy the payoff from opposing a coup, the utility of committed and uncommitted are identical and $\Delta V_{t+1}^c = \Delta V_{t+1}^u = 0$ for all $q_t \geq \tilde{q}(\phi)$. This implies that citizens do not put effort in trying to have their children with the same traits, i.e., $\delta_c = \delta_u = 0$, which will lead to no change in q over time. This also means that there will be no coups and regime transitions in all future periods, and that democracy is consolidated.

When $q_t \in [0, \tilde{q}(\phi))$, the military undertakes coups independently on the level of public democratic investment. For the committed parents, we have that

$$\Delta V_{t+1}^c \equiv V_{t+1}^{cc} - V_{t+1}^{cu} = \mathbb{E}_{t,2} \{ (b_{t+1} + \varepsilon_{t+1}) - \eta | b_{t+1} + \varepsilon_{t+1} - \eta \geq 0 \} = \frac{(\bar{b} + b_{t+1} - \eta)^2}{2\bar{b}}, \quad (23)$$

where $b_{t+1} = b_t = b_i^*(q_t)$ is the expected equilibrium public democratic investment for the next generation, which is equal to the current one since agents are naive and do not take into account the change in q for the next generation. The expression in (23) is the same as the one in (10) and corresponds to the expected utility that a committed citizen gets from the opposition to a military coup.

For an uncommitted parent we obtain that

$$\Delta V_{t+1}^u \equiv V_{t+1}^{uu} - V_{t+1}^{uc} = \eta \frac{\bar{b} + b_{t+1} - \eta}{\bar{b}}, \quad (24)$$

which is the expected cost of opposing a military coup. This comes from the fact that an uncommitted parent will evaluate the utility of his child from opposing a coup with his own preferences, which implies that he will take into account the losses from opposition but not the gains that the committed child will get from it.

Substituting (23) and (24) into (22), we obtain that the steady state composition q_e of society under democracy is implicitly defined by the following equation

$$\frac{b_e(q_e) + \bar{b} - \eta}{2\eta} = \frac{q_e}{1 - q_e}. \quad (25)$$

The analysis for the dynamics of the political culture under dictatorship is very similar and is reported in the proof of the following proposition that characterizes the conditional cultural dynamics across regimes.

Proposition 7 *The conditional cultural dynamics under democracy ($s_t = D$) is the following.*

1. When $q_t \in [1/2, 1]$ the steady state value of the share of committed citizens is \tilde{q}_c implicitly defined by

$$\frac{b_c^*(\tilde{q}_c) + \bar{b} - \eta}{2\eta} = \frac{\tilde{q}_c}{1 - \tilde{q}_c}; \quad (26)$$

$q_{t+1} > q_t$ when $q_t < \tilde{q}_c$, and $q_{t+1} < q_t$ when $q_t > \tilde{q}_c$.

2. When $q_t \in [0, 1/2]$ the steady state value \tilde{q}_u of the share of committed citizens in the society is given by

$$\frac{b_u^*(\tilde{q}_u) + \bar{b} - \eta}{2\eta} = \frac{\tilde{q}_u}{1 - \tilde{q}_u}; \quad (27)$$

$q_{t+1} > q_t$ when $q_t < \tilde{q}_u$, and $q_{t+1} < q_t$ when $q_t > \tilde{q}_u$.

3. The steady state value of the share of committed citizens under dictatorship ($s_t = M$) is \tilde{q}_M , defined by

$$\frac{\bar{b} - \eta(\tilde{q}_M)}{2\eta(\tilde{q}_M)} = \frac{\tilde{q}_M}{1 - \tilde{q}_M}; \quad (28)$$

$q_{t+1} > q_t$ when $q_t < \tilde{q}_M$, and $q_{t+1} < q_t$ when $q_t > \tilde{q}_M$.

4. The following ranking always holds: $\tilde{q}_M < \tilde{q}_u < \tilde{q}_c$.

Proof. See the Appendix. ■

5 Regime transitions and the dynamics of political culture

The following proposition summarizes the equilibrium of the model for any given initial level q_0 of democratic culture.

Proposition 8 *Let q_0 be the initial value of political culture in the society. The equilibrium of the model is the following. If $q_0 \in [\tilde{q}(\phi), 1]$, democracy persists with probability 1 (consolidated or permanent democracy).*

1. When $\tilde{q}(\phi) > 1/2$, then

- 1.i) if $\tilde{q}_c \geq \tilde{q}(\phi)$ and $\tilde{q}_u < 1/2$, there is a positive probability that democracy converges to a permanent democracy for all $q_0 \in (1/2, \tilde{q}(\phi))$, while it consolidates with probability zero for all $q_0 \in [0, 1/2]$;
- 1.ii) if $\tilde{q}_c \geq \tilde{q}(\phi)$ and $\tilde{q}_u \geq 1/2$, there is a positive probability that democracy converges to a permanent democracy for all $q_0 \in [0, \tilde{q}(\phi))$;
- 1.iii) if $\tilde{q}_c < \tilde{q}(\phi)$, there is a zero probability that democracy consolidates for all $q_0 \in [0, \tilde{q}(\phi))$.
2. When $\tilde{q}(\phi) \leq 1/2$, if $\tilde{q}_u \geq 1/2$, there is a positive probability that democracy converges to a permanent democracy for all $q_0 \in [0, 1/2)$ while it never consolidates if $\tilde{q}_u < 1/2$.

Figure 3 shows a possible example of the equilibrium described in Proposition 8.

[Figure 3 about here]

When $q_0 \in [\tilde{q}(\phi), 1]$ democracy is consolidated as there are no coups and therefore transitions to authoritarian regimes. Indeed, the level of public democratic investment $b_c^*(q_t)$ is such that the citizens would always oppose to coups attempt, and the military does not find optimal undertaking coups in presence of citizens' opposition when political culture is sufficiently high. Since the committed citizens never enjoy the payoff from opposing to a coup, the utility of committed and uncommitted are identical and they both do not put any effort in trying to have their children with the same political culture. This implies that q remains constant over time. When $q_0 \in (1/2, \tilde{q}(\phi))$, democracy is potentially unstable. The military undertakes coups independently on the level of the public democratic investment. However, depending on the level of public democratic investment, the committed citizens may oppose to coups or not, and the system may remain democratic or transition to dictatorship. If the level of the public democratic investment $b_c^*(q_t)$ is so high that $\tilde{q}_c \geq \tilde{q}(\phi)$, the committed citizens have a higher incentive in transmitting their values than the uncommitted ones, and their share in the society under democracy will increase over time for all $q_t \leq \tilde{q}(\phi)$. If no transition to dictatorships takes place, at some point the share of individuals committed to defend democracy will be such that it is not optimal for the military to undertake military coups (i.e., $q_t = \tilde{q}(\phi)$). In other words, there is a positive probability that democracy consolidates. Instead, the political system never converges to a permanent democracy when $\tilde{q}_c < \tilde{q}(\phi)$ because there is always a reduction in the share of committed citizens as long as $q_t \in (\tilde{q}_c, \tilde{q}(\phi))$. When $\tilde{q}_c \geq \tilde{q}(\phi)$

and $\tilde{q}_u \geq 1/2$, the share of committed citizens increases over time for all $q_t < \tilde{q}(\phi)$ if the system remains democratic. This implies that there is always a positive probability that the political system converges to a permanent democracy for all initial levels of political culture. When $\tilde{q}_u < 1/2$, there is no possibility to converge to a permanent democracy if $q_t < 1/2$. If $\tilde{q}(\phi) \leq 1/2$, then it is immediate that the convergence to permanent democracy takes place only when $\tilde{q}_u \geq 1/2$.

From Proposition 8 we also get the following important properties on the persistence and consolidation of democracy.

Proposition 9 (*Stochastic Persistence of Regimes*) *When a regime can be consolidated with positive probability, then the more time the political system is in that regime, the more likely that regime will occur next period.*

Proof. See the Appendix. ■

This result illustrates the dynamic complementarity between political institutions and the “slow moving” character of underlying congruent political values. Indeed, the longer a political regime is implemented, the longer public policies are designed to promote the evolution of cultural political values which are congruent with the preservation of that regime. This in turn makes that regime more likely to survive in the future.²⁰

6 Comparative statics

In this section we develop some comparative statics analysis trying to understand how some variables, such as the level of state capacity, economic development, natural resources, foreign aid and external threat affect the transmission of political culture and the process of democratic consolidation.

To this aim, we now assume that the economy has a certain amount of natural resources N , that are property of the state, and that it may receive some aid H from foreign countries. We also assume that foreign aid is conditional on the political system being democratic; α_t^s will be an indicator function equal to 1 if the system is a democracy and 0 if it is a dictatorship. This implies that the government budget constraint under democracy can be rewritten as

$$\hat{\tau}A(1-x) - xh/\gamma - G^D - \tilde{C}(b) + N + \alpha^s H = 0,$$

²⁰It can also be easily verified that for any $q_0 < \tilde{q}(\phi)$, the probability that the political system converges to a permanent democracy is (weakly) increasing in the steady state values of the share of committed citizens in the society \tilde{q}_u and \tilde{q}_c .

with $\tilde{C}(b) = 0$ in the first period of life cycle. This implies that $u_t^c = a - C(b_t)$, where the term a is now defined as follows

$$a \equiv (1 - \hat{\tau})A + \lambda\hat{\tau}A(1 - x) - \lambda xh/\gamma + \lambda N + \lambda\alpha_t^s H. \quad (29)$$

Once we take into account that the term a is defined as in (29) rather than (9), the analysis of the equilibrium under democracy is unchanged.

Condition (6) defining when the military undertakes a coup also in presence of citizens' opposition is unchanged, but $u^M(M, \phi)$ in (4) is now given by the following expression

$$u^M(M, \phi) = \phi\hat{\tau}A(1 - x)/x + N/x - h,$$

while $u^M(D)$ is still given by (5). This implies that (6) can be rewritten as $q_t \leq \tilde{q}(\phi)$, with

$$\tilde{q}(\phi) = F^{-1} \left(1 - \frac{T}{\phi\hat{\tau}A(1 - x)/x + N/x - h/\gamma} \right). \quad (30)$$

In analyzing the effects of the variables $(\hat{\tau}, A, N, h, H, \phi)$ on the process of consolidation of democracy, we need to consider two effects of these variables. The first effect is on $\tilde{q}(\phi)$. Higher values of $\tilde{q}(\phi)$ reduce the probability of consolidation of democracy because (i) the size of the region $[\tilde{q}(\phi), 1]$ where democracy is consolidated shrinks, and (ii) the probability that the steady state value of the share of committed citizens in the society \tilde{q}_c (or both \tilde{q}_c and \tilde{q}_u) is higher than $\tilde{q}(\phi)$ lowers, which makes the transition to permanent democracy less likely. The second effect of these variables is on the steady state values of the share of committed citizens \tilde{q}_u and \tilde{q}_c (recall that the probability of the political system converging to a permanent democracy is increasing in these values for a given level of $\tilde{q}(\phi)$). Then, we also remind that the above set of variable of interest affect the thresholds \tilde{q}_u and \tilde{q}_c only through the levels of public democratic investment $b_u^*(q)$ and $b_c^*(q)$, and that \tilde{q}_u and \tilde{q}_c are increasing in $b_u^*(q)$ and $b_c^*(q)$ respectively.

