DISCUSSION PAPER SERIES

No. 3473

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PUBLIC POLICY

Centre for Economic Policy Research

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ISSN 0265-8003

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Discussion Paper No. 3473
November 2002

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CEPR Discussion Paper No. 3473

November 2002

ABSTRACT

Endogenous Political Institutions*

A fundamental aspect of institutional design is how much society chooses to delegate unchecked power to its leaders. If, once elected, a leader cannot be restrained, society runs the risk of a tyranny of the majority, if not the tyranny of a dictator. If a leader faces too many *ex post* checks and balances, legislative action is too often blocked. As our critical constitutional choice we focus upon the size of the minority needed to block legislation, or conversely the size of the (super) majority needed to govern. We analyse both 'optimal' constitutional design and 'positive' aspects of this process. We derive several empirical implications, which we then discuss.

JEL Classification: H10, O30 and O50
Keywords: endogenous constitutions, political systems and super-majority rule

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*We thank Daron Acemoglu, Marios Angeletos, Olivier Blanchard, Stefano Della Vigna, Jeffrey Frieden, Ed Glaeser, Elhanan Helpman, Bryan Graham, Miklos Koren, Vardges Levonyan, Roberto Perotti, Andrei Shleifer, Adam Szeidl, Motohiro Yogo, Oliver Hart, Matthew Jackson, and Torsten Persson for useful comments and suggestions. Seminar participants at CBRSS, CIAR, Columbia, Copenhagen, Harvard, MIT, NYU, Pompeu Fabra, Stockholm, University of Pennsylvania and the McArthur Foundation group on inequality provided many helpful comments. Federico Etro provided excellent research assistance. Alesina and Aghion gratefully acknowledge financial support from the NSF through the NBER and from the Canadian Institute for Advanced Research respectively.

Submitted 28 October 2002

1 Introduction

Classical political theorists were well aware of the importance of the trade-off between delegation of power to leaders and the need to control them to avoid tyranny. For instance, in *Democracy In America,* Alexis de Tocqueville stressed that "Our contemporaries are incessantly racked by two inimical passions; they feel the need to be led and the wish to remain free"[1]. The Founding Fathers of the American Constitution were also quite aware of this dilemma. For instance, in the Federalist paper n. 70 Hamilton writes that "Taking for granted ..that all men of sense will agree in the necessity of an energetic executive, it will only remain to inquire what are the ingredients which constitute this energy? How far can they be combined with those other ingredients which constitute safety in the Republican sense?" The theory of checks and balances, embodied in the work by Montesquieu (1748) provided the answer adopted by the framers of the American Constitution. More specifically, the question of supermajorities as a way to restrain the "tyranny of the majority" features prominently in the Constitutional theory by Hayek (1960) and in Buchanan and Tullock (1962). The former, for instance, argues that the simple majority rule does not have any particular "superior" standing and under certain conditions may lead to excessive costs imposed on individual liberties by collective action. he argues that a "constitution of liberty" has to be based on supermajority rules and judicial control.

The contribution of this paper is threefold. First we provide a simple model of this trade off between delegation of power and ex post control of politicians, that generates a number of comparative statics results. We model delegation of power or, in one word, "insulation" of leaders as the share of votes that can block the leader ex post when he tries to implement legislation. A Constitution that establishes a high share of votes needed to "block" implies that leaders

[1] Volume 2, part 4, Chapter 6, page 664 from the translation by Mansfield and Winthrop (2000).

are more insulated. We show that the optimal amount of insulation depends on politico economic features such as the distribution of preferences, the degree of polarization of society, the importance or riskiness of reforms, the individual degree of risk aversion, the availability and efficiency of fiscal transfers, and the degree of protection of property rights against expropriation.

Second, we investigate the political economy of institutional design. That is, we discuss how the optimal choice of insulation would or would not be adopted in a system where the choice was not made completely behind a veil of ignorance and/or only a fraction of the population had a voice in the choice of institutions. What we have in mind is a situation in which those who choose a Constitution are also those who know who will control political office after the Constitution is ratified. In this case, what is optimal for those who choose the Constitution may not be optimal for society as a whole.

Finally we discuss several empirical implications of our model which help explaining the adoption and evolution of certain constitutional features having to do with delegation of (more or less constrained) power. In this respect our paper complements the recent vast literature on the effects of institutions on economic outcomes, as in Persson and Tabellini (2002) and the references therein. This literature takes institutions such as electoral laws, level of democracy, presidentialism etc. as exogenous and puts them in the right hand side of regressions in which various economic variables are on the left hand side. This paper suggests how to make progress towards endogenizing some types of institutional choices, in particular by showing how socio-economic variables such as countries' levels of GDP per capita or their degree of socio-ethnic fractionalization can affect the extent to which constitutions insulate political leaders.

Related to our paper is a formal literature on "choosing how to choose", i.e. voting on voting rules. Caplin and Nalebuff (1988) discuss of how supermajorities can overcome voting cycles, but do not discuss whether and how different societies would adopt these rules. Aghion and Bolton (1997) introduce

an incomplete contract methodology to analyze the normative choice of optimal majority rule by a constituency under the veil of ignorance. They show that the optimal rule results from a trade-off between the cost of compensating vested interests and the cost of expropriating minorities. While building on a similar methodology, the present paper goes much further by developing both a normative and a positive theory of political constitutions, with a whole set of comparative static results that can be turned into testable empirical predictions. In fact, we can show and test how different characteristics of different societies will lead to different constitutional choices and how Constitutions may evolve with economic development. Maskin and Tirole (2001) develop an agency model to analyze government accountability. Barbera and Jackson (2001) investigate the endogenous choice of a majority voting rule, investigating conditions of existence of a self-stable voting rule, an issue that we shall revisit below. Koray (2000) instead explores social choice functions and whether such functions are self-selecting. In an overlapping generations setting Polborn and Messner (2002) identify a trade off arising in the selection of voting mechanisms over a reform when only part of the population (the old) incurs the cost of the reform, but not the subsequent benefits.

The paper is organized as follows. In Section 2 we describe and solve the basic model. Section 3 illustrates several extensions. Section 4 offers interpretation and discussion of the model. Section 5 discusses the "political economy" of writing constitutions. Section 6 highlights several empirical implications of our model and brings about empirical support. The last section highlights plans for future research.

2 Political Insulation

We begin with the discussion of optimal institutional design. First we present and solve the basic model and in the next section we discuss extensions.

2.1 The Basic Model

Consider an economy populated by a continuum of individuals, assumed, for the moment, to be risk-neutral with respect to income. Members of this polity will differ ex post on how much they benefit from policy actions (labelled "reforms") which may be implemented. If no reform is implemented, all individuals obtain the same income, which we normalize at 1. Individual income from the policy reform is given by:[2]

$$\widetilde{y}_i = \begin{cases} \widetilde{\lambda}_i \gamma & \text{if reform occurs} \\ 1 & \text{otherwise} \end{cases} \qquad \text{with } \gamma > 0 \tag{1}$$

where

$$\widetilde{\lambda}_i = \lambda_i + a, \tag{2}$$

with λ_i uniformly distributed on $[\underline{\lambda}, \overline{\lambda}]$, with $\underline{\lambda} < \overline{\lambda}$ and

$$\lambda_m \equiv \frac{\overline{\lambda} + \underline{\lambda}}{2} \tag{3}$$

We label $l = \overline{\lambda} - \underline{\lambda}$. With a we indicate a random variable with mean zero, uniformly distributed between $[-A, A]$, $A > 0$. We use the uniform distribution to obtain simple closed-form solutions, but in the Appendix we show how our results extend to more general distributions. If $\lambda_m \gamma > 1$ the policy reform is ex ante efficient in the sense that it makes the average (and median) voter better off. The parameter γ allows to change the value of the reform without changing the distribution of the λ and the median voter in particular.

This community of individuals selects a leader to implement reforms. With exogenously given probability p the selected leader is "good" and promotes the reform; with probability $(1-p)$ the leader is "bad" and only expropriates resources from the citizens. For the moment we assume that all individuals are ex ante identical in terms of their wealth, so the costs of expropriation for each

[2]The following specification builds upon Krusell and Rios-Rull (1996) and Aghion and Howitt (1998, Ch.9) on the political economy of vested interests.

individual is the same and we label it bw were b is the exogenously given rate of expropriation and w represent individual wealth. Since we assume that w is for the moment identical for everyone, we normalized it to 1.

A (super) majority M of individuals, can block the action of the leader (expropriation or reform) once the aggregate shock on preferences "a" is realized. We define M as the "degree of insulation": if M is high, only a large majority of voters can block the reform. On the contrary, a low M means that when in office the leader is checked by a large fraction of the electorate. Thus a leader passes a reform only if a fraction $(1-M)$ of the population favors it or can expropriate only if $(1-M)$ of the population does not object to this policy. Note that when $M < 1/2$ then supermajorities are needed to pass legislation. Also, in order to expropriate the leader has to "buy off" a fraction $(1-M)$ of the population in order not to be blocked. Thus, ex ante each individual in the polity faces probability M of being subject to the expropriation, if the latter is not blocked.

The model, then, identifies a trade off at the constitutional stage which is similar to the one emphasized by Hayek (1960) and Buchanan and Tullock (1962) and formalized by Aghion and Bolton (1997). In our terminology an insulated leader can be less easily blocked, so the probability that a good reform passes is higher, but individuals are also more likely to suffer losses from expropriation. The choice of M occurs *ex ante*, before the realization of "a"and we make the incomplete contracting assumption that the size of M cannot be made contingent upon the realization of a. Thus, we assume that the corresponding events cannot be described ex ante, and we rule out social contracts contingent upon messages that voters would exchange ex post about the realization of these random variables. For the moment we assume that the $\widetilde{\lambda}_i$ are not observed by the politician and that the politician cannot compensate the losers, i.e. those who ex post do not want the policy reform.

The timing of "events" can be summarized as follows:

i) M is chosen at the constitutional stage, by individuals behind a veil of ignorance, that is before the realization of the λ_i in the interval $\left[\underline{\lambda}, \overline{\lambda}\right]$;

ii) λ_i is realized;

iii) the politician proposes the reform or the expropriation;

iv) the uncertainty on the distribution of ex post preferences is realized;

v) blocking of the reform may occur; the reform is implemented if and only if it is not blocked by the voters; if the leader is "bad" he expropriates, up to the point that avoids blocking.

Stage i) represents the "constitutional level" in which decisions are made behind a veil of ignorance. Stage iii) is rather trivial. The only role of the politician is to promote a reform, that passes if not blocked, or to expropriate the citizens. Steps iv) and v) capture the post electoral "dynamics" between leader and voters. The latter implies that after the realization of the shock "a" the voters still retain a choice to block ex-post undesirable reforms. If the threshold for blocking M is set low, then the voters insure themselves that they will have a "voice" ex post. However, this makes reforms easily blocked. On the other hands, if M is high, reforms pass more easily, but a larger fraction of the population may be expropriated, thus, *ex ante*, the probability that each person is taxed is higher.

2.2 Solution of the Model

We proceed by backward induction. In stage v) the voters with low $\widetilde{\lambda}_i$ oppose the reform; those with high $\widetilde{\lambda}_i$ favor it. A cutoff point divides these voters:

$$\widehat{\lambda} = \frac{1}{\gamma} \tag{4}$$

The realization of "a", for given M, determines whether or not the reform passes or not. The reform will pass if and only if:

$$\frac{\widehat{\lambda} - (\underline{\lambda} + a)}{l} < M \tag{5}$$

or $a > \widehat{\lambda} - \underline{\lambda} - lM$. Therefore, *ex ante* the expected utility of the generic voter, who is behind a veil of ignorance, is given by:

$$\max_{M} \left\{ p \left(\int_{-A}^{\widehat{\lambda}-\underline{\lambda}-lM} \frac{1}{2A} da + \int_{\widehat{\lambda}-\underline{\lambda}-lM}^{A} (\lambda_m + a)\gamma \frac{1}{2A} da \right) - (1-p)bM \right\} \tag{6}$$

The first two terms in (3) represent the expected benefits of the socially efficient reform (multiplied by the exogenously-given probability of such an event, p), the third term represents expropriation. Note that *ex ante* behind a veil of ignorance and with risk neutrality the generic voter acts as the "average" individual. Looking first for an interior solution to maximizing (3) relative to M, and remembering that $\widehat{\lambda} = 1/\gamma$, we obtain, after straightforward maximization:

$$M^* = \frac{1}{2} - \frac{2Ab\frac{1-p}{p}}{l^2\gamma} \tag{7}$$

whenever the RHS of (4) is positive. If the RHS of (4) is negative, then the optimal insulation level will be

$$M^{**} = 0. \tag{8}$$

One can then immediately establish:

Proposition 1

The preferences of voters are single peaked on M^* and the optimal degree of insulation is either zero or it is interior to the interval (0,1) and equal to the expression above if positive. In the latter case, the following comparative static properties hold:

$$\frac{dM^*}{db} < 0; \quad \frac{dM^*}{d\gamma} > 0; \quad \frac{dM^*}{dp} > 0; \quad \frac{dM^*}{dl} > 0; \quad \frac{dM^*}{dA} < 0.$$

Proof: By inspection.

