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The Transplant Effect

INTRODUCTION

Legal reforms have accompanied and have often played the central role in technical assistance programs around the world. The first law and development movement launched after World War II by legal scholars primarily from the United States[1] brought new legal codes to countries in Latin America, Africa, and - to a lesser extent - in Asia. The major protagonists of this movement announced its failure in 1974. They conceded that well meaning reform efforts had been based on bold assumptions about the functioning of legal systems that were neither backed by a well developed theory nor had been tested empirically in their home country (the U.S.A.).[2] Scholars and

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The paper draws on technical results derived in our companion paper Berkowitz, Pistor et al., "Economic Development, Legality, and the Transplant Effect," 47 *European Economic Review* 165-95 (2003). We thank Jan Kleinheisterkamp (Max Planck Institute, Hamburg), for his help with background information on Latin America and the coding of these countries. We are also grateful to Robert Bates, Francois Bourguignon, Erik Berglöf, Joe Kalt, Rachel Kranton, Fred Schauer, Dani Rodrik and Gérard Roland, and to the comments of seminar participants at Harvard University, the University of Maryland, University of Michigan, the Public Choice Society meetings (2000), the University of Wisconsin-Madison, and the World Bank.

1. For a critique of American law development activities in Latin America, compare James A. Gardner, *Legal Imperialism: American Lawyers and Foreign Aid in Latin America* (1980). Another active player in the law and development movement was France. Compare, for example, David, "A Civil Code for Ethiopia: Considerations on the Codification of the Civil Law in African Countries," 37 *Tul. L. Rev.* 187 (1963).

2. The seminal article by Trubek & Galanter, "Scholars in Self-Estrangement: Some Reflections on the Crisis in Law and Development Studies in the United States," *Wis. L. Rev.* 1062 (1974) has widely been perceived to be the death sentence of the first law and development movement, although this is nowhere explicitly stated in the article. See also Merryman, "Comparative Law and Social Change: On the Origins, Style, Decline & Revival of the Law and Development Movement," 25 *Am. J. Comp. L.* 457 (1977), Snyder, "The Failure of Law & Development," *Wis. L. Rev.* 373 (1982) and Theberge, "Law and Economic Development," 9 *Den. J. of Int'l L. & Policy* 231 (1980). The strong quest at the time for extensive research and better theories on the role of law and legal institutions in economic development did not materialize, mostly because the erstwhile proponents of the law and development movement

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policy advisors were therefore unprepared for the challenges of the second major law and development movement that was launched after the collapse of the socialist systems in Eastern Europe and the former Soviet Union. This proved essentially a repetition of the first movement: legal experts, including scholars and practitioners, swarmed formerly socialist economies with constitutions, codes, statutes, and regulations. This time advisors from the United States faced stronger competition from Western Europe in comparison with the first law and development movement. Proponents of the German or Dutch civil codes, American corporate law, European corporate law harmonization directives, English or American securities market and antitrust regulations, or newly designed model laws for secured transactions marketed the value of Western law to their counterparts in the East, backing their campaign to transplant their home legal system with financial aid promises and/or the prospect of joining the European Union.[3]

Ten years after the inception of the second law and development movement, countries in Central and Eastern Europe and in the Baltic region by and large follow European models at least in the area of commercial law. In the former Soviet Union, by contrast, the United States model has had a substantial impact in particular on corporate and bankruptcy laws.[4] Moreover, many countries borrowed from different legal systems, not infrequently in an attempt to signal to foreign investors from different countries that they comply with their domestic legal standards.[5] The scope of legal reforms undertaken in transition economies during this period has been likened to a legislative tornado. Yet, the results of these efforts have been mixed. While nobody has yet stood up and declared the death of the second law and development movement, there is a broad consensus that the impact of legal reform efforts has been at best limited.[6] The most common com-

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turned inwards to the American legal system. For a critique of these reactions to the first law and development movement, see Tamanaha, "The Lessons of Law-and-Development Studies," 89 *Am. J. Int'l. L.* 470 (1995).

3. See also Ajani, "By Chance and Prestige: Legal Transplants in Russia and Eastern Europe," 43 *Am. J. Comp. L.* 93, 110 (1995).

4. For a detailed analysis of the patterns of legal change in corporate and bankruptcy law in twenty-four transition economies, see Pistor, "Patterns of Legal Change: Shareholder and Creditor Rights in Transition Economies," 1 *EBOR* 59 (2000).

5. See Petrovic "The Legal Regulation of Company Groups in Croatia," 2 *EBOR* 781 (2001) Croatia adopted the company group law from Germany to please German investors and the tender rules from American corporate and securities law to please American investors.

6. Hendley, "Rewriting the Rules of the Game in Russia: The Neglected Issue of the Demand for Law," 8 *East European Constitutional Review* 89 (1999). Empirical analysis of the impact of legal change on financial market development in transition economies confirms that changes in the law on the books has so far had little impact on economic development. Compare Pistor, Raiser et al., "Law and Finance in Transition Economies," 8 *The Economics of Transition* 325 (2000). A comprehensive analysis

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plaint is that while the transplanted law is now on the books, the enforcement of these new laws is quite ineffective. In fact, empirical analysis suggests that there is little correlation between the level of legal protection afforded by statutes on the one hand, and measures for the effectiveness of legal institutions on the other.[7] While Russia today can boast with the most refined corporate law in the region thanks to American advisors,[8] shareholder rights are systematically trampled and Russia performs poorly on performance measures for the effectiveness of the judiciary and the trustworthiness of legal and administrative institutions.[9]

Ten years may be too short for a final assessment of the effectiveness of legal reforms. It obviously takes time for the law to gain more than a book-life and to influence household and firm-level decision making, for lawyers to be trained in the new rules, and for cases to be brought to court for clarification and interpretation.[10] Yet, the transition economies are not the first case of extensive transplantation of legal systems from the West to other parts of the world. The first law and development movement is an earlier example. But even this movement was small in scale in comparison to the massive transplantation of legal systems during the course of the nineteenth and early twentieth century. The newly created nation states in Europe conquered the world during the period of colonization and imperialism. They sent not only their troops, but brought their law, in many cases also their court organization and their personnel. We have thus a period of two hundred years of extensive legal transplantation to investigate. Two key questions warrant investigation: First, do legal transplants work ever? And second, in cases where they worked, what made the difference?

This paper seeks answers to both questions. In doing so, it hopes to enrich a growing literature of empirical studies on the effect of law on economic development that has ignored the problem of legal transplantation. Several recent studies analyze the impact of law on finan-

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of the impact of legal change in transition economies can be found in Peter Murrell (ed.), *Assessing the Value of Law in Transition Economies* (2001).

7. Id. at p. 344 and Table 6.

8. Black & Kraakman, "A Self-Enforcing Model of Corporate Law," 109 *Harv. L. Rev.* 1911 (1996).

9. See Black, Kraakman et al., "Russian Privatization and Corporate Governance: What Went Wrong?," 52 *Stan. L. Rev.* 1731 (2000) for a detailed account of the extent of misuses of shareholder rights. The authors clearly note that they had misjudged the effect of privatization absent a supportive institutional environment.

10. In fact, the slow reception of new statutory law has led some commentators to suggest that transition economies should build their legal order bottom up through case law rather than top down through statutory legal transplants. See Rubin, "Growing a Legal System in the Post-Communist Economies," 27 *Cornell Int'l L. J.* 1 (1994). For a similar argument see also Cooter, "Decentralized Law for a Complex Economy: The Structural Approach to Adjudicating the New Law Merchant," 144 *U. Pa. L. Rev.* 1643 (1996).

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cial market and economic development.[11] An influential finding is that a country's legal family is a significant determinant of the effectiveness of its legal system. Countries belonging to the English common law family have the most investor-friendly laws, French and German civil law countries have the least investor-friendly laws, and the Scandinavian families fall somewhere between. Regarding the impact of legal families on enforcement, La Porta et al. (1998, 1999) find that German and Scandinavian civil law countries dominate English common law countries, which, in turn, perform better than French civil law countries. A reason for this result is that enforcement is highly correlated with GNP per capita, and the German and Scandinavian civil law countries are among the richest countries in their sample. However, after controlling for GNP per capita, La Porta (1998, 1999 et al.) conclude that countries with investor-friendlier laws also tend to have the most effective enforcement of law: French civil law countries have poorer enforcement than common law countries; German civil law countries tend to have poorer enforcement than common law countries, and enforcement in Scandinavian is similar to common law countries. In other words, countries that were lucky enough to be colonized by the British did relatively well; those that had French colonizers or were foolish enough to voluntarily adopt the French or German legal family as a model suffered in comparison.[12]

These results are remarkable for several reasons. First, they clearly contradict the experience of both law and development movements that changes in the law on the books has relatively little impact on the effectiveness of legal institutions.[13] Second, they make no attempt to differentiate between the origin countries of legal families (those that developed their laws internally) from those that received their law by way of legal transplantation. Thus, they implicitly assume that the transmission of a particular code may matter, but the process of transplantation does not. Third, they do not reconcile obvi-

11. The series of studies was launched by La Porta, Lopez-de-Silanes et al., "Law and Finance," 106 *J. Pol. Econ.* 1113 (1998); id., "Legal Determinants of External Finance," *LII J. Fin.* 1131 (1997); id., "The Quality of Government," 15 *The Journal of Law, Economics & Organization* 222 (1999). These studies have inspired the extensive use of legal variables in empirical analyses and have given rise to numerous follow-up studies. Most of these studies focus on the effect of differences between civil law and common law countries. See for example, Johnson, Boone et al., "Corporate Governance in the Asian Financial Crisis 1997-98," 58 *Journal of Financial Economics* (1-2), 137, 141 (2000); Levine, "The Legal Environment, Banks, and Long-Run Economic Growth," 30 *Journal of Money, Credit, and Banking* 596 (1998); Ross Levine, "Napolean, Bourses, and Growth: With a Focus on Latin America," unpublished mimeo (1999); Mahoney, "The Common Law and Economic Growth: Hayek Might be Right," 30 *Journal of Legal Studies*, 503 (2001); and Thorsten Beck, Asli Demirguc-Kunt et al., "Law, Politics and Finance," <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=269118> (2001).

12. See La Porta et al. (1999) and Mahoney, id.

13. See the references in supra n. 2.

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ous contradictions in their findings, which may give us an important lead for understanding the process of legal development more generally. On the one hand, they propose a relation from legal family to quality of the law to financial market development to economic growth. On the other, they present data on the extensiveness and effectiveness of legal institutions (for which we use the shorthand "legality" in this paper)[14] and show that legality is highly correlated with GDP. Yet, they fail to make a convincing case that legal families and legality are correlated. If legal families cannot explain legality, but legality is highly correlated with growth, we need alternative explanations for the determinants of legality.