The effects of the variables considered on the probability of consolidation of democracy are summarized in the following proposition.

Proposition 10 *The threshold $\tilde{q}(\phi)$ is increasing in $\hat{\tau}$, A , and N , it is decreasing in h and ϕ , and it is independent on H . The thresholds $b_u^*(q)$ and $b_c^*(q)$ are both increasing in $\hat{\tau}$, A , and N , and both decreasing in h and H , while they are independent on ϕ . This implies that the overall effect of a higher level of state capacity $\hat{\tau}$, economic development A , natural resources N , and external threat h on the consolidation of democracy is ambiguous, while more foreign aid H that is conditioned on the existence of a democratic political system, or a lower appropriation capacity ϕ by the military, increases the probability that democracy becomes permanent.*

Proof. See the Appendix. ■

The results contained in Proposition 10 can be explained as follows. On the one hand, higher levels of state capacity $\hat{\tau}$, economic development A , and natural resources N , increase the amount of resources that the military can appropriate once in power; this reduces the region of parameters where the military does not undertake coups and democracy is consolidated (i.e., $\tilde{q}(\phi)$ increases and the region $[\tilde{q}(\phi), 1]$ shrinks). On the other hand, this also implies that the citizens have higher incentives to defend democracy and increase the public democratic investments ($b_u^*(q)$ and $b_c^*(q)$ are higher). This translates into stronger opposition against military coups and higher accumulation of political culture in the society (i.e., higher q). This in turn favors the process of consolidation of democracy.

Similarly, a higher level of external threat, represented by an increase in the effort parameter h of the military, also has two opposing effects. First, it leads to larger rents to the military under democracy, so reducing its incentive to undertake power. This increases the region where democracy is consolidated. At the same time, higher rents to the military reduce the net payoff of citizens from democracy relative to military dictatorship. Therefore, citizens also have lower incentives to defend democracy and to provide public democratic investment, leading to lower accumulation of political culture in the society (lower q).

Finally, more foreign aid H conditioned on the existence of a democratic system only generates a positive effect on democratic consolidation. Indeed, such a change does not affect the incentives of the military to take power, as these resources cannot be appropriated by them. At the same time, it unambiguously stimulates an unconsolidated democratic government to invest in public democratic infrastructures to defend democracy from a military coup. As a consequence, foreign aid conditioned to democracy stimulates indirectly the spreading of a political culture congruent to the regime and helps its consolidation. In contrast, a lower value of the military appropriation capacity ϕ reduces the incentives of the military to take power, while it has no effect on public democratic investments. As a result, such a change increases the probability that democracy consolidates.

7 Extensions

The previous section showed that higher state capacity, income and natural resources rents have ambiguous effects on democratic consolidation. A positive change in these variables leads both to more resources that the military can potentially appropriate and increased incentives for a democratic government to invest in public democratic infrastructures. In this section,

we show that these comparative statics are unambiguous when there is some strong enough asymmetry across political regimes on the capacity of appropriation of the resources.²¹

- **Inefficiency of appropriation of the military**

Consider first the situation where the military appropriation capacity ϕ depends negatively on productivity A or the fraction of committed citizens q , so that $\phi \equiv \phi(A, q)$ with $\partial\phi/\partial A < 0$ and $\partial\phi/\partial q < 0$. This case can reflect the fact that richer and more productive economies are technologically more sophisticated and specialized. Therefore it may require special competencies to extract efficiently resources from the country, competencies that the military do not have. As well, it may be more difficult for the military to get the cooperation from citizens to tax efficiently the economy. Such cooperation is more difficult to obtain when the legitimacy of the regime is put into question, something that is more likely to happen when there are more committed citizens in the society.

In this case, an increase in A may unambiguously favor the consolidation of democracy because it not only generate an increase in public democratic investment but also a reduction of the threshold $\tilde{q}(\phi)$ above which the military does not undertake coups. Indeed, it can be easily observed from (30) that an increase in A reduces $\tilde{q}(\phi)$ when $\partial[A\phi(A, q)]/\partial A = \phi(A, q) + A\partial\phi/\partial A < 0$, which is the case if $-\partial\phi/\partial A > 0$ is strong enough. In words, the increase in productivity helps the consolidation of democracy by making the military regime less efficient in extracting rents.²²

- **The effects of rent-seeking with natural resources in heterogeneous societies**

Consider now the effect of natural resources on democracy consolidation. A possible asymmetry in resource appropriation between a strong authoritarian regime and a democratic regime may reside in the ability for the first regime to restrict access to rent seeking and to capture resource revenues more efficiently than in the second democratic regime, in which social groups enjoy more freedom to undertake uncoordinated distortive rent seeking activities. In this section, we propose an extension to our framework that takes into account these features and show it can lead natural resources to affect negatively the consolidation of democratic regimes. Interestingly, this comparative statics illustrates the possibility of a “political curse effect” of natural resources on political institutions going through the channel of political socialization and cultural evolution.

²¹This is already the case for instance for conditional foreign aid in the previous section.

²²A similar results obtains when $\partial\phi/\partial q < 0$. At higher levels of q corresponds a lower ϕ since $\partial\phi/\partial q < 0$ and this also reduces $\tilde{q}(\phi)$.

To see that, consider the existence of $K \geq 2$ groups of equal size in the society, so that each group has size $(1-x)/K$. Under a democratic regime, each group $k = 1, \dots, K$ may exert an effort w_k to appropriate natural resources N .²³ We assume the absence of coordination problems within each group so that each agent i of group k exerts an effort

$$w_k^i = \frac{w_k}{(1-x)/K} = \frac{K}{1-x} w_k.$$

The utility cost of effort for each agent is linear in w_k^i . Total effort for rent-seeking activities in the society will be given by

$$W = \sum_{k=1}^K w_k, \quad (31)$$

and the share of natural resources appropriated by each group k is equal to its share of effort, i.e. equal to w_k/W . We also assume that total effort in rent-seeking affects negatively the individuals' productivity, i.e. $A(W)$ with $A'(W) \equiv \partial A(W)/\partial W < 0$ and $A''(W) \leq 0$. This last assumption is consistent with the rent seeking literature that emphasizes the distortive aspect of rent-seeking behavior on the non-resource economy, such as diverting entrepreneurial talent to unproductive rent-seeking (Torvik, 2002, and Mehlum et al., 2006), or erosion of property rights in the non-resource sector (Hodler, 2006). Finally, we assume that the military gets all natural resources in military dictatorship, which implies that $w_k = 0$ for all k .

We first compute the optimal effort of each individual in rent-seeking activities. Since this is chosen at the group level and all individuals in the group exert the same effort, we can write the maximization problem of an (uncommitted) individual belonging to group k in the second period of life under democracy as follows

$$\begin{aligned} \max_{w_k} \quad & a(W) + \frac{K}{1-x} \left(-w_k + \frac{w_k}{W} N \right) \\ \text{with } a(W) \quad & \equiv (1 - \hat{\tau}) A(W) + \lambda \hat{\tau} (1-x) A(W) - \lambda x h / \gamma, \end{aligned} \quad (32)$$

where W is given by (31) and $a(W)$ denotes the per-period utility of the citizen net of the natural resources rents and of the rent-seeking effort.

The first order condition of problem (32) is

$$[(1 - \hat{\tau}) + \lambda \hat{\tau} (1-x)] A'(W) + \frac{K}{1-x} \left(-1 + \frac{W - w_k}{W^2} N \right) = 0, \quad (33)$$

²³This implies that natural resources do not enter into the government budget constraint.

where we have used the fact that $\partial W/\partial w_k = 1$.²⁴ Given that all groups have the same size and there is no heterogeneity among them, the equilibrium is symmetric and, therefore, $w_k = W/K$ for all $k = 1, \dots, K$. Taking into account this fact, equation (33) defines the equilibrium level of total effort W^* and consequently the equilibrium effort in rent-seeking by each group k equal to $w_k^* = W^*/N$.

It can easily be observed that the total effort in rent-seeking activities is increasing in the amount N of natural resources available, and that this reduces the productivity of the individuals (i.e., $\partial A(W^*)/\partial N < 0$).

In order to determine the effect of natural resources on the consolidation of democracy, we need understand the effect of an increase in N on $\tilde{q}(\phi)$ and on $b_u^*(q_t)$ and $b_c^*(q_t)$ (which in turn affect \tilde{q}_u and \tilde{q}_c respectively). As in Section 6, the decision problem of the military about undertaking coups is unchanged, which means that an increase in N reduces the probability of consolidation of democracy by increasing $\tilde{q}(\phi)$.

For the optimal levels of public democratic investment $b_u^*(q)$ and $b_c^*(q)$, it can be shown that the impact of N depends crucially on the number K of rent-seeking groups in society. Indeed when there are few groups doing rent-seeking under democracy, each group limits its rent-seeking behavior about natural resources as it partly internalizes the negative externalities generated by such activities on the non-resource sector. The individuals' utility then increases in the amount N of natural resources available and this increases the incentive of a democratic government to spend more resources in public democratic investment in order to defend the regime (i.e., $\partial b_c^*(q_t)/\partial N > 0$ and $\partial b_u^*(q_t)/\partial N > 0$). When instead the number of rent-seeking groups is very large, such as in the limit case where K tends to infinity, one gets the situation of competitive rent-seeking where each group is very small and does not internalize the distortive effects generated by its behavior on the rest of the economy. This translates into a strong decrease in market productivity A and a reduction of public democratic investment as citizens gain less from the defense of democracy. In turn, the reduction of the optimal levels of public democratic investment $b_u^*(q)$ and $b_c^*(q)$ imply lower thresholds \tilde{q}_u and \tilde{q}_c of the steady state composition of society, which means a lower probability of a transition to a consolidated democracy.

²⁴The second order condition of this problem can be written as

$$[(1 - \hat{\tau}) + \lambda\hat{\tau}(1 - x)] A''(W) - \frac{K}{1 - x} 2N \frac{W - w_k}{W^3} < 0,$$

and it is always satisfied since $A''(W)$ is nonpositive.

Specifically when K is sufficiently high, then a higher level of natural resources has an unambiguously negative effect on the consolidation of democracy and one gets the following proposition.

