Legal Origin, Colonial Origins and Deforestation

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Abstract

This paper investigates whether inherited legacies such as legal origin allow for the explanation of deforestation in 110 developed and developing countries. I hypothesize that differences on deforestation among countries can be attributed to their legal systems. Also, since nearly all common law countries are former English colonies, and nearly all civil law countries were colonized by France, Spain or Portugal, legal origins and colonial history are strongly correlated, so that one can not attribute all the effect of legal system. Overall I find that (i) French civil law countries deforest less than English common law ones in the total sample, in the sample of colonized countries and in the sample of tropical developing countries; (ii) Former French colonies deforest less than previous English colonies. These results are robust when geography features are controlled for since the process of colonization was not random and depended on initial geographic and climatic conditions.

1 Introduction

Recent empirical work shows that countries whose legal systems are based on French civil law differ systematically from those whose legal systems are based on English common law. The Legal Origin Theory of development, mainly developed by La Porta, Lopez-Silanes, Vishny and Shleifer (LLSV—several papers La Porta et al. (1997, 1998, 2008)), investigates the role of legal origin on law and regulation on economic performance. The style of a legal system is influenced by political institutions (legal procedures,...), ideology, broader attitudes and philosophy. These latter features rely on the historical background and the historical institutional framework represented by the legal origin which is defined as "the style of social control on economic life" (La Porta et al., 2008). The main assumption is that some national legal systems are sufficiently similar to others to allow a classification of national legal systems into major families of law, though each country has a particular national legal system because each country has experienced its own changes and its own local circumstances. Despite particular adaptations, some fundamental legal features, shared by a group of countries, have persisted.

The Legal Origins Theory relies on three important conceptual ideas. First, by the eighteenth or nineteenth centuries, Continental Europe, particularly France, and Great Britain had developed separate styles of social control of economic activities as well as the underlying institutions supporting these styles. Second, both these styles and their legal institutions were transplanted by the origin countries to most of the world through colonization, rather "than written from scratch." Third, despite country specific changes, these styles have persisted in addressing the social control of economic life.

This way, this theory suggests that all law in a country is influenced by either the English common law or else the French civil law. The first one originates in the laws of England and has been transposed through conquest and colonization to England's colonies, including the United States, Canada, New Zealand, Australia, and many countries in Africa and Asia. The second one originates in the Roman law. Rediscovered in the eleventh century by the Catholic Church, the civil Roman law shaped the law in many European countries. However, the French civil law developed at the beginning of the nineteenth century after the French Revolution with Napoleon Bonaparte. This French law has been exported to many countries such as Spain, Portugal, Belgium, Italy, and the Netherlands through Napoleon's conquests. Moreover, the French civil law has been transposed to many countries in the world through colonization and conquest by France in the nineteenth century in Oceania, Indochina, Africa, and some Caribbean Islands. Besides, the influence of French civil law has also been implemented in Latin South American countries in the nineteenth century after the independence of the Spanish and Portuguese colonies. Finally, French civil law is now present in many South American, African and Asian countries.

The Legal Origins Theory attributes a heavier role of government in the civil law countries compared with the common law ones. This difference is mainly attributed to historical differences between the two legal traditions (see Glaeser and Shleifer (2002) for a theoretical presentation, and Klerman and Mahoney (2007) and Roe (2007) for a critical view of the Legal Origin Theory). The French civil law had been developed to promote state control and to prevent judges the opportunity for re-interpreting or changing laws. This marginalization of the judiciary helped extend state control of the economy. In contrast, the English common law had been created to protect private property and private freedom against the Crown. Thereby, a system of decentralized law-making with an independent judiciary where judges could interpret and change laws were implemented as effective checks on the government.

The consequences of these differing legal traditions on current economic performances have been broadly studied. For instance, La Porta et al. (1997, 1998) investigates the link between

the law and finance. They show that the law in the civil law system has been designed to keep investors poorly motivated and the stock market less developed, contrary to the common law's protecting and motivating investors. This paper highlights the crucial links between the legal environment and finance, i.e., the nexus between legal institutions of the past and current economic ones. Also, in several studies conducted by LLSV jointly with others, they found that such outcomes as government ownership of banks (La Porta et al., 2002), the burden of entry regulations (Djankov et al., 2002), regulation of labor markets (Botero et al., 2004), and government ownership of the media (Djankov et al., 2003) vary across legal families. They argue that civil law is associated with more government ownership and regulation than common law. This has adverse impacts on markets, such as greater corruption, a larger unofficial economy, and higher unemployment. For instance, La Porta et al. (1999) studies such determinants of political institutions as government performance (provision of public good, effectiveness, government spending). They highlight some political theories to explain the quality of government and assume that legal origin can be a good proxy for these political theories. They argue that the legal origin of law and regulation can predict "inefficient, interventionist and distortionary policies." They show that common law countries are less interventionist, better public good suppliers, more efficient and democratic than civil law countries. Besides, in other studies, the same authors have investigated the link between legal origin, property rights, and contract enforcement. For instance, Djankov et al. (2003) have found that common law is less associated with formalism of judicial procedures than French civil law. In another paper, La Porta et al. (2004) have argued that common law countries enhance their judicial independence which is, in turn, associated with more freedom, better contract enforcement, and greater security of property rights[1]. In all, more than 100 papers have used legal origin as an explanatory variable, and LLSV's papers have been cited more than 2500 times. This paper contributes to that literature by investigating the impact of legal origin on deforestation.