This paper offers such an explanation. It develops and tests the proposition that the way in which a country received its formal law is a much more important determinant of the current effectiveness of its legal institutions than the particular legal family that it adopted. Our argument is based on two key notions. First, for the law to be effective, it must be meaningful in the context in which it is applied so citizens have an incentive to use the law and to demand institutions that work to enforce and develop the law. Second, the judges, lawyers, politicians, and other legal intermediaries that are responsible for developing the law must be able to increase the quality of law in a way that is responsive to demand for legality.

In order to test our theory, we develop proxies for the way in which law has been transplanted and received. The use of proxies greatly simplifies the complexity of the real world. This has both advantages and disadvantages. It misses the richness of socioeconomic processes. Yet it allows us to test empirically conflicting propositions about what matters in legal development. While this cannot substitute for in depth case studies, it not only allows us to challenge other empirical studies more forcefully, but also to shape our future research agenda.

We develop a definition of the "transplant effect" as a proxy for the process of legal transplantation and reception. For this purpose, we classify countries into those that developed their formal legal order internally (origins) and those that received their formal legal order from other countries (transplants). We choose the period during which a country first developed or received a comprehensive formal legal order to classify each country. For most countries, the relevant period is the nineteenth century; for some it reaches into the first half of the twentieth century. Our basic argument is that for law to be effective, a demand for law must exist so that the law on the books will actually be used in practice and legal intermediaries responsible

14. We will discuss these data in detail in section 3 infra.

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for developing the law are responsive to this demand.[15] If the transplant adapted the law to local conditions, or had a population that was already familiar with basic legal principles of the transplanted law, then we would expect that the law would be used. Because the law would be used, a strong public demand for institutions to enforce this law would follow. And, legal intermediaries that are responsible for developing and enforcing this imported law would be able to develop the law so as to match demand, because the strong demand for law would provide resources for legal change. Where these conditions are present we would expect the legal order to function just as effectively as in an origin country where the law was developed internally. However, if the law was not adapted to local conditions, or if it was imposed via colonization and the population within the transplant was not familiar with the law, then we would expect that initial demand for using these laws to be weak. Legal intermediaries would have a more difficult time developing the law to match the demand. Countries that receive the law in this fashion are thus subject to the "transplant effect": their legal order would function less effectively than origins or transplants that either adapted the law to local conditions and/or had a population that was familiar with the transplanted law.

We test for the impact of the process of transplanting and reception on the development of effective legal institutions against the transplantation of a particular family. Regarding families, we employ the well-known classification of legal systems into four legal families: English-common law, French-civil law, German-civil law, and Scandinavian-civil law. Legal scholars show that these families differ significantly in style.[16] In light of the recent empirical studies that document a strong correlation between legal families and the level of shareholder and creditor protection,[17] legal families are a useful proxy for the commercial and corporate law on the books.

We provide statistical evidence showing that the "transplant effect" is a more important predictor of effective legal institutions than

15. On the demand for law see also Pistor, "Supply and Demand for Contract Enforcement in Russia: Courts, Arbitration, and Private Enforcement," 22 *Rev. Cent. E. Eur. L.* 55 (1996), Hendley, supra n. 6 and Milhaupt & West, "The Dark Side of Private Ordering: An Institutional and Empirical Analysis of Organized Crime," 67 *U. Chi. L. Rev.* 41 (2000).

16. These characteristics include a specific working methodology of jurists; idiosyncratic legal concepts (i.e., the trust in common law which is not known in the German or French legal systems); the sources of law and the methods applied for interpreting the law (i.e., the role of precedents in common law and the supremacy of statutory law in the codified civil law systems); and ideological factors. See Konrad Zweigert & Hein Kötz, *Introduction to Comparative Law* 67 (1998). The freedom of contract and the strong protection of private property, for example, are core elements of most Western legal systems, but were absent in the socialist legal family, and modified by religious principles in Hindu or Islamic law.

17. La Porta et al., supra n. 11.

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the supply of a particular legal family.[18] We also show that the transplant effect has a substantial negative impact on economic development via its impact on legality, but has no direct effect. By contrast, the impact of transplanting a particular legal family on economic development is not robust to different legality measures. Moreover, the overall impact of the transplanting process is stronger than the impact of a transplanting a particular legal family.

This paper contributes to an emerging literature that attempts to explain the variance of institutional development across countries. Most of the literature to date focuses on the political economy of institution building. There is a growing literature on just why strong institutions emerge or fail to emerge in the formerly socialist economies that are making a transition to a market economy.[19] There is also a growing interest in tracing the determinants of differences among legal families.[20] Among the studies that explore determinants of high quality institutions, this paper is closest in spirit to Rodrik,[21] who provides empirical support for his argument that a well-designed strategy for institution building should take into account local knowledge, and should not over-emphasize best practice blueprints observed in developed countries at the expense of local participation and experimentation. Our work also relates to Acemoglu, Johnson, and Robinson,[22] who use mortality rates of the first European settlers as an instrument for current institutions in the countries that they colonized. They argue that the settlers' initial supply of institutions impacted the long run effectiveness of institutions. Contrary to their approach, we focus on the compatibility of imported institutions with initial local demand, and analyze its implication for long-term institutional development.

The rest of this paper is organized as follows. In the next section, we develop our argument that the way in which the law is transplanted is a critical determinant of legality, and code the same forty-nine countries that LLSV used in their study accordingly. In section three, we test for the impact of the transplantation process and legal families on legality and economic development. Section four checks

18. A much more detailed and technical presentation of this evidence is contained in Daniel Berkowitz, Katharina Pistor et al., *Econmic Development, Legality, and the Transplant Effect* op. cit.

19. Berkowitz & Li, "Tax Rights in Transition Economies: A Tragedy of the Commons," 76 *Journal of Public Economics* 369 (2000); Zhuravskaya, "Incentives to Provide Local Public Goods: Fiscal Federalism, Russian Style," 76 *Journal of Public Economics* 337 (2000); Gerard Roland & Thierry Verdier, "Law and Enforcement in Transition," unpublished mimeo on file with the authors (1999).

20. Edward L. Glaeser & Andrei Shleifer, "Legal Origins," unpublished mimeo, Harvard University (2000).

21. "Institutions for High-Quality Growth: What they Are and How to Acquire them," 35 *Studies in Comparative International Development* (3), 3 (2000).

22. "The Colonial Origins of Comparative Development: An Empirical Investigation," 91 *American Economic Review* (5), 1369 (2001).

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for the robustness of these results to variations in the country coding; section five checks for the validity of our aggregate legality measure. Section six concludes.

THE TRANSPLANT EFFECT

Virtually all countries today have a set of rules embodied in codes or court cases that were established by designated state organs, and state institutions in charge of enforcing these rules. We call this set of rules the formal legal order. Although it is quite important in many countries today, the formal legal order is but one element of the governance structure of society. All societies, including the most developed ones, are also governed by informal norms and institutions. This informal legal order evolves over time mostly by internalizing existing norms of a social group.[23] It is enforced not by the state, but relies largely upon trust and reputation effects as well as monitoring devices. As we will further discuss below, the existing formal legal order in most countries was shaped by transplanting law that had evolved in several European countries in the late eighteenth and early nineteenth centuries. While many, although not all of the countries that received law from the West had formal legal orders prior to transplantation, the transplantation of Western law not only accelerated the development of a formal legal order, but altered the preexisting order profoundly, and not infrequently with detrimental outcome.[24]

We propose that countries that have developed their formal legal order internally have a comparative advantage in developing effective legal institutions over countries on which a foreign formal legal order was imposed externally. Internal development can take advantage of new solutions economic agents develop in response to new challenges and existing constraints. Lawmakers can build on domes-

23. Coleman in *Foundations of Social Theory* (1990) defines a norm as a "property of a social system, not of an actor within it." (at p. 241). The effectiveness of norms depends on the level of sanctions on the one hand, and the level of sanctions applied by individuals to their own action, on the other. In the latter case, norms have been internalized by said individuals. Coleman id. at 243. On the process of generating and enforcing social norms, see also Sunstein, "Social Norms and Social Roles," 96 *Colum. L. Rev.* 903 (1996).

24. An example is the introduction of land titling systems and effective enforcement institutions in colonial India. The measure was intended to improve the plight of peasants who often depended on single creditors with monopoly power over a given region. The legal change resulted in a more competitive market of creditors, but at the same time led to rigid enforcement of titles and the eviction of peasants, and ultimately lead to peasant revolts. See Kranton & Swamy, "The Hazards of Piecemeal Reform: British Civil Courts and the Credit Market in Colonial India," 58 *J. Dev. Econ.* 1 (1999) for a historical and theoretical account of this incidence. They argue that the absence of complementary institutions, such as insurance systems, was responsible for the failure of reforms that destroyed relational lending transactions with monopolistic creditors, but failed to create a buffer for exogenous shocks, such as bad harvest.

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tic knowledge and expertise and can take full advantage of complementarities between new and old institutional arrangements. This is most explicit for case law, where new legal rules are generated from litigated cases.[25] But legislatures can also take advantage of social knowledge about perceived problems and possible solutions through survey instruments or law commissions staffed with experts.[26]

By contrast, countries that receive their formal legal order from another country have to come to grips with what was often a substantial mismatch between the preexisting and the imported legal order. They may be unfamiliar with dispute settlement through adversarial litigation rather than mediation and negotiation,[27] or with the rigidity of legal rights independent of kinship relations or norms of social obligations.[28] Moreover, the social, economic and institutional context often differs remarkably between origin and transplant country, creating fundamentally different conditions for effectuating the imported legal order in the latter. Transplant countries therefore are likely to suffer from the transplant effect, i.e. the mismatch between preexisting conditions and institutions and transplanted law, which weakens the effectiveness of the imported legal order. In order to test these propositions empirically, we divide our 49 countries[29] into ten that developed their formal legal order internally (origins) and 39 that received their formal legal order externally (transplants); we

25. See Friedrich A. Hayek, *Law, Legislation and Liberty—Rules and Order*, Vol. 1, 85 (1973) on the advantages of the case law system in using of socially accumulated knowledge and information and creating new law rather than designing it top down. He asserts, however, that the legislature has an important correction function. Id. at p. 88. For an attempt to use case law in developing countries and transition economies, compare Rubin supra n. 10 and Cooter, "The Theory of Market Modernization of Law," (Michael Bruno & Boris Pleskovic eds., *Annual World Bank Conference on Development Economics* 191 (1996).

