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Law, Endowments, and Property Rights  
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**ABSTRACT**

While scholars have hypothesized about the sources of variation in property rights for over 2500 years, it is only very recently that researchers have begun to test these theories empirically. This paper reviews both the theory and empirical evidence supporting and refuting the law and endowment views of property rights. The law view holds that historically determined differences in national legal traditions continue to shape cross-country differences in property rights. The endowment view argues that during European colonization, differences in climate, crops, the indigenous population, and the disease environment influenced long-run property rights.

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Private property rights are crucial for personal welfare and economic development. Adam Smith (1776) stressed that private contracting is a critical prerequisite for the voluntary, mutually beneficial exchanges that foster specialization, innovation, and economic growth. Hayek (1960, p. 140) argued that protecting private property rights is vital for preventing coercion, securing liberty, and enhancing personal welfare. More recently, a growing body of empirical work demonstrates a strong positive association between the degree to which countries protect private property and economic development (Knack and Keefer, 1995; Hall and Jones, 1999).<sup>1</sup>

The security of property rights, however, is not a natural occurrence; rather, it is an outcome of policy choices and social institutions. Any government strong enough to define and enforce property rights is also strong enough to abrogate those rights (North and Weingast, 1989). Thus, protection of property rights requires finding a balance between: 1) an active government that enforces property rights, facilitates private contracting, and applies the law fairly to all, and 2) a government sufficiently constrained that it cannot engage in coercion and expropriation. Besides the explicit codes and formal enforcement organizations associated with defining, defending, and interpreting private property rights and contracts, property rights are also shaped by the “moral and ethical” norms governing human interactions.<sup>2</sup> Thus, in this paper, the term “property rights” refers to the degree to which a broad set of policies, legal and political systems, and informal norms define and protect private property, apply the law equally to all, and limit government interference in private contracting.

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<sup>1</sup> For views that critique the beneficial effects of private property, see Muller (2002). For example, Hegel feared that private property and the market could create an unhealthy desire for accumulation and foster want-creating firms in an unsatisfying cycle of consumption and product creation. Karl Marx saw private property and the market as forces for manipulating behavior and exploiting people, at the expense of true personal liberty.

<sup>2</sup> North (1981, p.201-202) notes: “Institutions are a set of rules, compliance procedures, and moral and ethical behavioral norms designed to constrain the behavior of individuals ... .”

This paper describes two views of what leads a society to greater or lesser protection of property rights. The *law view* stresses that differences in legal traditions formed centuries ago in Europe and spread via conquest, colonization and imitation around the world continue to account for cross-country differences in property rights. The *endowment view* argues that differences in natural resources, climate, the indigenous population, and the disease environment affected the construction of institutions and these self-sustaining institutions continue to shape property rights today. These views are not mutually exclusive, nor do they exhaust the possible explanations of cross-country differences in property rights. Although I mention alternative views, I focus mainly on the law and endowment views.

I focus on property rights and avoid detailed discussions of the structure of political systems.<sup>3</sup> While democracy may help in the formation and maintenance of the rule of law, it may also lead to discriminatory, coercive behavior by the majority. In contrast, an authoritarian government may adopt equality before the law as a guiding principle. In describing the law and endowment views of the formation of national approaches to property rights, this paper discusses political economy factors, but I do not compare and contrast specific political systems.

## **Law and Property Rights**

The law, property rights and contracting are inseparable. Statutes define property rights. At a broader level, legal systems consist of the entire apparatus of courts, procedures, and institutions associated with enforcing property rights. Court systems differ in their ability and

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<sup>3</sup> Plato (360 BC [1992]), for example, draws a sharp contrast between democracy and equality before the law, which he defines as equal laws for elites and the public.

willingness to recognize and enforce complex private contracts, to verify intricate clauses that trigger specific actions, and to facilitate innovative commercial and financial arrangements.

What I will call the “law view” argues that differences in legal tradition *cause* differences in property rights. This argument requires both a theory running from exogenous differences in legal tradition to current differences in property rights, as well as empirical support for the theory. Since the law view argues that legal traditions formed centuries ago continue to shape property rights today, I begin with a brief review of the historical evolution of legal systems.