Several comments are in order.

1. First, note that in the absence of expropriation ($b = 0$),or with no bad leaders ($p = 1$) we have:

$$M^* = 1/2. \tag{9}$$

This result follows from risk-neutrality and the utilitarian nature of the maximization problem in (3) but it extends to more general distributions of idiosyncratic and aggregate shocks on preferences, as we show in the Appendix. The basic intuition is that with risk neutrality ex ante the representative voter does not want to prevent an ex post simple majority to stop a policy.[3].

2. Insulation is decreasing in the probability $(1 - p)$ of expropriation and in the loss b from it. Thus, low protection of property rights (i.e. higher scope for expropriation) would require lower insulation.

3. Insulation is increasing in γ, the average benefit of the reform. With more expected benefit from the reform, the voter behind a veil of ignorance is

[3]Suppose there were only two alternatives, x and y to be chosen between ex post. Ex ante the individuals in the constituency (of size normalized to 1) are under the veil of ignorance and do not know whether they will prefer x or y. Suppose k is the number of individuals that prefer x to y. If an individual has ex post income α if her preferred alternative is selected and income $(-\beta)$ if the other alternative is chosen, then under risk-neutrality the ex ante total utility of choosing alternative x, is equal to:

$$U(x) = \alpha k - \beta(1 - k);$$

similarly:

$$U(y) = -\beta k + \alpha(1 - k)$$

if alternative y is chosen. Choosing $M = 1/2$ will then guarantee that the alternative that maximizes total ex ante utility is always chosen, namely x whenever $k > 1/2$, and y otherwise. This reasoning extends to collective decision problems like ours that boils down to a utilitarian maximization problem: if $M > 1/2$ (resp. $M < 1/2$) then reforms would take place too (resp. not sufficiently) often from the standpoint where voters expect their preferences for reform to lie ex post. This explanation was kindly suggested to us by Matthew Jackson and it builds on Rae (1969).

willing to accept a higher risk of expropriation in order to increase the probability that the reform passes.

4. Insulation is decreasing in A and increasing in l. In order to gain intuition about these last two results it is useful to study the *ex ante* probability that the policy reform passes (i.e. the probability that the fraction of individuals below the threshold is less than M). This probability $\phi(M)$ is given by:

$$\begin{aligned} \phi(M) &= \Pr\left(\frac{\widehat{\lambda}-\underline{\lambda}-a}{\overline{\lambda}-\underline{\lambda}} \leq M\right) \\ &= \frac{1}{2}+\frac{1}{2A}\left(lM-\frac{1}{\gamma}+\underline{\lambda}\right). \end{aligned} \tag{10}$$

Note, first, that $\partial\phi(M)/\partial M = l/2A$ is increasing in l. This is because M represents the required *fraction* of individuals necessary to block the reform, so that Ml is the required *number* of blocking individuals. Thus, the higher l, the more an increase in the fraction M will increase the probability that the reform is not blocked, and therefore the higher the expected gain from increasing insulation. Second, $\partial\phi(M)/\partial M = l/2A$ is decreasing in A. This can be interpreted as a *status-quo bias effect* of uncertainty. [4]

[4] More precisely, consider first the special case where $l = \overline{\lambda} = 1$ and $M = \frac{1}{\gamma} = 1/2$; in this case, the reform will be not blocked whenever $a > 0$, that is with probability $1/2$, for any admissible value of A. Next, suppose that $M = 1/2 > \frac{1}{\gamma}$; then, the reform will pass for all a's such that $a + 1/2 > \frac{1}{\gamma}$, that is for all positive realizations of a and also for $a \in (\frac{1}{\gamma} - 1/2, 0)$; the higher A the smaller the set $(\frac{1}{\gamma} - 1/2, A]$ relative to the overall support $[-A, A]$; in other words, higher aggregate uncertainty will increase the relative weight of blocking losers among the whole set of voters; similarly, when $M > 1/2 > \frac{1}{\gamma}$, then the reform will pass for all a's such that $a + M > \frac{1}{\gamma}$, that is for all positive realizations of a and also for $a \in (\frac{1}{\gamma} - M, 0)$; once again, the higher A, the smaller the set $(\frac{1}{\gamma} - M, A]$ relative to the overall support $[-A, A]$. So, to the extent that with no aggregate uncertainty ($A = 0$) and for given M the reform would not be blocked, then more uncertainty decreases the effect of increasing M; that is it increases a status quo bias. The status-quo bias effect in turn implies that an increase in

3 Extensions

3.1 Polarization of Preferences

For simplicity we introduce a very stylized form of non linearity in the preference distribution, namely, we assume that a point mass $\Delta(\leq 1/2)$ is now added to the two extremes of the distribution's support $[\underline{\lambda}, \overline{\lambda}]$. Obviously the median and average point of the distribution, λ_m, does not change. The reform will not be blocked if and only if:

$$\frac{\widehat{\lambda} - \underline{\lambda} - a}{l}(1 - 2\Delta) + \Delta \leq M \tag{11}$$

Solving for the optimal choice of M at the Constitutional stage but with the new preference distribution, we get:

$$M^* = \frac{1}{2} - \frac{2Ab^{\frac{1-p}{p}}}{l^2\gamma}\left(1 - 2\Delta\right)^2. \tag{12}$$

This in turn establishes:

Proposition 2

The optimal degree of insulation depends positively on the polarization parameter Δ :

$$\frac{dM^*}{d\Delta} > 0.$$

Proof: By inspection.

The implication of this result is that more polarization of preferences leads to more insulation. To better understand this result, consider for a moment the alternative case where polarization only occurs at the bottom of the preference distribution, i.e. where there is a probability mass of Δ at $\lambda_i = \underline{\lambda}$ only. In this case the reform would not be blocked ex post whenever:

$$\frac{\widehat{\lambda} - \underline{\lambda} - a}{l}(1 - \Delta) + \Delta \leq M, \tag{13}$$

aggregate uncertainty of the reform outcome, measured by A, should reduce insulation: a higher A reduces the extent to which increasing insulation helps increasing the probability of reform while the expropriation cost of increasing insulation remains unaffected by A. See Fernandez and Rodrik (1990) for a different model of status quop bias in polciy reforms.

The optimal choice of M then leads to the first order condition:

$$\frac{1}{(1-\Delta)}\left(((\lambda_m(1-\Delta)+\underline{\lambda}\Delta)\,\gamma-1)l+l\gamma\left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)\,l}{(1-\Delta)}\right)\right)-2A\frac{1-p}{p}b=0. \tag{14}$$

In particular an increase in the degree of polarization Δ now has an ambiguous effect on insulation. On the one hand, if we abstract from its negative effect on the expected return from the reform $(\lambda_m(1-\Delta)+\underline{\lambda}\Delta)$, an increase in polarization increases insulation as formally proven in the Appendix. Increased insulation indeed avoids opposition to reform by the lower tail of the preference distribution. On the other hand, more polarization at the bottom also reduces the expected reform outcome, thereby pushing towards lower insulation. The overall effect of downward polarization on insulation becomes therefore ambiguous, whereas the latter effect is eliminated in the case analyzed above where polarization occurs symmetrically at both ends of the preference interval and individuals are risk-neutral. In the next section we shall see how polarization interacts with risk aversion.

3.2 Risk Aversion

Let us now return to the basic model, with no polarization of preferences, that is $\Delta=0$, and a uniform distribution of λ_i, but let us add a very simple form of risk aversion, with ex post individual utilities being given by:

$$u(y_i)=\begin{cases} y_i & \text{if } \ y_i \ \geq\theta, \\ -u & \text{otherwise,} \end{cases} \tag{15}$$

where y_i is ex post income and where $u>0$. Thus, only if income is above a threshold θ we have the same utility as in the basic model, otherwise the individual incurs a loss. We assume that the status quo outcome is always above such threshold (i.e. $\theta<1$) linking more tidily risk aversion and reform. Moreover, for simplicity we take the probability of a bad reform to be zero, i.e. $p=1$. This also shows an important result: *with risk aversion one obtains a*

well defined interior solution for M^* even without expropriation, that is even when property right are fully protected.

In this case the optimal choice of M becomes:[5]

$$M^* = \frac{1 + l\gamma + u - \sqrt{(2u\gamma l + u^2 + 2\gamma l)}}{l\gamma} \tag{16}$$

This implies:

Proposition 3

The optimal degree of insulation depends negatively on the risk aversion parameter u :

$$\frac{dM^*}{du} < 0.$$

Proof: See Appendix.

Thus, more risk aversion leads to lower insulation: in choosing insulation, *ex ante* the voter takes into account the risk of falling below 0 ex post. Thus, more risk aversion leads to choosing a system were ex post policy reforms can be more easily blocked. [6]

Now let us reintroduce polarization of preferences with a positive mass of individuals Δ at both ends of the interval $[\underline{\lambda}, \overline{\lambda}]$, as in the previous subsection. Also for simplicity let the preference interval be symmetric around zero, i.e. $\underline{\lambda} = -\overline{\lambda}$.

Proposition 4

[5]To further simplify the algebra we assume the threshold θ to be 0; in this case sufficient conditions for risk aversion to have a bite are that $\underline{\lambda} \leq 0$ and that the reform be ex ante efficient, i.e. $\lambda_m \gamma > 1$. Such restrictions on the parameter space are meant to make the analysis under risk aversion meaningful.

[6]Note that the critical assumption that drives this result is that there is "risk" about the outcome of the reform for an individual voter, but no risk about the status quo. This is a realistic assumption to the extent that one knows its own status quo, but not the outcome of a possibly complex sequence of policy changes. Yet one might think about the reverse situation. Think for instance about the introduction of unemployment insurance, in which case the reform is meant to remove uncertainty of outcomes. In this case the effect of risk aversion would be reversed.

For sufficiently large degree of risk-aversion as measured by u, more polarization reduces insulation:

$$\frac{dM^*_{\Delta,u}}{d\Delta} < 0.$$

where $M^*_{\Delta,u}$ is the optimal degree of insulation.

Proof: See Appendix.

The intuition for this result is straightforward: more polarization increases the risk of ending up at the bottom of the preference distribution, which in turn leads to a low utility level when the reform is implemented; reducing insulation will limit that risk.

3.3 Compensation

In general, those who are net losers from a policy reform can be compensated by transfers, even though the latter will generally induce welfare costs, such as the costs of distortionary taxation. Suppose that after M is chosen, a fixed amount of resources ω can be raised from all individuals through taxes, and assume for simplicity that taxes are raised before the idiosyncratic and aggregate shocks on preferences are realized. Note that this implicitly assumes that any increase in income obtained through the reform cannot be used to compensate losers, since the amount available for compensation is fixed ex ante. The maximum amount of ω is 1 which represents initial individual wealth. The only purpose of taxation is to compensate losers for the reform, which means that if the available resources for compensation exceed the needs the resources in excess are returned lump sum at no cost and the leader does not retain any revenue for his own consumption.

Such a transfer scheme is assumed to involve a positive deadweight cost k per unit of taxed funds, and the net tax revenues are used by the politician to compensate the required number of losers in order to avoid blocking. Ex post, for given realization of the aggregate shock a, either more than $(1 - M)$ individuals are willing to support the reform even without any compensation

(this will be the case whenever $\frac{\widehat{\lambda}-a-\underline{\lambda}}{\overline{\lambda}-\underline{\lambda}} < M$), in which case no compensation will take place; or passing the reform requires compensations to be made (this will be the case when $\frac{\widehat{\lambda}-a-\underline{\lambda}}{\overline{\lambda}-\underline{\lambda}} > M$: then the politician needs to compensate the fraction $\frac{\widehat{\lambda}-a-\underline{\lambda}}{\overline{\lambda}-\underline{\lambda}} - M$ of individuals for potential loss of utility due to the reform). Compensations are paid to enough individuals who would, ex post, vote against the policy reform, in order to keep them in. Obviously, the "cheaper" individuals are compensated, i.e., those closer to the cut point of indifference between having or not having the reform. This, however, requires that individual preferences be ex post observable, since compensations are made dependent on those preferences.[7]

Thus the total amount of compensation needed to pass a reform is given by:

$$c(a) = \int_{\underline{\lambda}+lM}^{\widehat{\lambda}-a} (\widehat{\lambda} - \lambda_i - a)\frac{1}{l} d\lambda_i \tag{17}$$

Two cases must be considered. The first case is when there are enough funds in the compensation scheme so that the reform will always take place no matter what the realization of a is. In this case reform will always take place (as it will be always affordable) and, at the constitutional stage behind a veil of ignorance, the generic individual will choose M^*in order to maximize:

$$\max \{p\left(\lambda_m \gamma - kE_a c(a)\right) - (1-p)bM\} \tag{18}$$

where $E_a c(a)$ is the expected compensation cost given by:

$$\begin{aligned} E_a c(a) &= \int_{-A}^{\widehat{\lambda}-\underline{\lambda}-lM} \frac{\left(\widehat{\lambda} - \underline{\lambda} - lM - a\right)^2}{2l} \frac{1}{2A} da \\ &= \frac{(\widehat{\lambda} - \underline{\lambda} - lM + A)^3}{12Al} \end{aligned} \tag{19}$$

[7]The case where individual preferences are not publicly observable can be analyzed along the same lines as in Aghion-Bolton (1997).