In this series of papers, LLSV and others have explained that legal origin is correlated with a wide range of institutions and policies which could be expected to produce higher rates of deforestation such as corruption, mis-defined property rights, or a weak rule of law in French civil law countries as opposed to common law ones. For this reason, the present paper investigates the role of legal origin on deforestation assuming that the legal system matters in explaining deforestation. The main result is that civil law countries deforest significantly less than common law countries. Nevertheless, the implementation of the each legal system is not exogenous, except for previously colonized countries in which the legal system was transplanted by the colonizer. The differential impact of the French civil law remains significant for the previously colonized. Also, because of the close relationship between colonial history and legal origin, it is difficult to attribute the differences in environmental performance to legal origin as opposed to other aspects of colonial policy. In this sense, the differential impact of the the French civil law could be attributed to French colonial legacies. Fortunately, not all previously colonized countries with a French civil law inheritance were colonized by France, which allows us to test a specific French difference. Former French colonies tend to deforest less than former British, Spanish, or other colonies. This difference can be attributed to forest law legacies inherited from the 1827 French Forestry Code. Finally, since colonization strategies were not random and depended on geographical and climatic conditions, geographic features are controlled for. These results remain significant and robust.

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[1]The seventeenth-century English revolutionary took control of the judiciary away from the Crown, and marginalised the role of the judiciary to prevent it from doing anything other than apply the existing law. The creation of laws and the administration of justice were then separated contrary to France. In this case, legislatures make laws, and independent judges enforce them, without interference from the legislature or the executive.

This paper is organized as follows. Section 2 describes the dataset and variables used in this paper. Section 3 presents the main results and checks for the role of colonial legacies as well as geography. Section 4 provides concluding remarks and points to a interesting possible extension of this study.

2 Data

The core dataset consists of 110 countries which had to meet one condition: having a French civil law origin, a common law origin, or a German civil law origin. However, two other different samples are used here to investigate more deeply the exogeneous role of legal origin and the influence of colonial legacies. The first one is a core dataset of 70 countries which had to meet two other conditions: (1) they are former colonies, (2) they are not located in Europe. The first criterion ensures that legal origin was exogenous and the second one excludes European countries to reflect the difficulty of classifying the colonial history of most European countries such as Italy or Finland for instance. The second sample is a core dataset of 47 countries which had to meet two other conditions: (1) being located in the tropics and (2) having a forest area above one million hectares in 1990.

Table 9 describes the variables. Table 8 indicates which countries are in the core dataset of 110 countries as well as in the two other sub-samples. Deforestation rates have been calculated from various Forest Resources Assessment (FRA) of the Food and Agriculture Organization (FAO). Although forest area data are available since 1960, only data since 1990 is used here, given the lack of reliability of the data before the 1990-FRA. This way, the dependent variable is the four-year average annual rate of deforestation on the sub-periods 1990–1993, 1994–1997, 1998–2001, and 2002–2005.

Legal origin was coded following two classifications. The first coding comes from LLSV's most recent coding (La Porta et al., 2008). The second is a revaluation of this coding in light of a variety of sources[2]. This coding differs from LLSV's coding for five countries which are here classified as "mixed legal origin"[3]. This alternative coding represents hybrid legal systems of the common and civil law whereas four countries were classified by LLSV as common law and one, the Philippines, as civil law. This coding could have had a large effect on the analysis, because all four classified common law countries had deforestation rates significantly higher whereas the Philippines had lower rates than average[4]. Nevertheless, as discussed further below, the main results remain valid even using LLSV's coding.

The colonial origin variables are coded by the dominant colonial power in the period 1750–2009. Though for most countries the coding was relatively straightforward, it was more complicated where the country was colonized by multiple countries. In this latter case, the assumption is that the last colonialist had had the biggest effect on institutional infrastructure at the time of independence[5]. Four categories of formerly colonized countries are created: the groups are the former colonies colonized by (i) France, (ii) England, (iii) Spanish and (iv) other countries (Belgium, the Netherlands, the Ottoman Empire, Portugal, and Spain, Japan or the U.S).

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[2]Basically, the World Legal Systems Websites (http://www.droitcivil.uottawa.ca/world-legal-systems/eng-monde.html) of the University of Ottawa, Canada, is examined.

[3]Four of these countries are former colonies: Zimbabwe, Sri Lanka, the Philippines, and South Africa. Also, Thailand is classified as "mixed legal origin" and as a non-colonized country.

[4]For instance, the average deforestation rate was 0.03% in the core dataset and 0.05% in the sub-sample of tropical countries. In contrast, the four common law countries had a mean deforestation rate of 0.08% whereas the Philippines had a deforestation rate of -0.08%.

[5]Some countries were colonized by joining colonial powers, such as Cameroon, and were coded according to the colonial power of the more populous part (French in the case of Cameroon).

[Table 1]

Table 1 shows that legal and colonial origin are highly correlated. First, all common law countries are former British colonies whereas all former French colonies are of French legal origin. Nevertheless, the correlation between legal and colonial origin is not perfect so that some deviations could be exploited. For instance, all former Spanish colonies have French legal origin countries. These heterogeneities help to investigate whether legal traditions or colonial legacies have a greater influence on current deforestation in former colonized countries.