### *Historical Background and Themes*

The literature on the historical development of legal systems typically draws a sharp distinction between civil law and common law countries. The French legal system is typically used as the main example of a civil law system, while Great Britain offers the main example of a common law system. Legal scholars also emphasize differences between French, German, and Scandinavian civil law systems that I describe while tracing the historical background of these legal traditions.<sup>4</sup>

The French Civil Code of 1801 involved a substantive break from French legal tradition. Napoleon sought a legal system that empowered the state and minimized the independent role of judges by making the state the sole source and interpreter of the law. The Napoleonic Code strove both to eliminate jurisprudence -- the law created by judges in interpreting statutes and adjudicating disputes -- and to impose strict procedural formalism on court processes to eradicate judicial discretion (Schlesinger, Baade, Damaska and Herzog, 1988). At least two key motivating forces drove these changes. While France’s legal system evolved from the fifteenth century onward as a regionally diverse amalgamation of local law, the texts from Emperor Justinian’s

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<sup>4</sup> This section relies on Beck, Demirguc-Kunt, and Levine (2001) and Beck and Levine (2003b).

codification of Roman law in the sixth century, and judicial decisions, the growing corruption of judges roused reformers to minimize the role of judges. Furthermore, Napoleon sought to unify and strengthen the state by codifying the law and eliminating the role of judges in interpreting and hence making law.<sup>5</sup>

There are conflicting views on whether the Napoleonic Code successfully eliminated jurisprudence. Merryman (1985, 1996) argues that the Napoleonic doctrine is a theoretical deviation from a French legal history steeped in jurisprudence. Even the lead draftsman of the Napoleonic Code recognized that the legislature could not revise the Code quickly enough or draft the laws clearly enough to handle changing and complex contractual relationships efficiently. From this perspective, the practicalities of a dynamic economy in conjunction with France's judicial history both compelled and permitted France to circumvent rigidities with the Code. In contrast, Glaeser and Shleifer (2002) argue that antagonism toward the courts produced a comparatively static, rigid legal system in France that relies on "bright-line-rules." Johnson, La Porta, Lopez-de-Silanes, and Shleifer (2000) argue that these simple rules and excessive judicial formalism impeded the ability of judges to apply the law fairly to new situations.

Like Napoleon, Otto von Bismarck used codification to unify and strengthen the German state. Unlike France, however, Germany in the 1860s and 1870s had not experienced the same degree of judicial corruption in terms judges using their powerful positions to extract bribes and to promote their personal interests. Jurisprudence thus remained an accepted part of the German

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<sup>5</sup> In legal systems, Napoleon had a predecessor in Emperor Justinian (emperor of the eastern Roman Empire), who had Roman law codified in the sixth century and also sought to place the state – in the form of himself -- above the law, making his pronouncements the sole source of law. According to Hayek (1960, p. 167), "Thereafter, for a thousand years, the conception that legislation should serve to protect the freedom of the individual was lost." Justinian also attempted to eliminate jurisprudence. This step was also a bold switch from Roman legal tradition, where judicial decisions were largely responsible for adapting the law from the needs of a small farmer community to the needs of a world empire. Thus, Justinian asserted for himself not only a monopoly over law-making, but also over legal interpretation (Dawson, 1968, p. 22). Nevertheless, this "Justinian deviation" did not last; jurisprudence and local customs played a leading role in shaping the law in Europe over subsequent centuries.

legal tradition after codification. As stressed by Merryman (1985, p. 31), codification under Bismarck was not meant to abolish prior law or eliminate judicial discretion. Thus, while codification helped unify the country and strengthened the central state, Germany did not adopt the same degree of antagonism toward judges as France did.

Scandinavian civil law was developed relatively independently from the other legal traditions between 1600 and 1800. Zweigert and Kotz (1988) argue that it is less closely linked to Roman law than the French or German legal traditions. They also stress that Scandinavian civil law embraces jurisprudence and emphasizes a strong independent judiciary to a much greater degree than the French civil law.

