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ACLE

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DEMOCRACY, JUDICIAL ATTITUDES AND HETEROGENEITY: THE CIVIL VERSUS COMMON LAW TRADITION.*

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Abstract

A key feature of legal systems is the law making institution used to aggregate citizens' preferences over the harshness of punishment. While under Case law appellate judges' biases offset one another at the cost of volatility of the law, under Statute law the Legislator chooses certain rules that are biased whenever she favors special interests: i.e., when the preference heterogeneity is sufficiently high and/or the political process sufficiently inefficient. Hence, Case law can be selected only in the last scenario. Instrumental variables estimates based on data from 156 countries, which eventually reformed the transplanted law making rule, confirm this prediction.

Keywords: legal origins, culture, democracy, economic development.

JEL classification: K40; Z1; H11; O10; P16.

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“A legal tradition [...] is not a set of rules of law [...] rather it is a set of deeply rooted, historically conditioned attitudes about [...] the proper organization and operation of a legal system. The legal tradition relates the legal system to the culture of which it is a partial expression” *The Civil Law Tradition*, Merryman (1969), page 2.

1 Introduction

The law and the institutions entrusted with its creation are deeply influenced, in a great part of the world, by either the Civil or the Common law tradition. While the latter originated in England and has, then, been transplanted through colonization into England’s ex-colonies, the former has its roots in Roman law and was imposed by Napoleon to countries in continental Europe and exported by the latter to Latin America, Africa and Asia. Structurally the two traditions operate in very different ways: while Common law recognizes a crucial role to precedents and allows more procedural discretion to lower adjudicating courts, Civil law relies on legal codes and bright line adjudication rules. Exploiting these differences and assuming that transplanted institutions remained in place unaffected after independence, the “legal origins” project has provided evidence suggesting that French and socialist Civil law countries display more inefficient governments and courts, less secure investor rights and a stricter market regulation than Common law countries do (see La Porta, Lopez-de-Silanes and Shleifer, [2008]). Yet, legal scholars have recently documented a great wave of convergence and that, for instance, countries where the Common law tradition was transplanted are relying more heavily on statutes (see Zweigert and Kötz, [1998]; Roe, [2004]). What is, therefore, the set of forces justifying, despite all the evidence in favor of Common law, the existence of such dissimilar institutions and their counterintuitive evolution?

This paper lays out a theoretical framework for thinking about these issues, and explores its empirical implications using data on the history of the legal order of 156 countries that received their initial legal tradition externally by a fairly exogenous transplantation process—hereafter transplanted—but then eventually introduced institutions typical of the other tradition. The model builds on recent research on endogenous lobbying (Felli and Merlo, 2006) and Case law (Gennaioli and Shleifer 2007a and b; Fernandez and Ponzetto

2008), and studies the choice between two law-making institutions taken by a benevolent Constitutional table interested in maximizing the expected long run social welfare. This society is divided in groups heterogeneous in their preference for the level of deterrence that a law should impose. Under Case law, such rule is chosen by appellate judges randomly picked from the population and bearing variable costs of overruling the precedent. Under Statute law, instead, it is selected once and for all by a Legislator who bargains with coalitions of the groups facing fixed “collective action” costs and has as outside option the socially optimal rule—i.e., the mean of the groups’ bliss points. Thus, while statutes will always be certain but biased whenever the Legislator signs side contracts, judicial biases will balance one another and induce the expected optimal rule at the cost of volatility. Hence, if the cultural distance between groups is limited, the fixed costs will discourage side contracts and Statute law will prevail. When, instead, such distance is sufficiently high, the Legislator will eventually favor a coalition and select a rule the farther away from the optimal one the less democratic the political process is. In this case, Case law will outperform Statute law for sufficiently low levels of democracy. The model also shows that the use of limited discretion by lower adjudicating courts increases appellate judges’ overruling costs and make Statute law volatile. As a result, a pure Common (Civil) law tradition where Case (Statute) law is used along with flexible (bright line) adjudication rules will endogenously arise. All these patterns stand should appellate judges and/or the Constitutional table be corruptible.

To test the model’s predictions I have collected, for the first time in the literature, data recording the law making institution in place in 156 transplanted countries at independence and in 2000 and four adjudication rules, related to the degree of procedural discretion allowed to lower courts, in place in 98 of the 156 countries at the same points in time. In sharp contrast with the “legal origins” maintained hypothesis, 26 countries have reformed their law-making institution and 91 have reformed the law-making and/or at least one of the adjudication procedures. Consistent with the model, in countries in which Statute (Case) law was transplanted, reforms toward Case (Statute) law are more likely the broader (smaller) is the cultural heterogeneity. Also, moves toward Common law—i.e., Case law and flexible adjudication rules—in countries to which Statute law was imposed are found where the long run quality of the political process is the poorest. Building on evolutionary biology studies

(Ahlerup and Olsson, 2007), I measure the level of cultural heterogeneity with both the genetic distance between the plurality ethnic group in the country which chose the law-making institution and the one in the transplanted country and the ethnic fractionalization in the transplanted country. Following some of the existing literature (see Tabellini, 2010), I code the quality of the political process by the first principal component of the average over the period elapsing between independence and the year 2000 of the variables *Constraints on the Executive* and *Polity* as defined in the data set POLITY IV. Also, the statistical significance of the estimated coefficients increases when I deal with the endogeneity of the ethnic fractionalization and democracy measures with an instrumental variables approach.

The paper most closely related to mine is Fernandez and Ponzetto (2008). They build on a similar set up but assume that the set of lobbies participating to policy making is exogenously given by a random process and that, being selected by corrupted politicians and eventually coerced by powerful litigants, the judiciary is less democratically representative than the legislature.¹ Thus, albeit in the short run Statute law is optimal, in the long run judge-made law becomes superior due to its evolutionary properties. Such result, which is driven by the empirically unreasonable assumption that all groups are equally willing to participate to policy-making (see Wright, [1996]), not only comes short in justifying the observed evolution of legal systems but also fails to highlight the role of cultural heterogeneity. Yet, this is a general drawback of the literature. Indeed, although the comparative merits of Statute and Case law have been debated for centuries,² the present paper constitutes the first attempt to link the welfare properties of the institutions characterizing the two traditions to the cultural and political environment,³ and to implement a full-fledged empirical test of the resulting implications.⁴ My results cast several doubts on the supposed primacy of Common law and suggest that the new “legal origins” project should not only consider the evolving nature of

¹This also means that the Case law is less suited to react to social changes and a mixed system could be optimal when society is facing dramatic mutations (Fernandez and Ponzetto, 2008). Being extremely difficult to find a coherent proxy for the latter, further inquiring this point remains as an agenda for future research.

²Proponents of Statute law (Hobbes, 1681; Bentham, 1891) stress the certainty of statutes; supporters of Case law (Cardozo, 1921; Hayek, 1960) exalt the evolutionary properties of precedents.

³Looking at the 13th century France and England, Glaeser and Shleifer (2002) also study the relation among law making and adjudication institutions; yet, their focus is on the threat of coercion by powerful litigants.

⁴Somehow similar is the work of Balas et al. (2009), who, focusing on adjudication institutions, document that between 1950 and 2000 the procedural formalism in countries cataloged by La Porta et al. (1999) as having an English legal origin diverged from that in countries cataloged as having a French legal origin.

law making and adjudication institutions, but should also consider the fact that legal reforms are driven by forces affecting the performances of economic interest. The rest of the paper is organized as follows. Section 2 identifies the levels of cultural heterogeneity and democracy conducive to a primacy of either Statute or Case law. Section 3 studies the relation between law making and adjudication institutions. Section 4 states the predictions which are tested in section 5; section 6 concludes. The appendix gathers all the proofs and the tables.

2 The Optimal Law-making Institution

I will first introduce the analysis of the underlining regulation problem, which takes its approach from Gennaioli and Shleifer (2007a), and explain how it is performed under Case law and Statute law. Next, I will compare the two institutions. Finally, I will show that the model's message is not upset should some of the key assumptions be relaxed.

The regulation problem.—Consider a society composed by a continuum of citizens whose mass is normalized to one and interested in regulating a harmful action affecting an offender O and a victim V . The offender can take at cost C precautions reducing the probability of an accident from p_N to $p_P = 0$. The harm suffered by V is normalized to unity so that precautions are socially optimal if and only if $p_N - p_P = p_N > C$. Also, the probability of an accident depends on the attributes $a \in [0, 1]$ and $u \in [0, 1]$ which are independently and uniformly distributed in the population of cases. Being $p_N - p_P = \overline{\Delta P} > C$ if $a + u \geq 1$ and $p_N - p_P = \underline{\Delta P} < C$ if $a + u < 1$, the offender should be held liable whenever $a + u \geq 1$.

Each case is adjudicated by a lower court observing only a and acting as a perfect agent of the law-maker. Self interested lower courts are discussed in section 2.2. Damages are so high that they induce the offender to take precautions when she is held liable. Hence, the law-maker's problem reduces to find the level of a —call it A —such that lower courts hold the offender liable if and only if $a \geq A$. Being information imperfect, statistical errors are bound to arise and the offender is mistakenly held liable if $a \geq A$ and $a < 1 - u$ which happens with probability $\int_A^1 (1 - a) da = (1/2)(1 - A)^2$, and mistakenly held not liable if $a < A$ and $a \geq 1 - u$ which happens with probability $\int_0^A ada = (1/2)A^2$. Over (under) precautions bring the fixed marginal cost $\bar{\Lambda} = C - \underline{\Delta P}$ ($\underline{\Lambda} = \overline{\Delta P} - C$) and, consequently, $\lambda = \bar{\Lambda}/\underline{\Lambda}$ is the relative marginal cost of a false positive in terms of a false negative.

A world of biases.—The population is equally split in two groups $i \in I = \{L, H\}$ perceiving the relative cost of a false positive as $\beta_i = \beta_{O,i}/\beta_{V,i}$ with $\beta_{O,i} + \beta_{V,i} = 1, \forall i$. The unconcerned group L has $\beta_L = \lambda\pi$ and the concerned group H has $\beta_H = \lambda/\pi$ with $\pi \in (1, \infty)$. Hence, π is here a measure of cultural heterogeneity—i.e., the extent of disagreement about the perceived harm brought by the action among citizens belonging to groups with different ethnic, religious or political ideologies. This is coherent with an increasing legacy of empirical evidence documenting the systematic differences across cultural groups in their preferences for the harshness of the punishment of actions contrasting with formal and informal norms of conduct.⁵ The loss of welfare relative to the first best for a type i citizen is

$$\Lambda_i(A) = (1/2) [\beta_{O,i}(1-A)^2 + \beta_{V,i}A^2], \quad (1)$$

which is fully characterized by group i 's favorite threshold $\hat{A}_i = \beta_{O,i} = \Gamma(\beta_i)$ with $\Gamma(x) \equiv x(1+x)^{-1}$.⁶ The unconcerned group prefers the lenient $\hat{A}_L = \lambda\pi(1+\lambda\pi)^{-1} \equiv \bar{A}$ while the concerned one the stricter $\hat{A}_H = \lambda(\pi+\lambda)^{-1} \equiv \underline{A}$. Consequently, equation (1) rewrites as:

$$\Lambda_i(A) = (1/2) [\hat{A}_i(1-A)^2 + (1-\hat{A}_i)A^2] \propto (1/2) (A-\hat{A}_i)^2. \quad (2)$$

Under rule A , the loss of social welfare—relative to the first best—is

$$\tilde{\Lambda}(A) = (1/2) [\Lambda_L(A) + \Lambda_H(A)] \propto (1/2) \left(A - E(\hat{A}_i) \right)^2, \quad (3)$$

and the socially optimal rule \tilde{A} is $E(\hat{A}_i)$.⁷ The timing of the events is the following:

1. In $t = 0$, a benevolent Constitutional table chooses between Statute law and Case law comparing the expected long run losses of welfare under the two institutions;

⁵Running public good experiments on comparable participant pools around the world, Herrmann, Thöni, and Gächter (2008) show that the wide heterogeneity in individual willingness to punish free riders is related to cultural biases. Similarly, Glaeser and Sacerdote (2003) provide evidence suggesting that sentences respond to citizenry tastes for vengeance as driven by ethnicity, and Mocan (2010) show that vengeful feelings are stronger in countries that are collectivist or in which the respect of the rule-of-law is weak.

⁶The first best implies that in half of the cases precautions are not taken and the expected cost of accident is $\underline{\Delta P}$ and that, in the other half, precautions are optimally taken and the social cost is C .

⁷ \tilde{A} is weakly greater (strictly lower) than the technologically efficient $A^* = \Gamma(\lambda)$ for $\lambda \leq 1$ ($\lambda > 1$)—see the appendix. At the cost of a much more cumbersome algebra, the cultural groups could have different masses.

2. If Statute law has been chosen, the Legislator selects in $t = 1$ a rule A_S at the end of a bargaining game to be further discussed below; then A_S sticks forever. If Case law has been chosen, an appellate judge randomly picked from the population selects in $t = 1$ an $A_{c,1}$ which guides adjudication until another judge overrules it in $t \geq 2$, turning $A_{c,t-1} = A_{c,1}$ into $A_{c,t}$, and possibly giving rise to a new round of changes.

In evaluating the generality of the set up, three points should be borne in mind: 1. the model applies not only to tort law but to a generic legal typology as long as a is interpreted as the only observable between two signals on the defendant's culpability;⁸ 2. the gist of the analysis goes through even when the population is equally split among a concerned, an unconcerned and an unbiased group—see section 2.2; 3. as discussed in section 2.2, the model's message would survive should the Constitutional table be corruptible.

2.1 Statute Law versus Case Law

Let me start from the characterization of the equilibrium under Case law.

Case law.—*Stare decisis* only binds in so far as it is costly for judges to change the precedent. A judge, inheriting a rule $A_{c,t-1}$ and setting a $A_{c,t} \neq A_{c,t-1}$, can introduce any change in the law provided that she incurs a persuasive effort whose cost rises with the relevance of the doctrine of *stare decisis* $K > 0$ —see the institutional analysis of section 4—and the magnitude of the legal revision. Hence, a type i judge minimizes both the loss she bears as a part of group i when $A_{c,t}$ differs from \hat{A}_i and the one of justifying an $A_{c,t}$ far from $A_{c,t-1}$: $\hat{A}_{c,t}(i) = \arg \max_{A_{c,t}(i)} - (1/2) \left(A_{c,t}(i) - \hat{A}_i \right)^2 - (K/2) \left(A_{c,t}(i) - \hat{A}_{c,t-1} \right)^2$.