26. See Louis Kaplow, *General Characteristics of Rules*, http://encyclo.findlaw.com/lit/9000art.html (1997) for a strong argument that legislatures do not suffer from an informational disadvantage vis-à-vis courts.

27. This argument is often invoked to explain comparatively low litigation rates in Japan and other Asian countries. For a discussion of long term litigation rates in Japan, compare Haley, "The Myth of the Reluctant Litigant," 4 *J. Jap. Stud.* 366 (1978) who holds institutional rather than cultural constraints responsible. See also Ramseyer, "The Cost of The Consensual Myth: Antitrust Enforcement and Institutional Barriers to Litigation in Japan," 94 *Yale L.J.* 604 (1985) and West, "The Pricing of Derivative Action in Japan and the United States," 88 *Nw. U. L. Rev.* 1436 (1994).

28. For inconsistencies between informal indigenous norms and Western formal law in Asia compare Jones, "Capitalism, Globalization and Rule of Law: An Alternative Trajectory of Legal Change in China," 3 *Social & Legal Studies* 195 (1994); Hamilton, "Culture and Organization in Taiwan's Market Economy," (Robert W. Hefner ed., *Market Cultures - Society and Morality in the New Asian Capitalism* 1998) and Kaufman-Winn, "Relational Practices and the Marginalization of Law: Informal Financiall Practices of Small Businesses in Taiwan," 28 *Law and Society Review* 193 (1994).

29. We use the same sample of countries as La Porta et al. (1998), supra n. 11 so that we can compare our with their results.

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then divide the transplants into those that are and those that are not subject to the transplant effect.

Origins vs. Transplants

Most countries derived their current formal legal order from Europe during the nineteenth century and the early twentieth century. Earlier legal transplants are well known, including the reception of Roman law in Europe, the enactment of the Chinese codes in other parts of Asia, or the transfer of Spanish and Portuguese law to Latin America. Indeed, as Watson argues, legal transplants are as old as the law is.[30] However, the transplanting process that occurred in the nineteenth and early twentieth centuries superseded all earlier transplants. Moreover, despite lively borrowing and transplanting since then, most countries have retained the core characteristics of the legal system they had received during this period. The wholesale transplantation of legal systems was made possible by the consolidation and formalization of legal systems in Europe that coincided with the development of the nation state. The expansion of European influence through war and conquest was primarily responsible for the transplantation of these laws to countries in Asia, Africa, North America and Latin America, although some of these non-European countries transplanted these laws voluntarily.

Three legal families, the English common law, the French civil law and the German civil law, dominated the process of consolidation and formalization of formal legal orders in Europe. The English common law has evolved over centuries and, in contrast to the French and German civil families, was never systematized and codified. Case law, or precedents established by courts, defined legal principles that were applied to other cases. The roots of the common law date back to the Norman conquest of England in 1066, but only in the late fifteenth centuries was a firm body of legal principles established that replaced preexisting customary law.[31] The publication of law since the sixteenth century[32] and the development of legal reports - which

30. Alan Watson, *Legal Transplants: An Approach to Comparative Law* (1974). The costs and benefits of legal transplantation have, however, always been a contentious issue. Montesquieu in his *The Spirit of Laws* (1977), for example, held that it was wrong to impose foreign law on other societies. He declares any attempt to change the customs of a society through legislation as tyranny (id., chapter 3). For a critical assessment of Montesquieu's thesis in the light of legal transplantation among Western nations in the twentieth century, compare Kahn-Freund, "On Uses and Misuses of Comparative Law," 37 *Mod. L. Rev.* 1 (1974). He argues that not culture, as suggested by Montesquieu, but politics determine the compatibility of foreign norms with institutions in the host country.

31. On the early development of the English legal system see Anthony Musson & W.M. Omrod, *The Evolution of English Justice; Law, Politics and Society in the Fourtheenth Century* (1999).

32. Ross, "The Commoning of the Common Law: The Renaissance Debate over Printing English Law, 1520-1640," 146 *U. Pa. L. Rev.* 323 (1998).

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was completed in the second half of the nineteenth century - contributed to the formation of a consistent body of law that was widely accessible. Statutory law gained in importance in the nineteenth century, but case law remains the hallmark of the English legal system to this day.

In continental Europe, codification resulted in a formal legal order that is very different than the English common law. The French issued the first comprehensive national civil, commercial and criminal codes, as well as separate civil and criminal procedure codes between 1804 and 1811. The French (Napoleonic) codes consolidated legislation operating before the French revolution and codified existing business practice in language that was systematic and accessible to lay people. Politically, the codification movement manifested the superiority of the parliament over the executive and the judiciary in making new law. The other major codification of the nineteenth century is the German civil code of 1886 (enacted in 1900), which had been preceded by commercial, criminal, civil and criminal procedure codes, as well as a bankruptcy law. Codification in Germany was delayed until the end of the nineteenth century primarily for political reasons. Only with unification in 1871, did codification move forward.[33] The German codes, in particular the civil code, differ from the earlier French codification. Legal scholars compiled a consistent system of civil law based on Roman legal principles, and, as such, wrote codes that were highly technical and thus much less accessible to lay people.

Most legal families operating currently are derived either from the English common law, the French civil law or the German civil law. We denote England, France and Germany as origin countries, or simply origins, because their formal legal orders developed largely internally and display highly idiosyncratic features, some legal borrowing notwithstanding, and because their formal legal order served as a model for other countries. Comparative legal scholarship also distinguishes a fourth legal family, the Scandinavian one. The Scandinavian legal family is not built around a major codification, like the French or the German legal family, nor does it have a body of case law like the English common law. However, early codification of existing business practices have given rise to a legal system based on statutory law that is distinct from the legal systems described above. Although Finland was part of Sweden from the twelfth century until Sweden ceded Finland to Russia in 1908, and Norway was part of

33. On the development of private law in Germany during the nineteenth century, see Döhlemeyer in Helmut Coing, *Handbuch der Quellen und Literatur der Neueren Europaeischen Privatrechtsgeschichte,* III-2 (1982) pp. 1440-1552 and Gerhard Wesenberg & Gunter Wesener, *Neuere deutsche Privatrechtsgeschichte* 170-210 (1985).

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Denmark until 1814, we treat all four countries as origins.[34] Denmark, Norway and Sweden closely collaborated since the mid 19th century in developing the formal modern law that has shaped their development since. While Finland was controlled by Russia from 1808 through 1917, it remained attached to the Scandinavian legal tradition throughout the nineteenth century and continued this tradition after it became independent.[35]

In our sample, the United States, Austria and Switzerland are also origins because the development of their formal legal order was highly idiosyncratic.[36] While English common law influenced the legal system in the United States during the colonial period, legal development in the United States has sharply diverged from the English system after the colonial period.[37] Each new state that broke away from the colony decided how much of the common law of England would be part of the new legal order.[38] Moreover, statutory law has played an increasingly important role since the adoption of the American constitution.[39] Austria and Switzerland are also origins. According to standard classification, both countries belong to the German legal family. The codification that forms the basis of the Austrian civil law, the AGBGB, was adopted in 1811, over ninety years before the adoption of the German civil code. It influenced the development of the German code, rather than the other way around. The major Swiss codification (the law on obligations of 1881 and the civil code of 1907) followed the German codification. However, it did not

34. Compare the country reports in Knapp, National Reports, *International Encyclopedia of Comparative Law* (Drobnig et al. (1972)). For Denmark see p. D-27, for Sweden p. S-162 and for Norway p. N-77.

35. Berkowitz, Pistor and Richard, op. cit., as a robustness check, analyze a classification where only Sweden and Denmark are Scandinavian origins.

36. Just whether or not the United States should be coded as a transplant or origin is controversial, as it did clearly receive English common law from England. However, in Berkowitz, Pistor and Richard, op. cit. we show that our statistical results in section 3 are robust to coding the United States as an origin or what we define to be a receptive transplant.

37. The distinctiveness of American law is apparent, when one compares it with the development of law in Australia, Canada and New Zealand, all of which stayed much closer to the English common law system. On the distinctive development of American law since 1780 see Morton J. Horwitz, *The Transformation of American Law 1780-1860* (1977). According to Horwitz (p. 16) the major change that took place was the perception of the function of the common law. Rather than viewing it as a set of nonchanging binding legal principles, American judges and legislatures increasingly perceived the common law as an instrument of social change.

38. See Posner, "Creating a Legal Framework for Economic Development," 13 *The World Bank Research Observer* 1 (1998) with further references. A similar process took place in other colonies when they became independent. This took place, however, much later and had little impact on the formal legal order that developed initially in these territories.

39. This is evident, for example in the development of bankruptcy law in the two countries, which increasingly diverged over time. According to Franks and Sussman "Financial Innovations and Corporate Insolvency," mimeo (1999), different patterns of law making, or legal innovation account for this.

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incorporate Roman law to the same extent as the German codifications, and differs considerably in style and organization from the German code. Table 1 lists the ten origins in our sample and notes the time when these legal systems were formalized. All other countries (or territories that were later organized as independent states) received their formal legal orders, either voluntarily or involuntarily, from these ten origin countries. We call these countries "transplants".

Table 2a summarizes the finding by La Porta et al. (1998) that legal families capture differences in law on the books. Shareholder rights and creditor rights are cumulative indices developed in La Porta et al. (1998) that measure the scope of the protection of shareholder and creditor rights by statutory law. The categorical means on the top half of table 2a show that the English have strongest and the French have the weakest protection of shareholder and creditor rights, while the German and Scandinavian families are in the middle. The bottom half of table 2a tabulates differences in means for shareholder and creditor rights for the six different pairs of legal families. The parenthesis in each cell contain p-values, which measure the probability of falsely rejecting the null hypothesis that the difference in means across a pair of legal families is negligible. Following standard statistical practice, we do not reject the null hypothesis when the p-value exceeds .10. The p-values show that that the difference in means across the English family and the three civil law families are statistically significant.[40] Thus, the legal families are a useful indicator for the quality of the law on the books in the different countries in our sample.