[Table 2]

Table 2 presents descriptive statistics of deforestation rates between 1990–2005 along the identity of the former colonizer[6]. As can be seen, countries with different legal systems and colonial histories differ significantly in terms of deforestation performance. First, we see that French civil law countries have deforested less between 1990–2005 than common law ones. Second, the former French colonies have deforested less between 1990 and 2005 than the other former colonies[7]. These results seem thus to highlight that legal and colonial legacies could have influenced some current features which, in turn, influence current deforestation.

3 Econometric Results

3.1 Main results

Table 3 presents the results of regressions using the core dataset of 110 countries as well as the sample of 70 former colonies[8]. In all regressions, the dependent variable is the four-year average annual rate of deforestation on the sub-periods 1990–1993, 1994–1997, 1998–2001, and 2002–2005. In the first two columns, the only independent variables are legal origin dummy variables and the omitted category is that of French legal origin.

[Table 3]

As in Table 2, common law countries deforest 0.4% more, on average, than French civil law countries, and this difference is significant at the 1% level (column 1)[9]. This result holds in only previously colonized countries in which the implementation of the legal system is more

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[6]The sample used is of 65 countries formerly colonized by France, Great Britain, Spain or Portugal. The five other former colonies, not presented but in the sample of colonized countries, are: the Democratic Republic of the Congo, Eritrea, Ethiopia, South Korea and Indonesia.

[7]However, the mean of deforestation in former French colonies is not statistically and significantly different from that of the former Spanish colonies.

[8]Diagnostics measures were made about multicollinearity. The variance inflation factor was used. In all specification, none explanatory variable is above the tolerance value of a VIF of 10 (results available upon request).

[9]Note that German civil law system is used to control for the specific feature of this system. In fact, this system is hybrid composing of some elements of French civil law (little independence of judges) and English common law (a strong power of law making for judges) (La Porta et al., 2008). This variable has a positive and robust significant effect suggesting that German civil law countries deforest more than French civil law countries. Moreover since the sample of these countries is of only 13 countries (Austria, Bulgaria, China, Croatia, Germany, Hungary, Japan, Macedonia, Mongolia, Poland, Serbia, Slovenia and South Korea (unique previous colonized countries)), I do not focus on this result. A deeper study should be run to better understand the superiority of French civil law on German civil law for the protection of forest. Indeed, both in France and Germany, a strong forest law, and an efficient and durable forestry management system were implemented during the nineteenth century. This way, the differential effect between these two systems could not be explained by the promotion of a strong forestry system.

exogenous (column 2)[10]. These countries tend to deforest 0.3% more than French civil law countries.

The third column reports a regression with only colonial origin dummies as independent variables on the sample of former colonies (the omitted category is French former colonies). Former British colonies deforest 0.5% more than former French colonies, and this difference is statistically significant at the 1% level. Since all former British colonies are common law ones countries, this result does not allow for the conclusion about the role of legal origin or colonial legacies on deforestation. In addition, former Spanish and other colonies deforest more than former French colonies. This result is important, because all of these countries had received a version of the French civil law from Spain, Belgium, the Netherlands, the Ottoman Empire, or Portugal. Hence, since these former colonies deforest significantly more than former French colonies, it is obvious that legal origin does not suffice to explain the effects of inherited legacies on deforestation. This fact suggests that other aspects of colonial policy are likely to have been more important than legal origin.

Column 4 presents the results of a regression with both legal and colonial origin on the core dataset of 110 developed and developing countries. The coefficient on the common law dummy remains significant whereas the coefficient on the former British colony variable is now non-significant, although positive. These results seems to suggest that legal origin, not colonial origin matters. Moreover, the coefficient of both former Spanish and other colonies remains significantly positive. In this case, colonial origin seems to matter and some French colonial legacies allow for the reduction in deforestation compared to Spanish colonial legacies for instance.

[Table 4]

Table 4 presents the same regressions and adds the five commonly used explanatory variables of deforestation[11]: the lag of forested areas (Rudel et al., 2005; Scrieciu, 2007)[12], the log of GDP[13], the rural population density, the population growth (Cropper and Griffiths, 1994)[14] and the relative price of timber (Arcand et al., 2008)[15] (see Table 9 for more information). All variables are four-year averages, the sub-periods being 1990–1993, 1994–1997, 1998–2001 and 2002–2005. The core dataset is reduced to 87 countries and the former colonies sample

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[10]Non colonized countries were excluded because they are not former colonies so that their legal origin is not exogenous. United States, Canada, Australia and New Zealand are removed from the sample despite they are former British colonies. These four countries are dropped since they are developed countries. Results do not change when these countries are in the sample. In this case, a dummy variable was used (1 for these four countries and 0 otherwise) to control for their specific income effect. Results available upon request.

[11]The results do not change with other control variables such as corruption or the rule of law index provided by ICRG or the World Bank (World Governance Indicators). Results available upon request.

[12]The initial level of forest cover is introduced to control for the path of deforestation. The basic assumption is that deforestation is often associated positively with the initial forest area for three primary reasons: (i) the scarcity effect implies that any remaining forested lands are more preserved; (ii) logging or forest conversion activities are more expensive when forest areas are rare; (iii) non-forested lands (in proportion to total area) are more available to other land uses such as agriculture, cattle ranching, tree plantations or urbanization when forest lands are vast.