The unique and global solution $\hat{A}_{c,t} = \Gamma(K) A_{c,t-1} + [1 - \Gamma(K)] \hat{A}_i$ implies that Case law follows a first order auto-regressive process converging to the distribution with mean \tilde{A} and variance $V(\hat{A}_c) = V(\hat{A}_i) (1 + 2K)^{-1}$. As stressed by Gennaioli and Shleifer (2007b) and Fernandez and Ponzetto (2008), Case law assures unbiasedness at the cost of volatility:

$$E(\tilde{\Lambda}(\hat{A}_c)) \propto (1/2) V(\hat{A}_c) + (1/2) \left(E(\hat{A}_c) - \tilde{A} \right)^2 = V(\hat{A}_i) [2(1 + 2K)]^{-1}.$$

The variance of the long run Case law \hat{A}_c falls with the institutional relevance of precedent K

⁸Here, the cost of a false positive (negative) equals the foregone utility from acting net of the expected harm (the expected harm less the foregone act-utility) measured when conviction is inefficient (efficient).

and increases with the cultural heterogeneity π because the extent of disagreement between groups $(\bar{A} - \underline{A})$ rises with π and $V(\hat{A}_i) = (1/4)(\bar{A} - \underline{A})^2$. Summarizing:

Lemma 1: *Let attribute u be unobservable. Case law evolves as a first-order autoregressive process converging to the ergodic distribution $N(E(\hat{A}_i), V(\hat{A}_i)(1 + 2K)^{-1})$.*

Statute law.—Even if legislation has been interpreted as the sovereign act of the legitimate political authority only (Hobbes, 1681), in reality it also involves the activity of lobbies representing the special interests of subgroups of the population particularly penalized by a social compromise and, *a fortiori*, by the rule selected by a Legislator—i.e., the government, the legislature and the president—captured by an opposing group (Felli and Merlo, 2006). To synthesize at best such interaction between ideology, the quality of political institutions and the law, I build on the seminal work on endogenous lobbying by Felli and Merlo (2006).

Suppose that the Statute law A_s is chosen by a Legislator who bargains with coalitions of the two groups and maximizes a weighted average of the loss of social welfare and the perquisites y from favoring special interests. Her utility is $U(A_s, y) = -(1 - \mu)\tilde{\Lambda}(A_s) + \mu|i|y$, where the adjustment for the number of existing groups avoids that a rise in $|i|$ brings a mechanical bonus to democracy and can be easily eliminated. Also, μ should not be considered as a simple measure of corruption but as being inversely related to the weight that the Legislator is constrained to put on society’s will by the citizenry control or, in other words, an inverse measure of the persistent component of democracy (see Acemoglu and Robinson, [2006]). Such interpretation squares with recent evidence showing that political institutions are the persistent product of long lived cultural traits (see Tabellini, [2008] and [2010]; Guiso, Sapienza, and Zingales, [2009]). To this extent, there is no presumption in the set up that more democratic societies are also less corrupted. Also, as explained in section 2.2 and under reasonable extra assumptions, should the Legislator be selected in a citizen-candidate election the main model’s message would not be upset.

In $t = 1$ each possible coalition l proposes binding contracts to the Legislator over A_s in exchange for y and, if chosen, pays a fixed non sunk “collective action” (Olson, 1965) fee $\Psi > 0$ to make the transfers possible (Mitra, 1999).⁹ These short run costs affect a coalition’s choice in $t = 1$ but do not accrue to the long run social welfare. Should this last

⁹These are costs of “establishing links with politicians, hiring professional lobbyists” (Mitra, 1999) and so on.

assumption be relaxed the model’s message would still stand—see footnote 13 and section 2.2. The Legislator either accepts a side contract or implements the socially optimal rule (see for a similar set up Acemoglu and Robinson, [2006]). These two model’s features constitute the sense in which lobbying is endogenous, and avoid the empirically unsatisfactory menu-auction models’ assumption that all groups are willing to participate to policy-making.

Lobby i ’s utility is $-(1/2) \Lambda_i(A_s) - y$ and coalition $l \in \Omega = \{\{\phi\}, \{L\}, \{H\}, \{L, H\}\}$ is willing to pay for A_s the amount $W_l(A_s, \tilde{A}) = (1/4) \sum_{i \in l} \left[(\tilde{A} - \hat{A}_i)^2 - (A_s - \hat{A}_i)^2 \right] - \Psi$, which is the sum of the maximum individual rational y of each lobby $i \in l$ less the fixed “collective action” fee. The Legislator, first, chooses an A_s for each $l \in \Omega$

$$\hat{A}_s(l) \in \arg \max_{A_s} - (1 - \mu) \tilde{\Lambda}(A_s) + \mu |l| W_l(A_s, \tilde{A}), \quad (4)$$

and then her preferred bargaining coalition

$$\hat{l} \in \arg \max_{l \in \Omega} - (1 - \mu) \tilde{\Lambda}(\hat{A}_s(l)) + \mu |l| W_l(\hat{A}_s(l), \tilde{A}). \quad (5)$$

Therefore, a subgame perfect equilibrium of the endogenous lobbying game is given by a threshold function $\hat{A}_s(l)$ and a coalition \hat{l} . If the Legislator favors special interests, the outcome of the bargaining is a compromise between the socially optimal \tilde{A} and the rules preferred by the lobbies included in the winning coalition. Such compromise is the further away from \tilde{A} the less democratic society is and the higher the cultural heterogeneity is:

Lemma 2.A: *Let attribute u be unobservable. For any coalition $l \in \Omega$, there is a unique optimal threshold $A_s(l_s)$ that solves problem (4):*

$$\hat{A}_s(l) = \left[(1 - \mu) \tilde{A} + \mu \sum_{i \in l} \hat{A}_i \right] (1 - \mu + |l| \mu)^{-1}, \quad (6)$$

where $|l|$ represents the number of lobbies participating to coalition l .

The Legislator, however, favors special interests only if the polarization between groups is so wide that the equilibrium perquisites overcome the losses of social welfare. Indeed:

Lemma 2.B: *Let attribute u be unobservable. There are two levels of cultural heterogeneity $\bar{\pi}$ and $\bar{\bar{\pi}}$, falling with the inverse measure of democracy μ and increasing with the*

“collective action” costs Ψ , such that: 1. $\bar{\pi} \geq \bar{\pi}$; 2. for $\pi \geq \bar{\pi}$ coalitions $\{L\}$ and $\{H\}$ pay Ψ , and for $\pi < \bar{\pi}$ they don’t; 3. for $\pi \geq \bar{\pi}$ the Legislator is indifferent between $\{L\}$ and $\{H\}$ and the loss of social welfare is $(\bar{A} - \underline{A})^2 (\mu^2/8)$, and for $\pi < \bar{\pi}$ the Legislator chooses the outside option and the loss of social welfare is 0; 4. no coalition pays a $\Psi > \bar{\Psi} = 1/16$.¹⁰

The optimal law-making institution.—All in all, for $K < \infty$, Case law can outperform Statute law only when the extent of cultural heterogeneity is sufficiently wide—i.e., $\pi \geq \bar{\pi}$, and:

$$\tilde{\Lambda}(\hat{A}_s) > E(\tilde{\Lambda}(\hat{A}_c)) \leftrightarrow (\bar{A} - \underline{A})^2 (\mu^2/8) > (\bar{A} - \underline{A})^2 [8(1 + 2K)]^{-1} \leftrightarrow \mu^2 > (1 + 2K)^{-1}.$$

This last inequality implies the following comparison between law-making institutions:

Proposition 1: *Let attribute u be unobservable. Statute law performs weakly better than Case law at low levels of cultural heterogeneity—i.e., for $\pi < \bar{\pi}$. For $\pi \geq \bar{\pi}$, there is a level of the inverse measure of democracy $\bar{\mu}(K)$, falling with the relevance of stare decisis K , such that: 1. $\bar{\mu}(\infty) = 0$ and $\bar{\mu}(0) = 1$; 2. Statute law performs better than Case law if the political process is sufficiently efficient—i.e., $\mu < \bar{\mu}(K)$ —and weakly worse otherwise.*

Proposition 1 stresses the basic fact that while Statute law possibly brings the cost of a biased rule, Case law always comes at the cost of a rule that, albeit socially optimal in expectation, is volatile. Hence, whenever side transfers distort the Legislator’s decision, societies sufficiently able to assure the probity of their representatives will embrace Statute law and societies relatively less democratic would go for Case law. When, instead, the cultural distance is relative small— $\pi < \bar{\pi}$ —and the Legislator prefers to implement its outside option, Statute law will always outperform Case law.¹¹ This basic pattern strikingly conflicts with the evolutionary superiority of Case law discussed by Fernandez and Ponzetto (2008). Their result is essentially driven by the assumption that Statute law is the product of the interaction of randomly selected lobbies and so bound to be volatile and, for K sufficiently high, inferior to Case law.¹² Yet, such a set up not only comes short in explaining

¹⁰Here, I am also assuming that the groups cannot commit to remain dormant. Yet, should the Legislator leave to the coalitions at least the expected extra loss from side contracting—i.e., $(\bar{A} - \underline{A})^2 (\mu^2/32)$, the two groups would never agree to remain dormant and the main idea behind Lemma 2 would go on unchanged. In this perspective and given the model’s focus on the *ratio decidendi*, the assumption that the Legislator appropriates the entire willingness to pay of the winning coalition is innocuous.

¹¹If chosen in each and every period, Statute law would become volatile but ex-ante unbiased for $\pi \geq \bar{\pi}$: in this case, however, the same inequality informing proposition 1 would identify the optimal institution.

¹²Clearly enough, the comparison illustrated in proposition 1 would not be upset by social changes that shift the preference distribution because such shocks would not affect the disagreement between groups.

which coalition is willing to bargain with the Legislator but also what the role of cultural heterogeneity is. Proposition 1, instead, makes the very reasonable point that, in a world where the disagreement among citizens is limited, special interests would not bear “collective action” costs in order to distract the Legislator from the maximization of social welfare.¹³

Crucially, as shown in section 2.2, the basic model’s idea—Case law is the optimal law making institution in relatively heterogeneous and/or less democratic societies—stands under a vast array of alternative hypotheses on the objective function of the population, the Constitutional table, the Legislator and the appellate judges. This last set of robustness has not been mentioned above and looks at environments where appellate judges are corruptible or Case law has no evolutionary properties because of fixed costs of changing the precedent.

2.2 Robustness to Alternative Assumptions

Introducing an unbiased group.—Should the population be equally split among the unconcerned group L , the concerned H and an unbiased group E with $\beta_E = \lambda$, the Legislator will again choose an extremist coalition for π sufficiently high. This time, however, the presence of the unbiased group will break the Legislator’s indifference and:

Lemma 3: *Let attribute u be unobservable. For any coalition $l \in \Omega$, there exists a unique optimal threshold $\hat{A}_s(l)$ defined by (6) and there are levels of cultural heterogeneity $\tilde{\pi}_i$ and $\tilde{\tilde{\pi}}_i$ for $\tilde{l} = \{\{L\}, \{H\}\}$ falling with the inverse measure of democracy μ and rising with the “collective action” costs Ψ such that: 1. $\tilde{\tilde{\pi}}_i \geq \tilde{\pi}_i$ for all \tilde{l} ; 2. for $\pi \geq \tilde{\pi}_L$, coalition $\{L\}$ ($\pi \geq \tilde{\pi}_H, \{H\}$) pays Ψ , and for $\pi < \tilde{\pi}_L$ ($\pi < \tilde{\pi}_H$) she does not; 3. for $\lambda \leq 1$ and $\pi \geq \tilde{\tilde{\pi}}_L$ ($\lambda > 1$ and $\pi \geq \tilde{\tilde{\pi}}_H$) the Legislator chooses $\{L\}$ ($\{H\}$) and the loss of social welfare is $(A^* + \underline{A} - 2\bar{A})^2 (\mu^2/18)$ ($(\bar{A} + A^* - 2\underline{A})^2 (\mu^2/18)$), and for $\lambda \leq 1$ and $\pi < \tilde{\tilde{\pi}}_L$ ($\lambda > 1$ and $\pi < \tilde{\tilde{\pi}}_H$) she selects \tilde{A} and the loss of social welfare is 0. No coalition pays a $\Psi > \tilde{\Psi} = 1/27$.¹⁴*

As before, for $K < \infty$ Case law can outperform Statute law if and only if:

$$\tilde{\Lambda}(\hat{A}_s) > E\left(\tilde{\Lambda}(\hat{A}_c)\right) = \left[3(\bar{A})^2 + 3(A^*)^2 + 3(\underline{A})^2 - (\bar{A} + A^* + \underline{A})^2\right] [18(1 + 2K)]^{-1}.$$

¹³Should side transfers and “collective action” fees be also socially wasteful in the long run, the main results would be reinforced. Indeed, statutes would be even less efficient when side transfers are paid. Also, only the algebra (interpretation) but not the message of lemma 2.B would change should the “collective action” cost be paid by each group in a coalition (borne before the Legislator’s decision).

¹⁴I suppose that for $\lambda = 1$ the Legislator inclines for $\{L\}$. The hypothesis is without loss of generality.

This last inequality leads directly to the following proposition:

Proposition 2: *Let u be unobservable. Statute law performs weakly better than Case law at low levels of cultural heterogeneity—i.e., for $\lambda \leq 1$ and $\pi < \tilde{\pi}_L$ or for $\lambda > 1$ and $\pi < \tilde{\pi}_H$. For $\lambda \leq 1$ and $\pi \geq \tilde{\pi}_L$ ($\lambda > 1$ and $\pi \geq \tilde{\pi}_H$), there is a level of the inverse measure of democracy $\tilde{\mu}_L$ ($\tilde{\mu}_H$), falling with the institutional relevance of stare decisis K and with π , such that Statute law performs better than Case law if the political process is sufficiently efficient—i.e., for $\mu < \tilde{\mu}_L$ ($\mu < \tilde{\mu}_H$)—and weakly worse otherwise.*

Cultural heterogeneity has now also an intensive margin: as it rises the threshold of the inverse measure of democracy for which Case and Statute law have equal performances falls. Thus, the main model’s message remains true even when “collective action” costs are zero. The intuition for this result is straightforward once it is noticed that the coalition maximizing the perquisites going to the Legislator is the one leading to the compromise further away from the socially optimal rule. Thus, the Statute law bias, which in this world is the square of the maximum possible distance between the prevailing rule and the socially optimal one, is always greater than the volatility of Case law—i.e., the mean of the squares of the distance between the prevailing rule and the socially optimal one. The same relation turns out to exist between the derivative of the first quantity with respect to π and the same derivative of the second quantity. Even if the following analysis holds true in the enlarged world just studied, I will consider, for sake simplicity, only two groups.

Endogenous collusion proofness.—Consider a world in which the Constitutional table can always reform the law making institution and cares only about side transfers from the two groups. An equilibrium of this more general setting is *collusion proof* if no group is able to outbid the other in order to have the socially suboptimal institution introduced. In the following I will show that the equilibrium described in Proposition 1 is always *collusion proof*.