Proposition 11 *A higher level of natural resources N increases the threshold $\tilde{q}(\phi)$. When the number of groups in the society is sufficiently large, (i.e., $K > K^*$) a higher N reduces both $b_u^*(q)$ and $b_c^*(q)$ and makes democratic consolidation unambiguously less likely. When the number of groups in the society is not too large, (i.e., $K < K^*$) more natural resources have instead an ambiguous effect on democratic consolidation.²⁵*

Proof. See the Appendix. ■

• **Permanent of effects of temporary shocks on the consolidation of democracy**

The framework presented has also the feature that temporary shocks may have permanent effects on the consolidation of democracy through the process of family transmission of political culture. Consider for example a temporary increase in the level of productivity at time t , so that $\Delta A_t > 0$. As shown in Section 6, a permanent increase in A has ambiguous effects on the probability of consolidation of democracy as it increases the public democratic investment $b_u^*(q_t)$ and $b_c^*(q_t)$ (and the associated steady state values of the share of committed and uncommitted citizens in the society, \tilde{q}_c and \tilde{q}_u) but it also lowers the threshold $\tilde{q}(\phi)$ above which the military does not attempt coups. In the case of one period increase in A , the long run value of $\tilde{q}(\phi)$ is unchanged. However, the increase in the public democratic investment generated by a higher productivity also rises the probability that the democratic regime persists from t to $t + 1$, which gives more incentives to the committed individuals to transmit their traits (i.e., $\partial q_{t+1}/\partial A_t > 0$). As the level of committed citizens at time $t + 1$ is higher (relative to the case where there is no productivity shock), the probability to remain in democracy will also be higher. This positively affects the transmission of political culture and the probability to remain in democracy at $t + 1$. The mechanism just described is at work in all periods. In sum, while the impact of an increase in A will decline over time, its final effect is a higher probability that democracy persists and consolidates.

²⁵Under the additional convenient assumption that $A'''(W) \geq 0$, it can be shown that the threshold K^* above which such negative effect is unambiguous is unique.

8 Some evidence

In this section, we provide a few but significant illustrations of some of the main mechanisms on which our theory is based. We first focus on the cases of Post World War II Federal Republic of Germany and Japan. Then we consider the interesting case of Estonia during much of its 20th century turbulent history.

8.1 The cases of post World War II: Germany and Japan

Germany:

As it is well-known, political (and economic) institutions in both the Federal Republic of Germany and in the former Empire of Japan were drastically transformed under the active supervision of the Allied military government. This process of essentially exogenous institutional change, following the military defeat of the Axis power in 1945, lead to creation in both countries of parliamentary democracies, whose legislature was elected under universal suffrage. Nevertheless, a major concern was raised in both countries relative to the congruence between the new democratic institutions and the prevailing political culture within the West German and Japanese population.

In the case of Germany, “[...] this concern was reinforced by early postwar surveys, which suggested that Germans had neither developed a deep commitment to the democratic forms of the Federal Republic nor adopted appropriate roles as citizens participating in a democracy.” (Baker, Dalton, and Hildebrandt, 1981, p. 16). Nevertheless, since the end of World War II both the Allied occupation forces and then the Federal government undertook a major effort to reeducate or “denazify” the German people (related in our model to the variable of investment in public socialization b). This program not only included the removal of former Nazi from most power positions and the punishment of war criminals, but also use the mass media, the educational system and public forum to conduct a pervasive campaign of political education of democratic norms, targeted particularly to the younger generations.²⁶

By several quantitative indicators, this major public investment in political education appeared to be highly fruitful according to different pieces of evidence cited in (Baker, Dalton, and Hildebrandt, 1981). For instance, the number of citizens of the Federal Republic who believed that Bundestag represented the public interest doubled between 1951 and 1964; while only over half favored a democratic form of government, the same figure increased to three quarters by 1965 (see p. 25). Moreover, political discussion was much higher in 1973 then it

²⁶See also Baker, Dalton, and Hildebrandt (1981, ch. 1).

used to be in 1953, with the youngest generation raised in the democratic environment of the Federal Republic showing the highest level of it (see p. 39, and p. 48). In 1973, 44% of the German citizens (see p. 30) felt that they could “bring about a change in their nation”, a figure somewhat above the corresponding mean at the European level of 41%, which demonstrate a relatively diffused sense of political efficacy, and therefore of internalization of a fundamental democratic norm.

These features lead Baker, Dalton, and Hildebrandt to conclude that: “All the evidence suggests that a viable democratic political culture has developed in the Federal Republic of Germany during the postwar period. Because diffuse support for the system and its norms is quite pervasive [i.e. the number of committed citizens is relatively high in terms of our model], it is increasingly inappropriate to argue that the German political culture is incongruent with the existing political structure.” (Baker, Dalton, and Hildebrandt, 1981, p. 69).

Japan:

Similarly for Japan, 1945 war defeat represented a major catalyst for radical political and social change. As World War II came definitively to an end, there was the creation of new democratic institutions at the behest of external authorities (Sayuri, 2010). In the postwar years of the Allied occupation (1945–51) the country was run by the Supreme Commander for the Allied Powers (SCAP) whose occupation policies contributed to transform profoundly the key institutions of the post-war Japan, with the focus on the twofold aim of demilitarization and democratization. These objectives were codified in the new Japanese Constitution of 1947, considered one of the most advanced democratic constitution of its time. In particular, the explicit renunciation of war and the extent of guaranteed human rights represented the two major innovations of the Japan’s post-war constitution.

As in the case of the denazification in Germany, the process of demilitarization in Japan targeted those officials, journalists, educators and businessman blamed for being implicated in the pre-war militarist policies. Alongside the dismantling of Japanese militarist structure, a wide program of reforms whose implementation relied heavily on Japanese local authorities was started to democratize Japan’s political and social institutions.

One of the main target of reform was the educational system, being one of the primary agent of socialization blamed for spreading pre-war militarist ideas throughout the Japanese population. A series of initiatives were implemented in the field of education to pursue, coherently with the broader reform action of the postwar years, the general goals of demilitarization, democratization and delocalization: about one quarter of the teachers in charge during the pre-

war time left the profession; teaching programmes and textbooks were revised; the old elitist structure was dismantled and a new educational system was shaped upon the US model; the control of education of young people was democratized by transferring a large number of responsibilities to local education authorities, namely locally elected boards acting independently from the Ministry of Education (Neary, 2002: 40–41).

The new educational system played a crucial role in spreading a democratic political culture among the youngest generations of Japanese. The early 1960s witnessed the first open and massive expression of this new political consciousness, as thousands of young Japanese took the street to protest against the renewal of Japan’s unequal security treaty with the United States (Haddad, 2012: 66). As Haddad highlights, the target of the mass protests was not the treaty itself, but the method used to pass it, which infringed the normal democratic procedure. Hence, protagonists of this early episode of protest were young students who belonged to the first generation to have been educated in the postwar democratic educational system; fed with democratic ideas and become politically active, they were asserting their role as active citizens (Haddad, 2012: 66). As the new generations educated after WWII were increasingly numerous in the Japanese society, their democratic political culture began to take roots and to become increasingly dominant. According to Haddad’s tipping point model of political change—grounded on the importance of generational effects in creating opportunities for democratic change—a further consolidation and deepening of Japan’s democratic institutions occurred when the post-war generation took over important positions of power in the mid-1990s and reformed democratic institutions to better serve the needs of Japan’s contemporary society (Haddad, 2012: 98-101).

Alongside the central role played by education and generational fractures, a further element contributed to shape Japan’s democratic political culture, i.e. the persistence of some aspects of the country’s traditional political culture. In his analysis of Japanese political culture, Richardson (1974: 244) has come to the conclusion that, looking at the short experience of the Japanese postwar democracy, it could be argued that “democratic concepts can be internalized at the mass level in a relatively short period of time” with Japan developing its own peculiar viable democratic political culture. Indeed, the adoption of democratic values, institutions and practises has been accompanied by the preservation of important aspects of their traditional culture (Haddad, 2012: 101). Given that part of these traditional traits were going through family transmission, these facts are consistent with our view of a certain congruence between family political socialization and public indoctrination.

The case of Japan is also a good example of the persistency of political culture across

time. An example is provided by the fact that the Japanese democracy features very high level of civic engagement compared to other Western democracies. As a legacy of the wartime mobilization and of pre-war civic activities, civic engagement registered a rapid increase in postwar time. As argued by Kage, civic engagement acted as an important accelerator for the rebuilding of Japan in the aftermath of WWII (Kage, 2011: 159); and it still represents a cornerstone of today’s Japanese democracy. An example of Japan’s extraordinary high rates of civic participation is provided by the fact that more than 90% of Japanese families are members of their local neighborhood associations (Haddad, 2012: 194).

To conclude, from 1945 onwards Japanese succeeded in adopting liberal democratic institutions introduced from outside during the occupation time; and by reshaping them through the development of a Japanese democratic political culture, they have created their own consolidated democratic structures.

8.2 The case of Estonia in 1918–1991

The case of Estonia during the period 1918-1991 provides another illustration of our theory and the causal mechanisms interlinking political institutions, political socialization and cultural legacies. In particular, the Estonian case highlights the following features of our theory: a) an incumbent (unconsolidated) democratic government has the incentive to invest in civic virtues (democratic infrastructure or public political socialization); b) citizens committed to democracy tend to invest in transmitting their “type” to their offspring (private political socialization), and the more so under democracy; finally c) democratic virtues (i.e., the mass of citizens committed to democracy) has some degree of persistence (declining over time) in presence of nondemocratic formal political institutions, while the future of a new democracy depends on historical legacies (the number of citizens intrinsically committed to democracy present at the critical juncture of the democratic transition).²⁷

This section draws extensively on the recent contributions of Bennich-Björkman (2007a, 2007b and 2007c), which address the question of how institutional change affects political culture, but also the complementary question of how the persistence of a certain type of culture potentially influences the consolidation of new political institutions. The author draws on previous historical and sociological research. It also presents an original body of evidence

²⁷More generally, as already remarked, several other “success stories” of Post-Communist democratization like the ones of Poland, Hungary and Slovenia, as well as other examples much more “troubled democratization paths” of countries like Russia, Ukraine, Romania, or Bulgaria, point out to the importance of particular “historical legacies” (e.g., civic virtues) that these societies carried with them into democratic times. See for instance, Dryzek and Holmes (2002), Grzymala-Busse (2002), Jones-Luong (2002) and Kitschelt (2003).

consisting in interviews, conducted in 1998, with the surviving members the generation of Estonians whose original socialization occurred during in the 1920s and 1930s (the first episode of democratic government in Estonian history). This cohort of people is of particular interest since in 1944 a fraction of it left the country, mainly to resettle in democratic countries such as Sweden and Canada (relatively similar in terms of political culture and especially political and economic institutions),²⁸ and the rest stayed and lived under the Soviet rule in the Estonian Soviet Socialist Republic for the following four decades.²⁹

A brief review of the most significant events in the history of Estonia since its independence from the Russian Empire in 1918, to its secession from the Soviet Union in 1991, will be helpful. Estonia became an independent nation, whose state had the form of a parliamentary Republic with proportional representation (modelled after the constitution of the Weimar Republic), in 1918 after the defeat of the Russian Empire in World War I. Equally interesting, the overwhelming de facto political power enjoyed by the Junkers landlords aristocracy until then was broken-up by a major agrarian reform immediately implemented by the newly born state. This led to a society with a relatively horizontal structure mainly formed by small-scale peasants with a petit urban bourgeoisie. The economic power of the new state was also consolidated, as part of the Junkers' holding were converted into state property. The creation of the Estonian Republic came along with a major transformation and reallocation of both de jure and de facto political power, both in the direction of consolidating the newly established democratic regime. Furthermore, the land reform itself favoured the creation of a multitude of cooperative producers' associations, supported by the state which contributed to the consolidation of the civil society (we will discuss this issue further below).