[13]The introduction of the squared term of GDP to test the presence of the environmental Kuznets curve does not change the results. Results available upon request.

[14]Demographical effect and, more particularly, population pressures are associated with greater deforestation. The common explanation advanced is that population growth encourages the conversion of forest land to agricultural and other uses by increasing the need for arable land.

[15]The relative price of timber is used to control for economic opportunities for logging activities. The effect is ambiguous. A temporary increase can lead to more deforestation whereas a permanent increase should lead to a promotion of durable forestry management system. Arcand et al. (2008) find ambiguous results concerning the effects of the relative price of timber.

regroups, now, only 61 countries. The previous results concerning the effect of legal and colonial origins remain robust to the introduction of all these variables. All common law countries (previously colonized countries) deforest 0.7% (0.08%) more than French civil law countries between 1990 and 2005.

[Table 5]

Table 5 replicates key regressions from Table 4 using the alternative coding. This coding differs from LLSV's coding and uses hybrid legal systems of the common and civil law for five countries. The results remain identical to those in Table 4. Common law countries experience deforestation rates higher than French civil law countries (0.7% higher), and that difference remains significant when colonial origin is controlled for (column 3). Again, the coefficient on the former British colony variable is positive but non-significant, suggesting that legal origin, not colonial origin, mattered.

[Table 6]

Finally, Table 6 replicates key regressions from Table 4 using the third sample of tropical countries. The results remains identical to those in Table 4. Common law countries deforest 0.08% more than French civil law countries, and that difference remains significant when colonial origin is controlled for (column 4). Again, the coefficient on the former British colony variable is positive but non-significant, suggesting that legal origin, not colonial origin, mattered in developing countries with a significant tropical forest.

3.2 The role of geography

The colonization was not randomly implemented by colonial powers. It was done in accord with imperial aims and relative power which varied over time and between colonial powers (Engerman and Sokoloff, 2000; Joireman, 2001; Lange, 2004).

To capture this feature, settler mortality data provided by Daron Acemoglu (Acemoglu et al., 2001)[16] is used. These figures give an indication of the extent to which a particular place was suitable for European settlement. In that study, the authors argue that European colonizers adopted different colonization strategies with correspondingly different institutions, depending on the conditions in the colonies. They explain that the feasibility of European settlement, characterized by the mortality rates of colonizers, determined the colonization strategy. More precisely, the conditions in colonies (the disease environment and the density of population) conditioned the European strategies. Besides they argue that institutions of the past have persisted over time so that current effects of present institutions on economic development could be explained by institutions of the past designed by Europeans in their colonies. They show econometrically that former "extractive colonies" characterized by a high level of mortality of settlers experienced bad institutions which impeded their current ones and so their level of development. Unlike these extractive colonies, the "settler colonies" had good institutions brought by the colonizer which have persisted over time, encouraging economic development in these former colonies.

The fact is that Britain colonized all or nearly all the most favorable countries. A mean comparison test shows that former French colonies had higher settler mortality compared to former British colonies.

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[16]Acemoglu et al. (2001) provide data for sixty-two former colonies with the maximum settler mortality for Mali.

Moreover, the geographical position of each country could influence deforestation rates. Also, French civil law countries are farther from the equator than common law countries. To control for that, the geographic position (latitude) of each country is used, to be sure that the results are not driven by the geographic location of the country[17].

[Table 7]

Table 7 reports the regressions concerning the effects of the settlers' strategies and the latitude. The dataset for the first three columns is only for former colonies for which settler mortality data is available. This dataset, covering 54 countries, is slightly different than the sample of former colonies used previously, of 70 countries[18]. The results concerning the superiority of French civil law compared to common law are identical. However, the positive effect of former Spanish colonies becomes non-significant[19]. These results could suggest that the initial superiority of the French colonial legacies are better attributed to colonial strategies.

Columns 4–7 add the control for the distance from the equator. The previous results persist concerning the positive effect of common law origins, and Spanish colonial legacies on deforestation.

4   Conclusion

Recent empirical work demonstrates that countries whose legal systems are based on French civil law differ systematically from those whose legal systems are based on English civil law. The hypothesis of this paper was that differences in the legal system can explain differences in environmental performance, measured through the loss of forest area between 1990 and 2005.

The main result of this paper is that French civil law countries deforest significantly less than English common law countries. This result is robust in all samples and with the commonly used explanatory variables of deforestation. This result is particularly significant for the sample of previously colonized countries for whom the legal system is mainly an exogenous feature, and of developing countries with a substantial tropical forest. Also, since the choice of colonization strategy was not random, geographical features were controlled for. These results remain significantly robust. Also, former French colonies deforest less than former British colonies, though this result does not persist when legal origin is controlled for. Thus legal origin, not colonial origin, matters for explaining the loss of forest area. Also, former French colonies deforest less than other former colonies in the civil law area, such as formerly Spanish colonies. These results suggest that more than the legal origin on law and regulation, some French colonial legacies have reduced deforestation in the developing countries which had been colonized by France[20].

As a conclusion, it is worth noting that the French civil law seems to matter in reducing deforestation in previously colonized countries, by comparison with English common law. This

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[17]The literature of the role of geography on economic development is substantial. See for instance Engerman et al. (2002) and Easterly and Levine (2003).