In characterizing the transplantation process, we note that a legal order existed in transplants at the time when the European law was transplanted and that many countries had formalized at least part of their legal systems. A legal order is a property of every society.[41] Norms may be formalized, i.e., embodied in written rules, or they may be based on conventions, customs, and remain informal. Most societies today have both informal and formal legal systems.[42]

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40. La Porta et al. (1998) supra n. 11 analyze all the indicators of shareholder and creditor rights and conclude that the French have the worst investor-protection laws.

41. See Coleman, supra n. 23.

42. On the relation between formal and informal norms, compare Knight, "The Bases of Cooperation: Social Norms and the Rule of Law," 154 *J. Inst. & Theor. Econ.* 754 (1998). He suggests that formal law may exert positive influence on the development of social norms. The relationship between different normative systems particularly in developing countries has been analyzed under the rubric "legal pluralism". See Merry, "Legal Pluralism," 22 *Law and Society Review* 867 (1988). For a critique of this literature, compare Tamanaha, "The Folly of the 'Social Scientific' Concept of Legal Pluralism," 20 *J.L. & Society* 192 (1993). There is also an extensive literature on the importance of informal legal orders in the U.S. Compare only Macaulay, "Non-Contractual Relations in Business: A Preliminary Study," *Am. Soc. Rev.* 55 (1962) who documents the extent to which entrepreneurs in Wisconsin rely on non legal mechanisms to solve disputes; Robert C. Ellickson, *Order Without Law — How Neigh-*

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Many societies that received European law in the nineteenth century were familiar with a formal legal order. Legal texts had a long tradition in Hindu, Islamic and Chinese law. In content and style, these legal texts, however, differ substantially from the modern European codification. For example, Hooker shows that issues of morality are much closer interwoven with legal rules and ambiguity rather than specificity characterizes their wording.[43] Other societies did not have a formal legal order that was embodied in codes or case law and enforced primarily by the state. They were governed by an informal legal order that was enforced by social sanctions, including reputation effects and mutual monitoring.[44] The social norms and enforcement mechanisms used differed considerably from society to society.[45] The preexisting legal order typically persisted after the process of transplantation was complete. In part, this was the intended outcome. In some instances, for example, the transplanted European law applied only to the European population, while local people continued to be governed by local custom. This was true in particular for Dutch colonies. In other cases, criminal and administrative law was applied to local people, but in family, inheritance, but also commercial matters, local law prevailed. This was the practice in many English colonies, although the jurisdiction of common law courts was often extended over time.[46] Even when transplanted law was not as clearly circumscribed, and therefore in principle applicable to all subjects in all areas of the law, the government organs did not always enforce the transplanted formal legal order against the indigenous population.

We do not have data on the effectiveness of the initial legal order and can only speculate at the ability of countries to develop an effective legal order internally, had they not received the legal order from the West. Our data, however, allow us to determine whether the

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bors Settle Disputes (1991) who argues that under certain conditions informal norms may be more effective than formal rules; and Bernstein, "Opting out of the Legal System: Extralegal Contractual Relations in the Diamond Industry," 21 *J. Legal Stud.* 115 (1992), who analyzes the normative order governing the diamond exchange.

43. M.B. Hooker, *Legal Pluralism—An Introduction to Colonial and Neo-colonial Laws* (1975).

44. See Katherine S. Newman, *Law and Economic Organization: A Comparative Study of Preindustrial Societies* (1983) for a survey of dispute settlement institutions based on anthropological field studies. Compare also Milgrom, North et al., "The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs," 2 *Econ. & Pol.* 1 (1990) and Greif, "Reputation and Coalitions in Medieval Trade; Evidence on the Maghribi Traders," 59 *Journal of Economic History* 857 (1989) for similar mechanisms in early European history. For a theoretical analysis of enforcement mechanisms absent the state, see Kronman, "Contract Law and the State of Nature," 1 *Journal of Law, Economics, & Organization* 5 (1985).

45. For an account of the complexity and variety of pre-colonial law in South/East Asia see Hooker, supra n. 43.

46. Alan Katz, *Legal Traditions and Systems—An International Handbook* (1986) on African colonies and pp. 125 on Asian colonies. See also the country reports on Zambia, Zimbabwe, Kenya, and Nigeria in Knapp supra n. 34.

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transplantation of foreign law has helped or hindered these countries to develop levels of legality that are comparable with those of origins. Legal scholars have long observed that there is a gap between formal law on the books and law in action. While this gap exists in origins, we would expect to observe a larger gap between law on the books and law in action in transplants. The logic of this prediction follows from the idea that the law is primarily a "cognitive institution".[47] This is self-evident with respect to the informal legal order. Observance of this law requires knowledge of the customs and habits of a social group. The fact that formal legal orders have put the key elements of the legal order in writing tends to disguise the fact that the effectiveness of these rules also rests on knowledge and understanding of these rules and their underlying values by social actors. While most members of society will not, and in fact need not, be familiar with the specifics of individual rules and regulations, they are familiar with the basic concepts of the legal order.[48] Moreover, they can rely on legal professionals as intermediaries, who have a better knowledge of the formal legal order. But even for professionals to apply a special rule, they must not only grasp the wording of that rule, but also the concept behind it, the value judgments on which its rests, and its position within the overall legal order. Even a seemingly clear law - do not steal! - raises a host of interpretative problems when applied to real world cases. What about taking from a common pool, or overgrazing? What about taking something with the intention of returning it later, or picking up an object that (apparently) has been abandoned by the owner? An identical rule like this one, will be interpreted differently by those charged with applying it and will be influenced by their understanding of the underlying values on which this norm rests. This is true even within the same legal system. If this was not the case, countries would not need several court instances and a supreme court whose task it is to ensure the uniform interpretation and application of the law.

When a transplant country applies a rule that it has received from an origin, it is effectively applying a rule to its own local circumstances that was developed in a foreign socioeconomic order. Thus, we would expect that the interpretation of a legal rule will differ more within a transplant than an origin. Applying a simple rule that prohibits stealing in the context of communal property is a case in point. Other examples include:

47. Robert Charles Means, *Underdevelopment and the Development of Law* 44 (1980). He notes that "modern law's complexity and its intellectual autonomy create a need for cognitive institutions that are specialized and relatively structured". Id: at p. 45.

48. On the role of lawyers as "transaction cost engineers" in Western legal systems, compare Gilson, "Value Creation by Business Lawyers: Legal Skills and Asset Pricing," 94 *Yale L.J.* 239 (1985).

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- the enforcement of the freedom of contract principle in a society governed by kinship relations or guangxi - the Chinese term that refers to norms of reciprocity or more generally, human emotions;[49]
- the introduction of the corporate form in pre-revolutionary mainland China, where mistrust in the state prevented entrepreneurs from registering their business with the state;[50]
- the introduction of the corporate form in mid 19th century Colombia, which at that time was dominated by a handful of state run enterprises, overwhelmingly agricultural production, and state policies that discouraged the formation of private capital.[51]

In each of the above cases the transplanted law was largely ineffective. In early 20th century China, for example, family owned businesses frequently called themselves limited liability companies but in fact were unincorporated family owned businesses. In the words of Kirby, "it had become fashionable and modern to attach the term youxian gongsi (limited company) to almost any enterprise. But it was not in vogue to register with the government, even with the very weak central government of 1916-28".[52] Even where the corporate form was used, outside finance was marginal, as kinship networks provided the most important financial resources. They also ensured that obligations would be honored. And in Colombia, the introduction of the corporate law did not lead to the establishment of corporations or the reorganization of existing partnerships. In fact, there is evidence that knowledge of the existence of this law was not wide spread.[53]

The context specificity of formal legal order has important implications for the effectiveness of the legal order (legality) in transplant countries. Where the meaning of specific legal rules or legal institutions is not apparent, they will either not be applied or applied in a way that may be inconsistent with the intention of the rule in the context in which it originated. This in turn has implications for the perception and trustworthiness of the institutions applying them, and thus for the future demand for these institutions. However, if a transplant country adopts foreign laws from origins in a way that is sensitive to its initial conditions, then the meaning of these rules be-

49. Hamilton, supra n. 27.

50. Kirby, "China Unincorporated: Company Law and Business Enterprise in Twentieth-Century China," 54 *The Journal of Asian Studies* 43 (1995). For an elaboration of this proposition, see also Bowen & Rose, "On the Absence of Privately Owned, Publicly Traded Corporations in China: The Kirby Puzzle," 57 *Journal of Asian Studies* 442 (1998).

51. Compare Means, supra n. 47.

52. Kirby, supra n. 50, at p. 50.

53. See Means, supra n. 47, at 139.

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comes clearer, and it is also simpler to develop institutions such as the courts, procurators, anti-trust agencies, etc. that enforce these rules. We conjecture that there are two reasons for this. First, when the law is adapted to local needs, people will use it and want to allocate resources for enforcing and developing the formal legal order. Second, legal intermediaries responsible for enforcing and developing the formal legal order can be more effective when they are working with a formal law that is broadly compatible with the preexisting order, or which has been adapted to match demand.

Our core proposition is that legality is determined by the ability of a country to give meaning to the transplanted formal legal order and to apply it within the context of its own socioeconomic conditions. Countries that developed a formal legal order internally, i.e. origins, should develop more effective legal institutions than countries that received it from another country. However, there may be cases where the transplanted law is more or less compatible with the initial order and this could offset the fact that law was transplanted. This possibility is reflected in our classification of different transplants.

Receptive and unreceptive transplants

Legal transplantation has taken different forms in different countries. Some legal transplants were imposed during occupation; others were part of a voluntary reform process initiated by the law receiving country. Differences in the transplanting process may impact the receptivity of the transplants, where receptivity is defined as the country's ability to give meaning to the imported law. Based on the theoretical considerations developed in the previous section we develop proxies for the receptivity of import countries to foreign law, namely whether they have adapted the foreign law to local conditions, or whether they exhibit familiarity with the imported legal order.

Our argument is that a voluntary transplant increases its own receptivity when it makes a significant adaptation of the foreign formal legal order to initial conditions, in particular to the preexisting formal and informal legal order. Changes in the transplanted rules or legal institutions indicate that the appropriateness of these rules has been considered and modifications were made to take into account domestic legal practice or other initial conditions. Means, for example, reports that Colombia voluntarily, but almost blindly, transplanted the Spanish commercial code of 1829.[54] The few changes made were instituted in ignorance of the implications of these rules for business practice. For example, a provision requiring state ap-

54. See Means, supra n. 47, Table 2 at p. 160. Of the 1,110 Articles of the 1853 Colombian Commercial Code, 995 were copied without change from the Spanish model.