A significant fact documented by various historians is the major effort done since the very beginning by the new Estonian democratic government, both at the central and local level, to increase both the level of formal education, and the diffusion of democratic values (through the schooling process and other channels), especially among the young generations socialized during the 1920s and 1930s. For example, Estonian language schools were established, and artistic

²⁸See also Bennich-Björkman (2006) for a comparative analysis mainly focused on the differences in political culture between Swedish-Estonians and the Canadian-Estonians.

²⁹The opinion survey in question was conducted in 1998 and involved 291 Estonians living at that time respectively in their native country, in Sweden and in Canada. These two groups of people thus potentially represent, loosely speaking, respectively the "treatment" and the "control" group of a potential quasi-natural experiment consisting in the invasion of Estonia by the Red Army in 1944. Nevertheless, as Bennich-Björkman remarks, the decision to migrate was affected by social and geographic factors, and therefore the assignment of individuals to the two groups was far from random, due to a potential selection bias. See Appendix A and B of Bennich-Björkman (2007b) for a detailed description of the construction of the survey and the results of its statistical analysis.

life of all kinds flourished. In 1919, instruction in the Estonian language was introduced at the University of Tartu; in addition, Tallinn Technical University and the Estonian Academy of Music were established in Tallinn. One of the more notable cultural acts of the independence period, unique in Western Europe at the time of its passage in 1925, was a guarantee of cultural autonomy to minority groups comprising at least 3,000 persons, including Jews. The democratic character of the Estonian educational and cultural reforms, and more generally the generous and tolerant legislation toward minorities implemented (Church and state were formally separated in Estonia in 1925; see Hope, 1994, p. 46), is important since it clearly highlights of existence and progressive consolidation of shared republican values since the early years of the new state.³⁰

In addition, many people interviewed (see Bennich-Björkman, 2007c, pp. 37–38) recall that the educational process put special emphasis on civic education and nationalism (public investment in political socialization), which can be thought of in terms of our model as a relatively high investment in the endogenous component of b . In particular, civic training focused on the rights of citizens and on the workings of the democratic process. These facts match with the prediction of our theory that a relatively unconsolidated democracy has the incentive to invest in increasing the democratic stock of its citizens, a goal that can be partly achieved by empowering the public educational system as agency not only of transmission of human capital, but also of promotion of democratic political socialization.

Between the 1920s and the 1940s the Estonian society a whole became indeed, “[...] highly communal. Civil society was vibrant, and voluntary associations covering various aspects of life and diverse fields of interest filled the country...” (Bennich-Björkman, 2007c, p. 26; see also on this issue Uustalu, 1952, pp. 233–34; Hope, 1994, p. 56; Ruutsoo, 2002, p. 57). Estonian culture was a culture of “joiners,” and in this respect the Latvian and Estonian societies were in agreement while Lithuania had much weaker traditions of associational life (Ruutsoo, 2002, p. 59).³¹

It is thus not too surprising (and consistent with our model) that in 1924 the Estonian government was able to defeat a coup attempt orchestrated by the Estonian Communist party and supported by Moscow. Both the relatively egalitarian distribution of income caused by the

³⁰ Arguably, this rich civic life was itself partly rooted in the previous Estonian historical experience transmitted across generations. “The will to associate with one other must also have rested on a sense of trust in society, which may have emanated from the shared suffering, the historic experiences, and the similar living conditions that many found themselves in. Joining together in organizations became also an expression of citizenship: Estonia was a young state that needed you.” (Bennich-Björkman, 2007c, p. 28).

³¹ Interestingly, according to Hope (1994, p. 45), a cooperative movement providing credit and other services emerged in Estonia as early as the 1870s, and it quickly resumed operation in the 1920s, after the interruption occurred during the war period.

original land reform, and the peculiarly high degree of development of civiness, a democratic spirit within the society (which is of course the novel variable emphasized by our theory relative to the standard models of political transitions), generated a diffused support for the incumbent democracy. Nevertheless, ten years later, in 1934, Konstantin Pats, chief of the government together with Johan Laidoner, head of the army, violated the constitution by establishing a right-wing, authoritarian, presidential government. This event was one example of the many democratic breakdowns occurred in Europe, and in particular in all of the three Baltic republics, following the economic and political crisis of the early 1930s. In terms of our model, it can be explained with a relatively low draw of the random variable ε (the exogenous component in the democratic stock) and the stochastic nature of political transition processes. Yet, the authoritarian government established in Estonia was significantly weaker than its counterparts in both Latvia and Lithuania, a fact which arguably reflected the relatively stronger degree of consolidation of democratic virtues present in the Estonian society. Estonia then developed a civic culture that partly survived even during the Päs regime. Indeed, as explained in greater detail below, “These experiences surfaced once the yolk of Stalinism was lifted in the 1950s and shaped Estonia under Communism into a society of “collective mobilization” where democratically inclined counter-elites could form.” (Bennich-Björkman, 2007b, p. 316).

Estonia ceased to be an independent state again in 1940, following its invasion by the Soviet Union.³² It was then temporarily occupied by the German army in 1941 after Germany declared war to and invaded the Soviet Union (“Operation Barbarossa”), and then recaptured by the Red Army in 1944. It was thereafter part of the Soviet Union until the breakdown of the latter in 1991, when it once again obtained independence.

As already mentioned, in 1944 the “democratic generation” (born between 1915 and 1925), either stayed in their homeland or left (mainly) for Sweden or Canada. The main empirical results on the survey comparing the values of the sample of this set of Estonians interviewed by Bennich-Björkman are the following.

First of all, cultural adaptation and evolution did take place. As a matter of fact, early civic-oriented socialization did *not* safeguard Estonians of the interwar period who lived under authoritarian rule against becoming less democratic than their counterparts in exile. Similarly, while the exiles actively organized themselves to maintain their civic-minded culture, existing institutions and external impulses also did break through and affected their mental-

³²The occupation of Estonia by the Soviet Union was contemplated by the one of the secret protocols of the infamous “Ribbentrop-Molotov” pact of August 1939, which precluded the German invasion of Poland and the outbreak of World War II.

ties (Bennich-Björkman, 2007c, p. 117). This finding is congruent with the prediction of our theory that political culture is to some degree persistent across time, and in particular through the mechanism of its transmission by the family. However, it is also potentially gradually reshaped by the presence of “incongruent” political institutions which attempt themselves to indoctrinate people with different political values. Consistent with our theory, such policy was actively pursued by the Soviet government and was indeed to some extent effective in mitigating over time the direct and indirect influence of the “democratic generation” socialized in the 1920’s and 1930’s.³³

Second, and related, there is also some evidence that, again consistent with our theory, the relatively smooth process of consolidation of democratic institution experienced by Estonia in the early 1990s may have been facilitated by the intergenerational transmission through micro-entities such as the family, of the stock democratic political culture produced early on in the 20th century under the government of the independent Estonian state. For instance Haerpfer, Bernhagen, Inglehart and Welzel (2009, p. 317, Table 20.2) report that Estonia outperformed all other electoral democracies in Post-Communist Europe in the period 1993–2006, according to both the Freedom House and the Polity IV indicators of democratic development. The conclusions of the author on this issue are summarized in the following sentence. “Do the results indicate that the Estonian transition to democracy is the beginning of the 1990s even could have been facilitated by a collective memory of political cultural traditions from the first republic transmitted not least by this interwar generation? The results just discussed partially point to an affirmative answer.” Moreover, “The republican interwar generation thus played a role in preserving such an Estonian identity, even though it has also significantly affected by Soviet experiences” (see Bennich-Björkman, 2007c, p. 116). This finding is congruent with our result that the effort made by the committed family to transmit their own trait, decreases when a nondemocratic government invests more in various forms of repression in the first place (i.e., when $\Delta\eta$ is higher). However it may still remain positive and maintain a certain degree of transmission over generations. As a consequence, the influence of the original political culture tends to decrease (but not necessarily to vanish) across the new generations. As Bennich-Björkman, (2007b, p. 342) concludes “[...] What Estonia’s twentieth-century history nevertheless tells us is that a legacy of civic culture can travel in time and constitute

³³In particular, the “Sovietization” of the Estonian population was mostly effective in eroding generalized values such as trusts, tolerance and political efficacy (defined as the perception of “making a difference” in the political process). However, it had much less effect on civic virtues, which are some of the main cultural reflection of democracy, such as activity and participation, and personal autonomy. See Bennich-Björkman (2007a, pp. 10–16).

a tremendous asset for a state in the process of transition to democratic government”.

9 Conclusions

We regard this paper as a first attempt to link two bodies of literature that, to best of our knowledge, were previously disconnected: the literature on endogenous political transitions on the one hand, and on the endogenous intergenerational transmission of preferences on the other. The motivation for this exercise is provided by much scholarship in comparative politics, which argues that political culture is an important determinant of many political outcomes including the dynamics of political regimes. Furthermore, we have argued that some important facts, such as the different paths of political development followed by former Communist countries cannot be entirely explained by standard “first generation” models of political transitions where agents have only induced, as opposed to intrinsic preferences over political institutions.

Rather than summarizing the results of the paper, we prefer to discuss briefly a few potential new directions of research. Many questions remain indeed still open. First and foremost, is the question of how income inequality (neglected in this paper), and the related class-conflict, interact with the politico-cultural conflict (between citizens who are and who are not committed to democracy), and the civil-military conflict (between the civil society as a whole and the army). Second, it would be potentially interesting to investigate how the dynamics of political culture is shaped by institutions other than the state or the family, such as religious organizations. Third, an interesting question to be pursued is how different patterns of democracy (i.e., the electoral system or the form of government) influence the dynamics of political culture and democratic consolidation. We hope that the bare-bone model of democracy and culture considered here can be used as a stepping stone in addressing these important issues in future research.