The equilibrium is *collusion proof* in $t = 0$ because, under a veil of ignorance, each group is faced with a problem in all similar to the one solved by a benevolent Constitutional table. Indeed, the expected long run loss of welfare for each group equals $(1/16) (\bar{A} - \underline{A})^2 (1 + \mu^2)$ under Statute law and $(1/16) (\bar{A} - \underline{A})^2 [1 + (1 + 2K)^{-1}]$ under Case law. Hence, the whole population will prefer Statute law for $\mu^2 < (1 + 2K)^{-1}$ and Case law for $\mu^2 > (1 + 2K)^{-1}$, which means that no offer will be made by any group. The latter is also the case when $t \geq 1$,

$\mu^2 > (1 + 2K)^{-1}$ and so Case law is optimal and in place. In this case, indeed, the identity of the winner under Statute law would be uncertain and no group would find optimal pushing the Constitutional table to have Case law reformed. The situation is different when $t \geq 1$, $\mu^2 < (1 + 2K)^{-1}$ and so Statute law is in place. Now, the group chosen by the Legislator is losing less than she would under Case law and the one not chosen more than she would under Case law. Hence, while the losers are willing to side contract to have Case law introduced, the winners are willing to offer side transfers to have Statute law retained. The appendix shows that the losing group's willingness to pay can be the highest only for $\mu^2 > (1 + 2K)^{-1}$, which cannot be the case. All in all, the key lesson coming from this exercise is that the choices of a self interested Constitutional table are observationally equivalent to those of a benevolent one: I will exploit this crucial result in the empirical section.

Endogenous Legislator Selection.—The model's message will still hold true when the Legislator is selected in a citizen-candidate election (see Felli and Merlo, [2006]) where candidates maximize a weighted average of the two groups' welfare, still attach a higher weight to their own faction's welfare but a not too small weight on the opponent group's welfare—i.e. there is a minimum level of checks and balances or even a minimum credible threat of revolution by the opposing faction. As proofs available from the author show, in equilibrium: 1. only two candidates, one for each group, run to become the Legislator; 2. due to symmetry the two candidates gather the same number of votes; 2. the minimum loss of social welfare under Statute law is obtained for low level of π ;¹⁵ 3. a comparison similar to that illustrated in proposition 1 describes the relative merits of the two law-making institutions.

Alternative Appellate Judges' Objective Functions.—Let me first consider those set ups that preserve the evolutionary properties of Case law summarized in lemma 1. The most discussed in literature (see Gennaioli and Shleifer, [2007a and b]; Fernandez and Ponzetto, [2008]) are those in which: 1. litigation is endogenous; 2. only a subset of cases can give rise to a precedent change; 3. appellate judges are concerned with being overruled by future colleagues; 4. appellate judges are selected by partisan politicians; 5. appellate judges can be bribed or bullied (as in Glaeser and Shleifer, [2002]) by powerful litigants. In all these cases, the basic model's idea will hold steady exactly because Case law will continue to converge to the

¹⁵At sufficiently high level of π , the elected Legislator will accept bribes from the opposing group.

socially optimal rule and have a volatility equal to that reported in lemma 1 multiplied by a function of an extra parameter summarizing other details of the appellate judges’ objective function: i.e., the probability of refining the existing law, the strength of the forward-looking concerns, the volatility of the politicians’ preferences (see for these three cases Fernandez and Ponzetto, [2008]), and the weight attached to side transfers. Particularly interesting is the case in which appellate judges play the endogenous lobbying game seen above. Lemma 1 will still characterize the evolution of judge-made law when side transfers are not very important. Should the latter not be the case, appellate judges would implement a compromise among the precedent, their own cultural group’s bliss point and the one of the other group. Given symmetry, judge-made law will still converge to \tilde{A} but it will have a volatility depending on the weight put on special interests—proofs available from the author.

Even if a wide strand of theoretical literature has formalized the strategic reasons that could possibly induce Case law to converge to optimality, Niblett, Posner, and Shleifer (2010) have found no evidence of convergence of a well defined tort law—the “economic loss rule”—toward an efficient point. Starting from this observation, I close this section looking at a key environment where Case law has no evolutionary properties but has a flexibility advantage due to the fact that appellate judges can introduce new information by distinguishing the precedent. *Stare decisis* requires appellate judges to abide by the holding of the first court, but still allows them to distinguish the precedent by introducing a new adjudication dimension into consideration. This ability to create “complex balancing tests based on marginal trade-offs between different factors” (Fernandez and Ponzetto, 2008) can be easily captured supposing, as in Fernandez and Ponzetto (2008), that eventually the second dimension u becomes observable and appellate judges can implement the optimal two-dimensional rule $B = 1 - a$ at a positive but not excessive fixed cost $K^D > 0$. Focusing on this information advantage of Case law and shutting down overruling, I obtain that:

Lemma 4: *Suppose that $K = 0$, $K^D \in (0, 1/2)$, and that attribute u becomes observable. There always exists a level of cultural heterogeneity π^D increasing with the distinguishing cost K^D such that for $\pi \geq \pi^D$ the optimal two-dimensional rule $B = 1 - a$ is introduced.*

Whenever distinguishing constitutes the key feature of the doctrine of *stare decisis*, Case law is essentially inferior to Statute law so long as ignorance on u does. If the latter becomes

observable, conflicts between groups with opposite biases vanish and all judges agree on the reduction at zero of the errors, provided that cultural heterogeneity is sufficiently high to justify the payment of the fixed charge. In this last scenario, Case law achieves the first best and overcomes Statute law. Again this exercise points in the direction of proposition 1:

Proposition 3: *Suppose that $K = 0$, $K^D \in (0, 1/2)$, and that attribute u becomes observable, Statute law outperforms Case law at low level of cultural heterogeneity—i.e., whenever $\pi < \pi^D$ —and it is strictly worse otherwise—i.e., for $\pi \geq \pi^D$.¹⁶*

Proposition 3 stresses another nice feature of the model: when also appellate judges face fixed costs the model’s idea would be reinforced because Case law will work even worse when the degree of cultural heterogeneity is limited.¹⁷ In the next section I study the relation between law making and adjudication institutions.

3 Rules versus Discretion in Adjudication

Scholars in comparative law (Merryman, 1969; Damaška, 1986; Zweigert and Kötz, 1998; Glendon, Gordon, and Carozza, 1999) see the reliance on broad adjudication principles rather than specific “bright line” rules, as a defining feature of the Common as opposed to the Civil law tradition. In section 2 I solved the model under the maintained assumption that bright line rules of adjudication were always in place—i.e., assuming that the rule selected by the law-maker is strictly respected by lower adjudicating courts. In reality, under broad adjudication rules, lower courts have the right to use a procedurally accepted form of *discretion* and, accordingly, adjudicate a case according to a *ratio-decidendi* slightly different from the one chosen by the law-maker: see Merryman (1969), and the institutional analysis in section 5.2. In this section, I show that this mild procedural *discretion* can emerge as an efficiency attempt to blunt the losses driven by the volatility of Case law.

Lower courts are randomly chosen from the population and maximize $(1/2) (A_{j,t}^F - \hat{A}_i)^2$. Bearing a fixed cost $\theta > (\alpha/2) (\bar{A} - \underline{A} - \alpha) + \epsilon$ with $\epsilon \geq 0$ very small, they can use any

¹⁶The model produces a qualitatively similar pattern when, as in Gennaioli and Shleifer (2007a), appellate judges choose thresholds \underline{B} and \bar{B} such that O is held liable if $a < \hat{A}_c$ and $b \geq \underline{B}$ or $a \geq \hat{A}_c$ and $b \geq \bar{B}$.

¹⁷When appellate judges face, instead, fixed costs of overruling the precedent, there is a π^* such that for $\pi \leq \pi^*$ (for $\pi > \pi^*$) the rule fixed by the first judge sticks forever (judges with opposite biases overrule each other) and the loss of welfare is $(1/8) (\bar{A} - \underline{A})^2$. In this case, Case law is always sub-optimal for $K < \infty$.

de facto rule $A_{j,t}^F$ with $j = \{c, s\}$ whose distance α from the *de jure* rule $A_{j,t}^J$ is lower than $\bar{\alpha} \equiv (\bar{A} - \underline{A}) \min \left\{ 1 - (1 + 2K)^{-1/2}, 2K(1 + 3K + 4K^2)^{-1} \right\}$. As the appendix shows, this assumption implies that: 1. a type H lower court uses $\hat{A}_{j,t}^J - \alpha$ if $\hat{A}_{j,t}^J > \tilde{A} = E(\hat{A}_i)$ and sticks to $\hat{A}_{j,t}^J$ if $\hat{A}_{j,t}^J \leq \tilde{A}$; 2. a type L lower court chooses $\hat{A}_{j,t}^J + \alpha$ if $\hat{A}_{j,t}^J < \tilde{A}$ and sticks to $\hat{A}_{j,t}^J$ otherwise. The loss of social welfare is now proportional to $(1/2) E \left(A_{j,t}^F - \hat{A}_i \right)^2$ where A_j^F is the long run *de facto* rule. I also posit that: 1. Case law is in its steady state before the possible introduction of discretion, which always entails a set up cost $\Theta > 0$; 2. under discretion, in each period, first an appellate judge fixes a precedent and then a lower court adjudicates; 3. a type i appellate judge not only bears the usual justification cost but also cares about the expected distance between the *de facto* rule in period t and \hat{A}_i . The last assumption implies that appellate judges try now to minimize $(1/2) E \left(A_c^F(i) - \hat{A}_i \right)^2 + (K/2) \left(A_{c,t}^J(i) - \hat{A}_{c,t-1}^J \right)^2$, where $E \left(A_c^F(i) - \hat{A}_i \right)^2 = V \left(A_c^F(i) \right) - \left[E \left(A_c^F(i) \right) - \hat{A}_i \right]^2$.

Under discretion, the equilibrium *de jure* Case law is given by: $\hat{A}_{c,t}^J(i) = \Gamma(K) A_{c,t-1}^J + [1 - \Gamma(K)] \left(\hat{A}_i(i) + \tilde{\alpha}/2 \right)$, with $\tilde{\alpha}$ equal to α when $i = L$ and to $-\alpha$ when $i = H$. It follows that $\hat{A}_{c,t}^J(L) > E(\hat{A}_i)$, $\hat{A}_{c,t}^J(H) < E(\hat{A}_i)$ and that now Case law converges to the distribution with mean $E(\hat{A}_i)$ and variance: $\left[V(\hat{A}_i) + \alpha^2/4 + (\bar{A} - \underline{A})(\alpha/2) \right] [(1 + 2K)]^{-1}$. Each appellate judge moves $\hat{A}_{c,t}^J(i)$ nearer to her own bias in order to counteract the action of a lower court with opposite bias; however, discretion more than compensates this strategic bias. Indeed, $A_c^F(i)$ equals $\hat{A}_{c,t}^J(i)$ if the lower court's type is i and $\hat{A}_{c,t}^J(i) - \tilde{\alpha}$ if it is $-i$. This not only implies that the *de facto* rule is unbiased, being $E(\hat{A}_{c,t}^F) = E(\hat{A}_{c,t}^J) + (1/2) \Pr \left[\hat{A}_{c,t}^J > E(\hat{A}_i) \right] (-\alpha) + (1/2) \Pr \left[\hat{A}_{c,t}^J < E(\hat{A}_i) \right] \alpha = E(\hat{A}_i)$, but also that its variance is strictly lower than the variance that Case law would have in the absence of discretion—i.e., $V(\hat{A}_i) [(1 + 2K)]^{-1}$. Hence, the expected loss of social welfare under the pure Common law tradition—i.e., Case law plus discretion in adjudication—is lower than the one under the mixed tradition. Thus, while the latter will be established for $\Theta > \bar{\Theta}$ —with $\bar{\Theta}$ found in the appendix, the former will prevail for $\Theta < \bar{\Theta}$. Germany, Switzerland and the Scandinavian countries are examples of mixed traditions (see footnote 21).

Consider now Statute law, the objective function in (4) rewrites as:

$$- [(1 - \mu)/2] \left(A_s^J + \tilde{\alpha}/2 - \tilde{A} \right)^2 + (\mu/2) \sum_{i \in l} \left[\left(\tilde{A} - \hat{A}_i \right)^2 - \left(A_s^J + \tilde{\alpha}/2 - \hat{A}_i \right)^2 \right] - 2\mu\Psi.$$
The Legislator is always able to foresee the lower courts' actions and neutralize in expectation

the use of discretion choosing $\hat{A}_s^J(l) = \left[(1 - \mu) \tilde{A} + \mu \sum_{i \in l} \hat{A}_i \right] (1 - \mu + |l| \mu)^{-1} - \tilde{\alpha}/2$. The *de facto* rule $A_s^J + \tilde{\alpha}/2$ under the pure Civil law tradition has always an expected value equal to the *de jure* rule prevailing when discretion is forbidden and, when biased, a variance equal to $\alpha^2/2$. Thus, the pure Civil law system is retained for every $\Theta > 0$. All in all, when discretion is introduced, non only proposition 1 continues to hold but I also have that:

Proposition 4: *Let attribute u be unobservable, and the degree of discretion be limited—i.e., $\alpha < \bar{\alpha}$: if Statute law is in place, discretion is never introduced; if instead Case law is in place, discretion is introduced only when the set up cost is sufficiently small—i.e., $\Theta \leq \bar{\Theta}$.*¹⁸

4 Empirical Implications

The basic idea of the theory is that, holding fixed the institutional relevance of precedents, Case law is the optimal law making institution in relatively heterogeneous and/or less democratic societies. This pattern survives under very different hypotheses on the objective function of the population, the Legislator and the appellate judges. Even more crucially, section 2.2 gives a positive characterization to this normative result: even when the institutional design phase can be affected by powerful special interests, a society will adopt the law making institution which is optimal for its level of cultural heterogeneity and democracy.

This implication motivates my first empirical test. Starting from the features of the transplantation wave, Berkowitz, Pistor, and Richard (2003) have introduced the distinction between countries that are *origins*—because they have developed their legal order internally—and countries that are *transplanted*—because they have received their legal order externally either through colonization or by adoption of the tradition considered most advanced at the time.¹⁹ Yet, as the model suggests, transplanted countries penalized by the transplantation match had all the incentives to reform their institutions toward their optimal legal order. Hence, in the presence of switching costs, which are bound to be huge when new legislative

¹⁸Because both the level of heterogeneity for which Statute and Case law bring the same loss of social welfare and the volatility of Case law rise with α , proposition 4 would be overturned for a sufficiently high degree of discretion. Yet, this uncontrolled flexibility does not match the procedurally accepted level studied here.

¹⁹While a pure Common law tradition was transplanted into England's ex colonies, France exported a pure Civil law tradition to continental European countries and from here to their occupancy (Zweigert and Kötz, 1998). Differently from France, Austria and the Soviet Union allowed a higher discretion to adjudicating courts (David et al., 1995). Finally, Denmark, Germany, Sweden, and Switzerland have adopted bright-line adjudication procedures but entrusted a key role to judge-made law (David et al., 1995)—see footnote 21.

power is given to either the legislature or to the judiciary, proposition 1 to 3 can be restated as a prediction on the probability of a reform of the transplanted law making institution as:

Prediction 1: *The likelihood of a reform toward Case (Statute) law in countries to which Statute (Case) law was transplanted will increase (decrease) with the level of cultural heterogeneity and fall (rise) with the quality of political institutions.*

Clearly, in the background of this prediction, there is also the presumption that the institutional relevance of *stare decisis* is not country specific. Scholars in comparative law have classically considered the importance of this institution as a crystallized by-product of the *origins'* legal writings and High Courts' jurisprudence (Damaška, 1986; Zweigert and Kötz, 1998). The British model of precedent is a case in point. From the end of the eighteenth century, the following consensus position prevailed (see Bankowski, MacCormick, and Marshall, [1997]: pp. 315-353): when overruling or distinguishing a precedent, appellate judges should always consider the hierarchical rank of the court which set the precedent, whether or not the precedent was chosen *per incuriam*, and its age. These precise factors have guided the law-making activity of those countries that have been following the English Case law (David et al., 1995: U-107, U-108).²⁰ The German "free law" movement shaped other non-British models of precedents introducing very similar overruling rules (see Grechenig and Gelter, [2007]). This historical facts justify the above mentioned background assumption.