The solution of this problem leads to:

$$M^*_{(1)} = \frac{\widehat{\lambda} - \underline{\lambda} + A - 2\sqrt{\frac{Ab\frac{1-p}{p}}{k}}}{l} \tag{20}$$

The second case is when not enough resources can be raised to fully compensate losers. In the Appendix we show that the optimal insulation rule in this case is:

$$M^*_{(2)} = \frac{1}{2} - \frac{2Ab\frac{1-p}{p}}{l^2\gamma} - \left(\frac{2\omega}{l\,(1+k)}\right)^{\frac{1}{2}} \tag{21}$$

We have thus established[8]:

Proposition 5

[8]In the first case a sufficient condition for individuals to opt for compensations at the constitutional stage instead of the no-compensation solution analyzed in the previous section, is:

$$\lambda_m\gamma - \frac{1-p}{p}\frac{b}{l}\left(\widehat{\lambda} - \underline{\lambda} + A - \frac{4}{3}\sqrt{\frac{Ab\frac{1-p}{p}}{k}}\right) > \psi\left(\overline{\lambda}, \underline{\lambda}, A, \gamma, p, b\right)$$

where

$$\begin{aligned}\psi\left(\overline{\lambda}, \underline{\lambda}, A, \gamma, p, b\right) \quad = \quad & \left(\widehat{\lambda} - \underline{\lambda} - l\left(\frac{1}{2} - \frac{2Ab\frac{1-p}{p}}{l^2\gamma}\right) + A\right) + \left(A - \widehat{\lambda} + \underline{\lambda} + l\left(\frac{1}{2} - \frac{2Ab\frac{1-p}{p}}{l^2\gamma}\right)\right)\lambda_m\gamma \\ & + \left(\frac{A^2}{2} - \frac{\left(\widehat{\lambda} - \underline{\lambda} - l\left(\frac{1}{2} - \frac{2Ab\frac{1-p}{p}}{l^2\gamma}\right)\right)^2}{2}\right)\gamma - 2Ab\frac{1-p}{p}\left(\frac{1}{2} - \frac{2Ab\frac{1-p}{p}}{l^2\gamma}\right) < \infty\end{aligned}$$

Let us note that the LHS is not defined for $k = 0$, but it is continuous in k for any $k > 0$. If we consider the limit as $k \to 0$, it is possible to show that LHS diverges to $+\infty$. Hence, by continuity and the fact that LHS is decreasing in k, it follows that there exists a cut-off level $\overline{k}$ such that compensation will be a viable alternative whenever $k \in (0, \overline{k}]$.

In the second case a sufficient condition for individuals to opt for compensations at the constitutional stage instead of the no-compensation solution analyzed in the previous section, is:

$$(1 - \lambda_m\gamma)\,l + \frac{l^2\gamma}{4}\sqrt{\frac{2\omega}{l}} + 2Ab\frac{1-p}{p} > 0$$

obtained by substituting into (3) and (7) the optimal levels of insulation in both cases, respectively (4) and (8).

When the compensation scheme is available and k is not too large, the optimal degree of insulation M^* (either $M^*_{(1)}$ or $M^*_{(2)}$) increases with the taxation cost k; otherwise it satisfies the same comparative statics properties as in Proposition 1.

Proof: By inspection.

The basic message of this proposition is that a less efficient system of transfers should lead to higher insulation (higher M) in order to reduce the need for compensation ex post.

4 Discussion and Interpretation

There are several elements in our model that need discussion. The first one is our notion of "reform". Examples of policy reforms that we have in mind include trade liberalization reforms, competition or entry-enhancing policies, deregulation, labor market reforms, reforms of the social security system or fiscal adjustment packages to eliminate deficits. These reforms may ex ante favor a majority, but they also create net costs for a minority. Ex post, as a consequence of aggregate uncertainty, the distribution of costs and benefits may differ from the ex ante distribution, and, as a result, the distribution of those individuals in favor and against the reforms may change over time. The reforms for which $\lambda_m \gamma < 1$ favor a minority but are harmful to the majority, at least *ex ante*, although they may be not harmful ex post.

The second element is the structure of uncertainty about the realization of voters' preferences. The constitutional decision is taken behind a veil of ignorance, before the realization of the parameter λ_i for all i's and with all individuals facing the same status-quo outcome in case reforms do not occur, an assumption we shall relax below. The preference shock a has to be interpreted as a change of the distribution of preferences occurring after the leader has taken office and while he is implementing his policy. This is meant to capture the idea

that as a reform materializes through the effort of a leader new voters come in or the population at large "matures" definitive preferences about the reform for instance as they learn more precisely who will be a winner or loser form the reform.

The role of the political leader in the basic model is highly stylized. A leader is needed to promote the reform and to pass it (unless it is blocked). However, the leader can take advantage of his position to expropriate. Obviously, if the citizens could produce reforms without a leader, expropriation would not occur. We rely on the realistic idea that a centralized entity is needed to coordinate the reform policy.

The Constitution could prohibit expropriation, but not reforms that would be a Pareto improvement. We have two comments. First, in reality it is difficult to fully restrain the authority of the government in this respect to expropriation without restricting its ability to govern in other areas. In the Federalist paper n. 73 Hamilton, for instance, elaborates on the fact that "the power of preventing bad laws include that of preventing good ones" Second, with risk aversion, even without expropriation, we still have a well defined trade off between insulation and ex post control.

Further research (Aghion, Alesina, and Trebbi (2003)) will eventually allow to study how the Constitutional choice of M^* might affect the likelihood of having "good" or "bad" politicians, i.e. the probability p which is taken as exogenous here and also the effort that leaders may choose to have when in office. For instance a non insulated leader may choose to not even try to implement "good" reforms because he expects to be almost always blocked.

The third important element is the degree of insulation, captured by the parameter M which we view as a "summary statistic" for a wide variety of institutional rules that limit the power of appointed leaders. The most direct interpretation of M is the majority that an executive has to command to pass legislation. In general terms the issue of the "optimal supermajority" rule is

a widely debated question by Constitutional theorists. Those who favor supermajority rules (low insulation) worry about limiting the power of appointed leader and about the tyranny of the majority. Those who oppose them view the (simple) majority rule as the essence of democracy.

The real world example closest to the letter of the model would be a popular referendum on policy, an institution that is however, seldom used. In this case the most extreme form of non insulation would be a referendum that requires a majority of 100 per cent to pass legislation, so that any individual voter can block policy. This institutional arrangement would set expropriation to zero, but would make it impossible to pass any legislation which is not a Pareto improvement ex post. Given that referendum is rarely used, in the majority of institutional settings blocking takes place indirectly, within the institutional structure of delegation. In the case of Presidential regimes like the US, one can view the Presidential-Congressional relationship as a key element of the system of checks and balances[9]. In parliamentary democracies the question of insulation refers to the control over the power of the Prime minister and the relationship between majority and minority in parliament. For given size of the parliamentary majority the power of the executive, the agenda setter, is also determined by the voting rules within the parliament, an issue that has received much discussion in the literature[10]. Various voting rules governing procedures within legislatures can be interpreted as giving more or less insulation to the executive, i.e. in most cases the "leader" who holds a majority[11]. For example, an important distinction is one between "open rules" and "closed rules" in parliamentary voting. With open rules the legislature has a vast latitude in amending policy proposals of the agenda setter (the government); with closed

[9]This is a point already made by Hayek (1960). See Alesina and Rosenthal (1995) for an extensive formal discussion of this issue.

[10]See for instance Baron and Ferejohn (1989) and Baron (1991). On bicameralism see Diermeier and Myerson (1995).

[11]In some cases we can have minority governments, in which the executive does not command a simple majority in the legislature. See Persson and Tabellini (2000)

rules the government can prevent amendments to its proposals and, as a result, it has a larger strategic power. One may a priori associate open rules with low insulation (low M) and closed rules with high insulation (high M), since they imply different degrees of strategic power for the executive. Similar arguments apply to "fast track" legislation in trade. This procedure is viewed in the US as critical for the implementation of free trade agreements, which otherwise might be blocked by various special interests.[12]

Another important element of insulation refers to the role of the judiciary. A well functioning and truly independent judiciary system can "block" reforms when they depart from proper constitutional grounds. La Porta et al. (2002) distinguish between a British style and American style judiciary as a guarantee of freedom, as in Hayek (1960). The former restricts the power of the ruler to interfere with the administration of justice, the latter gives more power to the judiciary by allowing it to interfere more in the legislative process by checking its adherence to the will of the people sanctioned by the constitution[13]. In fact, the role of Courts in American history has been extensive. In a famous case, in 1894 the Supreme Court blocked the introduction of a federal income tax and it took the Sixteenth amendment of the Constitution, almost 20 years later, to overcome this block. Skocpol (1992) discusses how Courts in US history influenced and shaped the evolution of its welfare state through a series of "blocks" of welfare policies in defense of property.

With regard to the role of legislative institutions, a broad interpretation of "M" could include a comparison of different electoral rules. Proportional rules tend to produce political systems in which "governing by coalition" is the norm. In majoritarian systems, the majority party can govern with fewer constraints.[14]

[12] See Grossman and Helpman (2001).

[13] La Porta et al. (2001) classify 71 constitutions along the "British- American" dimension and find that the American system is a better predictor of political freedom, while the British system is a better predictor of economic freedom.

[14] Persson and Tabellini (2002) and Milesi-Ferretti, Perotti and Rostagno (2002) present

Even more broadly, one could also use "M" to compare dictatorship or oligarchy versus fuller democracy. In a sense, one can think of a dictatorship as a system in which a ruler, when in office (no matter how he gets there), is uncontrolled, while an essential element of democracy is some sort of checks and balances on the politicians, above and beyond the fact that the latter are elected.

Finally some readers may find that we simplify too much and that we ignore too many details of institutional design. There are two answers to this criticism. A more apologetic one is that one has to start with a simple model and further research will add complications and institutional details. We discus some of these issues in the Conclusion. The more "aggressive" response is that, perhaps the details of institutional design do not matter that much and the fundamental issues of supermajorities, insulation and veto power are critical regardless of the details of different systems.

5 The Political Economy of Constitutions

Thus far we have examined the case of a "perfect veil of ignorance", behind which everybody is identical. This, in a sense, is equivalent to a normative model of constitutional writing. In reality, Constitutions are not written by social planners, and veils of ignorance have large holes in them. In fact, in virtually every instance of Constitutional reform, a large amount of bargaining and conflict occurs at the Constitutional table. One simple way of capturing the complexity of the political economy of writing Constitutions is to generalize our model by assuming that not everybody derives the same (known) utility from the reform. The analytical structure that we have developed above allows us to extend the analysis in this direction fairly easily. From the point of view of empirical applications, a discussion of the political economy of Constitutional design, that is, an analysis of deviations from optimality criteria is critical.

recent studies which compare proportional versus majoritarian systems concerning fiscal policy choices.

5.1 Wealth Distribution, Voting Rights and Constitutions

For example, assume that individuals differ ex ante with regard to their taxable wealth, namely a "w_i -individual" expects to be expropriated by an amount equal to $(1-p)bw_iM$ on average. We have already seen in Proposition 1 that the optimal degree of insulation is negatively correlated with the scope for expropriation. It then immediately follows that an individual i with higher w_i at the Constitutional stage will optimally choose a lower level of insulation, with:

$$M^*(w_i) = \frac{1}{2} - 2Abw_i\frac{(1-p)}{p}, \tag{22}$$

and that individual i's preference for insulation is single peaked around this maximum. This in turn has interesting implications for the political economy of Constitutional writing. Consider a symmetric distribution of expropriation losses w_i between $\underline{w}$ and $\overline{w}$ and suppose that the Constitution is decided by majority rule. In this case, the median voter, w_m will prevail and impose her most preferred level of insulation, namely:

$$M^*(w_m) = \frac{1}{2} - 2Abw_m\frac{(1-p)}{p}. \tag{23}$$

Alternatively, if M had to be chosen by unanimity, any $M > M^*(w)$ would be vetoed by wealthy individuals. Allowing bargaining at the Constitutional table will make Constitution design ultimately depend on bargaining rules and the distribution of wealth.