[18]Given that all countries are previously colonized ones, in the third column with both legal and colonial origin, the former British colonies variable dummy has been removed because of its collinearity with the common law dummy variable.

[19]The sole Spanish colony removed is Equatorial Guinea, whereas none of the former French colonies have been removed. Thus, the results are not driven by a change in the sample.

[20]Though these results, mainly for former Spanish colonies, are not robust when controlling for "geographic" variables, thus suggesting that the superiority of the French colonial legacies could be attributed to French colonial strategies compared to Spanish ones.

study highlights the relative superiority of the French civil law over the English common law in preserving forested areas in developing countries. Moreover, because of the close relationship between colonial history and legal origin, it is difficult to attribute the differences in environmental performance to legal origin as opposed to other aspects of colonial policy. Anyway, one can attribute this effect of the French civil law on deforestation to French colonial or legal legacies such as the forest law legacies inherited from the French Forestry Code of 1827. Basically, in the nineteenth century, France promoted a strong forestry management whereas Great Britain chose to abandon its forest under strong agricultural and industrial pressures. In France, forest was legally protected and economically promoted[21]. In Great Britain, the legal framework remained the old medieval forest law not adapted for the British industrial economy. Consequences were a strong deforestation in Great Britain whereas forested areas grew in France. This differential in forestry management had been transplanted in all the world through colonization. In turn, this mechanism can explain the result found about the fact that former French colonies tend to deforest less than former British colonies, reinforcing the hypothesis on the presence of French forest law legacies which is both a colonial and legal origins.

This research can be extended to try to explain more precisely the differential impact of the French civil law. Another way to extend this article is to analyze whether English common law could, in such cases, allow for the reduction in deforestation since common law is associated to less corruption, better rule of law, and well defined property rights, all associated with low levels of deforestation. In this sense, legal origin could condition the effect of the institutional background on deforestation.

References

Acemoglu, D., S. Johnson, and J. Robinson (2000). The colonial origins of comparative development: An empirical investigation. *Working Paper Series* (7771).

Acemoglu, D., S. Johnson, and J. Robinson (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review 91*, 1369–1401.

Arcand, J.-L., P. Guillaumont, and S. Jeanneney-Guillaumont (2008). Deforestation and the real exchange rate. *Journal of Development Economics 86*, 242–262.

Botero, J., S. Djankov, R. La Porta, F. Lopez-de Silanes, and A. Shleifer (2004). The regulation of labor. *Quarterly Journal of Economics 119*, 1339–82.

Cox, J. C. (1905). *The royal forest of England*.

Cropper, M. and C. Griffiths (1994). The interaction of population growth and environmental quality. *The American Economic Review 84*, 250–254.

Devèze, M. (1973). *Histoire des forêts*. Presses universitaires de France.

Djankov, S., L.-d.-S. F. La Porta, Rafael, and A. Shleifer (2002). The regulation of entry. *Quarterly Journal of Economics 117*, 1–37.

Djankov, S., R. La Porta, F. Lopez-de Silanes, and A. Shleifer (2003). Courts. *Quarterly Journal of Economics 118*, 453–517.

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[21]See Huffel (1925) and Devèze (1973) on the French forest, and Cox (1905) and Gaurier (2006) for the British forest.

Djankov, S., A. Shleifer, T. Nenova, and C. Mcliesh (2003). Who owns the media? *Journal of law and economics 46*, 341–383.

Easterly, W. and R. Levine (2003). Tropics, germs, and crops: how endowments influence economic development. *Journal of monetary economics 50*, 3–39.

Engerman, S. L. and K. L. Sokoloff (2000). History lessons: Institutions, factors endowments, and paths of development in the new world. *The Journal of Economic Perspectives 14*, 217–232.

Engerman, S. L., K. L. Sokoloff, M. Urquiola, and D. Acemoglu (2002). Factor endowments, inequality, and paths of development among new world economies. *Economia 3*, 41–109.

Gaurier, D. (2006). *Terre, Forêt et Droit*, Chapter Le droit forestier en Angleterre: de ses fondations mediévales à son inadaptation croissante, pp. 225–244. Presses Universitaires de Nancy.

Glaeser, E. and A. Shleifer (2002). Legal origins. *Quarterly Journal of Economics 117*, 1193–1229.

Huffel, G. (1925). *Histoire des Forêts Françaises de l'Origine jusqu'à la Suppression des Maîtrises des Eaux et Forêts*.

Joireman, S. F. (2001). Inherited legal systems and effective rule of law: Africa and the colonial legacy. *The Journal of Modern African Studies 39*, 571–596.

Klerman, D. and P. G. Mahoney (2007). Legal origin? *Journal of Comparative Economics 35*, 278 – 293. Special Symposium on Courts and Judges.

La Porta, R., F. Lopez-de Silanes, and A. Shleifer (1997). Legal determinants of external finance. *Journal of Finance 52*, 1131–50.

La Porta, R., F. Lopez-de Silanes, and A. Shleifer (1998). Law and finance. *Journal of Political Economy 106*, 1113–55.

La Porta, R., F. Lopez-de Silanes, and A. Shleifer (2002). Government ownership of banks. *Journal of Finance 57*, 265–301.