As clarified in section 3, a legal tradition is a well defined bundle of law making and adjudication institutions structurally related by the bias versus volatility trade off. Informed by proposition 4, the second testable prediction deals with the probability of a reform of the whole set of institutions characterizing the transplanted legal tradition and reads as follows:

Prediction 2: *The likelihood of a reform toward Common (Civil) law—i.e., Case law plus flexible (Statute law plus bright line) adjudication procedures—in countries to which Statute (Case) law was transplanted will increase (decrease) with the level of cultural heterogeneity and fall (rise) with the quality of political institutions.*

Next, I will test these two empirical predictions.

²⁰This homogenization was institutionalized in 1833 when the Judicial Committee of the Privy Council was entrusted with the power of unifying the action of the Commonwealth appellate courts. Today, the Committee's decisions are still highly influential even in the eight countries in my sample which have abolished its control role (David et al., 1995). Considering an indicator for non-British models of precedents does not change the qualitative message of the empirical exercise discussed in the following.

5 Civil Law versus Common Law: Evidence

I start with the test of prediction 1, which implies comparing Statute law and Case law.

5.1 *Statute Law versus Case Law: What do the Data Say?*

First of all, I require a sample of reforms from one to the other law making institution and proxies of both the level of cultural heterogeneity and the quality of political institutions.

The dependent variable.—Two are the main data sources: 1. the first volume of the *International Encyclopedia of Comparative Law* written by several illustrious scholars of comparative law—e.g., Conard, Von Mehren, Zweigert—under the harmonizing editorial effort of René David and listed among the references as David et al. (1995); 2. the appendix accompanying Djankov et al. (2003) to which I will refer as Acartürk et al. (2005). The two publications report a detailed description of the history of the legal system and of the sources of private law for 164 countries for which I have sufficient data on the level of cultural heterogeneity and/or of democracy up to 2000. Building on this account, I have coded the law-making rule in place in each country at independence and in 2000 using the following definition:

Definition: *A country uses Case law in a given year if the decisions of a subset of appellate courts, but not only those of the Constitutional one, are considered as a source of private law and treated as binding by lower courts. A country employs Statute law, otherwise.*²¹

The main qualitative message of the empirical exercise—i.e. the signs and the statistical significance of the coefficients—remain unaffected when I alterate the group of countries which received Case law and: 1. I restrict it by including only those countries in which the decisions of all appellate courts are treated as binding; 2. I widen it by adding also those countries in which only the Constitutional-Cassation court’s decisions are considered as binding. I observe that each country switches at most once but not the precise timing of each reform; identifying the latter in order to add a time dimension to the analysis is an agenda for future research. I treat Austria, Denmark, France, Germany, the Soviet Union,

²¹I code Denmark, Germany, Sweden, Switzerland and the UK as exporter of Case law. Germany and Switzerland are two controversial cases. Yet, “the maintenance of the general structure of the BGB [German Civil code] is really the work of *courts*” (Zweigert and Kötz, 1998: pp. 153) which follow the BGB clauses 157, 242 and 826. Similar rules are present in the Swiss Civil Code. Having the two countries as exporter of Statute law does not affect the qualitative message of my results. My codification for the year 2000 is consistent with the one of La Porta et al. (2004): out of the 68 common observations, only seven are coded differently.

Sweden, Switzerland and the United Kingdom as *origins* countries.²² As a consequence, the data set gathers 156 transplanted countries which are listed in Table 1.²³

Ten countries have switched from Statute law to Case law, sixteen switched from Case to Statute law, and 70 (60) countries kept Statute (Case) law. Among these reforms, which can be seen as the upshots of the Coasian bargaining discussed above, some were peaceful, other more agitated. In spite of discussing each of them, I will illustrate the enlightening example of Mexico, which gained independence from Spain in 1821 inheriting also Statute law. After a century of inefficient governments, which flowed into the 1910-1920 revolution, president Venustiano Carranza introduced into the new 1917 constitution a rule known as “compulsory case law” in order to satisfy the rebels’ demand for a lower involvement of politicians into law making (see Gonzales, [2002]). “Under this rule, the decisions pronounced by certain courts become compulsory to courts of the same standing and to lower courts” (David et al., 1995: pp. M-68). In this way, Mexico was able to change the culturally distant principles of the Spanish legislation for the more progressive English system (Gonzales, 2002).

Proxying cultural heterogeneity and democracy.—Testing the model’s predictions also requires building measures of the level of cultural heterogeneity and the quality of political institutions. With regard to the former, I use two proxies. While one measures the cultural heterogeneity within the transplanted country, the other gauges the cultural distance between the ethnic group with the largest share of the population of the country which chose the law-making institution and the corresponding group in the transplanted country.²⁴

This second proxy is intended to capture the cultural distance between the two most influential players at the Constitutional table opened just after independence: the ethnic group who chose and very often exported the law making institution—e.g. the English—

²²Differently from Berkowitz, Pistor, and Richard (2003), I exclude from this group Finland, Norway and the U.S.A. The choice, which does not affect the gist of the results, is due to the fact that the legal system of these countries was set up respectively by Swedish, Danish and English lawyers looking mainly at their native lands’ institutions (David et al., 1995). The experience of the Soviet Union was instead more autonomous.

²³Klerman et al. (2009) claim that Ethiopia, Japan and Thailand chose voluntarily their legal order as “to fit their culture.” Yet, these countries started their post second world war independence history with the legal institutions adopted in the European codes commonly considered as most advanced at the time (David et al., 1995). Excluding from the sample these countries does not change the gist of the empirical exercise.

²⁴Making use of the distance between the plurality ethnic group in the transplanting country and that in the transplanted one produces results almost indistinguishable from those discussed below. Other proxies, like the political polarization or the difference in values surveys’ scores, are available only for smaller samples.

and the aboriginal one who, once gained political autonomy, was still facing the influence of the transplanter while attempting to reform legal institutions—e.g. the North Africans of Bahrain. Creating a meaningful measure of the cultural distance between populations is not an easy task. Cavalli-Sforza, Menozzi, and Piazza (1994)—hereafter CMP—suggest that an index of genetic distance, the coancestry coefficient, is a natural choice because it summarizes “the degree of genealogical relatedness of different populations over time. Thus, it can be interpreted as a general metric for average differences in characteristics transmitted across generations” (Spolaore and Wacziarg, 2009) including cultural and moral values. When two populations split apart, their genes start to change due to random genetic drift, natural selection and migration. The coancestry index is the sum of the differences in the frequencies of DNA polymorphisms—i.e., situations in which a DNA sequence exists in at least two different forms or alleles—affected only by random drift between aboriginal populations in place before 1500. Larger values of the coancestry coefficient reflect a longer separation between populations and, thus, a larger difference in cultural characteristics.²⁵

By construction, the coancestry index is also immune from measurement errors and exogenous to all those unobserved historical patterns which affected preferences and political institutions during and after the transplantation experience—i.e., after the post-1500 colonization period. CMP calculated the coancestry coefficient for macro-populations. Hence, following Spolaore and Wacziarg (2009), I proceed in three steps. First, I have identified the plurality ethnic group in the countries I was interested in using ethnic composition data from Alesina et al. (2003) and information from Britannica (2008).²⁶ Next, I have matched ethnic group labels with the macro-populations reported by CMP.²⁷ Finally, in order to simplify

²⁵In support of this view, Desmet et al. (2009) have documented a strong relation between a measure of opinion poll distances, based on answers from the section on perceptions of “life, family and religion and moral” of the World Value Survey, and the coancestry coefficient. Building on this evidence, Guiso, Sapienza, and Zingales (2009) have used the index as an instrument for bilateral trust in trade gravity regressions, and Spolaore and Wacziarg (2009) have employed it as a proxy of family-transmitted characteristics.

²⁶I would obtain similar estimates should I switch to an index of weighted genetic distance—i.e., averaging the genetic distances between the plurality ethnic group in the *origins* country and each ethnic group in the transplanted country and employing as weights the shares of population represented by each ethnic group.

²⁷In particular, I used appendices 2 and 3 of CMP in order to identify the groups sampled. The resulting matching is equal to that used by Spolaore and Wacziarg (2009) except for a few entries—i.e., Egypt, Finland, Hungary, Kenya, Lybia, Malawi, Poland, Tanzania, Tunisia and Uganda—for which the histories of demography in Britannica (2008) suggest different classifications. Should I switch to the Spolaore and Wacziarg (2009) classification the analysis would produce qualitatively similar results.

the interpretation of the results, I have normalized the index obtained in order to have it ranging between 0 and 1. This variable is called *Genetic_Distance*.

CMP also document the strong link between ethnic roots and genetic pools. This link, which is driven by the differentiation of the cultural transmission instruments of populations increasingly distant from the common ancestors, makes the ethnic fractionalization in a country a natural proxy of the “within” cultural heterogeneity. Below, I will use the index *Ethnic* proposed by Alesina et al. (2003) and approximating the probability that two individuals randomly chosen from the population differ in their ethnicity in 2000. Lower ethnic cohesion corresponds to higher values of *Ethnic* and a value of 0 (1) identifies a completely homogeneous (fractionalized) country. The estimates would be similar should I use, instead, the average ethno-linguistic fractionalization index devised by Bruk and Apenchenko (1964) or the first principal component of the linguistic fractionalization (Alesina et al., 2003) and *Ethnic*. These two aggregate variables, however, are available for a much smaller sample. These robustness checks along with those discussed below are available upon request.

Two are the most widely used proxies for the quality of the political process available for most of the countries in the sample and for the post-independence period (see for instance Acemoglu et al., [2008]; Persson and Tabellini, [2009]): *Constraints on the Executive* and *Polity* as defined in the data set POLITY IV (Marshall and Jaggers, 2008). While the former is designed to capture the “institutionalized constraints on the decision making powers of chief executives”, the latter also takes into consideration the competitiveness and openness of the executive recruitment and of the political participation.²⁸ *Constraints on the Executive* varies from 1 (unlimited authority) to 7 (accountable executive) and *Polity* from - 10 (strong autocracy) to 10 (strong democracy). In practice, higher values correspond to better political institutions and the two variables capture two key but somehow different features of the concept introduced in the model above—i.e. the weight that the Legislator is constrained to put on society’s will by the citizenry control. Indeed, while *Constraints on the Executive* is more focused on accountability, *Polity* inglobates also the degree of access to

²⁸Operationally, *Constraints on the Executive* assumes higher values when the holder of executive powers is accountable to the citizenry and/or when the government is constrained by checks and balances or by the rule of law. For what concerns *Polity*, a mature democracy is one in which: 1. political participation is fully competitive; 2. executive recruitment is elective; 3. constraints on the chief executive are substantial.

policy making of the different population interests. Following some of the existing literature (see Tabellini, 2010), I extract from these two imperfect metrics averaged over the period between independence and the year 2000 the first principal component, which is obtained by projecting the multivariate datavectors on the space spanned by the eigenvectors.

The first principal component, called *Pc_Institutions*, summarizes the underlying unobserved concept. In fact, it accounts for the 97% of the variability of the two measures and is almost perfectly correlated with each one and their average. This suggests that the two metrics enter *Pc_Institutions* with approximately equal weights and that there is only one main common dimension of variation. The qualitative message of the empirical exercise illustrated below would remain the same should I: 1. standardize each proxy before extracting the principal component; 2. use just one of the two measures; 3. employ different proxies of democracy available for comparable samples (Vanhanen, 2003; Marshall and Jaggers, 2008). *Conditional independence?*—As clarified by a recent literature on endogenous ethnic group formation (see Michalopoulos, [2008]), neither *Ethnic* nor *Pc_Institutions* can be safely considered exogenous controls. These works build on the two major theories of social evolution: the primordial and the constructive one. While the former contends that ethnicity has deep roots in a country’s geography, the latter has proposed two more recent factors (see also Ahlerup and Olsson, [2007]): 1. the rise of the state with its formal legal order deprived the extended kinship of its *raison d’être*, pushing for a more homogeneous society; 2. European colonizers tried to “divide-and-rule” the new colonies in order to increase the chance of successful exploitation of their natural resources. Also, Acemoglu, Johnson, and Robinson (2001) suggest that the extent to which such extractive strategy was pursued depends upon the adaptability of the colonizers to the climate and to pathogen loads which, in turn, is related to the species richness (see Ahlerup and Olsson, [2007] and references therein).

Thus, given that the the dependent variable lacks time variation and a fixed effects procedure is not viable, it is not difficult to think of unobserved social and geographical factors fostering at the same time the extent of unobserved heterogeneity, the preferences for ethnic homogenization and the quality of the political process. Accordingly, I will first maintain conditional independence and, then, I will turn to an instrumental variables estimator.

The empirical methodology.—The empirical approach is straightforward and prompted di-

rectly by prediction 1: I estimate by maximum likelihood probit models looking at the determinants of the probability of a reform toward Case law in countries that received Statute law, and probit models looking at the determinants of the probability of a reform toward Statute law in countries that received Case law. I crudely control for switching costs including the number of years between independence and 2000—*Time_Independence* (see CIA, [2008]), and estimate the variance-covariance matrix with the observed information matrix. Should I switch to a sandwich estimator handling arbitrary patterns of covariance within individuals, the likelihood function would be more difficult to estimate but the results would be qualitatively similar when convergence of the likelihood maximization routine is obtained.

In judging the adequacy of the embraced strategy, the drawbacks of alternative methodologies should be considered. First, the estimates' message would be similar should I switch to the linear probability model; the latter, however, produces results that may seriously misestimate the magnitude of the effects of IVs and are sensitive to the range of values observed (see Aldrich, Nelson, and Sullivan, [1984]). Second, because transplanted countries could not choose their initial institution, multinomial or ordered models are not viable. Finally, a conceptually different approach would be to run on the whole sample the equation:

$$I_i(t) = \alpha_i + \beta I_i(t-1) + \gamma' \mathbf{x}_i + \delta' \mathbf{x}_i I_i(t-1) + \phi y_i + \varepsilon_i,$$

where $I_i(t)$ is the law making institution in place in 2000, $I_i(t-1)$ the transplanted one, \mathbf{x}_i gathers *Genetic_Distance*, *Ethnic* and *Pc_Institutions*, and y_i is *Time_Independence*. When $I_i(t)$ is one if Statute law was in place in 2000, prediction 1 is tested checking that the coefficients in δ are negative (positive) when $I_i(t-1)$ is interacted with proxies of cultural heterogeneity (democracy). Yet, to assure consistency of the estimates, I would need a strictly exogenous initial assignment and at least five reasonable excluded instruments to test also the overidentifying restrictions.²⁹ The last requirement is extremely hard to meet here.³⁰

Results under conditional independence.—While Table 2 reports the variables' means across the two groups of transplanted countries, Table 3 lists the marginal effects for three different

²⁹Klerman et al. (2009) claim that the transplantation wave was shaped by the colonizers' goals and military powers. Yet, exactly such different technologies make difficult to envision that the choice of colony could have been guided by the desire of imposing the efficient legal order. Only the long run democracy significantly differs across the two groups: yet, as explained below, such gap is mainly driven by a cultural bias.