Another example of interest concerns the writing of Constitutions by a minority of wealthy individuals who might worry about the possibility that new redistributive policies be introduced by future majorities as the extension of voting rights progresses over time. In the language of our model this can be interpreted as follows. Suppose that individual wealth is heterogeneous across individuals and distributed between $\underline{w}$ and $\overline{w}$ with density $f(w)$. Suppose also that the expropriation rate is the same b for all individuals, and that those who decide on the Constitution lie in the upper part of the wealth distribution, say

between some w^h and $\overline{w}$, with $w^h > \underline{w}$. Assuming that all individuals with wealth $w \in [\underline{w}, \overline{w}]$ vote ex post, clearly the Constitution designers will choose a lower degree of insulation than if the franchise was not to be extended, because they expect more expropriation as a result of the franchise being extended. In other words, Constitutions written with an eye on defending property rights against future redistribution of expropriation will include a number of checks and balances and require supermajorities, i.e. low insulation to pass legislation. These checks and balances will be targeted especially toward making it easy to block legislation against redistribution and taxation of wealth.

5.2 Choosing Constitutions and Leaders

Consider a situation in which a minority who chooses the Constitution also knows that it will always be able to appoint leaders. For example, suppose that a minority of high λ individuals choose the constitution and appoint high λ leaders. Such leaders will only propose reforms that this high λ minority like, and they will never expropriate individuals in this minority which appoints leaders. In this case, obviously the minority will choose a very high M, that is, it will chose to have very insulated leaders. In the most extreme example where the minority is a singleton, one absolute dictator will "choose" $M = 1$, which in turn will allow him to pass any legislation he will like ex post. Below we will find considerable empirical support for this prediction.

5.3 Choosing How to Choose

If voters are not identical ex ante at the constitutional table, then the question is which rules "should" and will be used to choose a Constitution. That is we have both a normative and a positive question of voting rules at the Constitutional table.

One might think of some sort of "fixed point" argument in voting rules, that is, one may want to argue that a choice of M^* has to be approved itself

with a blocking rule M^*. That is, a Constitutional choice of M^* can be vetoed only by a M^* (super) majority. This is exactly the approach taken in models by Barbera and Jackson (2001) and Polborn and Messner (2002). While this self-stable solution is very elegant, its realism may be called into question. In fact, voting rules and procedures to select or change the Constitution are generally different from the rules regulating the passage of "normal" legislation. In general, the blocking coalitions needed to prevent changes in the Constitution are lower than those required to block "normal" legislation. In fact, our model, and more specifically Section 4.2 on risk-aversion, suggest one possible reason why changing the Constitution would require smaller blocking coalition (larger majorities): Constitutional change may bring about a more uncertain distribution of winners and losers and voters may be especially risk averse concerning radical changes of the rules of the game. Another commonly discussed reason, is the need to prevent an elected leader from "easily" changing the rules of the game restricting democratic rules in favor of the leader himself.

6 Empirical Implications and Discussion

In what follows we discuss several empirical implications of our theoretical analysis. Rather than formally "testing" our model we highlight several of its implications that seem to shed light on some aspects of institutional choices and economic development. In the previous sections we have discussed both, normative and positive aspects of constitutional design. As it is often the case in policy analysis one can take the normative case as a benchmark to analyze and interpret the actual evidence on Constitutional design.

6.1 Economic Development and Institutions

A well known feature of developing countries is that they have not well functioning fiscal systems. The share of transfers of GDP is larger in OECD

countries than in developing countries, and more generally, the role of government in transferring resources across individuals, the welfare state, is far more widespread in richer countries. In the nineties the average level of subsidies and other current transfers as a percentage of current expenditure in the high-income countries sample (World Development Report 2000-2001, Word Bank) was about 60 percent. In lower middle income countries it was 18 percent cent in 1990 and 26 percent in 1997. Part of the reason is that it is easier to collect taxes in more advanced industrial countries and also targeting compensations towards the truly deserving is particularly difficult. These considerations suggest that developing countries should adopt more insulated systems of government, since, in the language of our model they have a higher k.

On the other hand, property rights tend to be less well protected in developing countries, and insulated leaders may have more latitude to pursue policies which favor the leader himself and its close allies. The potential for "expropriation," broadly defined, is larger in developing countries. This is captured by a higher b in our model. One may argue that the technology for expropriation and that of taxing for compensation go hand in hand, to the extent that they both involve collecting fiscal revenues. However, a compensation scheme involves a fairly sophisticated system of targeting, while expropriation, especially in its more brutal form, can be rather easy to accomplish to the extent that the government has the monopoly of coercion, a monopoly which will itself increase with more insulation.

These considerations put developing countries between an institutional rock and a hard place. High insulation leads to high expropriation. Low insulation means that policy reform are not implemented. In fact, we believe that this "steep" trade-off between the possibility to implement reforms with winners and losers and the likelihood that insulated leaders turn into dictators, may be one of the key reasons for institutional failures in developing countries.

A related point concerns the well known fact that richer countries tend to

be more democratic. Note that richer countries have better functioning fiscal systems, which allows for transfers and social insurance, features that can be interpreted as a lower k in our model, that is, lower costs of compensation. This reduces the need for insulation and allows for better protection against socially inefficient reforms. A more stringent implication is that countries with lower costs of taxation or better functioning welfare state should have lower insulation. Interestingly Milesi-Ferretti, Perotti and Rostagno (2002) and Persson and Tabellini (2002) find that more proportional electoral systems are associated with a larger share of transfer payments. Proportional electoral systems (as opposed to majoritarian) can be thought of as systems with low insulation since they often require large coalition governments to govern. These authors interpret causality from the electoral systems to the welfare state; in this paper we suggest that the alternative direction of causation may also be present.

One may also argue that in richer countries the benefit of further "reform", captured by γ,declines, almost by definition of being "rich." This also leads to a choice towards less insulation. Thus, one can argue that, as an economy grows richer, the need for large reforms becomes smaller and that, whenever necessary, the losers can be compensated at low cost. Both factors lead to choosing lower insulation.

Incidentally, low insulation may raise problems in advanced democracies. For instance, a vast literature surveyed in Alesina and Perotti (1994) shows that low insulation, as measured by electoral laws, systems of government etc., may delay the implementation of fiscal reforms. In a sense, this is the cost of insurance against undesirable (by some) fiscal reforms.[15]

[15]See also Spolaore (1995) for a discussion of the trade-offs between majoritarian and proportional systems with reference to fiscal policy.

6.2 Polarization, Fragmentation and Institutional Choice

Our discussion of the political economy of Constitutional choice under an imperfect veil of ignorance shows that if a minority group which is not behind a veil of ignorance knows that the chosen policies will be in its favor (for instance because it controls the appointment process of leaders and/or the army) it will choose more insulated systems. In addition our analysis of the effects of polarization on political insulation in Section 4 shows that, when constitutional designers behind a veil of ignorance are not too risk averse, an increase in polarization would lead them to increase insulation. This would happen in order to limit the scope for ex post blocking by the lower tail of the distribution of preferences over the reform. This subsection proposes to explore these two points empirically. Namely, *we test the view that in more fragmented societies, and especially when it is more likely than one group imposes (or attempts to impose) its rule on others, insulation is more likely.*

Measurement issues are complex. They affect both our independent and dependent variables. It is almost impossible to construct an undisputable measure of "insulation" for a sample of more than a hundred countries in which institutional arrangements vary on many dimensions. In our model insulation is an ex post control of the voters over policymakers. In practice this type of control, as we discussed above, can take many different forms. For this reason we shall consider different empirical proxies for insulation.

As for a measure of polarization we consider several variation of indices of ethno-linguistic fractionalization, which we take as reasonably exogenous, and have been widely used in the empirical literature.[16] The formula for the fractionalization index in country i is:

$$FRACT_i = 1 - \sum_{j=1}^{J} (n_{ji}/N_i)^2$$

[16] See for instance, Easterly and Levine (1997), La Porta et al. (1998), Alesina et al. (2002), Montalvo and Reynal Querol (2002).

where $n_{ij}\,/N_i$ is the relative size of group j in country i, with $j = 1, ..., J$. As for the data used, the first index is the one used originally by Easterly and Levine (1997).[17]. It is an ethno-linguistic fragmentation index based on a historical Russian classification of languages in 1960. The second and third fractionalization indices have been constructed by Alesina et al. (2002) by disentangling linguistic measures from other ethnic variables, like racial origin. We will employ a measure for ethnic fragmentation and another measure for linguistic fragmentation.

We also check our results by using the polarization index proposed in Esteban and Ray (1994) and applied also by Montalvo and Reynal-Querol (2002). This index is computed as follows:

$$POL_i = K \sum_{j=1}^{J} \sum_{k=1}^{J} (n_{ji}/N_i)^{1+\alpha} (n_{ki}/N_i)\, d$$

where K and α are constant and we assume distance among ethnic groups $d = 1$ if $j \neq k$,0 otherwise. Esteban and Ray (1994) do not estimate the main parameter α in their model. However, they show that $\alpha \in [0, 8/5]$. We picked the mean value $\alpha = 4/5$, which is also indicated by the authors as being a reasonable choice (close to 1). Intuitively, the difference between these two indices of fractionalization and polarization is that, while the former increases monotonically with diversity, the latter measures the distance from a bimodal distribution of groups. Basically, according to the polarization index the largest value of the index (max polarization) is reached when two equally sized groups face each other. In the fractionalization index the max value of the index is reached when many small groups (in the limit one person one group face each other.[18]

In Table 1 we describe all the data used in the following tables including

[17] A second "traditional" index (labeled AVELF) is an index proposed by Easterly and Levine (1997) which averages over five related linguistic indices. All the following results are robust to the use of this alternative index and we do not report them.

[18] See Montalvo and Reynal-Querol (2002), for a detailed discussion.

their sources. In Table 2 we present some descriptive sample statistics. The first proxy for insulation is a simple dichotomy democracy vs. autocracy. A dictator is the most insulated leader of all. The second measure refers to democratic forms of government and we assign to Presidential systems the role of "most insulated" form of government, Semi-Presidential (or Hybrid) the middle level - not reported -, and Parliamentary systems the least insulated. This choice is justified by the substantial reduction in the number of veto players within Presidential systems and their intrinsic winner-take-all nature, which distinguishes them from Parliamentary systems[19]. The unconditional correlation between the form of government from Presidential to Semi-presidential to Parliamentary and the Freedom House index of political freedom is -.51, significant at the 1 per cent level, for the sample of countries used below. That is, more Presidential regimes are associated with lower political rights, which we interpret as a proxy for more insulation.[20] Notably, one can identify an analogue winner-take-all nature in electoral rules. For example, first-past-the-post formulae in Plurality systems may act as instruments of insulation of the elected politicians from the minority of the electorate. This is the third proxy we present. Table 2 shows that for all cases more fractionalized regimes are more insulated. For instance, more fractionalized systems are less democratic, more presidential and tend to have more Plurality rules.

In Table 3 we present Ordered Probit regressions where the dependent variable is the Freedom House autocracy index in 1990. This table shows that the correlations indicated in Table 2 survive after controlling for several other institutional and economic variables. Without controlling for real GDP per capita

[19]For example, there is a relevant, negative (-0.501), and significant (at 1 percent level) correlation between presidentialism and a measure of political constraints within the political arena (as presented in Henisz, 2002). For more discussion on insulation and presidentialism, see Shugart and Carey (1992).

[20]Further analysis shows that this correlation holds up even when controlling for a battery of other variables, including log of per capita GDP, school enrollment ratios, regional dummies, openness.

the fractionalization variables are statistically significant at the 1 percent level in explaining the probability of ending up in a more autocratic regime. GDP per capita may be endogenous, however in three out of four cases the fractionalization variable remains significant at standard levels, even after including together with GDP a large set of controls (not reported, but available from the authors)[21]. In columns (1)-(8) we alternatively control for legal and colonial origin, geographical and religious characteristics of each country; in column (9) we control, as mentioned, for income levels (we try to reduce the endogeneity issue by taking 1960 levels.) Usually, the control sets we employ show a joint significance well into the critical region and we note (although not report) that French legal origin and Socialist legal origin are associated with less democracy relative to the Anglo-Saxon system (the omitted category.) With few exceptions, fractionalization seems to increase the probability of ending up in a more autocratic (and more insulated) regime.[22] Finally,with reference to the potential endogeneity of ethnic fractionalization with respect to insulation, note that the bias should go against finding these correlations. In fact, more insulated and less democratic systems should be those more likely to engage in active policies toward reducing fractionalization, such as expulsion of minorities, genocide, etc. A more subtle problem of endogeneity concerns the case in which individuals self-classify themselves in certain ethnic or racial groups as a function of the feature of the institutional system, for instance because certain groups or others

[21] The results in Table 2 differ slightly from those reported by Barro (1996). Using a different sample and a different set of controls he finds that his measure of ethnic fractionalization has the same sign as ours in a regression explaining a democracy index but it is not significant. In fact this author finds that almost nothing except level of per capita GDP affects his democracy index. However, many of his controls could be endogenous.