La Porta, R., F. Lopez-de Silanes, and A. Shleifer (2008). The economic consequences of legal origins. *Journal of Economic Literature 46*, 285–332.

La Porta, R., F. Lopez-de Silanes, A. Shleifer, and R. Vishny (1999). The quality of government. *Journal of Law, Economics and Organization 15*, 222–79.

La Porta, R., F. López-de Silanes, C. Pop-Eleches, and A. Shleifer (2004). Judicial checks and balances. *The Journal of Political Economy 112*, 445–470.

Lange, M. K. (2004). British colonial legacies and political development. *World Development 32*, 905 – 922.

Roe, M. J. (2007). Juries and the political economy of legal origin. *Journal of Comparative Economics 35*, 294 – 308.

Rudel, T. K., O. T. Coomes, E. Moran, F. Achard, A. Angelsen, J. Xu, and E. Lambin (2005). Forest transitions: towards a global understanding of land use change. *Global Environmental Change 15*, 23–31.

Scrieciu, S. S. (2007). Can economic causes of tropical deforestation be identified at a global level? *Ecological Economics 62*, 603–612.

Tables

Table 1: Former colonial status and legal origin

	French civil law	Common law	German civil law	Total
Non-colonized countries	19	8	13	40
Former French colonies	18	0	0	18
Former British colonies	0	25	0	25
Former Spanish colonies	16	0	0	16
Former other colonies	10	0	1	11
Total	63	33	14	110

Table 2: Legal origin, colonial origin, and deforestation rate (1990–2005)

Core dataset (110 countries)				
Legal origin	French	Common	German	
	0.0022	0.0073***	- 0.0025***	
Number of countries	63	33	14	
Only previously colonized countries (65 countries)				
Colonial power	French	British	Spanish	Portuguese
	0.0034	0.0091***	0.0051	0.0070*
Number of countries	18	25	16	6

Asterisks indicate results of t-tests. The null hypothesis is that the mean is the same as the mean for French legal origin countries/Former French colonies. *** statistical significance at 1%, ** statistical significance at 5%, * statistical significance at 10%.

Table 3: Legal origin, colonial origin, and deforestation (1990–2005)

Dependent variable: Rate of deforestation				
	Legal origin	Legal origin	Colonial origin	Both
	All sample	Previously Colonized	Previously Colonized	All sample
VARIABLES	(1)	(2)	(3)	(4)
Common law	0.004***	0.003**		0.004***
	(0.001)	(0.001)		(0.001)
German civil law	0.0005	0.006***		0.001
	(0.001)	(0.001)		(0.001)
Former British colonies			0.005***	0.002
			(0.002)	(0.001)
Former Spanish colonies			0.006***	0.007***
			(0.002)	(0.002)
Former other colonies			0.004*	0.005**
			(0.002)	(0.002)
Constant	0.002	0.005*	0.004	0.0008
	(0.002)	(0.003)	(0.003)	(0.002)
Observations	436	278	278	436
Countries	110	70	70	110
Adjusted R2	0.26	0.092	0.108	0.278
F statistic	33.358	26.002	12.912	26.071

Note: OLS robust standard errors in parentheses. In all regressions, regional and year dummies are introduced (omitted region is Asia). The omitted category is French legal origin, and/or Former French colony. *** statistical significance at 1%, ** statistical significance at 5%, * statistical significance at 10%.

Table 4: Control variables, legal origin, colonial origin, and deforestation (1990–2005)

Dependent variable: Rate of deforestation				
	Legal origin	Legal origin	Colonial origin	Both
	All sample	Previously Colonized	Previously Colonized	All sample
VARIABLES	(1)	(2)	(3)	(4)
Common law	0.007***	0.008***		0.006***
	(0.002)	(0.002)		(0.002)
German civil law	0.005**	0.016***		0.005***
	(0.002)	(0.002)		(0.002)
Former British colonies			0.008***	0.003
			(0.002)	(0.002)
Former Spanish colonies			0.004	0.005*
			(0.003)	(0.003)
Former other colonies			0.005*	0.005**
			(0.003)	(0.002)
Lag forest Area	0.0002	-.00003	-.0002	0.00002
	(0.0005)	(0.0008)	(0.0009)	(0.0006)
Log GDP	-.003***	-.002***	-.002***	-.002***
	(0.0005)	(0.0007)	(0.0007)	(0.0005)
Rural density	-1.71e-06	-4.54e-06*	-3.58e-06	-2.48e-06
	(1.86e-06)	(2.37e-06)	(2.27e-06)	(1.96e-06)
Pop. growth	0.005***	0.006***	0.006***	0.005***
	(0.001)	(0.001)	(0.002)	(0.001)
Timber	0.003	0.002	0.001	0.002
	(0.002)	(0.003)	(0.003)	(0.002)
Constant	0.005	0.008	0.006	0.005
	(0.007)	(0.011)	(0.012)	(0.007)
Observations	348	244	244	348
Countries	87	61	61	87
Adjusted R2	0.341	0.24	0.236	0.35
F statistic	18.217	12.696	8.191	15.557

Note: OLS robust standard errors in parentheses. In all regressions, regional and year dummies are introduced (omitted region is Asia). The omitted category is French legal origin, and/or Former French colony. *** statistical significance at 1%, ** statistical significance at 5%, * statistical significance at 10%.