10 Appendix

10.1 Proof of Proposition 3

When $q_t \in [0, 1/2]$, the derivation of (8) with respect to b_t leads to (12) which implicitly defines $b_u(q_t)$. The second order condition of problem (8) reduces to $-C''(b_t) < 0$, which is always satisfied. The uncommitted will never choose a level of public democratic investment higher than η , as the committed will oppose to a coup with certainty (i.e., $P(b_{2t}) = 1$) when $b_t = \eta$. This implies that the optimal provision of public democratic investment for the uncommitted needs to be rewritten as $b_u^*(q_t) = \min\{b_u(q_t); \eta\}$.

In the region $q_t \in (1/2, \tilde{q}(\phi))$, the committed are in power and the optimal provision of public democratic investment $b_c^*(q_t)$ in (13) is obtained deriving (11). The second order condition of problem (11) is

$$1/\bar{b} < C''(b_t), \quad (34)$$

which requires that the cost function of b_t is sufficiently convex or the variance of the shock to the democratic capital stock sufficiently high (i.e., \bar{b} high enough).

When $q_t \in [\tilde{q}(\phi), 1]$ the utility of the committed and uncommitted are equal and defined by (8) with $F(q_t) = 1$. The first order condition is

$$-C'(b_t) + (1/\bar{b}) [a - (1 - \hat{\tau}) A] = 0,$$

which shows that b^* is independent on q_t . When $b^* \leq \eta$, there is always the possibility that $b_{t,2} < \eta$ and that a transition to dictatorship occurs. Assumption 4 ensures that the optimal public democratic investment for both committed and uncommitted is $b^* = \eta$ when $q_t \geq \tilde{q}(\phi)$.

10.2 Proof of Proposition 7

If $\tilde{q}(\phi) > 1/2$ and $q_t \in [1/2, \tilde{q}(\phi)]$, the committed citizens are the majority and decide the democratic fiscal policy. The steady state share of committed citizens \tilde{q}_c will be given by (25), with $b_e(q_e) = b_c^*(q_t)$ determined by (13), i.e.,

$$\frac{b_c^*(\tilde{q}_c) + \bar{b} - \eta}{2\eta} = \frac{\tilde{q}_c}{1 - \tilde{q}_c}.$$

In general, equation (26) does not lead to a unique equilibrium. However, as the right hand side of (26) is increasing and convex in q , a sufficient condition for uniqueness is that the function $b_c(q)$ is increasing and weakly concave in q . From the differentiation of (13) with respect to q , we obtain

$$-C''(b_c) \frac{\partial b_c}{\partial q} + \frac{1}{\bar{b}} F'(q) [a - (1 - \hat{\tau}) A] + \frac{1}{\bar{b}} \frac{\partial b_c}{\partial q} = 0 \quad (35)$$

and

$$\frac{\partial b_c}{\partial q} = \frac{(1/\bar{b}) F'(q) [a - (1 - \hat{\tau}) A]}{C''(b_c) - 1/\bar{b}} > 0,$$

since the denominator is positive from (34). The differentiation of (35) with respect to q leads to

$$\frac{\partial^2 b_c}{\partial q^2} = \frac{F''(q) [a - (1 - \hat{\tau}) A] [C''(b_c) - \bar{b}] - C'''(b_c) F'(q) [a - (1 - \hat{\tau}) A]}{(1/\bar{b}) (C''(b_c) - \bar{b})^2}. \quad (36)$$

The weak concavity of $b_c(q)$ requires that the numerator of (36) is nonpositive, i.e., that

$$F''(q) \leq \frac{C'''(b_c) F'(q)}{C''(b_c) - \bar{b}}. \quad (37)$$

We assume that $F''(q)$ is not too high, which implies that $F'(q) = f(q)$ is not too increasing, and that

$$C''(b_c) > \max\{\bar{b}, (1/\bar{b})\},$$

so that condition (37) is satisfied.

Under these conditions, the steady state value of the share of committed citizens \tilde{q}_c in the society is unique and implicitly defined by (26). When $q_t < \tilde{q}_c$, $\Delta q_{t+1} > 0$ and the share of committed citizens increases over time, while the opposite happens when $q_t > \tilde{q}_c$.

When $q_t \in [0, \max\{1/2, \tilde{q}(\phi)\})$, the uncommitted citizens are the majority and decide fiscal policy. This implies that the steady state value of the share of committed citizens in the society \tilde{q}_u is given by (25), where $b_e(q_e) = b_u^*(q_t)$ is determined by (12), i.e.,

$$\frac{b_u^*(\tilde{q}_u) + \bar{b} - \eta}{2\eta} = \frac{\tilde{q}_u}{1 - \tilde{q}_u}$$

Again, when $q_t > \tilde{q}_u$, $\Delta q_{t+1} > 0$ and q_t increases over time, and vice versa.

From the fact that $b_c^*(q_t) > b_u^*(q_t)$ (see Proposition 3) follows that $\tilde{q}_c > \tilde{q}_u$.

When $q_t < \tilde{q}(\phi)$ and the military are in power, there is always the possibility that a rebellion takes place (from Assumption 4) and that the political system becomes democratic.

We now obtain that for the committed parents

$$\begin{aligned} \Delta V_{t+1}^c(M) &\equiv V_{t+1}^{cc}(M) - V_{t+1}^{cu}(M) \\ &= \mathbb{E}_t \{ \varepsilon_t - (\eta + \Delta\eta^M) | \varepsilon_t - (\eta + \Delta\eta^M) \geq 0 \} = \frac{[\bar{b} - (\eta + \Delta\eta^M)]^2}{2\bar{b}}, \end{aligned}$$

and for the uncommitted parents

$$\Delta V_{t+1}^u(M) \equiv V_{t+1}^{uu}(M) - V_{t+1}^{uc}(M) = (\eta + \Delta\eta^M) \frac{\bar{b} - (\eta + \Delta\eta^M)}{\bar{b}},$$

where $\Delta\eta^M \equiv \Delta\eta^M(q_t)$ is defined by (16). The substitution of the last two expressions into (22) implies that the steady state composition \tilde{q}_M of society in military dictatorship is implicitly defined by the following equation

$$\frac{\bar{b} - \eta(\tilde{q}_M)}{2\eta(\tilde{q}_M)} = \frac{\tilde{q}_M}{1 - \tilde{q}_M},$$

where $\eta(\tilde{q}_M) \equiv \eta + \Delta\eta^M(\tilde{q}_M)$. Again, $\Delta q_{t+1} > 0$ and q_t increases over time when $q_t < \tilde{q}_M$, and vice versa.

The ranking $\tilde{q}_c > \tilde{q}_u > \tilde{q}_M$ follows immediately from (26), (27), (28) and Proposition (4).

10.3 Proof of Proposition 9

If $\tilde{q}(\phi) \leq 1/2$ and $\tilde{q}_u \geq \tilde{q}(\phi)$, then $q_{t+1} > q_t$ for all $q_t \in [0, \tilde{q}(\phi))$ and the probability that democracy persists when $q_t \in [0, \tilde{q}(\phi))$ is $P(b_u^*(q_t))F(q_t)$, which is increasing in q_t and therefore in t (see Proposition 8). Similarly, if $\tilde{q}(\phi) > 1/2$ and $\tilde{q}_c \geq \tilde{q}(\phi)$, then the probability that democracy persists is $P(b_c^*(q_t))F(q_t)$ for all $q_t \in (1/2, \tilde{q}(\phi))$, and $q_{t+1} > q_t$ for all $q_t \in (1/2, \tilde{q}(\phi))$. Finally, if $\tilde{q}_c \geq \tilde{q}(\phi) > 1/2$ and $\tilde{q}_u \geq 1/2$, democracy persists with probability $P(b_c^*(q_t))F(q_t)$ for all $q_t \in (1/2, \tilde{q}(\phi))$, and with probability $P(b_u^*(q_t))F(q_t)$ for all $q_t \in [0, 1/2]$, with $q_{t+1} > q_t$ for all $q_t \in [0, \tilde{q}(\phi))$.

10.4 Proof of Proposition 10

From (30), it is straightforward that $\tilde{q}(\phi)$ is increasing in $\hat{\tau}$, A , and N , and it is decreasing in h and ϕ , while it is independent on H .

Differentiating (13) with respect to $\hat{\tau}$ and rearranging terms, we obtain that

$$\frac{\partial b_c^*(q_t)}{\partial \hat{\tau}} = \frac{\lambda A (1-x) F(q_t)}{\bar{b} [C''(b_c^*(q_t)) - (1/\bar{b})]} > 0.$$

From (13) we also have that

$$\begin{aligned} \frac{\partial b_c^*(q_t)}{\partial A} &= \frac{\lambda \hat{\tau} (1-x) F(q_t)}{\bar{b} [C''(b_c^*(q_t)) - (1/\bar{b})]} > 0, \\ \frac{\partial b_c^*(q_t)}{\partial N} &= \frac{\lambda F(q_t)}{\bar{b} [C''(b_c^*(q_t)) - (1/\bar{b})]} > 0, \\ \frac{\partial b_c^*(q_t)}{\partial h} &= \frac{\partial b_c^*(q_t)}{\partial H} = -\frac{\lambda x F(q_t)}{\gamma \bar{b} [C''(b_c^*(q_t)) - (1/\bar{b})]} < 0, \end{aligned}$$

and

$$\frac{\partial b_c^*(q_t)}{\partial \phi} = 0.$$

Similarly, we obtain that $\partial b_u^*(q_t)/\partial \hat{\tau} > 0$, $\partial b_u^*(q_t)/\partial A > 0$, $\partial b_u^*(q_t)/\partial N > 0$, $\partial b_u^*(q_t)/\partial h = \partial b_u^*(q_t)/\partial H < 0$, and $\partial b_u^*(q_t)/\partial \phi = 0$.

10.5 Proof of proposition 11

We first derive some preliminary results that have been reported in the text before the statement of the proposition.

Equation (33) defining the optimal level of total effort W^* can be rewritten as

$$\frac{N}{W} = \frac{K}{K-1} \left\{ 1 - \frac{1-x}{K} [(1-\hat{\tau}) + \lambda \hat{\tau}(1-x)] A'(W) \right\}, \quad (38)$$

once we take into account that the equilibrium is symmetric ($w_k = W/K$ for all $k = 1, \dots, K$). As the left hand side of (38) is a strictly decreasing function in W and the right hand side is increasing in W , W^* is unique and the optimal effort in rent-seeking by each group k is $w_k^* = W^*/N$.

Total effort in rent-seeking activities is increasing in the amount N of natural resources available, and that this reduces the productivity of the individuals. Indeed denoting with IF the left hand side of (33) defining W^* and applying the implicit function theorem to this equation, we have that

$$\frac{\partial W^*}{\partial N} = -\frac{\partial IF/\partial N}{\partial IF/\partial W} > 0,$$

as $\partial IF/\partial W < 0$ from the second order condition and $\partial IF/\partial N = K(W - w_k)/(1 - x)W^2 > 0$. Hence, $\partial A(W^*)/\partial N < 0$ follows from $A'(W) < 0$.