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proval for the formation of a corporation, which at the time was still common throughout Europe, was eliminated from the books. Years later when the code was amended, this time using Chilean law as a model, state approval became mandatory, despite the fact that this rule had meanwhile been liberalized in most other countries. Adaptation does not necessarily require that the transplanted law is changed significantly. However, at the very least, an informed choice about alternative rules must have been made. Extensive comparative research prior to the adoption of a foreign legal system is indicative for an informed choice. A good example is Japan, where extensive debates about the adoption of English or French law, and several drafts based on the French model preceded the promulgation of codes that were largely based on the German model.

Another indicator that a transplant is receptive to formal legal order is that it has familiarity with the legal system that it uses as a model for legal borrowing. Countries that share a common legal history will be familiar with the transplanted legal concepts and will therefore have little reason to make major adaptations or to choose a system that is less familiar to them. Common roots in the distant past are, however, not sufficient. Most of the European countries can trace their legal history back to the Roman Empire. Yet, quite distinct legal systems developed on the basis of the Roman law, incorporating centuries of legal practice that combined elements of Roman law with customary rules. Not all countries in Europe shared this experience in the same way. Spain, for example, had codified Roman law already in the thirteenth century and supplemented these rules periodically with imperial ordinances. However, Spain did not develop the legal principles that gave rise to the modern business corporation or an elaborate system of property rights based on the (political) recognition of the right to ownership. This also implies that Latin America, which received Spanish law in the 16th century, was exposed to Roman legal heritage, not, however, to the development of the private law, which formed the core of the formal legal orders that emerged in Europe in the nineteenth century. Similarly, Greece can trace the roots of its legal system back to the Roman law. In fact, the famous compilation of the classic Roman jurists' texts under emperor Iustinian, the corpurs iuris civilis, which is the basis of the European Roman legal heritage, was a product of the East Roman empire.[55] Yet, the Byzantine law Greece enacted in 1821 after independence from Turkish rule differed significantly in content and style from the modern French - and, especially for the civil code German - law it transplanted subsequently, despite the fact that the French law is also based on Roman law. Finally, the legal development of Korea and Japan was long influenced by Chinese law. But when Japan

55. Peter Stein, *Roman Law in European History* (1999).

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transplanted its law to Korea, this was the new Japanese law that had been transplanted from Germany.[56] There is no definite time limit to distinguish a distant legal heritage from a more recently shared common legal history. From our discussion of law as a cognitive institution, it follows that the common history must still be recognizable in legal practice at the time when the foreign law is transplanted.

From the above analysis we conjecture that if a transplant has familiarity with the country or countries from which it takes the formal legal order, and/or it transplants the formal legal order with significant adaptation to its initial conditions, then it is a receptive transplant.

In certain cases, countries that had a foreign law imposed via collonization can be categorized as receptive transplants. As noted already, in the Dutch colonies, the foreign law applied primarily to members of the colonizing power. English common law was introduced in the early colonies in a gradual fashion. The East Indian Company established the first courts on the subcontinent, which applied English common law. Whether this law applied only to the English subjects or also to the local population remained unclear for decades. Only when the British government took over control from the company in the middle of the nineteenth century was the general jurisdiction of the common law established. A court system was created, which referred to the Privy Council as the highest court. For the purposes of transplanting English common law to other parts of the empire, it was codified, which greatly accelerated the transplantation of the common law to the Indian subcontinent and later to other parts of the empire. The introduction of English common law to other countries was swifter. Kenya and Zimbabwe were colonized only at the end of the 19th century. They received English law by decree, which stipulated that the law in force in England at a certain day would now apply in the territory. Still, exemptions were sometimes made for certain matters of the law such as family inheritance.[57] Similar principles applied to the imposition of French law in French colonies.

In some colonies the transplantation of foreign law took quite a different form. The English Empire distinguished between "settled"

56. For legal development of law in Korea prior to and under Japanese colonial rule, compare Pyuong-choon Hahm, *Korea's Initial Encounter with the Western Law 1866-1910*; id., *Korea's Initial Encounter with the Western Law, 1910-1948*; and Sang Hyun Song, ed., *Korean Law in the Global Economy* 47 (1996); for the development since World War II, see Dae-Kyu Yoon, *Law and Political Authority in South Korea*, (1990). On the reception of formal law in Taiwan during Japanese colonial rule, see Tay-sheng Wang, *Legal Reform in Taiwan Under Japanese Colonial Rule (1895-1945)* (1997).

57. See references supra n. 46.

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and "conquered" territories.[58] Settled territories were considered to be barren land, the existence of indigenous people like the Indians in North America, the Aborigines in Australia, or the Maoris in New Zealand notwithstanding. These territories were designated for migration from Europe and, in fact, experienced a massive influx of European people. The migrants used violence and their control of economic resources to seize power from the indigenous population. English law was transplanted to these territories through migration. The first settlers brought the law with them. In some cases, the applicability of English law remained in doubt or was disputed, and was only confirmed by the English crown. For our purposes, however, the important point is that in the case of the so-called settled territories, European law was not imposed on people accustomed to an entirely different legal order, but was applied to people who were familiar with the basic principles of the colonial legal order.[59] Therefore, the migration process has enabled some colonies to be receptive transplants because an important component of their population is familiar with the transplanted legal code.

Using adaptation and familiarity as the criteria for receptiveness, there are 11 receptive transplants and 28 unreceptive transplants in our data base. Table 3 presents a list of the characteristics of our transplants, including their period of transplantation, whether or not their transplantation process exhibited adaptation and familiarity, and their transplant type. Table 4 groups our transplants into the receptive-unreceptive categories, again lists the major period of legal transplantation, summarizes critical historical information that was used to classify the transplantation process and lists each country's legal family.[60]

Table 2a and 2b provide a useful comparison of the origin and transplant categories with the legal families. As already noted, the legal families are excellent predictors of the quality of law on the books. Table 2b, by contrast, shows that the origin and transplant categories have almost no ability to explain the quality of law on the

58. Acemoglu et al., supra n. 22 base their analysis of the different initial conditions for institutional development on a similar distinction by referring to colonies with different mortality rates.

59. That these territories greatly benefited from the legal order they had brought with them was noted already by Adam Smith in Adam Smith, *The Wealth of Nations* (1976) Book IV, chapter 7. The contrast with Latin America, which had been colonized earlier by imperial Spain, and where the Spanish elite was by far outnumbered by locals and Slaves, was indeed striking. S.E. Finer, *The History of Government From the Earliest Times*, 3 vols. (1997) pp. 1394 notes that these different territories represented not only geographic differences, but different historical periods.

60. In our companion paper, we note in section 4 that there may be good reasons to alter the classification of Mexico from unreceptive, to half unreceptive and half receptive; and, also alter the coding of Portugal and Spain from unreceptive to half unreceptive and half receptive. We show that our statistical results are robust to this alternative classification.

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books: in all eight possible binary comparisons, there is no statistically significant difference between the different categories. While the legal families are superior predictors of law on the books, in the rest of the paper, we will show that the origin and transplant categories are a much stronger predictor of legality.

LEGALITY AND THE TRANSPLANT EFFECT

In this section we test our hypothesis that the way in which the law is transplanted is a more important determinant of legality than the supply of a particular family. In order to measure legality, we use survey data measuring the effectiveness of the judiciary, rule of law, the absence of corruption, low risk of contract repudiation and low risk of government expropriation observed during 1980-1995.[61] Log GNP per capita in 1994 proxies for a country's economic development. Appendix table 1 lists our legality and economic development data, and appendix table 2 lists summary statistics. The legality proxies are ranked on a scale from zero to ten, where a higher number for any index means that legality has improved. The different legality proxies are all highly correlated with each other: for example, a country with an above average rule of law rating tends to be above average in the absence of corruption rating; a country with a high risk of expropriation tends to also have a high risk of contract repudiation. Thus, it is convenient to combine these five observed legality proxies into a legality measure, that is a weighted sum of effectiveness of the judiciary, rule of law, the absence of corruption, low risk of contract repudiation and low risk of government expropriation.[62]

Let LEGAL denote legality, and let subscript denote the ith country: i = 1, ..., 49. We estimate the following unrestricted regression:

$$(1)\quad LEGAL_i = \alpha + \beta_1 RECEP_i + \beta_2 UNRECEP_i + \beta_3 FRENCH_i + \beta_4 GERMAN_i + \beta_5 SCAND_i + \beta_6 OECD_i + u$$

where RECEP (UNRECEP) equals one when the ith country is a receptive (unreceptive) transplant and zero otherwise. The estimated regressors β_1, β_2 measure the impact on legality of being a receptive

61. The data are based on country risk assessments. They were first compiled by Knack & Keefer, "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures," 7 *Econ. & Pol.* 207 (1994) and are now commonly used for assessing the effectiveness of legal institutions, or what we call legality. See the studies by La Porta et al., supra n. 11.

62. The legality measure is derived from a principle components analysis of the covariance matrix for the five observed legality variables. Because the first component accounts for 84.6% of the variance, we use its eigenvector as weights: Legality = .381*(Efficiency of the Judiciary) + .5778*(Rule of Law) + .5031*(Absence of Corruption) + .3468*(Risk of Expropriation) + .3842*(Risk of Contract Repudiation). See Berkowitz, Pistor and Richard, op. cit., for details, as well as a system validation of this aggregation procedure.

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transplant versus an origin, and an unreceptive transplant versus an origin. FRENCH equals one when the ith country is in the French legal family and zero otherwise, GERMAN equals one when a country is in the German legal family and zero otherwise, and SCAND equals one when a country is in the Scandinavian legal family and zero otherwise. The estimated regressors β_3, β_4 and β_5 measure the impact of being a member of the French, German and Scandinavian families versus the English family. It follows from the definition of the transplantation and legal family variables that the intercept variable α is the estimated average legality for English origin countries.

There are twenty-two OECD members in our sample. Legality in twenty of these countries exceeds the median legality in our sample; GNP per capita in twenty of the twenty-two OECD countries also exceeds median GNP per capita. In order to account for the potential impact of OECD membership on legality, we estimate its impact, β_6, in our regression equation.[63]

The number of estimated regressors in the unrestricted regression (equation 1) is large in comparison to the sample of forty-nine countries. Therefore, it is not surprising that estimates in this equation contain many coefficients that have a negligible impact on legality. We sequentially eliminate insignificant regressors using a standard technique advocated by Hendry (2000). Regression column 1 in Table 5 reports the restricted regression for legality. Estimated regression coefficients and standard errors in parentheses are reported in each cell.