Table 5: Alternative coding: Legal origin, colonial origin, and deforestation (1990–2005)

	Legal origin	Legal origin	Both
Dependent variable: Rate of deforestation			
	All sample	Previously Colonized	All sample
VARIABLES	(1)	(2)	(3)
Common law	0.007***	0.008***	0.006***
	(0.001)	(0.002)	(0.002)
Mixed legal origin	0.018***	0.02***	0.017***
	(0.003)	(0.003)	(0.003)
German civil law	0.007***	0.018***	0.007***
	(0.002)	(0.002)	(0.002)
Former British colonies			0.002
			(0.002)
Former Spanish colonies			0.003
			(0.003)
Former other colonies			0.003
			(0.002)
Lag Forest Area	0.0005	0.0004	0.0004
	(0.0005)	(0.0008)	(0.0005)
Log GDP	-.003***	-.003***	-.003***
	(0.0006)	(0.0007)	(0.0006)
Rural density	-1.99e-06	-5.43e-06***	-2.49e-06
	(1.54e-06)	(1.81e-06)	(1.67e-06)
Pop. growth	0.006***	0.007***	0.006***
	(0.001)	(0.002)	(0.001)
Timber	0.003	0.002	0.003
	(0.002)	(0.003)	(0.002)
Constant	0.0002	0.003	0.0004
	(0.007)	(0.01)	(0.007)
Observations	348	244	348
Countries	87	61	87
Adjusted R2	0.409	0.326	0.408
F statistic	18.685	12.879	15.78

Note: OLS robust standard errors in parentheses. In all regressions, regional and year dummies are introduced (omitted region is Asia). The omitted category is French legal origin, and/or Former French colony. *** statistical significance at 1%, ** statistical significance at 5%, * statistical significance at 10%.

Table 6: Tropical countries: Legal origin, colonial origin, and deforestation (1990–2005)

Dependent variable: Rate of deforestation				
	Legal origin	Legal origin	Colonial origin	Both
VARIABLES	(1)	(2)	(3)	(4)
Common law	0.008***	0.008***		0.008**
	(0.002)	(0.002)		(0.003)
German civil law	-.012***			-.004
	(0.004)			(0.004)
Former British colonies			0.011***	0.003
			(0.002)	(0.003)
Former Spanish colonies			0.003	0.003
			(0.004)	(0.004)
Former other colonies			0.014***	0.014***
			(0.003)	(0.003)
Lag Forest Area	-.002***	-.002***	-.004***	-.004***
	(0.0006)	(0.0006)	(0.0006)	(0.0006)
Log GDP	-.001*	-.001	-.001	-.001
	(0.0008)	(0.0008)	(0.0008)	(0.0008)
Rural density	-5.68e-06***	-6.57e-06***	-6.63e-06***	-6.57e-06***
	(1.66e-06)	(2.02e-06)	(1.81e-06)	(1.81e-06)
Pop. growth	0.003**	0.003**	0.003**	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Timber	-.001	-.0006	-.001	-.001
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.032***	0.032***	0.04***	0.041***
	(0.01)	(0.011)	(0.01)	(0.01)
Observations	176	168	168	176
Countries	44	42	42	44
Adjusted R2	0.253	0.164	0.301	0.375
F statistic	18.568	5.361	7.806	17.549

Note: OLS robust standard errors in parentheses. In all regressions, regional and year dummies are introduced (omitted region is Asia). The omitted category is French legal origin, and/or Former French colony. *** statistical significance at 1%, ** statistical significance at 5%, * statistical significance at 10%.

Table 7: Geography, legal origin, colonial origin, and deforestation (1990–2005)

Dependent variable: Rate of deforestation

VARIABLES	Legal Origin (1)	Colonial Origin (2)	Both Origins (3)	Legal Origin (4)	Legal Origin (5)	Colonial Origin (6)	Both Origins (7)
Common law	0.01*** (0.002)		0.011*** (0.002)	0.007*** (0.002)	0.008*** (0.002)		0.006*** (0.002)
German civil law	0.011*** (0.003)		0.012*** (0.003)	0.006*** (0.002)	0.022*** (0.003)		0.006*** (0.002)
Former British colonies		0.011*** (0.002)				0.008*** (0.002)	0.002 (0.002)
Former Spanish colonies		0.002 (0.003)	0.003 (0.003)			0.005* (0.003)	0.005** (0.002)
Former other colonies		0.004 (0.003)	0.005* (0.003)			0.004* (0.002)	0.005* (0.002)
Lag Forest Area	0.0003 (0.0008)	-1.00e-05 (0.0009)	-.0001 (0.0009)	0.0002 (0.0005)	-.0004 (0.0007)	-.0005 (0.0008)	0.00006 (0.0006)
Log GDP	-.002*** (0.0008)	-.002** (0.0009)	-.002** (0.0009)	-.003*** (0.0005)	-.002*** (0.0007)	-.002*** (0.0007)	-.002*** (0.0005)
Rural density	-4.22e-06 (2.67e-06)	-4.24e-06 (2.71e-06)	-4.79e-06* (2.71e-06)	-2.94e-06 (1.86e-06)	-7.03e-06*** (2.36e-06)	-5.06e-06** (2.22e-06)	-3.51e-06* (1.94e-06)
Pop. growth	0.007*** (0.002)	0.007*** (0.002)	0.007*** (0.002)	0.005*** (0.001)	0.006*** (0.001)	0.006*** (0.002)	0.005*** (0.001)
Timber	0.002 (0.003)	0.001 (0.003)	0.002 (0.003)	0.002 (0.002)	0.002 (0.003)	0.001 (0.003)	0.002 (0.002)
Log settler mortality	0.003*** (0.0008)	0.003*** (0.0008)	0.003*** (0.0009)				
Latitude				-.009 (0.006)	-.020*** (0.007)	-.014** (0.007)	-.008 (0.006)
Constant	-.013 (0.012)	-.018 (0.013)	-.013 (0.013)	0.007 (0.006)	0.015 (0.01)	0.011 (0.011)	0.007 (0.007)
Observations	216	216	216	348	244	244	348
Countries	54	54	54	87	61	61	87
Adjusted R2	0.296	0.294	0.301	0.345	0.258	0.243	0.353
F statistic	10.875	7.501	9.946	16.31	11.443	7.038	14.275