³⁰Given the existence of huge switching costs, little can be learned, instead, from the coefficients piled in the vector γ because there is no presumption that the transplantation was guided by efficiency concerns.

specifications: the first includes *Genetic_Distance* and *Time_Independence*; the second considers also *Ethnic*, and the third *Pc_Institutions* as well. These figures give the percentage variation in the likelihood of the outcome considered when the control rises by one percentage point and they are, for the most part, consistent with prediction 1.

Indeed, a one-standard-deviation rise in the normalized genetic distance—i.e., 0.29 in columns (5) and 0.31 in column (6)—implies a little less than a thirteen percentage points increase in the likelihood of a reform from Statute to Case law and a little more than a twenty-one percentage points fall in the likelihood of a reform from Case to Statute law when also *Pc_Institutions* is considered. Both coefficients are significant at 5%. The proxy for the “within” cultural heterogeneity, instead, is never statistically significant. Also, contrary to prediction 1, a higher quality of the political process seems to increase the likelihood of a reform from Statute to Case law and decrease the one of a reform from Case to Statute law. This last effect is statistically significant at 1%. Next, I will show that this apparent failure of the model in capturing some key details of the evolution of law making institutions is largely due to the inadequacy of the conditional independence hypothesis.³¹

Relaxing conditional independence.—As already mentioned, the primordial theory of social evolution contends that humans—like other mammals—are by nature nepotistic, favoring kin in the struggle for survival (Ahlerup and Olsson, 2007). Thus, within-country geographical characteristics affecting the variation in skin color—i.e., like differences in altitude, humidity and temperature, have determined over the years the human ability to identify visible difference in the “others”, causating, in turn, the extent of ethnic fractionalization. Moreover, these within-country features have influenced, in the ex-colonies, the transplanter’s attitude toward the type of institutions—i.e., extractive or constructive—to put in place (Acemoglu, Johnson, and Robinson, 2001). Building on these elements, my instrumental variables strategy proceeds in two steps. First, I identify the most likely within-country geographical determinants of *Ethnic* and *Pc_Institutions* omitted in Table 3, then I come up with instruments related to the endogenous controls but conditionally independent from other unobserved within-country determinants of the evolution of the legal system.

³¹The proxy for the switching costs is never statistically significant—neither in Table 3 nor in the remaining tables. Proposition 1 does not exclude a role for interaction terms: yet, when introduced, they are usually not significant for the countries whose probability of reform is either 0 or 0.5 (Ai and Norton, 2003).

Two are the geographical traits I look at: the volatility of precipitation—*Precipitation_SD*, and that of land elevation—*Elevation_SD*—within each transplanted country in 2000. In order to construct each proxy, I aggregate at the country level 1 degree latitude times 1 degree longitude grid cell observations available from the G-Econ Dataset at <http://gecon.yale.edu>. While *Precipitation_SD* is expressed in millimetres of rainfall, *Elevation_SD* is measured in kilometres. The results discussed in the following would be quite similar should I focus, instead, on the standard deviation of the average temperature or the volatility of soil types.³²

By complementing the primordial theory of social evolution with economic reasoning, a paper by Ahlerup and Olsson (2007) provides a first instrument for *Ethnic*. In their model of genetic drift, the authors propose the idea that new ethnic groups endogenously and progressively emerge among peripheral populations as a response to an insufficient supply of public goods. Coherently with this theory, the duration of human settlement has a strong positive association with ethnic diversity. Accordingly, I use as instrument for *Ethnic* the variable *Orig_Time* which is the time from the first uninterrupted settlement by the anatomically modern human—hereafter AMH—in 100,000s years as constructed by Ahlerup and Olsson (2007). The AMH first spread to Africa between 160,000 BP and 135,000 BP. Next, after a first diffusion attempt frustrated by a gigantic volcanic eruption at Toba in Sumatra, the AMH occupied South East Asia and Australia in 65,000 BP, Southern Europe and central Asia in 45,000 BP, North America between 22,000 BP and 10,000 BP, and finally Northern Europe after the retreat of the ice caps around 8,000 BP. Given this peculiar diffusion pattern, it is extremely difficult to envision a systematic relation linking continental natural disasters and geographical restrictions with unobserved within-country geographical factors driving the extent of cultural heterogeneity and/or the quality of political institutions. A similar justification supports the use of the latitude of the country capital—*Latitude*—normalized in order to range between 0 and 1 and collected from the World CIA Factbook (2008). Cashdan (2001) has shown that the correlation between latitude and ethnic diversity is essentially due to climatic variability and habitat diversity. Thus, once I control for the former, the relation with *Ethnic* should pass only through the degree of adaptability of different groups

³²Michalopoulos (2008) argues that, during the agricultural revolution, heterogeneous land endowments generated region specific human capitals and, in turn, the formation of ethnically fractionalized populations.

of humans common to countries at similar vertical distance from the equator.

Turning to the quality of the political institutions, a recent literature informed by cross-cultural psychology (Licht, Goldschmidt, and Schwartz, 2007; Tabellini, 2008), has linked the preservation of the democratic institutions to the emphasis of the prevailing culture on autonomy. “Societies whose cultures emphasize individual uniqueness and view individual persons as moral equals are likely to develop norms that promote societal transparency as a means for social coordination [...]. In contrast, societies [that] view the individual as an embedded part of hierarchically organized groups [...] accommodate exercise of power from above” (Licht, Goldschmidt, and Schwartz, 2007). Being language the central mechanism of cultural transmission, Kashima and Kashima (1998, 2005) have proposed the idea that long lasting grammatical rules are able to summarize the importance of the autonomous control of citizens on their own representatives. In particular, languages that have several second person pronouns modulated according to the social distance among the speakers instill in the subject the respect for hierarchies. Similarly, languages that allow the speaker to drop the first person pronoun are typical of cultural traditions that give more emphasis to the social context relative to the individual. On top of this, I use, as an instrument for *Pc_Institutions*, the indicator *Egalitarianism* which equals 3 if the language spoken by the transplanted plurality group—i.e., the one used for the construction of *Genetic_Distance*—has the two grammatical features just mentioned, 1 if it has just one of the two and 0 otherwise. This time, the exclusion restriction is vindicated by the fact that the vast majority of ex colonies received from the transplanter also their plurality group’s language. Hence, it is extremely unlikely that unobserved geographical determinants of the evolution of legal traditions are in common to the country that chose the law making institutions and the transplanted.³³

Table 4 reports in the lower panel the first stage estimates and in the upper one the second stage IV probit marginal effects. While the evidence about *Genetic_Distance* remains almost unchanged, that regarding *Ethnic* becomes now deeply consistent with prediction 1. A one-standard-deviation increase in the ethnic fractionalization, which is about 0.27, leads to a little less than an eight percentage points rise in the likelihood of a reform from Statute

³³In the group which inherited Statute (Case) law: 1. 73% (53%) of the countries has the plurality group speaking the transplanter’s language; 2. there are 20 (23) different languages. The information for Ethiopia, Haiti, Papua New Guinea, Sierra Leone and Solomon Islands are collected from Britannica (2008).

to Case law in column (1), and a little more than a seventeen percentage points fall in the likelihood of a reform from Case to Statute law in column (2). These coefficients are always significant at 5% or less except in column (5). Finally, the evidence regarding *Pc_Institutions* is qualitatively comparable to that reported in Table 3. An appealing explanation to this is that, when new legislative power is suddenly entrusted to the legislature, the quality of the political process temporarily deteriorates due to the attempts of corruption operated by different cultural groups. In this perspective, further analyses should be repeated in future times in order to shed more light on the issue. Table 4 also shows that the instruments have a coefficient with the expected sign and enter into the first stages in a nice separable form whereby *Latitude* affects mainly *Ethnic*, and *Egalitarianism* explains mainly *Pc_Institutions*. This assures that the attenuation bias induced by the variable with the greatest measurement error does not load on to the other one (see Acemoglu and Johnson, [2005]). Crucially, the exogeneity test, which is a joint test of a zero covariance between the errors of the endogenous controls' equations and the error of the structural equation, confirms that the instruments are exogenous once either *Precipitation_SD* or *Elevation_SD* are considered. This is strongly in tune with the reasoning underlining the embraced identification strategy. Finally, the first stage R^2 confirms that the instruments are relevant.³⁴ Next, I will attack prediction 2.

5.2 *Civil Law versus Common Law: What do the Data Say?*

Djankov et al.'s (2003) analyze procedural rules governing the adjudication of simple legal disputes—i.e., the eviction of a non-paying tenant and the collection of a bounced check—for 109 countries for the year 2000, and report whether: 1. an extensive supreme courts' review of the lower courts' decisions was in place; 2. the judgment was supposed to be on law and not on equity; 3. the regulation of evidence was inquisitorial; 4. the evidence was compulsorily submitted in writing. A consistent body of comparative private law (Merryman, 1969; Zweigert and Kötz, 1998; Glendon, Gordon, and Carozza, 1999) considers the adjudication procedure of a legal system as being a perfect example of the Civil law tradition when all these

³⁴When I switch to a two stage least squares estimator, I cannot reject the overidentification restrictions at a level nowhere lower than 27%. Also, the critical values compiled by Stock and Yogo (2002) for the underidentification test cannot be used here because the IV probit is a highly non linear model.

rules are present, and as being a perfect example of the Common law tradition when no one of them is. Accordingly, I consider these institutions as proxies for bright-line adjudication rules.³⁵ Operationally, I stack one over the other the observations for the eviction of a non-paying tenant and the collection of a bounced check and I define the following four proxy for the existence of bright line rules:³⁶ 1. *Comprehensive_Appeal* equals one if issues of both law and fact can be reviewed in appeal and zero if only new evidence or issues of law can be reviewed, or if there is not appeal; 2 *Judgment_Law* equals one if judgment must be on law only, and zero when they may be based on equity grounds; 3. *Inquisitorial* equals one if the evidence gathering procedure can be considered inquisitorial and zero otherwise;³⁷ 4. *Written_Evidence* has value one if the evidence is mostly submitted to the court in written form—i.e., attachments, affidavits, or other—and zero otherwise.

Building on source detailing the history of the adjudication procedures governing similar commercial cases in the countries that transplanted the legal order into 98 of the 109 countries studied by Djankov et al.’s (2003)—i.e., Acartürk et al. (2005); Campbell (1995); Engelmann (1927); Finlason (1877); Ward and Wragg (2005), I obtain the same four binaries for the first year of independence: *Comprehensive_Appeal_Ind*, *Judgment_Law_Ind*, *Inquisitorial_Ind*, *Written_Evidence_Ind*. I also define the variable *Statute_Ind* (*Statute*) which equals one if the country uses Statute law in the first year of independence (2000). Next, I define the variable *Convergence* as the difference between the sum of *Comprehensive_Appeal_Ind*, *Judgment_Law_Ind*, *Inquisitorial_Ind*, *Written_Evidence_Ind* and *Statute_Ind* and the sum of *Comprehensive_Appeal*, *Judgment_Law*, *Inquisitorial*, *Written_Evidence*, *Statute*.

At this point, it is straightforward to build a binary capturing the evolution of the legal systems toward institutions typical of the Common (Civil) law tradition in countries that received Statute (Case) law: 1. *Common Law* equals one whenever *Convergence* assumes a value strictly greater than one—i.e., in aggregate at least one institution was reformed

³⁵Indeed, while extensive supreme review and written records assure a credible check on discretionary decisions, inquisitorial procedural requirements curbs the parties’ incentive to report noisy and contrasting evidence which calls, in turn, for interpretation of the law (see Damaška, [1986]: pp. 3-6). An explicit limitation to equitable judgments is of similar use (see Merryman, [1969]: pp. 123-127).

³⁶Balas et al. [2009] embrace a similar approach but they interpret the institutions commanding the degree of discretion in adjudication as a measure of formalism of the legal system across different “legal origins”.

³⁷I consider a procedure to be inquisitorial if judges can freely request or take evidence that has not been introduced by the parties, and can refuse to collect or admit requested evidence (see Damaška, [1986]).

toward the pure Common law tradition—and zero otherwise; 2. *Civil Law* equals one whenever *Convergence* assumes a value strictly lower than -1 and zero otherwise. In 18 among the 46 countries that received Statute law, *Common Law* has an observation equal to 1; in 29 among the 52 countries that received Case law, *Civil Law* has an observation equal to 1.

Results.—Table 5 lists the marginal effects relative to the probit models whose dependent variable is either *Common Law* or *Civil Law*. A glance to the statistically significant coefficients in columns (5) and (6) reveals that while the relation between the long run quality of the political process and the likelihood of going toward institutions typical of the Common Law tradition is the one foreseen in prediction 2, the proxies for cultural heterogeneity show an unpredicted sign. Yet, switching to an IV probit immediately reveals the, again, this discouraging evidence is mainly driven by a failure in the conditional independence assumption. Indeed, as the estimates in Table 6 suggest, not only the unreasonable relation between cultural heterogeneity and legal traditions’ evolution is no more statistically significant but the marginal effect of *Pc_Institutions* on the likelihood of *Common Law* becomes even more significant except that in column (3). In particular, a one-standard-deviation rise—i.e., 0.76 in column (1)—in the long run level of democracy reduces the likelihood of a reform from institutions typical of Civil Law to those typical of Common law by a little less than twenty percent. The poor performances of *Pc_Institutions* in explaining the likelihood of *Civil Law*, instead, can be again vindicated with the reasoning presented above. Finally, it is worth to notice that the exogeneity test rejects the endogeneity of the instruments at a level nowhere lower than 9%. Clustering the errors across countries would deliver similar estimates.

At this point, it is reasonable to summarize the evidence saying that the distribution of the key institutions shaping the functioning of actual legal systems is neither fixed nor randomly given. Instead, it is the outcome of a unique historical shock and of the continuous welfare maximizing effort of the society at whole. To the latter extent, the present work constitutes the decisive critique to the “legal origins” literature. Not only the evolution of legal traditions is driven by factor affecting also those economic outcomes we want to explain (see Alesina et al. [2003]; Persson and Tabellini, [2009]), but the La Porta et al.’s (1999) classification is plagued by several inconsistencies. The law-making institution switches studied in section 5.1 are not considered and, among the countries studied in section 5.2, 54% (39%) of the

observations coded by La Porta et al. (1999) as having an English (French) law origin has a value of *Civil Law* (*Common Law*) of one.³⁸ In other words, these countries have reshaped the fundamental structure of their legal order in a direction showing a *de facto* interest in solving the bias versus volatility trade off with rules different from those transplanted.