The statistical fit of this restricted legality regression is impressive: we obtain an R^2 of .742.[64] Three variables are excluded: the receptive-transplant, the German and the Scandinavian families. The unreceptive-transplant, French family and OECD variables are all significant at the 1-percent level. In order to formally test these exclusion restrictions, we test the null hypothesis that the joint impact of these excluded variables on legality is negligible. The p-value of the F test-statistic (reported at the in the bottom half of Table 5 in regression column 1) says that the probability of falsely rejecting this null hypothesis is .734. Because this p-value exceeds the critical value of .10, we do not reject the null. These exclusions have two important implications: firstly, a receptive-transplant policy is effective, since its impact on legality is indistinguishable from the impact of being an origin; second, there is no significant difference between the English, German and Scandinavian families.

63. Including or excluding this OECD membership effect has no substantial impact on our results.

64. This statistic says that the regression result captures 74.2 percent of the variance in legality.

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The legality estimates contain several important implications about transplantation and legal families. The process of unreceptive-transplantation and the transplantation of French law both have a negative impact on legality, and the absolute impact of the unreceptive-transplant effect is marginally worse. Specifically, an unreceptive transplantation is associated with a 70-percent standard deviation decline in legality; while transplanting the French family is associated with a 48-percent standard deviation decline. Second, since the receptive-transplant, English, German and Scandinavian families variables are all set to zero, the unreceptive transplant variable measures the difference between a receptive and unreceptive transplant that has received either the English or German legal code.[65] The unreceptive-transplant plus the French family coefficients measures the difference between a receptive transplant that has received English or German law and an unreceptive transplant that has received the French code. Clearly, it is much worse to be an unreceptive transplant that has received the French law, than it is to be an unreceptive transplant that has received the German or English law. Third, the OECD effect, in absolute terms, dominates either the impact of the French or unreceptive-transplant coefficient. An implication is that it is much worse to be an unreceptive-transplant that is not a member of the OECD. Furthermore, the worst possible outcome is to be an unreceptive-transplant that has received the French code, and that is not a member of the OECD. Countries in this category include the Philippines, Indonesia, Peru, Sri Lanka and Colombia, and each is contained at the bottom quintile of our legality measures. Finally, the families, by themselves, cannot adequately explain the cross-country variance in legality. In the test statistics section of table 5, we report an F test-statistic for the null hypothesis that only families are included in the legality equation. This null is overwhelmingly rejected (the p-value is 0.000).

A potential criticism of our results is that the legality data employed cover the period 1980-95, and may not be relevant for a different time period. Therefore, we check if our results are robust to an alternative legality measure based upon three legality proxies compiled by Kaufmann, Kraay and Zoido-Lobaton covering the period 1997-98.[66] Regression column 2 in Table 5 reports the estimates and

65. There are no Scandinavian transplants. However, in our robustness table 5.2 we consider an alternative coding where Finland and Norway are coded as receptive-transplants.

66. *Aggregating Governance Indicators* (1999): Worldbank Policy Regional Paper #2195 (1999). Here again we use a principal components analysis. The first component, which accounts for 95.9 percent of the total variance, is denoted legality (1997-98) and is given by .577*(Government Effectiveness) + .576*(Rule of Law) + .579*(Control of Corruption).

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test statistics. The fit is still impressive (R2 = 0.612), but is lower than the original estimates.

Regarding legality, the test statistics verify that the receptive-transplant and the German and Scandinavian families can be excluded, and the families, by themselves, still have poor explanatory power. The unreceptive-transplant and OECD dummy variables are both significant at the 1-percent level, while the significance of the French family deteriorates to the 7-percent level. In order to compare the impact of transplantation and families on the original legality measure and legality (1997-98), it is useful to compare their impact on a standard deviation in legality. The unreceptive transplant is associated with a 70-percent and 87-percent standard deviation decline in legality (1980-95) and legality (1997-98); the French family is associated with a 48-percent and 35-percent standard deviation decline in legality (1980-95) and legality (1997-98). Therefore, the absolute impact of an unreceptive transplant compared to a transplantation of the French family is stronger under the alternative legality measure.

ECONOMIC DEVELOPMENT, LEGAL FAMILIES AND THE TRANSPLANT EFFECT

In this section we test for the impact of transplantation and legal families on economic development (GNP per capita). If, after taking into account the level of legality in a country, there is a direct relationship between the transplanting process and economic development, then there is reason to believe that a well-designed legal reform would have an immediate positive impact on GNP per capita. If, however, the process of transplantation has a primarily indirect effect via its impact on legality, then an effective reform can improve legality, which, over time, will raise economic development. Similarly, it is critical to decompose the impact of supplying a particular legal family into its immediate direct effect and its indirect effect via its impact on legality. If legal families have a direct impact on GNP per capita, then policy makers could perhaps expect to obtain an immediate gain in GNP per capital by picking the best family.

In order to analyze these issues, we estimate the following unrestricted regression:

$$(2)\ LnG_i = \delta + \gamma_1 RECEP_i + \gamma_2 UNRECEP_i + \gamma_3 FRENCH_i + \gamma_4 GERMAN_i + \gamma_5 SCAND_i + \gamma_6 OECD_i + \gamma_7 LEGAL_i + u$$

where LnGi denotes 1994 log GNP per capita in the ith country. Once again, we employ standard statistical techniques and eliminate insignificant regressors. Regression column 1 in Table 6 reports the restricted regression for log GNP per capita. The fit for the restricted regression is impressive: we obtain an R2 of 0.872. Four variables are excluded: the receptive and unreceptive transplants, the Scandina-

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vian family and OECD membership. The test for this exclusion restriction passes with an impressive p-value of 0.887.

This regression contains several important lessons about the impact of transplantation and legal families on economic development. First, since the unreceptive transplant coefficient is excluded from this regression, there is no direct unreceptive transplant effect and the negative impact of unreceptive transplantation on log GNP per capita is completely indirect. Multiplying the legality coefficient in this economic development regression (.329) times the unreceptive-transplant coefficient in the restricted reduced form for legality (–3.017) in Table 1, the approximate indirect effect of transplant effect on log GNP per capita is – 1.00 (roughly two thirds of a standard deviation away from the mean log GNP per capita). Second, the overall impact of the French family is negligible. The approximate indirect effect of the French family on log GNP per capita is .329 times –2.060, which is roughly –0.678. This completely offsets the direct French & German effect of .651. Finally, supplying the German family can have a substantial direct effect on GNP per capita that is not offset by any indirect effect. However, the absolute impact of the unreceptive transplantation (–1) dominates the overall impact of the German family (.658).

The case of Colombia illustrates the impact of transplantation and legal families on economic development. It is an unreceptive transplant of French legal code, and GNP per capita in 1994 was $1,400 per capita. A receptive transplant strategy would have raised 1994 GNP per capita to roughly $3,785, which is comparable to Mexico and Uruguay. Transplanting the English or Scandinavian code in an unreceptive manner would have had no impact. Transplanting the German code in an unreceptive manner would have raised 1994 GNP per capita to only $2,690, which is comparable to Venezuela.

As a robustness check, we re-estimate the unrestricted regression for log GNP per capita in 1998 given legality in 1997-98. The estimates and test statistics for the restricted regression are reported in Table 6, regression column 2. The exclusion restriction test shows that that both transplant variables and all legal families have no significant impact and can be excluded. Therefore, the result that the impact of the unreceptive-transplant is completely indirect via its impact on legality is robust while the original results for legal families are not. In the original estimates, the French family had an insignificant impact on log GNP per capita: its negative indirect impact through legality was offset by its positive direct effect. In the alternative specification the negative impact of the French family via legality is again offset by its positive direct effect. In the original estimates, the direct and overall impact of the German family on eco-

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nomic development were both positive. In this alternative data, the German effect vanishes.

The substantial negative impact of an unreceptive transplant strategy, which in turn has a substantial indirect and overall impact on economic development, is robust to an alternative legality measure. The substantial (albeit weaker) impact of transplanting the French code on legality is also robust. However, just whether or not there is a positive or negligible impact of the German family on development depends on how and when we measure legality.

The policy implication following from these results is fundamental. An effective legal reform strategy should include measures to adapt the law to local conditions and/or increase familiarity with the law before it is formally transplanted. Furthermore, because the impact of the transplant effect on economic development is purely indirect, there is no reason to believe that a legal reform would have a direct and immediate impact on GNP per capita. Finally, because the transplant effect dominates the impact of legal families, and legal families may have a spurious impact on economic development, our econometric results provide no support for the idea that picking the correct family would lead to a direct and immediate gain in economic development.

CONCLUSIONS

In 1748, Montesquieu wrote in "L'Esprit des Lois" that the political and civil laws should be tailor made for each nation and that it would therefore be a great coincidence, should they fit another people equally well.[67] Montesquieu argued that the spirit of each nation's law closely reflects the type of government, geography and climate as well as religion, history and culture.

Today, this proposition seems like an anachronism as people around the globe have by and large converged on Western type formal law both for the political laws (constitutions) as well as civil and commercial laws. Yet, convergence has often been confined to the law on the books. The functioning of legal institutions and their effectiveness continues to differ substantially, as is evidenced by the great variance across countries on the legality index. This divergence is all the more puzzling when considering that many nations outside Europe received Western law within decades after they had been en-

67. Montesquieu, supra n. 30, at 30 in Book 1 chapter 3 states "Law in general is human reason, inasmuch as it governs all the inhabitants of the earth; the political and civil laws of each nation ought to be only the particular cases in which this human reason is applied. They should be adapted in such a manner to the people for whom they are made, as to render it very unlikely for those of one nation to be proper for another."

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acted in origin countries.[68] Thus, it is difficult to argue that it is only a matter of time for transplant countries to catch up. Indeed, our data suggest that the effect of transplanting law in the nineteenth century has implications for the effectiveness of legal institutions today.

Perhaps the rejection of the earlier transplants can be attributed to the fact that they were for the most part imposed under colonialism. But attempts to use Western law as a tool to promote socioeconomic development after the former colonies had become independent faired not much better, as the protagonists of the first law and development movement conceded in the early 1970s. This did not prevent economic and legal advisers from proposing a similar strategy when the socialist regime collapsed in East/Central Europe and the former Soviet Union. Ten years later we are taking stock once more and can hardly avoid the conclusion that the same recipe has failed again.