[22] It should be noted that many of these control sets are correlated with each other. Adding all the possible controls in the same regression causes two main problems: collinearity and a reduction in the sample size. We verified both problems being relevant. We tested simultaneously for all the possible controls and observed a reduction in the precision of the estimate for fractionalization as well as a loss of significance for a large majority of the controls.

are more or less favored.

From the coefficients reported in Table 3 one can compute the marginal effects on the probability of a political system of being less democratic. The marginal effect of ethnic fractionalization on the probability of ending up in the less democratic group for a country already partly lacking political freedom is about 0.38 on average. Including income, the size of the marginal effect is almost halved, but remains quantitatively important. This seems to suggest not only that fractionalization seems to explain insulation, but also that it has a quantitatively large role.

In summary, there seems to be evidence that in more ethically fragmented societies, political systems are less democratic. We find this result interesting because two strands of cross country empirical literature have independently emphasized the effect of ethnic fragmentation on economic outcomes and the effect of presidentialism and democratic status on politico-economic outcomes. These results seem to suggest that the two sets of variables, institutions and racial fragmentation are not independent form each other. Our interpretation, consistent with our model, is that in more fragmented systems, political systems are chosen to insulate certain groups and prevent others from having a voice.

Table 4 moves a step forward in focusing on institutional details and mapping insulation into specific political systems' features. The table repeats the analysis in Table 3 for Presidential regimes now, focusing on the issue of Separation of Powers (i.e. insulation of the Executive from the Legislative Power). In Table 3 the effect of all measures of fragmentation is strong and highly significant if we exclude income from the specification (columns (1)-(8)), even after employing a wide range of controls. The individual effects are not reported, but we note that French legal origin and Socialist legal origin are associated with more Presidential regimes relative to the Anglo-Saxon system, which is the omitted category. [23]. When we control for income the effect of fractionalization becomes weaker

[23] In some specification the impact of polarization/fragmentation appears weaker, but this is mostly due to the inclusion of an irrelevant set of controls, as shown by the Chi-square tests

and in some specifications looses significance at standard confidence levels. However, the size of the marginal effects never falls below .38. Table 5 maintains the same focus as Table 4, i.e. investigates insulation in terms of the characteristics of the Executive Power. We concentrate here on an index of intensity of the constraints on the de facto independence of the Chief Executive in different systems as another measure of insulation/delegation. Although the results are less robust to changes in the specification than in Table 4, it is still the case that the expected correlations between fractionalization and insulation hold. More fractionalized countries appear associated with lower levels of constraints for their Chief Executive. Tables 6 provides an analysis of the role of polarization and fractionalization within the form of government. It reports results related to Presidential regimes, gaining focus on characteristics highlighted in Tables 4 and 5. Within Presidential regimes there are evident differences in the degree of control by the elected president over both legislative and non-legislative processes. Shugart and Carey (1992) provide an insightful analysis of the issue and a taxonomic framework as well. As we interpret a more powerful president as a more insulated one, we expect to find that more polarized countries are also characterized by a more powerful president. Moreover, we would expect to be particularly so for those powers that are more closely related to insulation of the Executive (the non-legislative ones, such as the power of dissolving the assembly.) This seems to be the case in the simple linear relationships of Table 5. Not only there appears to be the expected positive correlation between insulation and polarization, but its significance actually increases when we consider specifically those powers that are more closely related to the insulation mechanisms we described. Unfortunately, the scarcity of data points does not allow us to get in such a detail for Parliamentary regimes. Similar patterns are evident, however, in some additional research we developed on the basis of Doring

reported. This seems to be the case, for example, in Columns (4) and (6) with respect to regional dummies. It may also, ex post, explain the weakness of specification (3).

(1995). Control of the agenda timing, for example, appears to be more frequently handed over to the Government, as opposed to the Parliament, in more fractionalized countries. Table 7 concludes our empirical overview focusing on Electoral Rules. The unconditional results of Table 2 are confirmed in the signs of the coefficients sign (Plurality systems are chosen wherever the population is more fractionalized), but the results are less robust.

Overall, we find significant evidence that various indices of insulations are positively correlated with measure of fractionalization and polarization. Thus, more polarized societies tend to have more "insulated" rulers. The dominant group knows that it cannot dominate the other groups unless its leader is sufficiently insulated. Also, forms of governments appear to be endogenous to ethnic fractionalization.

6.3 Insulation, Inequality and Voting Rights

An important aspect of insulation concerns the protection of property rights against expropriation. One can think of this issues in two ways. The rich (or, say, a racially defined fraction of the rich) can guarantee themselves a favorable treatment by choosing insulated constitutions, knowing that they would always hold control of political offices. However a forward looking wealthy writer of a Constitution will take into account the extension of voting rights. Consider a minority of wealthy men writing a Constitution, knowing that voting right would be entered or that, more generally, a majority of voters may later on choose taxation. If those at the constitutional table are a minority of the wealthy, who may face, later on, the risk of being governed by the majority of non wealthy, they may choose to constrain the majority when it comes to voting on property rights. That is they would choose low insulation. This is the case of an unequal distribution of wealth in which the rich choose the Constitution but everybody votes on policy. Obviously, this would imply also low insulation in terms of policy reforms, but to the extent that the rich cares mostly about protecting

property rights, in a period of extension of property rights, they would choose to have more checks on the majority. As Hamilton puts is "The injury which may possibly be done by defeating a few good laws will be amply compensated by the advantage of preventing a number of bad ones" (Federalist paper n.71). The bad laws are those which threaten property.

Beard (1913) argues that, in fact, this was on of the leading preoccupations of the Founding fathers of the American Constitution. James Madison in particular (see Federalist paper n. 51) advocated separation of power as a way of preventing an "overbearing majority" to become tyrannical vis a vis the minority. He clearly identifies the minority with that of wealthy men threatened by the majority of the poor. One important element separation of power was the independent judiciary. The famous blocking by the Supreme Court of the income tax in 1894 in the US can be viewed in this light: an institution representing a relatively small minority of the wealthy, and set up by the same constituency for that reason, was able to impose (for 20 years) a certain fiscal policy in defense of the upper part of the income distribution. F.D. Roosevelt's immediately understood that the only way to pass redistributive legislation was to tame the Supreme Court, which he did by threats of reforms of the Court itself. In the language of our model, FD Roosevelt increased executive insulation.

Empirically, this implies that older Constitutions, chosen when voting rights were restricted to a fraction of wealthy men, should prescribe larger majorities (i.e. be less insulated) when it comes to taxation and protection of property against redistributional reforms. To put it differently, older Constitutions would make it easier to pass legislation that protects property rights, or, to put it differently to block legislation that threaten property. Alesina, Glaeser and Sacerdote (2001) argue that one reason why the welfare state in the US is much less generous than in Continental Europe is precisely because the US Constitution is an "old" one and was written by wealthy white men, keen to

protect property, as originally argued by Beard (1913). More recent European Constitution, written when voting rights were much more widespread, are much less concerned about protecting property rights against redistribution, especially when it comes to protection of property. Alesina, Glaeser and Sacerdote (2001) note that "in a sample of 16 OECD countries, the correlation between social spending and the year of the most recent constitution is 0.52".

6.4 Insulation in Times of Crisis

A "crisis" can be defined as a situation in which a policy action is especially desirable, even though not everybody may benefit equally from such action. In our model, then, we can interpret a "crisis" as a situation where γ is especially high. A straightforward implication of our comparative static analysis is that one should observe a movement toward more insulation in times of emergency. One extreme example is war time, when, often, democratic rule is limited and even democratic countries adopt a more hierarchical structure of power. In the terminology of our model, one can think of "winning a war" as a policy with a very high γ requiring a very high degree of insulation of leaders.

Less extreme examples involve reforms of economic institutions. For instance, often Central Banks have been made more independent, in order to "insulate" monetary policy, in periods of very high inflation, that is in periods where anti-inflationary policies have an especially high γ. The most famous example involves the Bundesbank and the German hyperinflation. The recent adoption of fiscal rules with the European Union that limit the discretion of fiscal decisions on budget deficits can also be seen as a response to the fiscal crises of the eighties and nineties. In Latin America several institutional reforms leading to more "insulation" of monetary and fiscal police from the ebb and flows of changing political majorities have followed the "lost decade"of the eighties.

An even more extreme case of a crisis is a war. We can interpret winning a

war as a "policy" which is considered essential by most, so a war implies a large in crease in γ. It is generally believed that during wars it is necessary to increase the executive power of unrestricted action and even suspend temporarily certain types of checks and balances. The army itself has a very "insulated" constitution, that is nobody can question directives from superior officers. In fact the case of wars may be one example in which Constitutions can be made contingent on one particular event, namely war. So the Constitution can prescribe special and more insulated procedures in times of declared wars.

7 Conclusions

This paper has moved some steps forward in analyzing the "endogenous choice of political institutions." We have focused on one important, and general question of institution design, namely how insulated political leaders are expected to be ex-post, or to put in reverse, how large the (super) majority should and/or will be to pass legislation.

Rather than reviewing our results, we highlight a few avenues of ongoing research. One involves a more developed model of elected leaders, as currently pursued in Aghion, Alesina and Trebbi (2003). For instance, one could make the likelihood of success of a policy reform a function of how much "effort" the leader denotes into reform activity versus expropriation. The choice of more or less insulation would then influence leaders' incentives; for instance, a non-insulated policymaker may have little interest in trying to "push through" reforms if he knows that ex-post these are easily blocked. On the other hand, a highly insulated leader may have stronger incentives to produce reform and legislative activity, but he would also have more leverage to expropriate his fellow citizens and even restrict democratic rule. Modelling policy makers' incentives should allow us to study how the choice of policymakers and institutional rules interact; that is, the voters would choose different leaders, more or less pro-

reform, depending on the institutional rules about ex post insulation. It would also provide us with a simple analytical tool to analyze in details two important aspects of constitutional design.

The first aspect relates to the electoral rule; majoritarian (winner-take-all) or proportional. The composition of the elected legislature would generate, in this framework, a collective level of "reform producing" effort, which would depend upon the composition of the legislature, which in turn would depend on the voting rules. In this context one could analyze how different electoral rule lead to more or less legislative activity.

The second aspect relates to term limits as another form of insulation. A leader facing short term limits may not feel particularly interested in putting effort in policy reform, especially if they require "time to build." On the other hand, without term limits incumbents may achieve an entrenched power structure and restrict political competition. Once again the Founding Fathers had captured the essence of the problem of term duration. In *The Federalist* Paper n. 71, in fact, Hamilton puts it beautifully by writing that "It may be asked also whether a duration of four years would answer the end proposed; and if it would not, whether a less period, which would at least be recommended by greater security against ambitious design would be too short for the purpose of inspiring the desired fairness and independence of the magistrate."

8 Appendix

8.1 Proofs of Propositions

Generalization of Proposition 1.