The historical development of the British common law is different both in terms of jurisprudence and the balance of power between the state and the courts. At the start of the 1600s, British law was predominately a law of private property. However, during the seventeenth century, the Crown attempted to reassert feudal prerogatives and abrogate private property rights. Tensions between property owners and the Crown came to a peak after James II took the throne in 1685. The courts and Parliament sided with property owners against the Crown. In what became known as the Glorious Revolution in 1688, leaders in Britain's Parliament invited the Dutch prince William of Orange and his consort Mary (daughter of James II) to take the throne, on the condition that they agree to a Bill of Rights giving Britain's Parliament supremacy over its royalty and stating that all British citizens had certain civil and political rights. Unlike the situation in France before the revolution of 1789 in which a corrupt judiciary fomented hostility toward the courts, the legal system in England was viewed more favorably and judges were granted greater discretion and independence after the Glorious

Revolution.<sup>6</sup> Indeed, a defining trait of British common law is that judges regularly interpret and shape the law as new circumstances arise.

The French, British and, to a lesser degree, German legal systems spread throughout the world via conquest, colonization and imitation. Furthermore, the Napoleonic Code heavily shaped legal systems in Portugal and Spain and hence their colonies. Furthermore, former colonies tended to look to their former rulers for examples in establishing legal institutions (Zweigert and Kotz, 1988). Similarly, colonization brought the British common law to all parts of the globe. The German (and Austrian and Swiss) civil codes developed contemporaneously and influenced legal systems in Czechoslovakia, Hungary, and Greece. China, Japan, and Korea relied on the German civil code in developing their own commercial and company law.

#### *The Law and Property Rights View*

The law view holds that historically determined differences in the origin of legal traditions help to explain existing differences in national approaches to private property rights. More specifically, Hayek (1960) and La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) stress that compared to the British common law, the French civil law places comparatively less emphasis on private property rights, less emphasis on judicial independence and discretion, and more emphasis on the rights of the state. Indeed, the civil law can be viewed as a proxy for the intent to build institutions that further the power of the state (La Porta, Lopez-de-Silanes, Shleifer and Vishny, 1999). From this perspective, governments in French civil law countries tend to (a) enjoy greater latitude in their abilities to funnel resources toward politically advantageous ends, even if this abrogates private property rights and preexisting contracts, and (b) have difficulty credibly committing to not interfere in private contractual arrangements. Thus,

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<sup>6</sup> I focus on the courts and ignore religious tensions underlying the Glorious Revolution.

the law view argues that French civil law countries will have weaker protection of private property rights than common law countries.

Furthermore, many influential scholars argue that legal systems that embrace jurisprudence, such as British common law systems, tend to adapt more efficiently to the changing contractual needs of an economy than legal systems that adhere rigidly to formalistic procedures and codified law, such as French civil law countries. Posner (1973) argues that legislatures are unlikely to modify the law quickly to facilitate private contracting, while judges are more likely to adapt the law in socially efficient ways. Rubin (1977) and Priest (1977) argue that in common law systems, inefficient laws are routinely re-litigated, which pushes the law toward more efficient outcomes. From this perspective, common law countries are more likely to have efficiently flexible legal systems that support private contracting and respond to the changing needs of the economy. In contrast, the Napoleonic doctrine's distrust of judges, rigid adherence to formal procedures, and reliance on legislative changes may hinder the ability of the law to adapt efficiently to facilitate private agreements.

Merryman (1996) stresses that exportation of the French civil law to its colonies had more pernicious effects on property rights and private contracting than the Code's effect on France and other European countries that adopted the Napoleonic Code. He argues that while colonies imported the inflexibility associated with antagonism toward jurisprudence and reliance on judicial formalism, most did not learn how the French circumvented the adverse attributes of the Code. Furthermore, Merryman argues that given the Napoleonic Code's goal of minimizing judicial discretion, judges do not enjoy the same exalted position as in common law countries. Thus, the static, formalistic theory of the Napoleonic Code may become self-fulfilling as talented, innovative individuals choose other careers. Once "bright line" rules become the

accepted norm, it is very difficult to break this pattern and develop courts that focus on fairly defending property rights and facilitating private contracting.