As in Section 6, the decision problem of the military about undertaking coups is unchanged, which means that an increase in N reduces the probability of consolidation of democracy by increasing $\tilde{q}(\phi)$.

The effect of N on the optimal levels of public democratic investment $b_u^*(q)$ and $b_c^*(q)$ may now be different than in the baseline framework. It can be easily shown that $b_u^*(q)$ and $b_c^*(q)$ are still given by (12) and (13) with the term a replaced by $a(W)$ as defined in (32) and with the additional terms on gains and effort costs from natural resources. In particular, $b_c^*(q)$ is now defined by

$$-C'(b_t) + (1/\bar{b})F(q_t) \left[a(W) - (1 - \hat{\tau})A + \frac{K}{1 - x} \left(-w_k + \frac{w_k}{W}N \right) \right] + \frac{\bar{b} + b_t - \eta}{\bar{b}} = 0. \quad (39)$$

Applying the implicit function theorem to (39) leads to

$$\frac{\partial b_c^*(q_t)}{\partial N} = \frac{F(q_t)}{\bar{b} [C''(b_c^*(q_t)) - (1/\bar{b})]} \quad (40)$$

$$\left\{ [(1 - \hat{\tau}) + \lambda \hat{\tau}(1 - x)] \left[A'(W) \frac{K - 2}{K - 1} - \frac{W}{K - 1} A''(W) \right] + \frac{1}{(1 - x)(K - 1)} \right\} \frac{\partial W}{\partial N},$$

where we have used the fact that N/W is defined by (38), and $\partial w_k/\partial W = 1/K$ since $w_k = W/K$. As $\partial W/\partial N > 0$ and the denominator of the first term of (40) is positive, the sign of $\partial b_c^*(q_t)/\partial N$ is determined by the expression in brace. The component containing $A'(W)$ is negative while the other two are positive; this implies that the effect of a higher level of natural resources on the public democratic investment is generally ambiguous.

However, one can notice that when there are two groups in the society ($K = 2$), the first term is zero and therefore $\partial b_c^*(q_t)/\partial N > 0$. When instead the number of rent-seeking groups is very large, such as in the limit case where K tends to infinity, the two positive terms of

(40) are small enough and $\partial b_c^*(q_t)/\partial N < 0$. Hence there exists a threshold K^* such that $\partial b_c^*(q_t)/\partial N < 0$ holds for $K > K^*$.

Under the additional assumption that $A'''(W) \geq 0$, it can be shown that the threshold K^* above which such negative effect is unambiguous in unique. Indeed the term in brace in (40) is monotonically decreasing in K if

$$[(1 - \hat{\tau}) + \lambda \hat{\tau}(1 - x)] \left\{ \frac{A'(W)}{(K - 1)^2} + \left[\frac{W}{(K - 1)^2} + \frac{K - 2}{K - 1} \frac{\partial W}{\partial K} \right] A''(W) - \frac{W}{(K - 1)} A'''(W) \frac{\partial W}{\partial K} \right\} - \frac{1}{(1 - x)^2 (K - 1)^2} < 0$$

which is always satisfied when $A'''(W) \geq 0$, since $\partial W/\partial K > 0$ from (38).

The term in brace in (40) is monotonically decreasing in K and the fact that this is positive for $K = 2$ and negative for K sufficiently high implies there exists a unique K^* such that $\partial b_c^*(q_t)/\partial N < 0$ for $K > K^*$ and vice versa. Similar results obviously hold as well for $b_u^*(q)$.

The reduction of the optimal levels of public democratic investment $b_u^*(q)$ and $b_c^*(q)$ imply lower thresholds \tilde{q}_u and \tilde{q}_c of the steady state composition of society, which means a lower probability of a transition to a consolidated democracy.

References

Acemoglu, Daron and James A. Robinson (2000) "Why Did the West Extend the Franchise? Democracy, Inequality, and Growth in Historical Perspective." *Quarterly Journal of Economics*, 115(4), 1167–1199.

Acemoglu, Daron and James A. Robinson (2001) "A Theory of Political Transitions," *American Economic Review*, 91, 938–963.

Acemoglu, Daron and James A. Robinson (2006) *Economic Origins of Dictatorship and Democracy*. Cambridge University Press.

Acemoglu, Daron, Simon Johnson, James A. Robinson and Pierre Yared (2008) "Income and Democracy," *American Economic Review*, 98(3), pp. 808–42.

Acemoglu, Daron, Davide Ticchi and Andrea Vindigni (2010) "A Theory of Military Dictatorships." *American Economic Journal: Macroeconomics*, 2(1), pp. 1–42.

Acemoglu, Daron, Davide Ticchi and Andrea Vindigni (2011) "Emergence and Persistence of Inefficient States." *Journal of the European Economic Association*, 9(2), pp. 177–208.

Acemoglu, Daron and Matthew O. Jackson (2012) "History, Expectations, and Leadership in the Evolution of Social Norms," mimeo MIT.

Alesina, Alberto and George-Marios, Angeletos (2005) “Fairness and Redistribution,” *American Economic Review*, 95(4), pp. 960–980.

Alesina, Alberto and Giuliano, Paola (2010) “The Power of the Family,” *Journal of Economic Growth*, 15(2), pp 93–125.

Alesina, Alberto and Giuliano, Paola (2011) “Family Ties and Political Participation,” *Journal of the European Economic Association*, 2011, 9(5), pp. 817–839.

Alesina, Alberto, and Nicola Fuchs-Schündeln (2007) “Good Bye Lenin (Or Not?): The Effects of Communism on People’s Preferences,” *American Economic Review*, 97, pp. 1507–1528.

Ashraf, Quamrul and Oded Galor (2007) “Cultural Diversity, Geographical Isolation, and the Origin of the Wealth of Nations,” mimeo Brown University.

Alexander, Gerard (2002) *The Sources of Democratic Consolidation*. Ithaca, BY: Cornell University Press.

Almond, Gabriel and Sidney, Verba (1963) *The Civic Culture*. Princeton University Press, Princeton.

Aristotle (1962) *The Politics*. London: Penguin Classics.

Baker, Kendall L., Russell J. Dalton and Kai Hildebrandt (1981) *Germany Transformed: Political Culture and the New Politics*. Cambridge, Ma: Harvard University Press.

Bénabou, Roland (2008) “Ideology,” *Journal of the European Economic Association*, 6(2–3), pp. 321–352.

Bénabou, Roland and Jean Tirole (2006) “Belief in a Just World and Redistributive Politics,” *Quarterly Journal of Economics*, 121(2), pp. 699–746.

Bennich-Björkman, Li (2006) “A Political Culture in Exile: The Estonian Inter-War Generation in Canada and Sweden,” *Journal of Baltic Studies*, 37(1), pp. 68–93.

Bennich-Björkman, Li (2007a) “Civic Commitment, Political Culture and the Estonian Inter-War Generation,” *Nationalities Papers: The Journal of Nationalism and Ethnicity*, Volume 35, Issue 1.

Bennich-Björkman, Li (2007b) “The Cultural Roots of Estonia’s Successful Transition: How Historical Legacies Shaped the 1990s,” *East European Politics and Societies*, vol. 21(2).

Bennich-Björkman, Li (2007c) *Political Culture Under Institutional Pressure. How Institutional Change Transforms Early Socialization*. New York, NY: Palgrave Macmillan.

Bisin, Alberto and Thierry Verdier (2000a) “Beyond the Melting Pot: Cultural Transmission, Marriage, and the Evolution of Ethnic and Religious Traits,” *Quarterly Journal of Economics*, 115, pp. 955–988.

Bisin, Alberto, and Thierry Verdier (2000b) “Models of Cultural Transmission, Voting and Political Ideology,” *European Journal of Political Economy*, 16, pp. 5–29.

Bisin, Alberto, and Thierry Verdier (2001) “The Economics of Cultural Transmission and the Evolution of Preferences,” *Journal of Economic Theory*, 97, pp. 298–319.

Bisin, Alberto, and Thierry Verdier (2011) “The Economics of Cultural Transmission and Socialization,” In Jess Benhabib, Alberto Bisin and Matthew O. Jackson editors: *Handbook of Social Economics*, Vol. 1A, The Netherlands: North-Holland, Elsevier Science, pp. 339–416.

Boix, Carles (2003) *Democracy and Redistribution*. Cambridge: Cambridge University Press.

Bradley, John R. (2012) *After the Arab Spring: How Islamists Hijacked The Middle East Revolts*. New York, NY: Palgrave Macmillan.

Bronfenbrenner, Urie (1979) *The Ecology of Human Development*. Cambridge, MA: Harvard University Press.

Bunce, Valerie (1999) *Subversive Institutions: The Design and the Destruction of Socialism and the State*. Cambridge: Cambridge University Press.

Davies, James C. (1965) “The Family’s Role in Political Socialization,” *The Annals of the American Academy of Political and Social Science*, 361(1), pp. 10–19.

Dawson, Richard and Kenneth Prewitt (1969). *Political Socialization: An Analytic Study*. Boston, MA: Little Brown.

De Grazia, Victoria (2002) *The Culture of Consent: Mass Organisation of Leisure in Fascist Italy*. Cambridge: Cambridge University Press.

Dessí, Roberta (2008) “Collective Memory, Cultural Transmission, and Investments,” *American Economic Review*, 98(1), pp. 534–60.

Dixit, Avinash (2009) “Socializing Education and Pro-Social Preferences,” mimeo, Princeton University.

Dryzek, John S. and Leslie Templeman Holmes (2002) *Post-Communist Democratization: Political Discourses Across Thirteen Countries*. Cambridge: Cambridge University Press.

Easton, David (1965) *A Systems Analysis of Political Life*, New York, NY: John Wiley.

Eckstein, Harry (1988) “A Culturalist Theory of Political Change,” *American Political Science Review*, 82(3), pp. 789–804.

Farvaque Etienne, Alexander Mihailov and Alireza Naghavi (2012) “The Grand Experiment of Communism: Discovering the Trade-off between Equality and Efficiency,” Working Paper DSE n. 776, University of Bologna.