6 Concluding Comments

This paper has moved some steps toward a theory of “endogenous legal systems”. I have focused on a crucial aspect of the design of a legal system, namely the choice of those institutions that all together can be classified as “Civil law” or “Common law” tradition. Rather than reviewing my results, I will highlight the avenue for further research.

My results leave to the interested econometricians the key task of rewriting the “legal origins” literature. In the lights of the actual analysis, the empirical literature on comparative legal and economic systems should not only consider all the different institutions—i.e., law making and adjudication—characterizing the two traditions, but also the fact that the design of these institutional arrangements is driven by long-lasting cultural features of the society—i.e., the level of cultural heterogeneity and the quality of the political institutions, which affect also the economic performances we are interested in. As an immediate consequence, such an exercise will help us in understanding whether, as claimed by a recent literature (Acemoglu and Johnson, 2005) and contrary to the incomplete markets intuition, contracting institutions, as driven by the prevailing legal institutions, have no first-order effect on long-run economic growth, investment, and financial development.³⁹ All in all, exploring further the selection and evolution of legal institutions is a crucial but challenging task, which requires both a careful collection of data and a solid statistical work.

³⁸Also three non Scandinavian countries coded as having some form of Civil law origin (three countries assigned to the English law group) were using Case (Statute) law over the whole independence period.

³⁹Should the groups weigh preferences aggregation against technological efficiency—i.e. $(A^E - A^*)^2$, the basic comparison would still hold. Hence, for negligible switching costs, we should observe no performance differences among countries in the two traditions, provided that the proxies used capture both cultural biases and technological efficiency. Yet, those employed in the development literature measure only the second dimension. Based on the latter, at low level of π Statute law outperforms Case law because it produces certain and unbiased rules. If, instead, π is sufficiently high and only the long run bias (both the long run bias and volatility) of the law affects the dimension studied, Case (Statute) law is welfare maximizing (provided that the quality of institutions is sufficiently high) because unbiased (certain).

Appendix

Socially Optimal Versus Technologically Efficient Rules

Clearly, $(1/2) (\bar{A} + \underline{A}) \geq A^*$ is equivalent to $\Gamma(\lambda\pi) + \Gamma(\lambda/\pi) \geq 2\Gamma(\lambda)$ or $\lambda(1 + \lambda\pi)(1 + \lambda) + (\pi + \lambda)(\pi + \pi\lambda - 2 - 2\pi\lambda) \geq 0$, which is the case whenever $\lambda(\pi - 1)^2(1 - \lambda) \geq 0$ or $\lambda \leq 1$. Similarly, $(1/2) (\bar{A} + \underline{A}) < A^*$ for $\lambda > 1$. Also, $\frac{\partial}{\partial\pi} (\tilde{A} - \underline{A}) > \frac{\partial}{\partial\pi} (\bar{A} - \tilde{A})$ if $-\frac{\partial A}{\partial\pi} > \frac{\partial \bar{A}}{\partial\pi}$ or $\lambda(\pi + \lambda)^{-2} > \lambda(1 + \lambda\pi)^{-2} \leftrightarrow \lambda > 1$; by the same token, $-\frac{\partial A}{\partial\pi} < \frac{\partial \bar{A}}{\partial\pi}$ for $\lambda \leq 1$. \square

Proof of Lemma 1

The distribution of the judges' bliss points has expectation $(1/2) (\bar{A} + \underline{A})$ and variance $(1/4) (\bar{A} - \underline{A})^2$. Thus, by the properties of the AR(1), Case law converges to the ergodic distribution $N\left(E(\hat{A}_i), V(\hat{A}_i)(1 + 2K)^{-1}\right)$. Finally, $V(\hat{A}_i)$ increases with π because $(\lambda/2) (\bar{A} - \underline{A}) [\Gamma'(\lambda\pi) - \Gamma'(\lambda/\pi)(-1/\pi^2)] > 0$. \square

Proof of Lemma 2.A and 2.B

From (2) and (3) it is immediate to see that the objective function in (4) is strictly concave and the relative necessary and sufficient first order condition is

$$(1 - \mu) [\hat{A}_s(l) - \tilde{A}] + \mu \left[|l| \hat{A}_s(l) - \sum_{i \in l} \hat{A}_i \right] = 0 \quad (\text{A1})$$

The unique solution to (A1) is (6) which rewrites for every possible l as

$$\begin{aligned} \hat{A}_s(\{\phi\}) &= \tilde{A}; & \hat{A}_s(\{L\}) &= (1 - \mu) \tilde{A} + \mu \bar{A}; \\ \hat{A}_s(\{H\}) &= (1 - \mu) \tilde{A} + \mu \underline{A}; & \hat{A}_s(\{L, H\}) &= \left[(1 - \mu) \tilde{A} + \mu (\underline{A} + \bar{A}) \right] (1 + \mu)^{-1} = \tilde{A}. \end{aligned}$$

The equilibrium willingness to pay for each of the last three coalitions are

$$\begin{aligned} W_l(\hat{A}_s(\{L\}), \tilde{A}) &= \frac{1}{4} \left\{ (\tilde{A} - \bar{A})^2 - \left[(\tilde{A} - \bar{A})(1 - \mu) \right]^2 \right\} - \Psi = \\ &= \frac{1}{4} (\tilde{A} - \underline{A})^2 \mu(2 - \mu) - \Psi = W_l(\hat{A}_s(\{H\}), \tilde{A}); \end{aligned} \quad (\text{A2})$$

$$W_l(\hat{A}_s(\{L, H\}), \tilde{A}) = \frac{1}{4} \left\{ (\tilde{A} - \bar{A})^2 + (\tilde{A} - \underline{A})^2 - (\tilde{A} - \bar{A})^2 - (\tilde{A} - \underline{A})^2 \right\} - \Psi = -\Psi.$$

Being $2\tilde{A} = \bar{A} - \underline{A}$, coalition $\{L, H\}$ will not pay the fixed cost and the Legislator will choose among $\{\phi\}$, $\{L\}$ and $\{H\}$. $U(\hat{A}_s(\{\phi\}), \tilde{A}) = -\frac{1-\mu}{2} (\tilde{A} - \tilde{A})^2 = 0$ and

$$\begin{aligned}
U\left(\hat{A}_s(\{L\}), \tilde{A}\right) &= -(1-\mu)\frac{\mu^2}{2}\left(\tilde{A}-\bar{A}\right)^2 + \frac{\mu^2}{2}(2-\mu)\left(\tilde{A}-\bar{A}\right)^2 - 2\mu\Psi = \\
&= \frac{\mu^2}{8}\left(\bar{A}-\underline{A}\right)^2 - 2\mu\Psi = U\left(\hat{A}_s(\{H\}), \tilde{A}\right)
\end{aligned} \tag{A3}$$

Thus, the Legislator is indifferent between $\{L\}$ or $\{H\}$, and both her utility when bribed and the coalitions' willingness to pay rise with μ for $\mu > 0$ and with π being $\partial\left(\bar{A}-\underline{A}\right)^2/\partial\pi > 0$.

In particular, for Ψ small, it exists a π implicitly defined by $(\mu/16)(2-\mu)\left(\bar{A}(\bar{\pi})-\underline{A}(\bar{\pi})\right)^2 = \Psi$, such that—as (A2) suggests—for $\pi \geq \bar{\pi}$ both groups become organized and for $\pi < \bar{\pi}$ they remain dormant. Also, there is a π implicitly defined by $(\mu/16)\left(\bar{A}(\bar{\pi})-\underline{A}(\bar{\pi})\right)^2 = \Psi$, such that—as (A3) suggests—for $\pi \geq \bar{\pi}$ the Legislator chooses either $\{L\}$ or $\{H\}$, and for $\pi < \bar{\pi}$ she chooses \tilde{A} . For every $\mu \leq 1$, $(\mu/16)(2-\mu)\left(\bar{A}(\pi)-\underline{A}(\pi)\right)^2 \geq (\mu/16)\left(\bar{A}(\pi)-\underline{A}(\pi)\right)^2$ and consequently $\bar{\pi} \geq \bar{\pi}$. From $t = 1$ on and for $\pi \geq \bar{\pi}$, the loss of social welfare is $(\mu^2/8)\left(\bar{A}-\underline{A}\right)^2$. No group pays a $\Psi > 1/16$ and the following comparative statics hold:

$$\begin{aligned}
\left(\frac{\mu}{16}\right)(2-\mu)\left[\partial\left(\bar{A}(\bar{\pi})-\underline{A}(\bar{\pi})\right)^2/\partial\pi\right]d\bar{\pi}-d\Psi &= 0 \rightarrow d\bar{\pi}/d\Psi > 0; \\
\left(\frac{\mu}{16}\right)(2-\mu)\left[\partial\left(\bar{A}(\bar{\pi})-\underline{A}(\bar{\pi})\right)^2/\partial\pi\right]d\bar{\pi}+(1/8)(1-\mu)\left(\bar{A}(\bar{\pi})-\underline{A}(\bar{\pi})\right)^2d\mu &= 0 \rightarrow \frac{d\bar{\pi}}{d\mu} < 0; \\
(1/8)\mu^2\left[\partial\left(\bar{A}(\bar{\pi})-\underline{A}(\bar{\pi})\right)^2/\partial\pi\right]d\bar{\pi}-2\mu d\Psi &= 0 \rightarrow d\bar{\pi}/d\Psi > 0; \\
(1/8)\mu^2\left[\partial\left(\bar{A}(\bar{\pi})-\underline{A}(\bar{\pi})\right)^2/\partial\pi\right]d\bar{\pi}+(1/4)\mu\left(\bar{A}(\bar{\pi})-\underline{A}(\bar{\pi})\right)^2d\mu &= 0 \rightarrow d\bar{\pi}/d\mu < 0. \quad \square
\end{aligned}$$

Proof of Lemma 3

The possible coalitions are now $\{\phi\}$, $\{E\}$, $\{L\}$, $\{H\}$, $\{E, L\}$, $\{E, H\}$, $\{L, H\}$, and $\{E, L, H\}$ who will never pay a $\Psi > 0$. The Legislator obtains the following utility levels:

$$\begin{aligned}
U\left(\hat{A}_s(\{\phi\}), \tilde{A}\right) &= 0; & U\left(\hat{A}_s(\{E\}), \tilde{A}\right) &= (\mu^2/2)\left[(\bar{A}+\underline{A}-2A^*)/3\right]^2 - 3\mu\Psi; \\
U\left(\hat{A}_s(\{L\}), \tilde{A}\right) &= (\mu^2/2)\left[(A^*+\underline{A}-2\bar{A})/3\right]^2 - 3\mu\Psi; \\
U\left(\hat{A}_s(\{H\}), \tilde{A}\right) &= (\mu^2/2)\left[(\bar{A}+A^*-2\underline{A})/3\right]^2 - 3\mu\Psi; \\
U\left(\hat{A}_s(\{E, L\}), \tilde{A}\right) &= (1/2)\left[(2\mu^3+\mu^2)/(1+\mu)^2\right]\left[(2\underline{A}-A^*-\bar{A})/3\right]^2 - 3\mu\Psi; \\
U\left(\hat{A}_s(\{E, H\}), \tilde{A}\right) &= (1/2)\left[(2\mu^3+\mu^2)/(1+\mu)^2\right]\left[(2\bar{A}-A^*-\underline{A})/3\right]^2 - 3\mu\Psi; \\
U\left(\hat{A}_s(\{L, H\}), \tilde{A}\right) &= (1/2)\left[(2\mu^3+\mu^2)/(1+\mu)^2\right]\left[(2A^*-\bar{A}-\underline{A})/3\right]^2 - 3\mu\Psi.
\end{aligned}$$

For every π , $\max\left\{\left|\bar{A}-\bar{A}\right|,\left|\bar{A}-\underline{A}\right|\right\} > \left|\bar{A}-A^*\right|$ which implies that coalition $\{L\}$ or $\{H\}$ will always be preferred to $\{E\}$. Also, the Legislator prefers $\{L\}$ to $\{H\}$ if $\left|A^*+\underline{A}-2\bar{A}\right| = 2\bar{A}-A^*-\underline{A} > \bar{A}+A^*-2\underline{A}$ or $\lambda \leq 1$ and $\{H\}$ to $\{L\}$ if $\lambda > 1$. For $\lambda \leq 1$, $\{E, H\}$ is preferred to $\{L, H\}$ —being $2\bar{A}-A^*-\underline{A} > \bar{A}+\underline{A}-2A^*$ —and to $\{E, L\}$ —because

$2\bar{A} - A^* - \underline{A} \geq \bar{A} + A^* - 2\underline{A}$. Yet, the Legislator weakly prefers $\{L\}$ to $\{E, H\}$ for every $\mu \geq 0$ being $2\mu + 1 \leq (1 + \mu)^2$. For $\lambda > 1$, $\{E, L\}$ is preferred to $\{E, H\}$ —because $\bar{A} + A^* - 2\underline{A} > 2\bar{A} - A^* - \underline{A}$ —which, in turn, is preferred to $\{L, H\}$ —because $2\bar{A} - A^* - \underline{A} > 2A^* - \bar{A} - \underline{A}$. Yet, the Legislator prefers $\{H\}$ being $2\mu + 1 \leq (1 + \mu)^2$. The Legislator's utility in favoring $\{L\}$ or $\{H\}$ and the two coalitions' willingness to pay rise with μ and with π —because $\partial \left(A^* + \underline{A} - 2\bar{A} \right)^2 / \partial \pi = 2 \left(A^* + \underline{A} - 2\bar{A} \right) \left[\Gamma'(\lambda/\pi) (-1/\pi^2) - 2\Gamma'(\lambda\pi) \pi \right] = \partial \left(\bar{A} + A^* - 2\underline{A} \right)^2 / \partial \pi > 0$. For Ψ sufficiently small and $\lambda \leq 1$, there exists a $\tilde{\pi}_L$ implicitly defined by $(1/54) \mu (2 - \mu) \left(A^* + \underline{A}(\tilde{\pi}_L) - 2\bar{A}(\tilde{\pi}_L) \right)^2 = \Psi$ such that for $\pi \geq \tilde{\pi}_L$, $\{L\}$ pays the fixed fee and for $\pi < \tilde{\pi}_L$ it remains dormant; by the same token, for $\lambda > 1$, it exists a $\tilde{\pi}_H$ implicitly defined by $(1/54) \mu (2 - \mu) \left(\bar{A}(\tilde{\pi}_H) + A^* - 2\underline{A}(\tilde{\pi}_H) \right)^2 = \Psi$ such that for $\pi \geq \tilde{\pi}_H$, $\{H\}$ pays the fixed fee and for $\pi < \tilde{\pi}_H$ it remains dormant. Also, for $\lambda \leq 1$, there is a $\tilde{\tilde{\pi}}_L$ implicitly defined by $(1/54) \mu^2 \left(A^* + \underline{A}(\tilde{\tilde{\pi}}_L) - 2\bar{A}(\tilde{\tilde{\pi}}_L) \right)^2 = \Psi$, such that for $\pi \geq \tilde{\tilde{\pi}}_L$ the Legislator chooses $\{L\}$ and, for $\pi < \tilde{\tilde{\pi}}_L$, \tilde{A} prevails; for $\lambda > 1$, there is a $\tilde{\tilde{\pi}}_H$ implicitly defined by $(1/54) \mu^2 \left(\bar{A}(\tilde{\tilde{\pi}}_H) + A^* - 2\underline{A}(\tilde{\tilde{\pi}}_H) \right)^2 = \Psi$, such that for $\pi \geq \tilde{\tilde{\pi}}_H$ the Legislator chooses $\{H\}$ and, for $\pi < \tilde{\tilde{\pi}}_H$, \tilde{A} prevails. Again, $\forall \tilde{l} = L, H, \tilde{\pi}_{\tilde{l}} \geq \tilde{\pi}_{\tilde{l}}$. The loss of social welfare is $(\mu^2/18) \left(A^* + \underline{A} - 2\bar{A} \right)^2$ for $\lambda \leq 1$ and $\pi \geq \tilde{\tilde{\pi}}_L$ and it is $(\mu^2/18) \left(\bar{A} + A^* - 2\underline{A} \right)^2$ for $\lambda > 1$ and $\pi \geq \tilde{\tilde{\pi}}_H$. No group pays a $\Psi > 1/27$. The comparative statics are obtained as above. \square