### *Countervailing Views*

The law view of property rights has strong critics. I first discuss criticisms based on comparative legal and political studies and later, after reviewing recent regression evidence, discuss criticisms of these statistical tests. At a basic level, Ekelund and Tollison (1980) argue that simply because the courts in England sided with Parliament against the Crown during the Glorious Revolution does not mean that common law countries will necessarily be disposed to protect property rights and promote private contracting better than civil law countries. In addition, North (1981), North, Summerhill, and Weingast (1998), and Landes (1998) argue that European countries brought national institutions – besides legal traditions -- that have had an enduring influence on property rights. From this perspective, the British exported better economic and political institutions, not just a common law system.

Furthermore, some researchers challenge the view that common law courts are more effective at producing socially efficient laws than civil law systems. Galanter (1974) and Tullock (1980) note that only the wealthy have the resources to re-litigate cases until they obtain privately efficient outcomes, which suggests that the “flexibility” of the common law will not necessarily support efficient contracting for all. Moreover, the common law relies on judges setting precedents in individual cases which then constrain and guide future decisions. Backhaus (1977), Blume and Rubinfeld (1982), Epstein (1975), Rubin (1982), and Zweigert and Kotz (1998) provide numerous examples where adherence to judicial precedent has hindered the efficient evolution of the law. Moreover, the common law relies on judges, but if judges are

corrupt or inept, then government may better reflect society's interests (Glaeser and Shleifer, 2002). These arguments suggest that simply knowing whether the country has a civil or common law system will not provide much information on the effectiveness of property rights institutions.

At a broader level, some question whether it is appropriate to categorize countries as simply having British, French, or German legal systems and whether the distinguishing characteristic brought by European colonists was a legal system or whether they brought some other national trait that explains property rights. As noted above, the French legal system in France operates differently from those in many of its former colonies (Dawson, 1960, 1968; Merryman, 1985, 1996), so it may be misleading to categorize all as simply "French legal origin" countries. Others note differences between the French and Spanish civil law and describe differences across Latin American systems, which sheds doubt on categorizing them all as French legal origin countries (Zweigert and Kotz, 1988). Franks and Sussman (1999) describe differences between the legal systems in the United Kingdom and the United States, which challenges the usefulness of classifying them together as "common law" countries. Furthermore, Berkowitz, Pistor and Richard (2002) question whether legal origin per se is important and instead argue that the manner in which national legal systems were obtained – through conquest, colonization, or imitation – profoundly influenced the effectiveness of the law in protecting property rights.

Finally, some scholars accept Cicero's dictum that the "law stands mute in the midst of arms" and argue that political (and military) institutions ultimately determine the degree to which any legal system effectively protects private property, applies the law equally to all, and limits government interference in private contracting (Pound, 1991; Roe, 1994; Pagano and Volpin, 2001; Rajan and Zingales, 2003; Haber, Maurer Razo, 2003). Although this political view does

not reject the importance of legal institutions, it rejects the notion that exogenous differences in legal origins shape property rights institutions today.

*Regression Results on the Components of the Law and Property Rights View*

La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998) ignited a burgeoning cross-country empirical literature on the implications of countries having different legal origins. They classify countries as having British, French, German, or Scandinavian legal origins based on the source of each country's company or commercial code. They (and others) then examine the impact of legal origin on legal codes, financial contracting, the operation of financial markets, corporate finance, the degree to which legal systems operate efficiently and fairly, individual and political freedom, and private property rights protection. In reviewing the empirical evidence, I focus on differences between British and French legal origin countries for two reasons. First, the law and property rights view focuses most clearly on these two categories of legal systems. In addition, there are only five Scandinavian legal origin countries (Denmark, Finland, Iceland, Norway and Sweden) and six German legal origin countries (Austria, Germany, Japan, Korea, Switzerland and Taiwan).