Let us consider $a \sim g(-A, A)$, where $g(a) = dG(a)/da$ and G is the cumulative distribution function for the shock a, and $\lambda_i \sim f(\underline{\lambda}, \overline{\lambda})$ and $A > 0, \overline{\lambda} > \underline{\lambda}, \gamma > 0$. For simplicity let us fix $p = 1$ in this analysis. The maximization problem for the voter under a veil of ignorance is:

$$\max \left\{ \int_{-A}^{\widehat{\lambda}-\underline{\lambda}-lM} \int_{\underline{\lambda}}^{\overline{\lambda}} 1 f(\lambda_i) d\lambda_i g(a) da + \int_{\widehat{\lambda}-\underline{\lambda}-lM}^{A} \int_{\underline{\lambda}}^{\overline{\lambda}} \gamma(\lambda_i + a) f(\lambda_i) d\lambda_i g(a) da \right\}$$

$$
\begin{aligned}
&= \max\left\{\int_{-A}^{\widehat{\lambda}-\underline{\lambda}-lM} 1dG(a) + \int_{\widehat{\lambda}-\underline{\lambda}-lM}^{A}(\lambda_m+a)\gamma g(a)da\right\}\\
&= \max\left\{\begin{array}{c} G\left(\widehat{\lambda}-\underline{\lambda}-lM\right)-G(-A)+\left(G(A)-G\left(\widehat{\lambda}-\underline{\lambda}-lM\right)\right)\lambda_m\gamma+\\ \gamma\left(AG(A)-\left(\widehat{\lambda}-\underline{\lambda}-lM\right)G\left(\widehat{\lambda}-\underline{\lambda}-lM\right)\right)-\gamma\int_{\widehat{\lambda}-\underline{\lambda}-lM}^{A}G(a)da \end{array}\right\},
\end{aligned}
$$

where we make straightforward use of integration by parts.
Now, by imposing the first order conditions, we obtain:

$$
\begin{aligned}
-lg\left(\widehat{\lambda}-\underline{\lambda}-lM\right)+lg\left(\widehat{\lambda}-\underline{\lambda}-lM\right)\lambda_m\gamma+\gamma(-l)G(\widehat{\lambda}-\underline{\lambda}-lM) &= \\
\gamma\left(-lG\left(\widehat{\lambda}-\underline{\lambda}-lM\right)-l\left(\widehat{\lambda}-\underline{\lambda}-lM\right)g\left(\widehat{\lambda}-\underline{\lambda}-lM\right)\right) &\iff\\
-1+\lambda_m\gamma+\gamma\left(\frac{1}{\gamma}-\lambda_m+\frac{l}{2}-lM\right) &= 0\iff\\
M^* &= 1/2
\end{aligned}
$$

Proof of Proposition 2- related results.

- Case with symmetric polarization (probability mass of Δ on both extremes in the distribution of λ_i)

To pass the reform it has to hold that:

$$
\begin{aligned}
\frac{\widehat{\lambda}-\underline{\lambda}-a}{l}(1-2\Delta)+\Delta &\leq M\\
&\iff \widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)\,l}{(1-2\Delta)}\leq a
\end{aligned}
$$

So the maximization problem for the voter becomes in this case:

$$
\begin{aligned}
&\max\left\{\int_{-A}^{\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-2\Delta)}} 1\frac{1}{2A}da+\int_{\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-2\Delta)}}^{A}(\lambda_m+a)\gamma\frac{1}{2A}da-b\frac{1-p}{p}M\right\}\\
&= \max\left\{\begin{array}{c}\left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-2\Delta)}+A\right)+\left(A-\widehat{\lambda}+\underline{\lambda}+\frac{(M-\Delta)l}{(1-2\Delta)}\right)\lambda_m\gamma\\ +\left(\frac{A^2}{2}-\frac{\left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-2\Delta)}\right)^2}{2}\right)\gamma-2Ab\frac{1-p}{p}M\end{array}\right\}
\end{aligned}
$$

Now, by imposing the first order conditions, we obtain:

$$
\frac{1}{(1-2\Delta)}\left((\lambda_m\gamma-1)l+l\gamma\left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)\,l}{(1-2\Delta)}\right)\right)=2Ab\frac{1-p}{p}
$$

and so:

$$
M^*=\frac{1}{2}+\frac{8Ab\Delta-2Ab-8Ab\Delta^2}{l^2\gamma}\frac{1-p}{p}
$$

From this we can verify that:

$$\frac{dM^*}{d\Delta} = 8Awb\frac{1-2\Delta}{l^2\gamma} > 0.$$

The second order conditions are verified by inspection.

- Case with asymmetric polarization (probability mass of Δ on $\underline{\lambda}$.)

To pass the reform it is necessary that:

$$\begin{aligned} \frac{\widehat{\lambda}-\underline{\lambda}-a}{l}(1-\Delta)+\Delta \quad &\leq \quad M \\ &\iff \quad \widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)\,l}{(1-\Delta)} \leq a \end{aligned}$$

So the maximization problem becomes in this case:

$$\begin{aligned} & \max\left\{\int_{-A}^{\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-\Delta)}} 1\frac{1}{2A}da + \int_{\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-\Delta)}}^{A} (\lambda_m(1-\Delta)+\underline{\lambda}\Delta+a)\gamma\frac{1}{2A}da - b\frac{1-p}{p}M\right\} \\ = \quad & \max\left\{\begin{array}{c} \left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-\Delta)}+A\right)+\left(A-\widehat{\lambda}+\underline{\lambda}+\frac{(M-\Delta)l}{(1-\Delta)}\right)(\lambda_m(1-\Delta)+\underline{\lambda}\Delta)\,\gamma \\ +\left(\frac{A^2}{2}-\frac{\left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-\Delta)}\right)^2}{2}\right)\gamma - 2Ab\frac{1-p}{p}M \end{array}\right\} \end{aligned}$$

Now, by imposing the first order conditions, we obtain:

$$\frac{1}{(1-\Delta)}\left(((\lambda_m(1-\Delta)+\underline{\lambda}\Delta)\,\gamma-1)l + l\gamma\left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)\,l}{(1-\Delta)}\right)\right) - 2Ab\frac{1-p}{p} = 0$$

from which we can derived a closed form solution M^*. Anyway, in this case the sign of $\frac{dM^*}{d\Delta}$ cannot be unambiguously determined because of the shift in the mean of the distribution of the λ_i.

Now consider the case in which the individuals on the lower extreme are not included in the constitutional design stage (i.e. the mean λ_m is not affected).

$$\max\left\{\left(A-\widehat{\lambda}+\underline{\lambda}+\frac{(M-\Delta)\,l}{(1-\Delta)}\right)(\lambda_m\gamma-1)+\left(\frac{A^2}{2}-\frac{\left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-\Delta)}\right)^2}{2}\right)\gamma - 2Ab\frac{1-p}{p}M\right\}$$

Now, by imposing the first order conditions, we obtain:

$$\frac{l}{(1-\Delta)}\left((\lambda_m\gamma-1)+\left(\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)\,l}{(1-\Delta)}\right)\gamma\right) - 2Ab\frac{1-p}{p} = 0$$

and $\frac{dM^*}{d\Delta} > 0$ unambiguously in this case.

Proof of Proposition 3

In the risk aversion model we define the bankruptcy threshold as $\theta < 1$. So, $(\lambda_i + a)\,\gamma < \theta$ implies that bankruptcy happens for individual i and her utility plummets down at level $-u$ (for example, because of bankruptcy costs). For simplicity we fix $p = 1$ in this analysis. The maximization problem now becomes:

$$\begin{aligned} & \max\left\{\int_{-A}^{\widehat{\lambda}-\underline{\lambda}-lM} 1\frac{1}{2A}da + \int_{\widehat{\lambda}-\underline{\lambda}-lM}^{A}\left(-u\int_{\underline{\lambda}}^{\frac{\theta}{\gamma}-a}\frac{1}{l}d\lambda + \int_{\frac{\theta}{\gamma}-a}^{\overline{\lambda}}(\lambda+a)\frac{\gamma}{l}d\lambda\right)\frac{1}{2A}da\right\} \\ = \quad & \max\left\{\begin{array}{c} \left(\widehat{\lambda}-\underline{\lambda}-lM+A\right) + \frac{1}{6}\frac{\gamma}{l}\left(A^3-\left(\widehat{\lambda}-\underline{\lambda}-lM\right)^3\right) + \\ \frac{u+\overline{\lambda}\gamma}{2l}\left(A^2-\left(\widehat{\lambda}-\underline{\lambda}-lM\right)^2\right) - \frac{1}{2\gamma}\frac{2u\theta-2u\underline{\lambda}\gamma-\overline{\lambda}^2\gamma^2+\theta^2}{l}\left(A-\widehat{\lambda}+\underline{\lambda}+lM\right) \end{array}\right\} \end{aligned}$$

Now, by imposing the first order conditions, we obtain:

$$\begin{aligned} & -l + \frac{1}{2}\gamma\left(\left(\frac{1}{\gamma}-\underline{\lambda}-lM\right)^2\right) + \left(u+\overline{\lambda}\gamma\right)\left(\frac{1}{\gamma}-\underline{\lambda}-lM\right) \\ = \quad & \frac{1}{2\gamma}\left(2u\theta-2u\underline{\lambda}\gamma-\overline{\lambda}^2\gamma^2+\theta^2\right) \end{aligned}$$

Solutions are:

$$M_1 = \frac{1+l\gamma+u+\sqrt{(2l\gamma u+u^2+2\gamma l+2u\theta+\theta^2)}}{l\gamma}$$

$$M_2 = \frac{1+l\gamma+u-\sqrt{(2l\gamma u+u^2+2\gamma l+2u\theta+\theta^2)}}{l\gamma}$$

Now, by imposing the second order conditions, we verify that:

$$l\gamma\left(\left(\frac{1}{\gamma}-\underline{\lambda}-lM\right)\right) + \left(u+\overline{\lambda}\gamma\right)l < 0$$

Therefore the solution needs to satisfy $M < \frac{1}{\gamma l}\left(1+l\gamma+u\right)$. By this argument we have to rule out M_1. For the comparative statics we now set $\theta = 0$ and consider $\lambda_m\gamma > 1$ and $\underline{\lambda} \leq 0$ (corresponding to the assumption that the reform is good on average and that someone may lose from the reform). The following comparative statics result holds:

$$\frac{dM^*}{du} = \frac{\sqrt{(2l\gamma u+u^2+2\gamma l+2u\theta+\theta^2)}-l\gamma-u-\theta}{\sqrt{(2l\gamma u+u^2+2\gamma l+2u\theta+\theta^2)}l\gamma} < 0.$$

Also, we can note that including expropriation would not change the results under the risk aversion model, as the two effects would add each other up in reducing insulation.

Proof of Proposition 4

We analyze the risk aversion model with symmetric polarization. Again we set the bankruptcy threshold at θ (and we will set it equal to zero for simplicity when we derive our results below). So, $(\lambda_i + a)\,\gamma < \theta$ implies a bankruptcy-related reduction of utility down to level $-u$. Also we have to recall that by definition $\Delta \leq 1/2$. For simplicity we fix $p = 1$ in this analysis. The maximization problem now becomes:

$$\begin{array}{rl} & \max \left\{ \begin{array}{c} \int_{-A}^{\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-2\Delta)}} 1\frac{1}{2A}da + \int_{\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-2\Delta)}}^{A} \left(-\Delta u - u\left(\int_{\underline{\lambda}}^{\frac{\theta}{\gamma}-a} \frac{1-2\Delta}{l} d\lambda\right)\right)\frac{1}{2A}da + \\ \int_{\widehat{\lambda}-\underline{\lambda}-\frac{(M-\Delta)l}{(1-2\Delta)}}^{A} \left(\int_{\frac{\theta}{\gamma}-a}^{\overline{\lambda}} (\lambda+a)\frac{\gamma(1-2\Delta)}{l} d\lambda + \Delta\overline{\lambda})\right)\frac{1}{2A}da \end{array} \right\} \\ = & \max \left\{ \begin{array}{c} \left(\widehat{\lambda} - \underline{\lambda} - \frac{(M-\Delta)l}{(1-2\Delta)} + A\right) + \Delta(\overline{\lambda} - u)\left(A - \widehat{\lambda} + \underline{\lambda} + \frac{(M-\Delta)l}{(1-2\Delta)}\right) + \\ (1-2\Delta)\left(\frac{1}{6}\frac{\gamma}{l}\left(A^3 - \left(\widehat{\lambda} - \underline{\lambda} - \frac{(M-\Delta)l}{(1-2\Delta)}\right)^3\right) + \frac{u+\overline{\lambda}\gamma}{2l}\left(A^2 - \left(\widehat{\lambda} - \underline{\lambda} - \frac{(M-\Delta)l}{(1-2\Delta)}\right)^2\right)\right) \\ -\frac{(1-2\Delta)}{2\gamma}\frac{2u\theta - 2u\underline{\lambda}\gamma - \overline{\lambda}^2\gamma^2 + \theta^2}{l}\left(A - \widehat{\lambda} + \underline{\lambda} + \frac{(M-\Delta)l}{(1-2\Delta)}\right) \end{array} \right\} \end{array}$$

Now, by imposing the first order conditions, we obtain:

$$\begin{array}{rl} & \frac{\Delta(\overline{\lambda}-u)l - l}{(1-2\Delta)} + (1-2\Delta)\left(\left(\frac{1}{2}\frac{\gamma}{(1-2\Delta)}\left(\frac{1}{\gamma} - \underline{\lambda} - \frac{(M-\Delta)\,l}{(1-2\Delta)}\right)^2\right) + \right) \\ = & -\left(u + \overline{\lambda}\gamma\right)\left(\frac{1}{\gamma} - \underline{\lambda} - \frac{(M-\Delta)\,l}{(1-2\Delta)}\right) + \left(\frac{2u\theta - 2u\underline{\lambda}\gamma - \overline{\lambda}^2\gamma^2 + \theta^2}{2\gamma}\right) \end{array}$$