- Galston, William A. (2001) "Political Knowledge, Political Engagement, and Civic Education," *Annual Review of Political Science*, 4, pp. 217–234.
- Gerring, John, Philip Bond, William T. Barndt, and Carola Moreno (2005) "Democracy and Economic Growth: A Historical Perspective," *World Politics*, 57(3), pp. 323–364.
- Glaeser, Edward, Rafael LaPorta, Florencio Lopes-de-Silanes and Andrei Shleifer (2004) "Do Institutions Cause Growth?," *Journal of Economic Growth*, 9(3), pp. 271–303.
- Gramsci, Antonio (1971) *Selections from the Prison Notebooks*. New York, NY: International Publishers.
- Greif, Avner and Tadelis, Steven (2010) "A Theory of Moral Persistence: Crypto-Morality and Political Legitimacy," *Journal of Comparative Economics*, 38(3), pp. 229–244.
- Grzymala-Busse, Anna M. (2002) *Redeeming Communist Past*. Cambridge: Cambridge University Press.
- Haddad, Mary Alice (2012) *Building Democracy in Japan*. Cambridge: Cambridge University Press.
- Hadenius, Axel and Jan Teorell (2005) "Cultural and Economic Prerequisites of Democracy: Reassessing Recent Evidence," *Studies in Comparative International Development*, 39. pp. 87–106.
- Haerpfer, Christian W., Patrick Bernhagen, Ronald F. Inglehart, and Christian Welzel, eds. (2009) *Democratization*. Oxford: Oxford University Press.
- Hibbing, John R. and Elizabeth Theiss-Morse (1995) *Congress as Public Enemy: Public Attitudes toward American Political Institutions*. Cambridge: Cambridge University Press.
- Hodler, R. (2006) "The Curse of Natural Resources in Fractionalized Countries." *European Economic Review*, 50 pp. 1367–1386.
- Hooghe, Marc and Britt Wilkenfeld (2007) "The Stability of Political Attitudes and Behaviors Across Adolescence and Early Adulthood. A Comparison of Survey Data on Adolescents and Young Adults in Eight Countries," *Journal of Youth and Adolescence*, 37(2), pp. 155–167.
- Hope, Nicholas (1994) "The inter-war statehood Statehood: Symbol and Reality," in Smith and Graham, eds., *The Baltic States. The National Self-Determination of Estonia, Latvia and Lithuania*. London: Macmillan Press.
- Hyman, Herbert H. (1959) *Political Socialization: A Study in the Psychology of Political Behavior*. Glencoe, IL.: Free Press.
- Inglehart, Ronald (1989) *Culture Shift in Advanced Industrial Society*. Princeton, NJ: Princeton University Press.
- Inglehart, Ronald and Christian, Welzel (2005) *Modernization, Cultural Change and Democ-*

racy. New York and Cambridge: Cambridge University Press.

Jennings, Kent M., Stoker, Laura and Jake Bowers (2009) "Politics Across Generations: Family Transmission Reexamined," *Journal of Politics*, 71(3), pp. 782–799.

Jones–Luong, Pauline (2002) *Institutional Change & Political Continuity in Post–Soviet Central Asia–Power, Perceptions, and Pacts*. Cambridge: Cambridge University Press.

Kage, Rieko (2011) *Civic Engagement in Postwar Japan. The revival of a Defeated Society*. Cambridge: Cambridge University Press.

Keenan, Edward L. (1986) "Muscovite Political Folkways," *Russian Review*, 45, pp. 115–81.

Kitschelt, Herbert P. "Accounting for Postcommunist Regime Diversity: What Counts as a Good Cause?," in *Legacies of Communism*, 2003, edited by Grzegorz Ekiert and Stephen Hanson, pp. 49–86. Cambridge: Cambridge University Press.

Koon, Tracy H. (1985) *Believe, Obey, Fight: Political Socialization of Youth in Fascist Italy, 1922–1943*. Chapel Hill, NC: The University of North Carolina Press.

Kubik, Jan (2000) "Between the State and Networks of 'Cousins': The Role of Civil Society and Noncivil Associations in the Democratization of Poland." in Nancy Bermeo and Philip Nord eds., *Civil Society Before Democracy: Lessons from Nineteenth Century Europe*. Lanham, MD: Rowman and Littlefield.

Langton, Kenneth P. (1969) *Political Socialization*. Oxford: Oxford University Press.

Lasswell, Harold D. (1951) *The Political Writings of Harold D. Lasswell*. Glencoe, IL: Free Press.

Lipset, Seymour M. (1959) "Some Social Requisites of Democracy: Economic Development and Political Legitimacy," *American Political Science Review*, 53(1), pp. 69–105.

Lott, John (1999) "Public Schooling, Indoctrination, and Totalitarianism," *Journal of Political Economy*, 107(6), part 2, pp. 127–157.

Mehlum, Halvor K., Karl Moene, and Ragnar Torvik (2006) "Institutions and the Resource Curse," *Economic Journal*, 116, pp. 1–20.

Mishler, William and Richard Rose (2001) "What are the Origins of Political Trust? Testing Institutional and Cultural Theories in Post–Communist Societies," *Comparative Political Studies*, 34(1), pp. 30–62.

Neary, Ian (2002) *The State and Politics in Japan*. Cambridge: Polity Press.

Norris Pippa, editor (1999) *Critical Citizens: Global Support for Democratic Government*. Oxford: Oxford University Press.

Noueihed, Lin and Alex Warren (2012) *The Battle for the Arab Spring: Revolution, Counter-Revolution and the Making of a New Era*. New Haven, CT: Yale University Press.

Obeidi, Amal (2001) *Political Culture in Lybia*, London: Routledge Curzon.

Okamura, Tadeo (1968) "The Child's Changing Image of the Prime Minister," *The Developing Economies*, 6, pp. 566–586.

Persson, Torsten and Guido Tabellini (2009) "Democractic Capital: The Nexus of Political and Economic Change," *American Economic Journal: Macroeconomics*, 1, pp. 88–126.

Pharr, Susan J. and Robert D. Putnam, editors (2000). *Disaffected Democracies: What's Troubling the Trilateral Countries?* Princeton, NJ: Princeton University Press.

Piketty, Thomas (1995) "Social Mobility and Redistributive Politics," *Quarterly Journal of Economics*, 110(3), pp. 551–584.

Richardson, Bradley M. (1974) *The Political Culture of Japan*. Berkley CA: University of California Press.

Robinson, James A., Ragnar Torvik and Thierry Verdier (2006) "Political Foundations of the Resource Curse," *Journal of Development Economics*, 79, pp. 447–468.

Roland, Gérard (2004) "Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions," *Studies in Comparative International Development*, 38(4), pp. 109–131.

Ruutsoo, Rein (2002) *Civil Society and Nation Building in Estonia and the Baltic States: Impact of Traditions on Mobilization and Transition 1986–2000*. Historical and Sociological Study, Rovaniemi: Acta Universitatis Lapponiensis.

Saint-Paul, Gilles (2009) "Endogenous Indoctrination: Occupational Choice, the Evolution of Beliefs, and the Political Economy of Reform," *Economic Journal*, 120(544), pp. 325–353.

Sapiro, Virginia (2004) "Not Your Parents' Political Socialization: Introduction for a New Generation," *Annual Review of Political Science*, vol 7, pp. 1–23.

Sayuri, Guthrie-Shimizu (2010) "Japan, the United States, and the Cold War, 1945–1960," in *The Cambridge History of the Cold War*, vol. 1., pp. 244–265, edited by Melvyn P. Leffler. Cambridge: Cambridge University Press.

Skocpol, Theda (1996) "Unravelling from Above," *The American Prospect*, 25, pp. 20–25.

Spolaore, Enrico and Romain Wacziarg (2009) "The Diffusion of Development," *Quarterly Journal of Economics*, 124 (2), pp. 469–592.

Tabellini, Guido (2010) "Culture and Institutions: Economic Development in the Regions of Europe," *Journal of the European Economic Association*, 8, pp. 677–716.

Ticchi, Davide and Andrea Vindigni (2010) "Endogenous Constitutions," *Economic Journal*, 120(543), pp. 1–39.

Torvik, Ragnar (2002) "Natural Resources, Rent-seeking and Welfare," *Journal of Development Economics*, 67, pp. 455–470.

de Tocqueville, Alexis (1994) *De la Démocratie en Amérique* (English trans. *Democracy in America*). New York, NY: Random House (Everyman's Library).

Uustalu, Evald (1952) *The History of Estonian People*. Boreas Pub. Co.

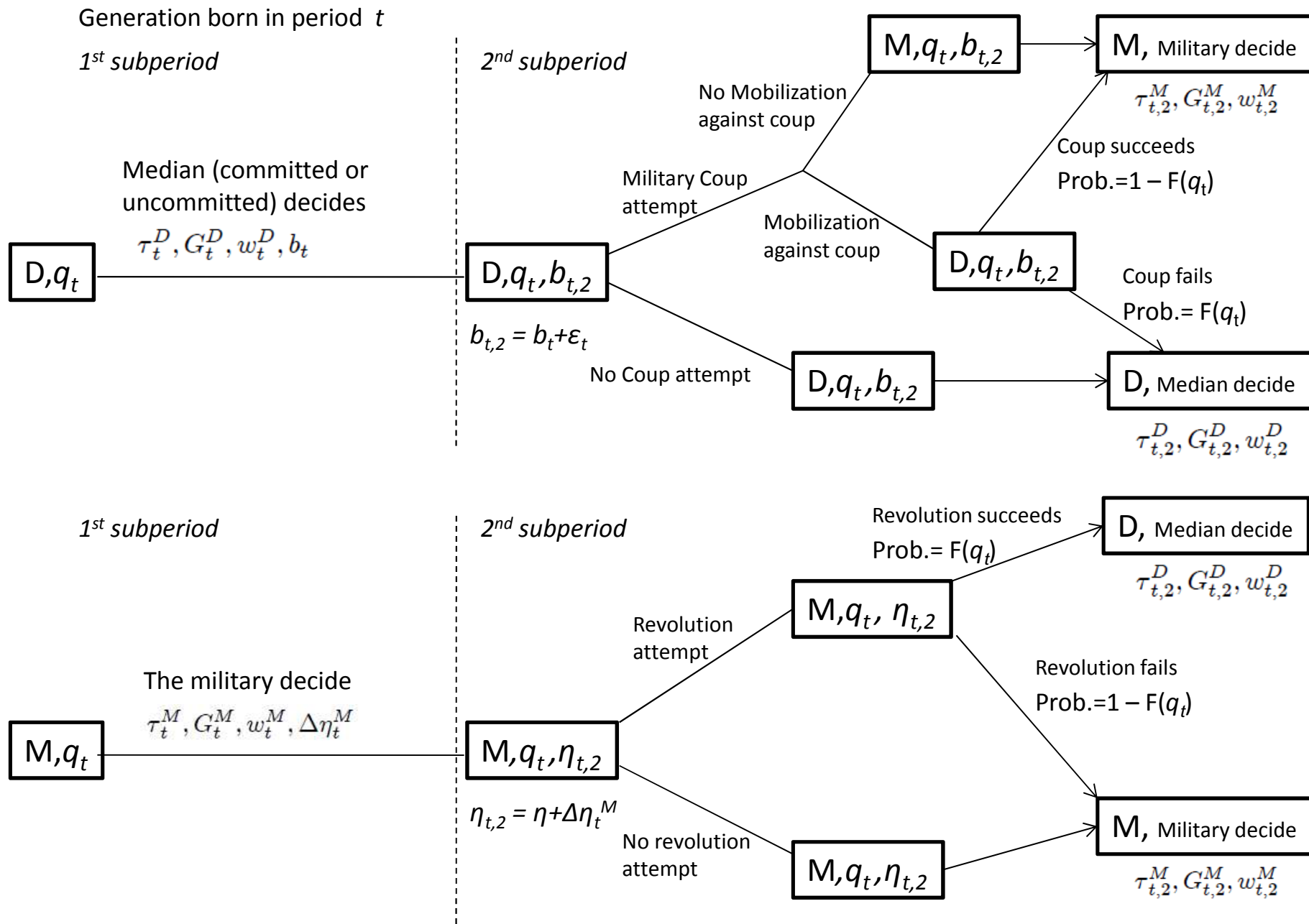


Figure 1. Timing of events in Democracy and Military dictatorship.