Note: Columns 1 to 3 (4 to 6) report the results with settlers mortality (latitude) as control variable. OLS robust standard errors in parentheses. In all regressions, regional and year dummies are introduced (omitted region is Asia). The omitted category is French legal origin, and/or Former French colony. *** statistical significance at 1%, ** statistical significance at 5%, * statistical significance at 10%.

Table 8: List of Countries

Core Dataset of 110 Countries

Algeria, Angola, Argentina, Australia, Austria, Belize, Benin, Bhutan, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Central African Rep., Chad, Chile, China, Colombia, Democratic Rep. Congo, Congo Rep., Costa Rica, Ivory Coast, Croatia, Czech Republic, Dominican Rep., Ecuador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, France, Gabon, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Guinea-Bissau, Guyana, Honduras, Hungary, India, Indonesia, Iran, Italy, Japan, Kazakhstan, Kenya, South Korea, Laos, Latvia, Liberia, Lithuania, Macedonia, Madagascar, Malawi, Malaysia, Mali, Mexico, Mongolia, Morocco, Mozambique, Namibia, Nepal, New Zealand, Nicaragua, Niger, Nigeria, Pakistan, Panama, Papua New, Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Senegal, Serbia, Sierra Leone, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, Sudan, Suriname, Switzerland, Tanzania, Thailand, Turkey, Turkmenistan, Uganda, Ukraine, United Kingdom, United States, Uruguay, Uzbekistan, Venezuela, Vietnam, Zambia, Zimbabwe.

70 Past Colonized Countries

Algeria, Angola, Argentina, Belize, Benin, Bhutan, Bolivia, Botswana, Brazil, Burkina Faso, Cameroon, Central African Rep., Chad, Chile, Colombia, Democratic Rep. Congo, Congo Rep., Costa Rica, Ivory Coast, Dominican Rep., Ecuador, Equatorial Guinea, Eritrea, Ethiopia, Fiji, Gabon, Ghana, Guatemala, Guinea, Guinea-Bissau, Guyana, Honduras, India, Indonesia, Kenya, South Korea, Laos, Madagascar, Malawi, Malaysia, Mali, Mexico, Morocco, Mozambique, Namibia, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Senegal, Sierra Leone, Solomon Islands, Somalia, South Africa, Sri Lanka, Sudan, Suriname, Tanzania, Uganda, Uruguay, Venezuela, Vietnam, Zambia, Zimbabwe.

47 Tropical Countries

Angola, Argentina, Benin, Bolivia, Brazil, Burkina Faso, Cameroon, Central African Republic, Chad, Chile, China, Colombia, Democratic Rep. Congo, Costa Rica, Ivory Coast, Ecuador, Ethiopia, Gabon, Ghana, Guatemala, Guinea, Honduras, India, Indonesia, Laos, Madagascar, Malawi, Malaysia, Mozambique, Nepal, Nicaragua, Nigeria, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Senegal, Sierra Leone, Sri Lanka, Sudan, Tanzania, Thailand, Uganda, Vietnam, Zambia, Zimbabwe.

Table 9: Data Descriptions and Sources

Code	Variables and Definition	Source
Deforestation	Log forested areas in $t-1$ minus log forested areas in t.	FAO
Lag(Forest$_{t-1}$)	Initial Forest Areas: Log forested areas in $t-1$.	FAO
Log GDP	Log GDP per capita, constant 2000 US\$.	WDI 2008
Pop. growth	Annual population growth rate (percentage).	WDI 2008
Rural density	Rural population density per km^2 of arable land.	WDI 2008
Timber	The relative price of timber. the ratio of the price of hardwood logs in Sarawak, Malaysia (in \$US/m3, source: IMF, International Financial Statistics) to the country-specific unit export values of agricultural goods (source: FAO)	FAODATA/IFS-IMF
Legal origin	Legal origin of law and regulation with common, French civil law and German law.	(La Porta et al., 2008)
Mixed legal origin	Countries' legal systems are hybrids of the common and civil law.	Adapted from the World Legal Systems Website
Colony	Colonial dummies indicating whether a country had been a British, French, Spanish, or other (German, Italian, Belgian, Dutch or Portuguese) colony.	(La Porta et al., 1999)
Mortality	Log of the fourth mortality estimated by Acemoglu et al. (2000, Appendix, Table A2).	(Acemoglu et al., 2001)