Let us impose for simplicity a symmetry condition $\underline{\lambda} = -\overline{\lambda}$,and $\theta = 0$ as in the proof of Proposition 3. The F.O.C. now becomes:

$$\frac{\Delta(\overline{\lambda}-u)2\overline{\lambda} - 2\overline{\lambda}}{(1-2\Delta)} + \frac{\overline{\lambda}^2\gamma^2}{2\gamma} + \frac{\gamma}{2}\left(\frac{1}{\gamma} - \frac{(M-\Delta)\,2\overline{\lambda}}{(1-2\Delta)}\right)^2 + \left(u + \overline{\lambda}\gamma\right)\left(\frac{1}{\gamma} - \frac{(M-\Delta)\,2\overline{\lambda}}{(1-2\Delta)}\right) = 0$$

Which has solutions

$$M_1 = \frac{(1-2\Delta)\,(u+1) + \overline{\lambda}\gamma + \sqrt{\left(\left(4\overline{\lambda}\gamma + 2\overline{\lambda}\gamma u - 4\overline{\lambda}^2\gamma\Delta\right)(1-2\Delta) - 4u^2\Delta + u^2 + 4u^2\Delta^2\right)}}{2\gamma\overline{\lambda}}$$

$$M_2 = \frac{(1-2\Delta)\,(u+1) + \overline{\lambda}\gamma - \sqrt{\left(\left(4\overline{\lambda}\gamma + 2\overline{\lambda}\gamma u - 4\overline{\lambda}^2\gamma\Delta\right)(1-2\Delta) - 4u^2\Delta + u^2 + 4u^2\Delta^2\right)}}{2\gamma\overline{\lambda}}$$

The first solution, M_1, is ruled out by SOC. Let us define $M_2 = M^*_{\Delta,u}$ and consider the following comparative statics:

$$\frac{dM^*_{\Delta,u}}{d\Delta} = -\frac{(u+1)}{\gamma\overline{\lambda}} - \frac{-u^2 + 2u^2\Delta - \overline{\lambda}\gamma u - 2\overline{\lambda}\gamma - \overline{\lambda}^2\gamma + 4\overline{\lambda}^2\gamma\Delta}{\sqrt{(2\Delta-1)\left(4\overline{\lambda}^2\gamma\Delta + 2u^2\Delta - 2\overline{\lambda}\gamma u - 4\overline{\lambda}\gamma - u^2\right)\gamma\overline{\lambda}}} < 0$$

To prove this we just need to consider the highest-order terms in u, for u large enough. It holds that $-\frac{u}{\overline{\gamma\lambda}} - u\frac{2\Delta-1}{\overline{\gamma\lambda}\sqrt{(2\Delta-1)(2\Delta-1)}} \leq 0$.

Proof of Proposition 5- related results

The second case in the text is characterized by:

$$\widehat{\lambda} - \underline{\lambda} - lM^* + A > \left(\frac{2l\omega}{1+k}\right)^{\frac{1}{2}}.$$

Hence, the problem for the voter becomes:

$$\max_M \left\{ \begin{array}{c} p\left(\int_{-A}^{\widehat{\lambda}-\underline{\lambda}-lM-\left(\frac{2l\omega}{1+k}\right)^{\frac{1}{2}}} \frac{1}{2A}da + \int_{\widehat{\lambda}-\underline{\lambda}-lM-\left(\frac{2l\omega}{1+k}\right)^{\frac{1}{2}}}^{A} (\lambda_m + a)\gamma\frac{1}{2A}da - k\frac{1}{12Al}\left(\frac{2l\omega}{1+k}\right)^{\frac{3}{2}}\right) \\ -(1-p)\,bM \end{array} \right\},$$

where the third term in the parentheses multiplied by p is the expected deadweight loss from compensation, calculated as:

$$\begin{aligned} E_a c(a) &= \frac{1}{2l}\int_{\widehat{\lambda}-\underline{\lambda}-\left(\frac{2l\omega}{1+k}\right)^{\frac{1}{2}}}^{\widehat{\lambda}-\underline{\lambda}-lM} \left(\widehat{\lambda} - \underline{\lambda} - lM - a\right)^2 \frac{1}{2A}da \\ &= \frac{1}{12Al}\left(\frac{2l\omega}{1+k}\right)^{\frac{3}{2}}, \end{aligned}$$

while the first two terms represent the usual expected value of income.

Similarly as before, the maximization problem implies:

$$M^*_{(2)} = \frac{1}{2} - \frac{2Ab\frac{1-p}{p}}{l^2\gamma} - \left(\frac{2\omega}{l\,(1+k)}\right)^{\frac{1}{2}},$$

as reported in the text.

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Table 1

Variables Definitions:

Ethnic Fractionalization: Ethnic Fractionalization Index from Alesina et al. (2002); construction is described in the text.

Ethno-Linguistic Fractionalization Index in 1960: ELF from Easterly and Levine (1997). The original source is the1964 Atlas Narodov Mira for the year 1960.

Polarization: Measure constructed applying Esteban and Ray (1994) to the Alesina et al. (2002) ethnic measure, $\alpha = 4/5$.

Linguistic Fractionalization: Linguistic Fractionalization Index from Alesina et al. (2002).

Autocracy: Ordinal variable based on Freedom House (2002) Index in 1990. Free =1, Partly Free = 2, Not Free =3. The ranking increases in the degree of insulation of the Executive.

Separation of Powers: Ordinal variable from the Database of Political Institutions (2001), available from DATAVINE/ Harvard CID and the World Bank (Beck et al., 2000) for year 1990. We consider the variable SYSTEM, complemented to 2 to facilitate exposition. Direct Presidential is assigned 2, Hybrid-Presidential = 1, and Parliamentary = 0. The ranking increases in the degree of insulation of the Executive.

Executive Constraints: Measure of operational (de facto) independence of the Chief Executive. From Polity IV data set. Ordinal, from 1 = minimum degree of constraint to 7 = maximum degree of constraint. Average over 1990-94 period for variable XCONST. The ranking decreases in the degree of insulation of the Executive.

Powers of the Presidency: For columns (1)-(5) is Powers of the Elected President from Shugart and Carey (1992, Ch. 8), dependent variable for (6)-(10) includes only non-legislative powers (as oppose to legislative). High non-legislative powers imply high insulation of the Executive. The NCSEER data expand the sample to post-Soviet Hybrid-Presidential countries and conform to Shugart and Carey's criteria. The ranking increases in the degree of insulation of the Executive.

Plurality: MAJ Dummy for plurality rule and majority systems (1 = Plurality, 0 = Proportional representation, mixed system or other). From Persson and Tabellini (2002) variable MAJ. The ranking increases in the degree of insulation of the Executive.

Control Sets:

Legal origin: French, Socialist, and other non-Common Law legal origin from La Porta et al.(1999); the Social legal origin dummy is dropped when ELF is used, as not Socialist countries were included in the original study.

Regional dummies: Sub-Saharan Africa, East Asia, and Latin America.

Colonial origin dummies: British, French, Spanish/Portuguese, other colonies; from CIA World Factbook (2001).

Religion: Continuous variable indicating fraction of the total population that is Protestant, Catholic, or Muslim; from La Porta et al. (1999).

Log(Real GDP) in 1960: Natural logarithm of real GDP per capita in 1960 from Easterly and Levine (1997).

Table 2

Sample Means: Variables defined in Table 1. The table reports number of observations, the mean, the standard deviation, and the minimum and maximum values within the sub-samples reported for different indicators of fractionalization. Democracy refers to the classification of "Free" by Freedom House, Autocracy of "Not Free".

Sample: DEMOCRACY

Variable	Obs	Mean	Std. Dev.	Min	Max
Ethnic Fractionalization Index	69	0.30999	0.22927	0.002	0.7872
Ethno-Linguistic Fractionalization Index 1960	46	0.28522	0.24319	0	0.82
Polarization (alpha = 4/5)	69	0.12976	0.08185	0.001	0.2723
Linguistic Fractionalization Index	66	0.27273	0.24297	0.0021	0.8734

Sample: AUTOCRACY

Variable	Obs	Mean	Std. Dev.	Min	Max
Ethnic Fractionalization Index	41	0.5711	0.24783	0.0392	0.9302
Ethno-Linguistic Fractionalization Index 1960	20	0.58	0.32216	0.01	0.93
Polarization (alpha = 4/5)	41	0.17759	0.0614	0.0201	0.2739
Linguistic Fractionalization Index	38	0.50847	0.2881	0.0028	0.9227

Sample: PARLIAMENTARY

Variable	Obs	Mean	Std. Dev.	Min	Max
Ethnic Fractionalization Index	50	0.29523	0.21684	0.0119	0.8082
Ethno-Linguistic Fractionalization Index 1960	38	0.30158	0.25149	0.01	0.89
Polarization (alpha = 4/5)	49	0.12939	0.08189	0.006	0.2692
Linguistic Fractionalization Index	46	0.3079	0.2447	0.0111	0.8141

Sample: DIRECT PRESIDENTIAL

Variable	Obs	Mean	Std. Dev.	Min	Max
Ethnic Fractionalization Index	68	0.54252	0.26042	0	0.9302
Ethno-Linguistic Fractionalization Index 1960	55	0.48455	0.30358	0.01	0.93
Polarization (alpha = 4/5)	68	0.17862	0.07225	0	0.279
Linguistic Fractionalization Index	65	0.46227	0.31572	0.0103	0.9227

Sample: NON PLURALITY

Variable	Obs	Mean	Std. Dev.	Min	Max
Ethnic Fractionalization Index	67	0.37671	0.25062	0.0119	0.8791
Ethno-Linguistic Fractionalization Index 1960	59	0.32593	0.27512	0.01	0.89
Polarization (alpha = 4/5)	66	0.14849	0.08195	0.006	0.279
Linguistic Fractionalization Index	64	0.32198	0.28145	0.0124	0.8652

Sample: PLURALITY

Variable	Obs	Mean	Std. Dev.	Min	Max
Ethnic Fractionalization Index	42	0.48886	0.25831	0	0.8635
Ethno-Linguistic Fractionalization Index 1960	36	0.5125	0.271	0.01	0.93
Polarization (alpha = 4/5)	42	0.1755	0.07478	0	0.2774
Linguistic Fractionalization Index	40	0.45338	0.30719	0.0103	0.8983

Table 3

Autocracy and Polarization: Variables defined in Table 1. Each column in the table reports Ordered Probit coefficients, robust standard errors (in round parentheses, below coefficient estimates) and number of observations (in square parentheses, below) for the measures of polarization in society described in Table 1. The table includes p-values for Chi-square test of joint significance of the control sets described in Table 1. The marginal effects and p-values reported refer to the specification employing the Ethnic Fractionalization Index of Alesina et al. (2002). * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

	ORDERED PROBIT								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Autocracy (1990)	Autocracy (1990)	Autocracy (1990)	Autocracy (1990)	Autocracy (1990)	Autocracy (1990)	Autocracy (1990)	Autocracy (1990)	Autocracy (1990)
Ethnic Fractionalization Index	1.926	2.021	1.700	1.434	1.866	1.506	1.743	0.982	1.700
	(0.355)***	(0.390)***	(0.418)***	(0.448)***	(0.383)***	(0.455)***	(0.386)***	(0.463)**	(0.513)***
	[174]	[163]	[174]	[163]	[146]	[146]	[145]	[145]	[109]
Ethno-Linguistic Fractionalization Index 1960	1.678	1.625	0.526	0.383	1.545	0.678	1.654	0.429	0.731
	(0.421)***	(0.450)***	(0.481)	(0.499)	(0.422)***	(0.464)	(0.443)***	(0.475)	(0.457)
	[107]	[107]	[107]	[107]	[107]	[107]	[107]	[107]	[103]
Polarization (alpha = 4/5)	4.229	3.387	4.112	2.854	4.281	3.637	3.031	1.630	3.995
	(1.148)***	(1.226)***	(1.173)***	(1.296)**	(1.226)***	(1.272)***	(1.251)**	(1.377)	(1.608)**
	[174]	[163]	[174]	[163]	[146]	[146]	[145]	[145]	[109]
Linguistic Fractionalization Index	1.395	1.576	0.681	0.562	1.436	0.668	1.431	0.458	1.140
	(0.309)***	(0.333)***	(0.365)*	(0.396)	(0.316)***	(0.395)*	(0.339)***	-0.417	(0.453)**
	[168]	[157]	[167]	[156]	[141]	[140]	[140]	[139]	[106]
Control Sets									
Legal Origin		Included [0.005]		Included [0.000]					
Regional Dummies			Included [0.002]	Included [0.000]		Included [0.026]		Included [0.001]	
Colonial Origin					Included [0.002]	Included [0.014]			
Religion							Included [0.000]	Included [0.000]	
Log(Real GDP) in 1960									Included [0.000]
Marginal Effect at Mean from Partly Free to Not Free Status	0.553	0.478	0.469	0.297	0.453	0.344	0.402	0.199	0.231