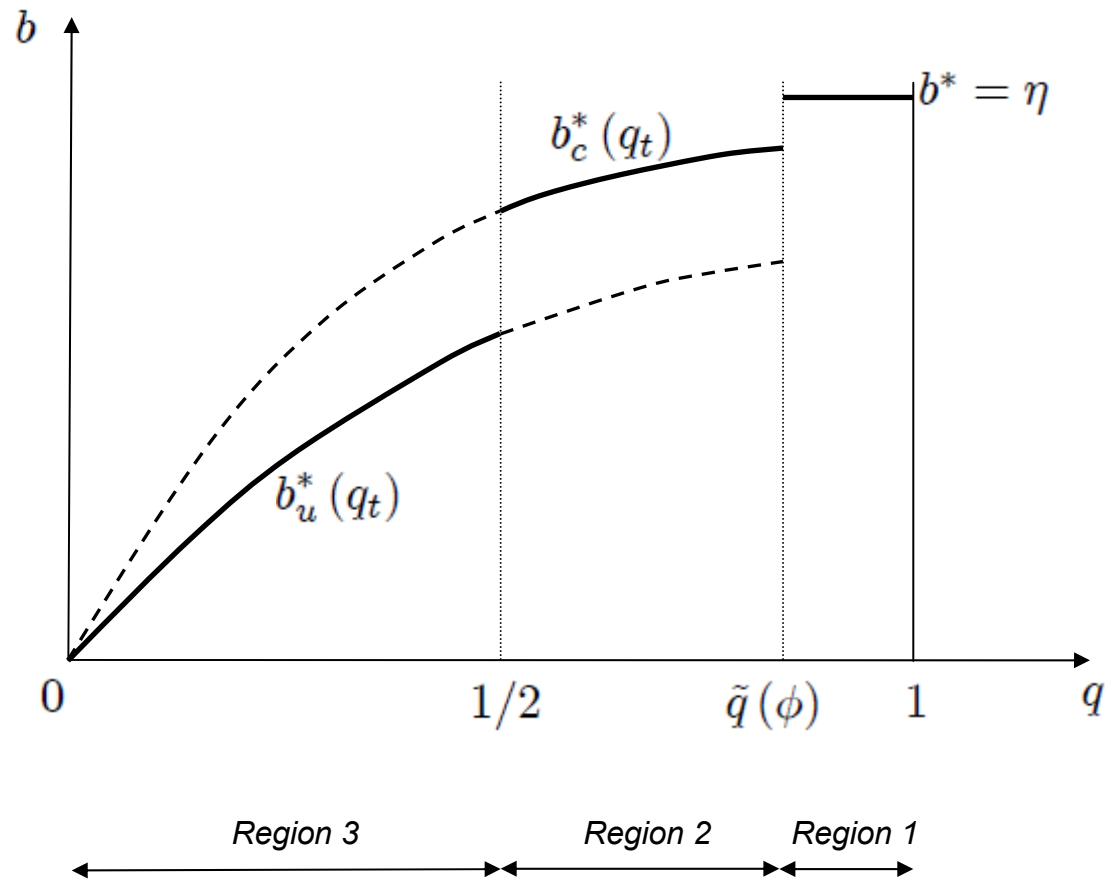


Figure 2a. The provision of public democratic investment in democracy.

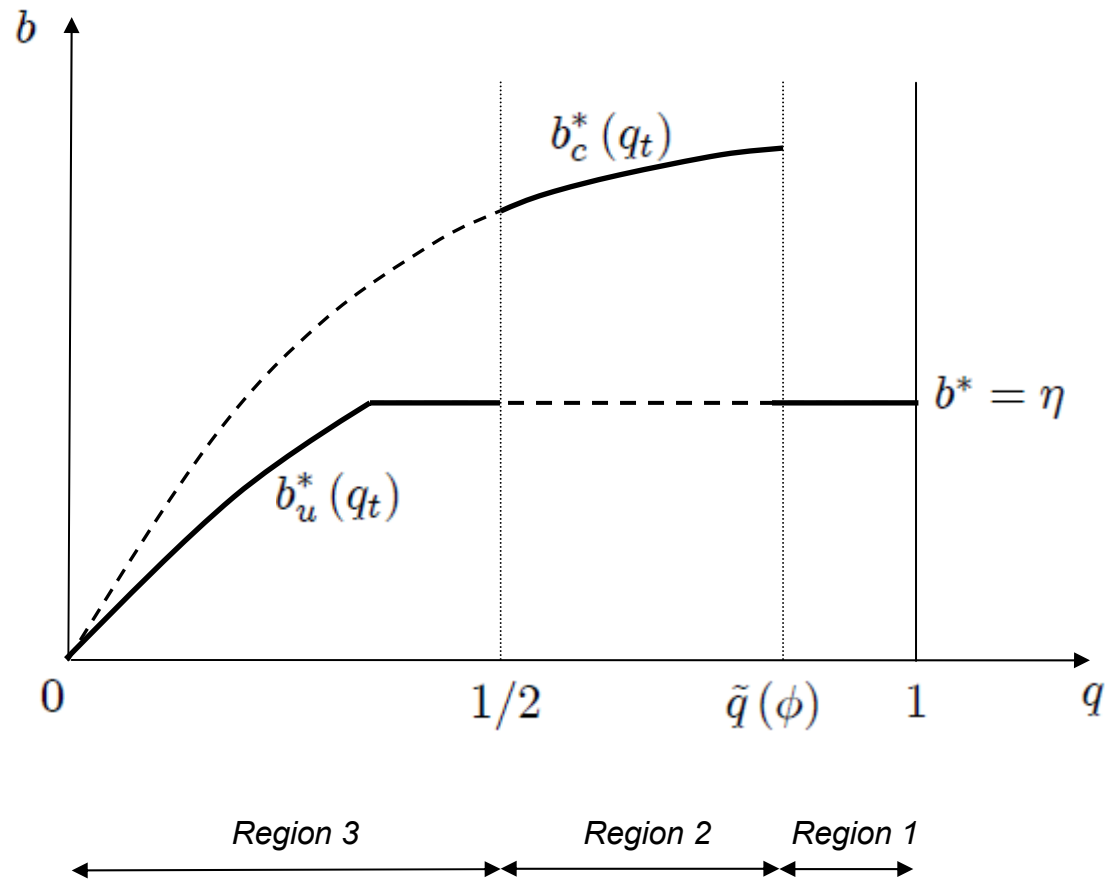


Figure 2b. The provision of public democratic investment in democracy.

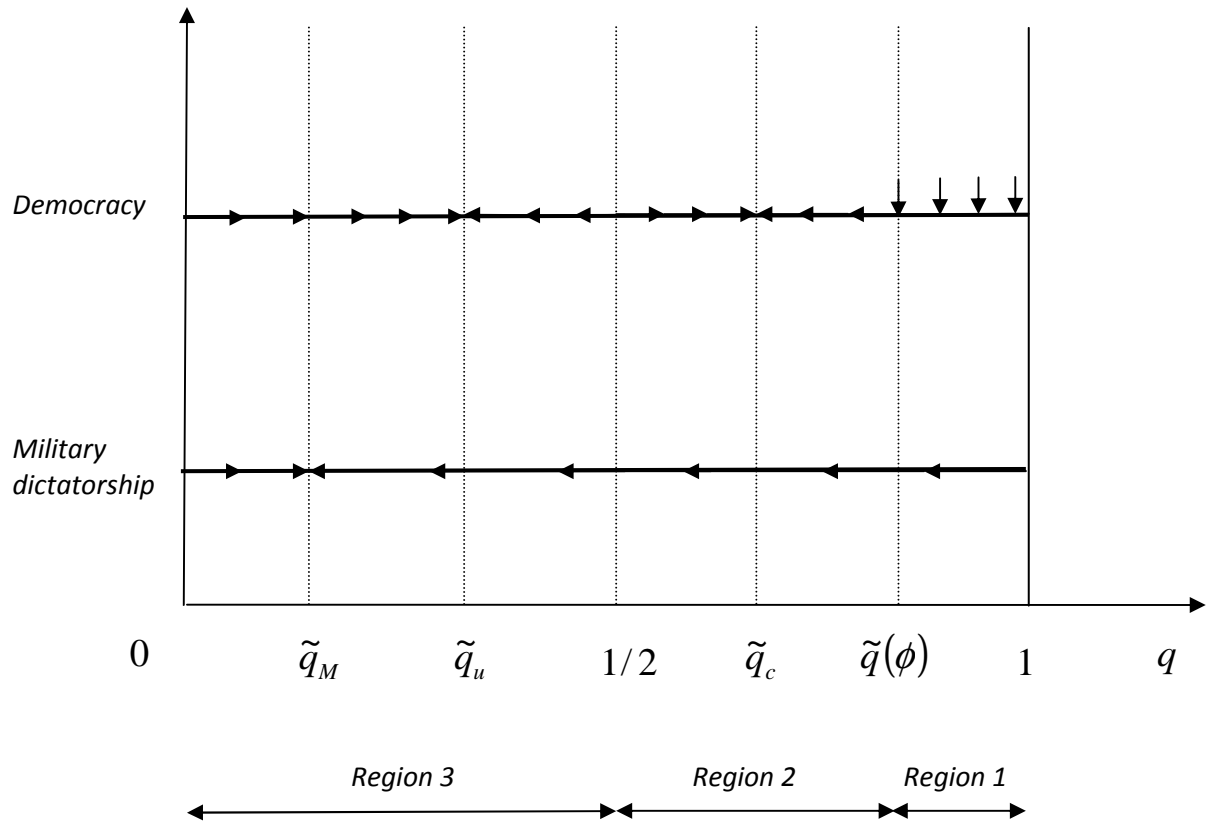


Figure 3. The dynamics of q in democracy and in military dictatorship.