Proof of Proposition 2

For $\lambda > 1$ the expected losses of welfare under the two institutions are equal for $0 \leq \tilde{\mu}_H^2 =$

$$[2(1 + 2K)]^{-1} \left\{ \left[6(\bar{A})^2 + 6(A^*)^2 + 6(\underline{A})^2 - 2(\bar{A} + A^* + \underline{A})^2 \right] (\bar{A} + A^* - 2\underline{A})^{-2} \right\} \quad (\text{A4})$$

The difference between the numerator and the denominator of the ratio in the brackets is

$$6(\bar{A})^2 + 6(A^*)^2 + 6(\underline{A})^2 - 2(\bar{A} + A^* + \underline{A})^2 - \left[(\bar{A} + A^* + \underline{A}) - 3\underline{A} \right]^2 =$$

$$6(\bar{A})^2 + 6(A^*)^2 - 3 \left[(\bar{A} + A^* + \underline{A})^2 - 2\underline{A}(\bar{A} + A^* + \underline{A}) + (\underline{A})^2 \right] = 3(\bar{A} - A^*)^2 > 0,$$

so that (A4) can be written as $\tilde{\mu}_H^2 = (1/2)(1 + 2K)^{-1} \left\{ 1 + 3(\bar{A} - A^*)^2 (\bar{A} + A^* - 2\underline{A})^{-2} \right\}$.

As a result, the right hand side of (A4) is decreasing with π because

$$\frac{\partial}{\partial \pi} \left(\frac{\bar{A} - A^*}{A + A^* - 2\underline{A}} \right)^2 < 0 \leftrightarrow \frac{\partial \bar{A}}{\partial \pi} (\bar{A} + A^* - 2\underline{A}) - \left(\frac{\partial \bar{A}}{\partial \pi} - 2 \frac{\partial A}{\partial \pi} \right) (\bar{A} - A^*) < 0 \leftrightarrow$$

$$\leftrightarrow \frac{2\lambda}{(1 + \pi\lambda)^2} \left(\frac{\lambda}{1 + \lambda} - \frac{\lambda}{\pi + \lambda} \right) < \frac{2\lambda}{(\pi + \lambda)^2} \left(\frac{\lambda\pi}{1 + \lambda\pi} - \frac{\lambda}{1 + \lambda} \right) \leftrightarrow \pi + \lambda < 1 + \lambda\pi \leftrightarrow \lambda > 1.$$

A similar analysis applies to the $\lambda \leq 1$ case and it is, therefore, omitted. In this case, the expected loss of welfare is equal under Statute law and Case law for

$$\tilde{\mu}_L^2 = (1/2) (1 + 2K)^{-1} \left[1 + 3 \left(A^* - \underline{A} \right)^2 \left(A^* + \underline{A} - 2\bar{A} \right)^{-2} \right] \geq 0. \quad \square$$

Endogenous Collusion Proofness

In $t \geq 1$ and for $\mu^2 < (1 + 2K)^{-1}$, Statute law is optimal and in place. Given symmetry we can just look at the case in which L has been chosen. The *ex post* losses of welfare for group H and L are $(1/8) (1 + \mu)^2 \left(\bar{A} - \underline{A} \right)^2$ and $(1/8) (1 - \mu)^2 \left(\bar{A} - \underline{A} \right)^2$. Hence, coalition H is unable to offer, in order to have the Constitutional table introducing Case law, a transfer bigger than the one that coalition L is willing to pay in order to retain Statute law.

This is because $\Lambda_H \left(\hat{A}_s \right) - E \left(\Lambda_L \left(\hat{A}_c \right) \right) < E \left(\Lambda_L \left(\hat{A}_c \right) \right) - \Lambda_L \left(\hat{A}_s \right)$ or equivalently $0 < \left[1 + \mu^2 + 2\mu - 1 - \frac{1}{1+2K} \right] \frac{\left(\bar{A} - \underline{A} \right)^2}{8} < \left[1 + \frac{1}{1+2K} - 1 - \mu^2 + 2\mu \right] \frac{\left(\bar{A} - \underline{A} \right)^2}{8}$ or $\mu^2 < (1 + 2K)^{-1}$. \square

Proof of Lemma 4 and Proposition 3

A type $\{H\}$ judge faced with a type $\{L\}$'s precedent distinguishes to the first best if $-K^D \geq -(1/2) \left(\bar{A} - \underline{A} \right)^2$. By the same token, a type $\{L\}$ judge faced with a type $\{H\}$'s precedent distinguishes to the first best if $2K^D \leq \left(\bar{A} - \underline{A} \right)^2$. Being $\partial \left(\underline{A} - \bar{A} \right)^2 / \partial \pi > 0$ and provided that $K^D \leq 1/2$, there exists a π^D rising with K^D such that every judge finds it worthy to introduce the second dimension for $\pi \geq \pi^D$. The expected loss of social welfare under Case law for $\pi < \pi^D$ is $(1/8) \left(\bar{A} - \underline{A} \right)^2$ which is always weakly greater than the one under Statute law. Thus, for $\pi < \pi^D$ Statute law is weakly better than Case law and, for $\pi \geq \pi^D$, Case law outperforms Statute law because it achieves the first best. \square

Proof of Proposition 4

Lower courts of type H and L will make use of discretion respectively when:

$$\left(\hat{A}_{j,t}^J - \underline{A} \right)^2 \geq \left(\hat{A}_{j,t}^J - \alpha - \underline{A} \right)^2 + 2\theta \leftrightarrow \hat{A}_{j,t}^J \geq (2\alpha)^{-1} \left(2\theta + \alpha^2 \right) + \underline{A}; \quad (\text{A5})$$

$$\left(\hat{A}_{j,t}^J - \bar{A} \right)^2 \geq \left(\hat{A}_{j,t}^J + \alpha - \bar{A} \right)^2 + 2\theta \leftrightarrow \hat{A}_{j,t}^J \leq -(2\alpha)^{-1} \left(2\theta + \alpha^2 \right) + \bar{A}. \quad (\text{A6})$$

From (A5) and (A6) it follows that a type H (L) lower court uses discretion if and only if $\hat{A}_{j,t}^J > E \left(\hat{A}_i \right)$ ($\hat{A}_{j,t}^J < E \left(\hat{A}_i \right)$) and $\theta > \bar{\theta} \equiv (\alpha/2) \left[\left(\bar{A}(\pi) - \underline{A}(\pi) \right) - \alpha \right]$; $\bar{\theta} > 0$ being $\alpha < (1/2) \left(\bar{A} - \underline{A} \right)$. A type i appellate judge's objective function is: $-2K \left(A_{c,t}^J(i) - \hat{A}_{c,t-1}^J \right)^2 +$

$$\begin{aligned}
& - \Pr \left[A_{c,t}^J(i) < \tilde{A} \right] \left\{ \left[A_{c,t}^J(i) - A_{c,t}^J(i) - \alpha/2 \right]^2 + \left[A_{c,t}^J(i) + \alpha - A_{c,t}^J(i) - \alpha/2 \right]^2 \right\} + \\
& - \Pr \left[A_{c,t}^J(i) > \tilde{A} \right] \left\{ \left[A_{c,t}^J(i) - A_{c,t}^J(i) + \alpha/2 \right]^2 + \left[A_{c,t}^J(i) - \alpha - A_{c,t}^J(i) + \alpha/2 \right]^2 \right\} + \\
& - \Pr \left[A_{c,t}^J(i) < \tilde{A} \right] \left[A_{c,t}^J(i) + \alpha/2 - \hat{A}_i \right]^2 - \Pr \left[A_{c,t}^J(i) > \tilde{A} \right] \left[A_{c,t}^J(i) - \alpha/2 - \hat{A}_i \right]^2.
\end{aligned}$$

Consider first a type L appellate judge, she will choose an $A_{c,t}^J(L) > \tilde{A}$ whenever the first order condition is met and the corner \tilde{A} is not a solution or

$$\hat{A}_{c,t}^J(L) - \alpha/2 - \bar{A} + K \left(\hat{A}_{c,t}^J(L) - \hat{A}_{c,t-1}^J \right) = 0; \quad (\text{A7})$$

$$\tilde{A} + \alpha/2 - \bar{A} + K \left(\tilde{A} - \hat{A}_{c,t-1}^J \right) < 0 \leftrightarrow \alpha < \left(\bar{A} - \underline{A} \right) - K \left(\bar{A} + \underline{A} - 2\hat{A}_{c,t-1}^J \right). \quad (\text{A8})$$

Symmetrically a type H judge will fix an $A_{c,t}^F(H) < \tilde{A}$ whenever

$$\hat{A}_{c,t}^J(H) + \alpha/2 - \underline{A} + K \left(\hat{A}_{c,t}^J(H) - \hat{A}_{c,t-1}^J \right) = 0; \quad (\text{A9})$$

$$\tilde{A} - \alpha/2 - \underline{A} + K \left(\tilde{A} - \hat{A}_{c,t-1}^J \right) > 0 \leftrightarrow \alpha < \left(\bar{A} - \underline{A} \right) - K \left(\bar{A} + \underline{A} - 2\hat{A}_{c,t-1}^J \right). \quad (\text{A10})$$

Conditions (A7) and (A9) imply that Case law follows an AR(1) process converging to the ergodic distribution with variance $(1 + 2K)^{-1} \left[(1/4) \left(\bar{A} - \underline{A} \right)^2 + \alpha^2/4 + (\alpha/2) \left(\bar{A} - \underline{A} \right) \right]$ and mean $E \left(\hat{A}_i \right)$. If Case law is mature, conditions (A8) and (A10) are always met being $\alpha < \bar{\alpha} < \left(\bar{A} - \underline{A} \right)$, and \tilde{A} is not a solution being $\tilde{A} - \bar{A} < 0$ ($\tilde{A} - \underline{A} > 0$) when $i = L$ ($i = H$). As a consequence, $A_{c,t}^J(L) > \tilde{A}$ and $A_{c,t}^J(H) < \tilde{A}$. Let $\tilde{\alpha}$ be the random variable equal to 0 when appellate and lower courts are of the same type and to $-\alpha$ (α) if $i = L$ ($i = H$) and the adjudicating court is of type H (L). The variance of the *de facto* rule equals

$$\begin{aligned}
& V \left(\hat{A}_{c,t}^J(L) \right) + V \left(\tilde{\alpha} \right) + 2Cov \left(\hat{A}_{c,t}^J(L) + \tilde{\alpha} \right) = V \left(\hat{A}_{c,t}^J(L) \right) + E \left(\tilde{\alpha}^2 \right) + 2E \left(\hat{A}_{c,t}^J(L) \tilde{\alpha} \right) = \\
& = \frac{1}{1+2K} \left[\frac{\left(\bar{A} - \underline{A} \right)^2}{4} + \frac{\alpha^2}{4} + \frac{\alpha \left(\bar{A} - \underline{A} \right)}{2} \right] + \frac{\alpha^2}{2} - \frac{\alpha \left(\bar{A} - \underline{A} \right)}{2(1+K)} - \frac{\alpha^2}{2(1+K)} = \\
& = \frac{V \left(\hat{A}_i \right)}{1 + 2K} + \frac{\alpha^2 (1 + 3K + 4K^2)}{4(1 + K)(1 + 2K)} - \frac{\alpha \left(\bar{A} - \underline{A} \right) K}{2(1 + K)(1 + 2K)} < \frac{V \left(\hat{A}_i \right)}{1 + 2K}. \quad (\text{A11})
\end{aligned}$$

The last inequality in (A11) is true because $\alpha < \bar{\alpha} \leq 2K(1 + 3K + 4K^2)^{-1} \left(\bar{A} - \underline{A} \right)$. The pure Common law tradition is introduced if $\Theta < \bar{\Theta} \equiv (1/2) \left[V \left(\hat{A}_i \right) [1 + 2K] - V \left(\hat{A}_{c,t}^F \right) \right]$

with $\bar{\Theta} > 0$. Also, if Statute law outperforms Case law, it has to be true that $\mu^2 V(\hat{A}_i) < \min \left\{ \left[V(\hat{A}_i) + \alpha^2/4 + (\bar{A} - \underline{A})(\alpha/2) \right] [(1 + 2K)]^{-1}, V(\hat{A}_i) (1 + 2K)^{-1} \right\}$. Thus, $\alpha < \left[1 - (1 + 2K)^{-1/2} \right] (\bar{A} - \underline{A}) < (1 - \mu) (\bar{A} - \underline{A})$ and the maximum (minimum) value of the *de facto* rule when coalition L (H) wins is always lower (bigger) than \bar{A} (\underline{A}) being $\hat{A}_s^F(L) = (1 - \mu) \bar{A} + \mu \underline{A} + \alpha < \bar{A} \leq 1$ ($\hat{A}_s^F(H) = (1 - \mu) \bar{A} + \mu \underline{A} - \alpha > \underline{A} \geq 0$). \square

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Tables

Table 1: Sample

Albania; Algeria; Anguilla*; Antigua; Argentina*; Australia*; Bahrain*; Bangladesh*; Barbados; Belgium*; Belize*; Benin; Bermuda*; Bolivia*; Botswana*; Brazil*; British Virgin Island*; Brunei; Bulgaria*; Burma; Burkina Faso; Burundi; Cameroon; Canada*; Cayman*; Central African Republic; Chad; Chile*; China*; Colombia*; Comoro; Congo; Costa Rica*; Cote D'Ivoire*; Croatia*; Cuba; Cyprus*; Czech Republic*; Dominica; Dominican Republic*; Ecuador*; Egypt*; El Salvador*; Equatorial Guinea; Estonia*; Ethiopia; Falkland Island; Fiji; Finland*; Gabon; Gambia; Georgia*; Ghana*; Gibraltar*; Greece*; Grenada*; Guatemala*; Guinea; Guyana; Haiti; Honduras*; Hong Kong*; Hungary*; Iceland*; India*; Indonesia*; Iran; Iraq; Ireland*; Israel*; Italy*; Jamaica*; Japan*; Jordan*; Kazakhstan*; Kenya*; Khmer Republic; Korea Republic*; Kuwait*; Laos; Latvia*; Lebanon*; Lesotho; Liberia; Libya; Liechtenstein; Lithuania*; Luxembourg*; Malagasy Republic/Madagascar; Malawi*; Malaysia*; Mali; Malta*; Mauritania; Mauritius; Mexico*; Monaco*; Montserrat; Morocco*; Namibia*; Nauru; Nepal; Netherlands*; New Zealand*; Nicaragua; Niger; Nigeria*; Norway*; Pakistan*; Panama*; Papua New Guinea; Paraguay*; Peru*; Philippines*; Poland*; Portugal*; Qatar; Romania*; Rwanda; St. Kitts and Navis; St. Lucia; St. Vincent*; Senegal*; Seychelles; Sierra Leone; Singapore*; Slovenia*; Solomon Island; Somalia; South Africa*; Spain*; Sri Lanka*; Sudan; Swaziland*; Syria; Taiwan*; Tanzania*; Thailand*; Togo; Tonga; Trinidad and Tobago*; Tunisia*; Turkey*; Turks and Caicos*; Uganda*; Ukraine*; United Arab Emirates*; USA*; Uruguay*; Vatican; Venezuela*; Vietnam*; Western Samoa; Zaire; Zambia*; Zimbabwe*.