Table 4

Separation of Powers and Polarization: Variables defined in Table 1. Each column in the table reports Ordered Probit coefficients, robust standard errors (in round parentheses, below coefficient estimates) and number of observations (in square parentheses, below) for the measures of polarization in society described in Table 1. The table includes p-values for Chi-square test of joint significance of the control sets described in Table 1. The marginal effects and p-values reported refer to the specification employing the Ethnic Fractionalization Index of Alesina et al. (2002). * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

	ORDERED PROBIT								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Separation of Powers (PRES, 1990)	Separation of Powers (PRES, 1990)	Separation of Powers (PRES, 1990)	Separation of Powers (PRES, 1990)	Separation of Powers (PRES, 1990)	Separation of Powers (PRES, 1990)	Separation of Powers (PRES, 1990)	Separation of Powers (PRES, 1990)	Separation of Powers (PRES, 1990)
Ethnic Fractionalization Index	1.964	1.724	1.384	1.256	1.642	1.485	1.704	0.957	1.265
	(0.390)***	(0.464)***	(0.500)***	(0.535)**	(0.457)***	(0.539)***	(0.406)***	(0.525)*	(0.468)***
	[141]	[140]	[141]	[140]	[140]	[140]	[139]	[139]	[109]
Ethno-Linguistic Fractionalization Index 1960	1.153	1.357	0.714	0.969	1.236	0.929	1.704	1.043	0.391
	(0.392)***	(0.428)***	(0.502)	(0.485)**	(0.515)**	(0.622)	(0.432)***	(0.579)*	(0.439)
	[106]	[106]	[106]	[106]	[106]	[106]	[106]	[106]	[103]
Polarization (alpha = 4/5)	4.731	3.5	3.301	2.603	3.787	3.437	3.475	1.684	3.391
	(1.451)***	(1.633)**	(1.499)**	(1.629)	(1.584)**	(1.598)**	(1.482)**	(1.596)	(1.583)**
	[140]	[139]	[140]	[139]	[139]	[139]	[138]	[138]	[108]
Linguistic Fractionalization Index	0.938	0.932	0.5	0.55	0.983	0.735	1.104	0.642	0.269
	(0.326)***	(0.356)***	(0.430)	(0.428)	(0.399)**	(0.474)	(0.342)***	(0.502)	(0.412)
	[135]	[134]	[135]	[134]	[134]	[134]	[133]	[133]	[105]
Control Sets									
Legal Origin		Included		Included					
		[0.000]		[0.000]					
Regional Dummies			Included	Included		Included		Included	
			[0.044]	[0.190]		[0.801]		[0.060]	
Colonial Origin					Included	Included			
					[0.000]	[0.000]			
Religion							Included	Included	
							[0.000]	[0.000]	
Log(Real GDP) in 1960									Included
									[0.000]
Marginal Effect at Mean from Partly Free to Not Free Status	0.782	0.685	0.551	0.499	0.653	0.591	0.678	0.381	0.503

Table 5

Executive Constraints and Polarization: Variables defined in Table 1. Each column in the table reports OLS coefficients, robust standard errors (in round parentheses, below coefficient estimates), number of observations (in square parentheses, below), and R-squares (in Italics, further below) for the measures of polarization in society described in Table 1. The table includes p-values for F-test of joint significance of the control sets described in Table 1. The p-values reported refer to the specification employing the Ethnic Fractionalization Index of Alesina et al. (2002). * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

	OLS								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Executive Constraints	Executive Constraints	Executive Constraints	Executive Constraints	Executive Constraints	Executive Constraints	Executive Constraints	Executive Constraints	Executive Constraints
Ethnic Fractionalization Index	-3.768	-3.681	-2.633	-1.748	-2.988	-1.803	-3.135	-1.219	-1.99
	(0.619)***	(0.740)***	(0.843)***	(0.863)**	(0.719)***	(0.895)**	(0.612)***	(0.838)	(0.669)***
	[121]	[113]	[121]	[113]	[113]	[113]	[112]	[112]	[105]
	0.2	*0.25*	*0.28*	*0.4*	*0.32*	*0.38*	*0.33*	*0.44*	*0.42*
Ethno-Linguistic Fractionalization Index 1960	-2.869	-2.737	-0.593	-0.437	-1.943	-0.472	-2.388	-0.362	-1.074
	(0.691)***	(0.769)***	(0.744)	(0.788)	(0.745)**	(0.845)	(0.663)***	(0.658)	(0.643)*
	[104]	[104]	[104]	[104]	[104]	[104]	[104]	[104]	[100]
	0.14	*0.19*	*0.32*	*0.36*	*0.34*	*0.41*	*0.3*	*0.45*	*0.4*
Polarization (alpha = 4/5)	-7.182	-4.041	-6.142	-2.372	-3.842	-2.617	-3.75	-0.489	-1.635
	(2.368)***	(2.684)	(2.324)***	(2.398)	(2.549)	(2.386)	(2.281)	(2.286)	(2.147)
	[121]	[113]	[121]	[113]	[113]	[113]	[112]	[112]	[105]
	0.06	*0.1*	*0.26*	*0.37*	*0.23*	*0.36*	*0.21*	*0.42*	*0.37*
Linguistic Fractionalization Index	-2.742	-2.688	-1.196	-0.605	-2.035	-0.695	-2.381	-0.714	-1.056
	(0.601)***	(0.650)***	(0.783)	(0.785)	(0.629)***	-0.826	(0.589)***	-0.706	(0.630)*
	[119]	[111]	[119]	[111]	[119]	[111]	[110]	[110]	[102]
	0.13	*0.21*	*0.22*	*0.36*	*0.29*	*0.35*	*0.31*	*0.43*	*0.38*
Control Sets									
Legal Origin		Included		Included					
		[0.070]		[0.022]					
Regional Dummies			Included	Included		Included		Included	
			[0.001]	[0.000]		[0.011]		[0.009]	
Colonial Origin					Included	Included			
					[0.003]	[0.282]			
Religion							Included	Included	
							[0.000]	[0.001]	
Log(Real GDP) in 1960									Included
									[0.000]

Table 6

Powers of the Presidency and Polarization: Variables defined in Table 1. Each column in the table reports OLS coefficients, robust standard errors (in round parentheses, below coefficient estimates), number of observations (in square parentheses, below), and R-squares (in Italics, further below) for the measures of polarization in society described in Table 1. The table includes p-values for F-test of joint significance of the control sets described in Table 1. The p-values reported refer to the specification employing the Ethnic Fractionalization Index of Alesina et al. (2002). * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

	OLS									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total Powers of the Presidency	Total Powers of the Presidency	Total Powers of the Presidency	Total Powers of the Presidency	Total Powers of the Presidency	Non-legislative (checks and balances) Powers of the Presidency	Non-legislative (checks and balances) Powers of the Presidency	Non-legislative (checks and balances) Powers of the Presidency	Non-legislative (checks and balances) Powers of the Presidency	Non-legislative (checks and balances) Powers of the Presidency
Ethnic Fractionalization Index	7.164	7.723	5.523	6.887	5.269	5.566	5.765	3.456	5.522	4.545
	(3.940)*	(5.322)	(6.326)	(4.359)	(3.341)	(2.665)**	(3.993)	(4.703)	(2.981)*	(2.286)*
	[31]	[31]	[31]	[30]	[56]	[31]	[31]	[31]	[30]	[56]
	0.10	*0.19*	*0.33*	*0.15*	*0.03*	*0.13*	*0.19*	*0.29*	*0.14*	*0.05*
Ethno-Linguistic Fractionalization Index 1960	4.321	5.092	3.928	3.753	4.321	3.928	4.395	3.809	3.686	3.928
	(3.281)	(4.305)	(4.231)	(3.648)	(3.281)	(2.248)*	(3.195)	(2.969)	(2.494)	(2.248)*
	[30]	[30]	[30]	[30]	[30]	[30]	[30]	[30]	[30]	[30]
	0.04	*0.15*	*0.32*	*0.09*	*0.04*	*0.07*	*0.17*	*0.31*	*0.09*	*0.07*
Polarization (alpha = 4/5)	31.057	31.841	21.929	4.152	17.824	20.137	19.559	12.819	3.736	12.74
	(10.556)***	(13.776)**	(13.615)	(3.145)	(10.085)*	(7.369)**	(10.900)*	(10.188)	(2.176)*	(6.740)*
	[31]	[31]	[31]	[28]	[56]	[31]	[31]	[31]	[28]	[56]
	0.26	*0.30*	*0.39*	*0.21*	*0.06*	*0.22*	*0.25*	*0.33*	*0.18*	*0.06*
Linguistic Fractionalization Index	4.484	8.123	7.959	29.898	2.161	3.843	6.16	6.537	19.677	1.733
	(2.918)	(4.019)*	(3.356)**	(11.064)**	(3.063)	(1.948)*	(3.380)*	(2.135)***	(7.936)**	(2.138)
	[29]	[29]	[29]	[30]	[53]	[29]	[29]	[29]	[30]	[53]
	0.06	*0.30*	*0.56*	*0.29*	*0.01*	*0.09*	*0.33*	*0.59*	*0.23*	*0.01*
Control Sets										
Legal Origin		Included [0.240]					Included [0.321]			
Regional Dummies			Included [0.000]					Included [0.023]		
Log(Real GDP) in 1960				Included [0.296]					Included [0.569]	
Sample	Shugart and Carey (1992)	Shugart and Carey (1992)	Shugart and Carey (1992)	Shugart and Carey (1992)	Shugart and Carey (1992) and NCSEER	Shugart and Carey (1992)	Shugart and Carey (1992)	Shugart and Carey (1992)	Shugart and Carey (1992)	Shugart and Carey (1992) and NCSEER

Table 7

Electoral Rule and Polarization: Variables defined in Table 1. Each column in the table reports Probit coefficients, robust standard errors (in round parentheses, below coefficient estimates) and number of observations (in square parentheses, below) for the measures of polarization in society described in Table 1. The table includes p-values for Chi-square test of joint significance of the control sets described in Table 1. The marginal effects and p-values reported refer to the specification employing the Ethnic Fractionalization Index of Alesina et al. (2002). * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

	PROBIT								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Plurality Rule	Plurality Rule	Plurality Rule	Plurality Rule	Plurality Rule	Plurality Rule	Plurality Rule	Plurality Rule	Plurality Rule
Ethnic Fractionalization Index	1.071	0.997	0.351	0.186	0.749	0.200	0.877	0.133	1.051
	(0.488)**	(0.565)*	(0.611)	(0.65)	(0.572)	(0.66)	(0.518)*	(0.638)	(0.565)*
	[109]	[109]	[109]	[109]	[109]	[109]	[108]	[108]	[96]
Ethno-Linguistic Fractionalization Index 1960	1.481	1.031	0.651	0.065	0.966	0.392	1.205	0.566	1.357
	(0.479)***	(0.541)*	(0.588)	(0.650)	(0.553)*	(0.696)	(0.513)**	(0.621)	'(0.540)**
	[95]	[95]	[95]	[95]	[92]	[92]	[95]	[95]	[93]
Polarization (alpha = 4/5)	2.716	2.336	1.493	1.248	2.426	1.294	2.690	1.224	2.809
	(1.588)*	(1.844)	(1.788)	(2.008)	(1.815)	(1.948)	(1.698)	(1.861)	(1.748)
	[108]	[108]	[108]	[108]	[108]	[108]	[107]	[107]	[95]
Linguistic Fractionalization Index	0.94	0.726	-0.251	-0.594	0.496	-0.296	0.649	-0.218	0.901
	(0.427)**	(0.462)	(0.576)	(0.614)	(0.464)	(0.630)	(0.461)	(0.604)	(0.492)*
	[104]	[104]	[104]	[104]	[104]	[104]	[103]	[103]	[93]
Control Sets									
Legal Origin		Included [0.002]		Included [0.002]					
Regional Dummies			Included [0.048]	Included [0.031]		Included [0.312]		Included [0.242]	
Colonial Origin					Included [0.000]	Included [0.001]			
Religion							Included [0.003]	Included [0.026]	
Log(Real GDP) in 1960									Included [0.115]
Marginal Effect at Mean from Partly Free to Not Free Status	0.408	0.376	0.133	0.070	0.275	0.073	0.331	0.050	0.402