In this paper we developed a simple theory of legal evolution to explain why some countries have more effective legal institutions and thus rank higher on our legality index than others. We proposed that the process of lawmaking rather than the contents of legal rules determines the effectiveness of legal institutions. Where law develops internally through a process of trial and error, innovation and correction, and with the participation and involvement of users of the law, legal professionals and other interested parties, legal institutions tend to be highly effective. By contrast, where foreign law is imposed and legal evolution is external rather than internal, legal institutions tend to be much weaker. Our key argument is that legality is largely a function of the demand for law. Only if demand for law is high, will there be high voluntary compliance and will a society invest in the legal institutions necessary for upholding the legal order.

In contrast to Montesquieu, we rest our theory not on conditions such as geography, culture, or political regime type, but on the notion that law is a cognitive institution. As Sunstein put it – "the meaning of legal statements is a function of social norms, not of the speaker's intentions."[69] Laws that are compatible with the preexisting social norms are more likely to be well received and thus effectuated. We therefore suggest that legal transplants may work, if they are adapted, or if the population is already familiar with the basic principles of these laws.

Our empirical analysis offers strong support for these propositions. Receptive transplants, i.e., those that adapted the imported

68. In Japan, the enactment of the civil code (1898) that was modeled on the German Civil Code of 1896. However, the latter went into force only in 1900.

69. Sunstein, "On the Expressive Function of Law," 144 *U. Pa. L. Rev.* 2021, 2050 (1996). For a more elaborate statement of this point see also Sunstein, "Social Norms and Social Roles," 96 *Colum. L. Rev.* 903 (1996) at 925. While his argument deals primarily with social norms, the point is also applicable to formal law.

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law, or had a population that was familiar with it show legality ratings that are statistically no different from those of origin countries. Countries without similar predispositions, i.e. unreceptive transplants, perform much worst. These countries suffer from the transplant effect.

These findings have fundamental policy implications. They strongly suggest that legal reform viewed simply as technical assistance programs that can be implemented by having Western experts design good laws, are unlikely to produce the desired outcome, i.e. an effective legal order and economic growth and development. Instead, attempts must be made to induce an internal process of law development and to generate a self-sustaining demand for legal innovation and change. This does not exclude the possibility of borrowing from other countries. Our analysis suggests that a good fit of foreign with domestic law may not be only a lucky coincidence, but could be enhanced by meaningful adaptation of imported laws to local conditions. This process will undoubtedly take longer than the design and enactment of optimally designed laws. Yet, after two hundred years of for the most part unsuccessful legal transplants, more patience with the development of legal institutions seems to be in order.

TABLES

Table 1: Origins

Country	Legal formation period	Formal law source	Legal family
Austria	1811-1862	Austria enacts a comprehensive civil code in 1811. It is an idiosyncratic codification based on the Roman/Germanic tradition. The 1862 general German commercial code reflects existing business practice as well as French influence.	German
Denmark	1815-1905	Early codification of customary law. Series of statutory enactments during the 19th century. Legal borrowing is limited primarily to other Scandinavian countries.	Scandinavian
Finland[70]	1809-1917	Strong influence of Swedish law before 1809 (Sweden cedes Finland to Russia). Finland remains attached to Scandinavian legal tradition throughout 19th century and strengthens this after independence in 1917.	Scandinavian

70. We conduct robustness tests for this alternative category in Berkowitz, Pistor and Richard, op. cit.

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France	1804-1811	Promulgation of the five Napoleonic Codes, including the Code Civil, the Code of Civil Procedure, the Code of Commerce, the Code of Criminal Procedure, and the Penal Code. Codes consolidate legislation enacted prior to the revolution and codify business practice.	French
Germany	1862-1900	Extensive codification after unification in 1871. Most influential is the 1900 civil code based on Roman legal principles with some references to Germanic law. Earlier enactment of commercial code (1862) codifies existing business practice.	German
Norway[7]	1814-1915	Until 1814 part of Denmark with gradual infiltration of Danish law. Statutory enactments during the 19th century draw on increasing legislative cooperation with Denmark and Sweden.	Scandinavian
Sweden	1734-1905	Codification of customary law in 1734 (some Roman and canon law influences). In the 19th century parts of the code are replaced with new statutes, many of which are based on collaborative efforts with Denmark and Sweden.	Scandinavian
Switzerland	1881-1907	Codification of commercial and civil law. In comparison to Germany less influence of Roman law. Codification of Swiss business practice, with some borrowing from French and Austrian laws that had earlier been enacted in parts of the country.	German
United Kingdom	1485-1832	The development of English common law begins with the Norman conquest in 1066. Local customary law completely replaced by mid 15th century. Increasing importance of statutory law since the 19th century, but case law continues to dominate.	English
United States[1]	1774-1820	In 1774, the first continental congress passes resolution that Americans are entitled to the common law and statutes that existed at the time of English colonization. Since late 18th century courts overrule English law and assess it against American constitutional and utilitarian standards.	English

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TABLE 2A - SHAREHOLDER AND CREDITOR RIGHTS:

Categorical Means for Legal Families[a]

Category	Observations[a]	Shareholder Rights	Creditor Rights
English	18/19	4.00 (.970)	3.11 (1.231)
French	21/19	2.33 (1.197)	1.58 (1.346)
German	6/6	2.33 (1.033)	2.33 (.816)
Scandinavian	4/4	3.00 (.816)	2.00 (.816)
Sample Average	49/47	3.00 (1.307)	2.30 (1.366)

Differences in Means[b]

English – French	1.67 (.000)*	1.53 (.001)*
English – German	1.67 (.008)*	.78 (.101)***
English – Scandinavian	1.00 (.085)***	1.11 (.065)***
French – German	0.00 (1.000)	–.75 (.119)
French – Scandinavian	–.67 (.220)	–.42 (.438)
German – Scandinavian	–.67 (.291)	.33 (.548)

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TABLE 2B

Categorical Means for Origins and Transplants[a]

Category	Observations[a]	Shareholder Rights	Creditor Rights
Origin	10/10	3.00 (1.333)	2.00 (1.247)
Transplant	39/37	3.00 (1.318)	2.38 (1.401)
Receptive Transplant	11/11	3.27 (1.618)	1.91 (0.944)
Unreceptive Transplant	28/26	2.89 (1.197)	2.58 (1.528)
Sample Average	49/47/	3.00 (1.307)	2.30 (1.366)

Differences in Means[b]

Origin – Transplant	0.00 (1.000)	–0.38 (.420)
Origin – Receptive Transplant	–0.27 (0.677)	–0.09 (0.854)
Origin – Unreceptive Transplant	0.11 (0.826)	–0.58 (0.258)
Receptive – Unreceptive Transplant	0.38 (0.491)	–0.67 (0.117)

[a] Standard deviations are in parentheses. [b] A two-sided two-sample t test with unequal variances is performed. P-values are reported in parentheses. * Significant at the 1-percent level; ** significant at the 5-percent level; *** significant at the 10 percent level.

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Table 3: Receptive and Unreceptive Transplants				
Country	Transplanting Period	Transplantation Process		Transplant Type
		Adaptation	Familiarity	
Australia	1808-1873	0	1	receptive
Belgium	1810-1887	0	1	receptive
Canada	1810-1830	0	1	receptive
Ireland	1769-1801	0	1	receptive
Israel	1858-1945	1	0	receptive
Italy	1805-1870	1	1	receptive
Japan	1868-1899	1	0	receptive
Netherlands	1810-1838	1	1	receptive
New Zealand	1840-1900	0	1	receptive
Argentina	1862-1880	1	0	receptive
Chile	1854-1880	1	0	receptive
Brazil	1808-1865	0	0	unreceptive
Colombia	1821-1853	0	0	unreceptive
Ecuador	1831-1881	0	0	unreceptive
Egypt	1798-1840	0	0	unreceptive
Greece	1821-1878	0	0	unreceptive
Hong Kong	1844-1898	0	0	unreceptive
India	1858-1888	0	0	unreceptive
Indonesia	1815-1870	0	0	unreceptive
Jordan	1850-1918	0	0	unreceptive
Kenya	1895-1918	0	0	unreceptive
Malaysia	1867-1937	0	0	unreceptive
Mexico	1821-1889	0	0	unreceptive
Nigeria	1863-1915	0	0	unreceptive
Pakistan	1858-1888	0	0	unreceptive
Peru	1811-1853	0	0	unreceptive
Philippines	1889-1898	0	0	unreceptive
Portugal	1808-1867	0	0	unreceptive
Singapore	1858-1895	0	0	unreceptive
South Africa	1815-1865	0	0	unreceptive
South Korea	1912-1945	0	0	unreceptive
Spain	1808-1829	0	0	unreceptive
Sri Lanka	1796-1861	0	0	unreceptive
Taiwan	1895-1945	0	0	unreceptive
Thailand	1908-1935	0	0	unreceptive
Turkey	1850-1927	0	0	unreceptive
Uruguay	1878-1900	0	0	unreceptive
Venezuela	1811-1873	0	0	unreceptive
Zimbabwe	1888-1923	0	0	unreceptive

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Table 4: Transplants			
Country	Transplanting period	Country/countries that transplant the Law	Legal family
Receptive transplants			
Argentina	1862-1880	Spanish, Portuguese, Brazilian, Dutch (transplants) and French laws are important sources of law. Argentina asserts autonomy in 1810 and declares independence in 1816. 1862 extensive legal reforms, including the enactment of civil, commercial, civil procedure laws.	French
Australia	1808-1873	English common law is the main source. Australia was considered a "settled colony", where the settlers took the law of England with them. Major migration by free settlers from England in early 19th century.	English
Belgium	1810-1887	French law is the main source. French law is introduced in 1810 during Napoleonic wars. Independence of low countries in 1815, but codes remain in place. Independent Belgium (since 1830) enacts national codification based on French model.	French
Canada	1810-1830	English common law is the main source. Trading companies and settlers from England and the United States import English law.	English
Chile	1854-1880	Spanish (transplant), French law and legal practice are major sources. Independence from Spanish rule in 1811. Legal reforms in the second half of the 19th century, including the enactment of a commercial code in 1854.	French
Ireland	1769-1801	English common law is the main source, and was introduced in Ireland after the Norman conquest. By the mid 17the century it had replaced the native Irish law.	English
Israel	1858-1945	English common law is the main source. Modern codes based on French model introduced in the Ottoman empire in second half of 19th century. Since 1922 British mandate, migration from Europe. Ottoman law still binding, but basic principles of English common law (excluding statutory law) introduced.	French/ English[71]