Note: 1. Only those countries followed by an asterisk are in the sample used in table 5 and 6.

Table 2: Variables – Summary Statistics

		<i>Panel A: Main Controls</i>				
Sample	Statistic	<i>Genetic_Distance</i>	<i>Ethnic</i>	<i>Pc_Institutions</i>	<i>Time_Independence</i>	
Statute law (62 countries)	Mean	0.504	0.459	- 0.373	103.613	
	Standard Dev.	0.290	0.263	0.729	75.999	
	Minimum	0	0	- 1.399	7	
	Maximum	1	0.879	1.853	250	
Case law (48 countries)	Mean	0.472	0.481	0.375	74.229	
	Standard Dev.	0.311	0.272	1.107	67.708	
	Minimum	0	0.002	- 1.494	10	
	Maximum	1	0.930	1.853	250	
	T-test	0.59	0.67	0.00	0.03	
Civil law (37 countries)	Mean	0.424	0.389	- 0.059	129.892	
	Standard Dev.	0.268	0.244	0.755	75.241	
	Minimum	0	0.039	- 1.283	7	
	Maximum	1	1.198	1.853	250	
Common law (36 countries)	Mean	0.406	0.453	0.439	83.917	
	Standard Dev.	0.305	0.271	1.130	72.821	
	Minimum	0	0.002	- 1.347	10	
	Maximum	1	0.930	1.853	250	
	T-test	0.71	0.14	0.00	0.00	
		<i>Panel B: Secondary Controls and Instruments</i>				
Sample	Statistic	<i>Precipitation_SD</i>	<i>Elevation_SD</i>	<i>Latitude</i>	<i>Orig_Time</i>	<i>Egalitarianism</i>
Statute law (62 countries)	Mean	55.026	0.055	0.243	57077.42	2.645
	Standard Dev.	40.512	0.067	0.170	52641.12	0.515
	Minimum	6.699	0.001	0	1300	1
	Maximum	210.141	0.315	0.581	135000	3
Case law (48 countries)	Mean	56.263	0.043	0.266	71629.17	1.917
	Standard Dev.	39.705	0.049	0.186	51434.95	0.871
	Minimum	2.857	0.00008	0.011	1200	1
	Maximum	148.709	0.263	0.711	160000	3
	T-Test	0.87	0.28	0.51	0.15	0.00
Civil law (37 countries)	Mean	50.924	0.074	0.297	33432.43	2.784
	Standard Dev.	39.097	0.076	0.179	34267.71	0.476
	Minimum	2.857	0.002	0.022	6000	1
	Maximum	136.654	0.315	0.581	135000	3
Common law (36 countries)	Mean	45.953	0.043	0.309	64172.22	2.056
	Standard Dev.	30.604	0.050	0.188	47510.35	0.854
	Minimum	7.225	0.0004	0.011	1200	1
	Maximum	122.639	0.263	0.711	160000	3
	T-Test	0.39	0.00	0.69	0.00	0.00

Notes: 1. The samples considered to calculate the statistics are those used in tables 4 and 6;
 2. The null hypothesis of the t-test is that the mean of the variable is equal in the two relevant groups.

Table 3: Statute Law versus Case Law - Probit

	(1)	(2)	(3)	(4)	(5)	(6)
	The dependent variable is the likelihood of a reform toward:					
	<i>Case law</i>	<i>Statute law</i>	<i>Case law</i>	<i>Statute law</i>	<i>Case law</i>	<i>Statute law</i>
<i>Genetic_Distance</i>	0.347 (0.112)***	- 0.475 (0.169)***	0.354 (0.115)***	- 0.531 (0.182)***	0.437 (0.202)**	- 0.681 (0.318)**
<i>Ethnic</i>			- 0.018 (0.108)	0.127 (0.173)	- 0.043 (0.160)	- 0.245 (0.245)
<i>Pc_Institutions</i>					0.007 (0.083)	- 0.321 (0.118)***
<i>Time_Independence</i>	0.0008 (0.0004)*	0.0013 (0.0006)**	0.0008 (0.0004)*	0.0012 (0.0006)**	0.0008 (0.0007)	0.001 (0.001)
Estimation	Probit					
Pseudo R ²	0.16	0.16	0.16	0.17	0.10	0.62
Log Pseudo-Likelihood	- 25.222	- 32.746	- 25.203	- 32.059	- 24.606	- 11.051
Number of obs.	80	76	79	74	62	48

Notes: 1. Observed information matrix based standard errors in parentheses;
 2. *** denotes significant at the 1% confidence level; **, 5%; *, 10%.

Table 4: Statute Law versus Case Law - IV Probit

	(1)	(2)	(3)	(4)	(5)	(6)
	The dependent variable is the likelihood of a reform toward:					
	<i>Case law</i>	<i>Statute law</i>	<i>Case law</i>	<i>Statute law</i>	<i>Case law</i>	<i>Statute law</i>
<i>Genetic_Distance</i>	0.676 (0.240)***	- 0.570 (0.110)***	0.875 (0.147)***	- 0.541 (0.259)**	0.529 (0.213)**	- 0.397 (0.061)***
<i>Ethnic</i>	0.286 (0.077)***	- 0.634 (0.122)***	0.861 (0.172)***	- 0.604 (0.289)**	0.067 (0.465)	- 0.641 (0.099)***
<i>Pc_Institutions</i>	0.253 (0.156)	- 0.438 (0.070)***	0.400 (0.250)	- 0.432 (0.145)***	0.138 (0.123)	- 0.394 (0.090)***
<i>Precipitation_SD</i>			- 0.003 (0.0004)***	0.00007 (0.002)		
<i>Elevation_SD</i>					0.791 (0.921)	1.181 (0.181)***
	First Stage for <i>Ethnic</i>					
<i>Latitude</i>	- 0.955 (0.265)***	- 0.631 (0.239)**	- 1.141 (0.356)***	- 0.649 (0.272)**	- 0.927 (0.285)***	- 0.633 (0.227)***
<i>Orig_Time</i>	1.30e ⁻⁰⁶ (8.67e ⁻⁰⁷)	2.70e ⁻⁰⁶ (8.55e ⁻⁰⁷)***	1.12e ⁻⁰⁶ (8.99e ⁻⁰⁷)	2.70e ⁻⁰⁶ (8.65e ⁻⁰⁷)***	1.36e ⁻⁰⁶ (9.02e ⁻⁰⁷)	2.87e ⁻⁰⁶ (8.18e ⁻⁰⁷)***
<i>Egalitarianism</i>	- 0.0003 (0.069)	- 0.087 (0.045)*	- 0.010 (0.070)	- 0.089 (0.046)*	- 0.002 (0.070)	- 0.082 (0.043)*
R ² in the First Stage	0.34	0.45	0.35	0.45	0.34	0.51
	First Stage for <i>Pc_Institutions</i>					
<i>Latitude</i>	0.073 (0.723)	1.157 (0.930)	1.198 (0.949)	1.347 (1.058)	0.465 (0.763)	1.161 (0.934)
<i>Orig_Time</i>	- 7.77e ⁻⁰⁶ (2.37e ⁻⁰⁶)***	- 0.00001 (3.33e ⁻⁰⁶)***	- 6.70e ⁻⁰⁶ (2.40e ⁻⁰⁶)***	- 0.00001 (3.37e ⁻⁰⁶)***	- 6.90e ⁻⁰⁶ (2.42e ⁻⁰⁶)***	- 0.00001 (3.36e ⁻⁰⁶)***
<i>Egalitarianism</i>	- 0.244 (0.188)	- 0.577 (0.174)***	- 0.187 (0.187)	- 0.561 (0.181)***	- 0.265 (0.186)	- 0.584 (0.175)***
R ² in the First Stage	0.36	0.49	0.39	0.50	0.38	0.50
Other Controls	<i>Time_Independence</i>					
Estimation	IV Probit					
Exogeneity test	0.05	0.00	0.12	0.10	0.10	0.17
Log Likelihood	- 69.841	- 51.188	- 67.382	- 51.531	- 67.387	- 47.627
Number of Obs.	62	48	62	48	62	48

Notes: 1. Observed information matrix based standard errors in parentheses;
 2. *** denotes significant at the 1% confidence level; **, 5%; *, 10%;
 3. Control variables used in the second stage are also included in the first stage;
 4. In the exogeneity test row I report the p-value of a joint test of a zero covariance between the errors of the endogenous controls' equations and the error of the structural equation.

Table 5: Civil Law versus Common Law - Probit

	(1)	(2)	(3)	(4)	(5)	(6)
	The dependent variable is the likelihood of a reform toward:					
	<i>Common law</i>	<i>Civil law</i>	<i>Common law</i>	<i>Civil law</i>	<i>Common law</i>	<i>Civil law</i>
<i>Genetic_Distance</i>	0.270 (0.179)	0.253 (0.175)	0.279 (0.179)	0.356 (0.189)*	0.120 (0.242)	0.396 (0.219)*
<i>Ethnic</i>			- 0.298 (0.224)	- 0.306 (0.203)	- 0.430 (0.243)*	- 0.093 (0.281)
<i>Pc_Institutions</i>					- 0.180 (0.099)*	- 0.022 (0.058)
Other Controls	<i>Time_Independence</i>					
Estimation	Probit					
Pseudo R ²	0.03	0.01	0.04	0.03	0.08	0.05
Log Pseudo-Likelihood	- 57.045	- 71.028	- 56.158	- 68.476	- 43.983	- 46.975
Number of obs.	92	104	92	102	74	72

Notes: 1. Observed information matrix based standard errors in parentheses;
2. *** denotes significant at the 1% confidence level; **, 5%; *, 10%;
3. There are two observations for country; one refers to the eviction of a nonpaying tenant and the other to the collection of a bounced check.

Table 6: Civil Law versus Common Law - IV Probit

	(1)	(2)	(3)	(4)	(5)	(6)
	The dependent variable is the likelihood of a reform toward:					
	<i>Common law</i>	<i>Civil law</i>	<i>Common law</i>	<i>Civil law</i>	<i>Common law</i>	<i>Civil law</i>
<i>Genetic_Distance</i>	0.024 (0.266)	0.323 (0.301)	0.022 (0.520)	0.354 (0.273)	0.086 (0.330)	0.325 (0.282)
<i>Ethnic</i>	- 0.580 (0.352)	0.176 (0.643)	- 0.586 (0.461)	0.213 (0.480)	- 0.493 (0.423)	0.173 (0.728)
<i>Pc_Institutions</i>	- 0.256 (0.132)**	0.091 (0.074)	- 0.255 (0.303)	0.085 (0.076)	- 0.249 (0.148)*	0.091 (0.098)
<i>Precipitation_SD</i>			0.00005 (0.003)	- 0.001 (0.002)		
<i>Elevation_SD</i>					- 0.813 (1.108)	0.040 (1.329)
	First Stage for <i>Ethnic</i>					
<i>Latitude</i>	- 1.131 (0.197)***	- 0.631 (0.189)***	- 1.417 (0.290)***	- 0.768 (0.204)***	- 1.075 (0.213)***	- 0.648 (0.188)***
<i>Orig_Time</i>	1.86e ⁻⁰⁷ (1.04e ⁻⁰⁶)	2.33e ⁻⁰⁶ (7.77e ⁻⁰⁷)***	- 2.90e ⁻⁰⁸ (1.05e ⁻⁰⁶)	2.06e ⁻⁰⁶ (7.84e ⁻⁰⁷)**	3.26e ⁻⁰⁷ (1.06e ⁻⁰⁶)	2.48e ⁻⁰⁶ (7.82e ⁻⁰⁷)***
<i>Egalitarianism</i>	- 0.017 (0.067)	- 0.097 (0.035)***	- 0.033 (0.068)	- 0.090 (0.035)**	- 0.019 (0.067)	- 0.097 (0.035)***
R ² in the First Stage	0.37	0.52	0.39	0.54	0.37	0.53
	First Stage for <i>Pc_Institutions</i>					
<i>Latitude</i>	- 1.117 (0.566)*	0.854 (0.760)	0.119 (0.819)	1.297 (0.829)	- 0.681 (0.599)	0.903 (0.762)
<i>Orig_Time</i>	- 0.00002 (2.99e ⁻⁰⁶)***	- 0.00002 (3.13e ⁻⁰⁶)***	- 0.00001 (2.96e ⁻⁰⁶)***	- 0.00002 (3.18e ⁻⁰⁶)***	- 0.00001 (2.99e ⁻⁰⁶)***	- 0.00002 (3.17e ⁻⁰⁶)***
<i>Egalitarianism</i>	- 0.655 (0.193)***	- 0.552 (0.140)***	- 0.584 (0.192)***	- 0.574 (0.140)***	- 0.677 (0.189)***	- 0.553 (0.140)***
R ² in the First Stage	0.46	0.56	0.49	0.57	0.48	0.56
Other Controls	<i>Time_Independence</i>					
Estimation	IV Probit					
Exogeneity test	0.64	0.09	0.86	0.12	0.66	0.15
Log Likelihood	- 86.214	- 105.198	- 83.463	- 103.213	- 82.642	- 104.002
Number of Obs.	74	72	74	72	74	72

Notes: 1. Observed information matrix based standard errors in parentheses;
2. *** denotes significant at the 1% confidence level; **, 5%; *, 10%;
3. Control variables used in the second stage are also included in the first stage;
4. In the exogeneity test row I report the p-value of a joint test of a zero covariance between the errors of the endogenous controls' equations and the error of the structural equation.
5. There are two observations for country; one refers to the eviction of a nonpaying tenant and the other to the collection of a bounced check.