71. La Porta et al. (1998), supra n. 11, code Israel as belonging to the English common law family.

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Italy	1805-1870	French law is the main source. French rule since 1796; in 1805 Napoleon becomes King of Italy and introduces French codes. National codification only after Italy is unified, but individual states enact codes based on French law.	French
Japan	1868-1899	German law is the main source. Under foreign pressure, the Meji restoration launches the formalization of the Japanese legal system based on foreign models. Earlier drafts of the commercial code are based on French law. For the final versions of the civil and commercial law, German law is most influential.	German
Netherlands	1810-1838	French law is the main source; its codes are introduced in 1810 during when France annexes the Netherlands. After 1815 the laws remain in force on a preliminary basis and are replaced in 1838 by Dutch codification based on French law.	French
New Zealand	1840-1900	English common law is the main source. In 1840 Britain officially takes possession of the country. Legal transplant through migration.	English
Unreceptive transplants			
Brazil	1808-1865	Spanish and French laws are the main sources. 1822 Brazil achieves independence from Portugal. Imperial Portuguese law remains in force. Legal modernization occurs in mid 19th century.	French
Colombia	1821-1853	Spanish law is the main source. Major codification enacted in mid 19th century based on Spanish models of 1829. Subsequent revisions based on Chilean law.	French
Ecuador	1831-1881	Spanish and Venezuelan laws are the main sources. Since 1830 independent state. In 1831, the Spanish code is made directly applicable in Ecuador. The 1882 commercial code is based on the Venezuelan codification. Procedural law governed by Spanish law.	French

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Egypt	1798-1840	French law is the main source. Under French occupation from 1796-1807 courts are established, but legal reform remains incomplete. During the 19th century French law is applied to cases involving foreign parties. Textbooks and translations of French law into Arabic serve as primarily sources of this law.	French
Greece	1821-1878	French law is the main source. Translations of French codes in the 19th century influences commercial law. Other statutory enactments during 19th century, in particular the civil code, draw not only on French, but also heavily on German and Austrian law.	French/ German[72]
Hong Kong	1844-1898	English common law is the main source. Ordinance of 1844 declares law of England applicable to colony except where local circumstances render this inappropriate.	French
India	1858-1888	English common law is the main source. Establishment of British Raj in 1858. Jurisdiction of English law over local population gradually expanded. In 1862 all existing courts in India are replaced with English courts.	English
Indonesia	1815-1870	Dutch law is the main source. Local (adat) law applies to indigenous population. Dutch law governs colonial population.	French
Jordan	1850-1918	French law is the main source. As part of the Ottoman empire, Jordan received French law in mid 19th century.	French
Kenya	1895-1918	English common law is the main source. Since 1895 British protectorate. The laws in force in England are made applicable in the colony, and codifications of common law that were earlier used in India are introduced.	English
Malaysia	1867-1937	English common law is the main source. In 1867, London's colonial office assumes direct control over "Straits Settlements". English law applied primarily to criminal and commercial (not family, inheritance) matters.	English

72. La Porta et al. (1998), supra n. 11, code Greece as part of the French legal family. With regard to the civil (not the commercial) code, it could also be placed in the German legal family.

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Mexico[73]	1821-1889	Spanish and French laws are the main sources. Spanish imperial laws remain in force until replaced by new codifications. 1854 commercial code based on Spanish and French models; 1889 revision also incorporates elements of Italian law. Civil procedure modeled on Spanish law. 1870 comprehensive civil code based on various models.	French
Nigeria	1863-1915	English common law is main source. Cession of Lagos in 1863 and establishment of British rule. Courts with jurisdiction over British subjects established. Codified common law introduced, including 1912 companies ordinance.	English
Pakistan	1858-1888	English common law is the main source. Establishment of British Raj (including India, Pakistan, and Bangladesh). See comments for India.	English
Peru	1811–1853	Spanish law is the main source. Legal reforms in mid 19th century copy Spanish codes of 1829.	French
Philippines	1889-1898	Spanish law is the main source. Spanish colony since 1565. Codifications in the late 19 hundreds are based Spanish codes of 1829. Amendments and introduction of new procedural rules when sovereignty over the Philippines is transferred to the US in 1898, but character of legal system remains unchanged.	French
Portugal	1808-1867	French law is main source. First introduction of the French codes in 1808 during the Napoleonic invasion. New civil code promulgated in 1867, new Commercial Code in 1888.	French
Singapore	1858-1895	English common law is the main source. In 1819 Singapore is founded as part of the Strait Settlements. English law applies to settlers and local population in criminal and commercial matters.	English

73. We note in the paper that Mexico, Portugal, and Spain these three countries can also be categorized as a combination receptive- unreceptive transplant. We conduct robustness tests for this alternative categorization.

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South Africa	1815 -1865	England and Roman-Dutch common law are the main sources. British takeover of former Dutch colony in 1815. English law applied to court organization, judicial procedure, and administration.	English[74]
South Korea	1912-1945	Japanese law is the main source. Korea is colonized by Japan in 1912 and Japanese codes of the Meiji restoration are enacted.	German
Spain	1808-1829	French law is the main source. Introduction of the French codes in 1808 during the Napoleonic invasion. New civil code based on French model introduced in 1829; law on joint stock companies in 1848, and a revised code of civil procedure in 1881.	French
Sri Lanka	1796-1861	English common law is the main source. British take over former Dutch colony. Roman-Dutch law continues to apply, but the establishment of common law courts after 1801 fosters the development of English common law.	English
Taiwan	1895-1945	Japanese law is the main source. The island of Taiwan becomes Japanese colony and Japanese codes of the Meiji restoration are introduced.	German
Thailand	1908-1935	French law is the main source. Only country in SE Asia that escaped colonization. Set of codes produced under King Chulalongkorn with the help of French and Belgian advisors.	French (English ?)[75]
Turkey	1850-1927	French and subsequently Swiss law are the main sources. The Ottoman empire introduces legislation based on French law in mid 19th century. Under Kemal Atatürk Turkey copies Swiss codes.	French/German[76]
Uruguay	1878-1900	The law of Argentina is the main source. Modernization of legal system since 1865; codes are based on Argentine and Bolivian law models.	French

74. Because of the influence of Roman-Dutch law, South Africa is sometimes classified as a mixed jurisdiction. In mixed jurisdictions, common law was introduced after earlier transplants had established a civil law system. Other mixed jurisdictions include Israel, the Philippines, and Sri Lanka.

75. Note that La Porta et al. (1998), supra n. 11, code Thailand as belonging to the English legal family.

76. LLSV 1998 code Turkey as French, because of the Ottoman heritage.

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Venezuela	1811-1873	Chilean law is the main source. Venezuela becomes independent in 1811. Spanish imperial laws remain in force. In 1862 civil and commercial codes enacted based on Chilean model.	French
Zimbabwe	1888-1923	English common law is the main source. In 1888 charter issued by English law made applicable by decree.	English

TABLE 5: DETERMINANTS OF LEGALITY

	Legality (1980-95)	Robustness: Legality (1997-98)
Unreceptive – Transplant	–3.017* (0.958)	–1.482* (0.420)
French	–2.060* (0.679)	–0.601** (0.326)
OECD Member	4.271* (0.929)	1.229* (0.405)
Intercept	16.731* (0.943)	0.503 (0.426)
R^2	0.742	0.612
Test statistics for unrestricted regression		
Exclusion restrictions P-value	Receptive = 0 German = 0 Scandinavian = 0 0.734	Receptive = 0 German = 0 Scandinavian = 0 0.900
Include only Families P-value	0.000	0.000

TABLE 6: DETERMINANTS OF ECONOMIC DEVELOPMENT

	Ln GNP per capita (1994), given Legality (1980-95)	Robustness: Ln GNP per capita (1998), given Legality (1997-98)
French&German	0.651* (0.160)	
OECD Member		0.793* (0.273)
Legality	0.329* (0.019)	0.607* (0.081)
Intercept	2.926* (0.336)	8.341* (0.168)
R^2	0.872	0.783
Test statistics for unrestricted regression		
Exclusion restrictions	Receptive = 0 Unreceptive = 0 Scandinavian = 0 OECD = 0	Receptive = 0 Unreceptive = 0 French = 0 German = 0 Scandinavian = 0
P-value	0.887	0.645

Notes to Tables 5 and 6. OECD membership until the beginning of 1994 is used for legality (1980-95), and through 1998 for legality (1997-98). Standard errors are reported in the parentheses. * Significant at the 1– percent level; ** Significant at the 5-percent level. A standard deviation in legality (1980-95) is 4.32; a standard deviation in legality (1997-98) is 1.696.

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APPENDIX

Appendix Table 1: Legality (1980-95) and Economic Development (1994)							
Summary Statistics	Efficiency of Judiciary System 1980-83	Rule of Law 1982-95	Absence of Corruption 1982-95	Risk of Expropriation 1982-95	Risk of Contract Repudiation 1982-95	Legality 1980-95	GNP Per Capita (U.S. $) 1994
Average	7.67	6.74	6.90	8.05	7.58	16.05	11156
Median	7.25	6.78	7.27	8.25	7.57	16.54	7660
Standard Deviation	2.05	2.80	2.29	1.59	1.79	4.32	10190
Minimum	2.50	0.00	2.15	5.22	4.36	8.51	270
Maximum	10.00	10.00	10.00	9.98	9.98	21.91	35760
	Correlation Coefficients						
Efficiency of Judiciary	1.000						
Rule of Law	0.643	1.000					
Corruption	0.793	0.848	1.000				
Risk of Expropriation	0.656	0.910	0.845	1.000			
Contract Repudiation	0.635	0.880	0.841	0.961	1.000		
Legality	0.803	0.950	0.949	0.944	0.930	1.000	
GNP Per Capita	0.738	0.853	0.839	0.871	0.871	0.906	1.000

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Appendix Table 2: Legality (1997-98) and Economic Development (1998)					
Summary Statistics	Government Effectiveness 1997-98	Rule of Law 1997-98	Control of Corruption 1997-98	Legality 1997-98	GNP Per Capita (U.S. $) 1998
Average	0.645	0.644	0.663	0.000	13107
Median	0.714	0.861	0.672	0.245	10670
Standard Deviation	0.940	0.944	0.989	1.696	11837
Minimum	–1.321	–1.220	–0.954	–3.216	300
Maximum	2.082	1.996	2.129	2.473	39980
Correlation Coefficients					
Government Effectiveness	1.000				
Rule of Law	0.923	1.000			
Control of Corruption	0.944	0.934	1.000		
Legality	0.979	0.977	0.982	1.000	
GNP per capita	0.817	0.838	0.842	0.850	1.000

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