Since shareholder protection laws and the operation of financial markets clearly reflect the effectiveness of property rights, I start by briefly reviewing the vast law and finance literature before discussing more direct examinations of the linkages between legal origin and property rights. La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1998) show that French civil law countries have weak shareholder protection laws compared to British common law countries. This relationship holds even when controlling for each country's level of economic development.

They also show that French civil law countries tend to have contracting environments that are less conducive to financial development than British common law countries.<sup>7</sup>

Rather than examining shareholder protection laws, La Porta, Lopez-de-Silanes and Shleifer (2005) analyze data on the operation of securities markets. They find that French legal origin countries tend to have comparatively weak information disclosure rules and to rely more on state regulators to vet firms issuing securities (also see Barth, Caprio and Levine, 2005). This finding is consistent with the view that the common law emphasizes private contracting while the French civil law gives more discretion and power to the state.

Empirical research also finds a strong link from legal origin to corporate valuations, corporate finance, and the efficiency of capital allocation. For instance, French legal origin countries with less effective investor protection laws tend to make shareholders and creditors more reluctant to invest in firms, which drives down the price of corporate securities and increases the cost of capital to firms (Claessens, Djankov, Fan and Lang, 2002; La Porta, Lopez-de-Silanes, Shleifer and Vishny, 2002; Caprio, Laeven and Levine, 2003). Legal systems influence the effectiveness of property rights protection and hence the ability of firms to raise capital and grow (Kumar, Rajan and Zingales, 2001; Claessens and Laeven, 2003; Beck, Demirguc-Kunt and Maksimovic, 2005). Legal origin also affects the efficiency of the contracting environment, which in turn helps determine the efficiency of capital allocation (Wurgler, 2000; Beck and Levine, 2002). These results support the law and property rights view.

Recent research constructs databases on specific attributes of legal systems and traces the linkages from legal origin, to these legal system attributes, to the property rights system in general. Djankov, La Porta, Lopez-de-Silanes and Shleifer (2003) construct a measure of judicial

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<sup>7</sup> Beck, Levine and Loayza (2000), Levine (1998, 1999), and Levine, Loayza, and Beck (2000) extend this work by tracing the effect of legal origin through the financial contracting environment and on to economic growth. They find that legal origin influences economic growth by affecting the operation of the financial system.

formalism, where their formalism index is greater the more a country relies purely on statutory law rather than on jurisprudence and general assessments of fairness; the more the legal system demands written rather than oral inputs; the more the legal system requires specialists, rather than layman; and the more procedural steps are involved in resolving disputes. They show that British common law countries tend to have lower values of the judicial formalism index than French legal origin countries. Furthermore, they find that countries with lower values of the judicial formalism index tend to have more efficient and fair judicial proceedings as measured by surveys of firms around the world. These results support the law view.

Beck, Demirguc-Kunt and Levine (2003b, 2005) examine why legal origin matters for financial contracting. They use both measures of overall financial development and firm-level survey data of the obstacles that firms face in raising capital, including collateral requirements, paperwork, interest rates and corruption. They show that jurisprudence, as measured by the degree to which judicial decisions (case law) are a source of law, is more important for explaining both overall financial development and firm financing obstacles than the independence of the judiciary from the executive and legislative branches.<sup>8</sup>

In terms of linking the law with liberty, La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2004) show that British common law countries tend to have legal systems that enjoy greater independence from the government and rely more on jurisprudence than French civil law countries. Moreover, they find that both judicial independence and jurisprudence are associated with greater economic and political freedom. In bringing new data to bear on an old issue, this research provides empirical support for Hayek's (1960) prediction concerning the linkages between legal tradition and individual liberty.

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<sup>8</sup> Consistent with the emphasis on legal system adaptability, Acemoglu and Johnson (2003) find that legal formalism lowers stock market development. Klerman and Mahoney (2005) provide historical evidence regarding the positive impact of judicial independence on stock markets in London.

The security of property rights involves both facilitating private contracting and limiting government coercion and expropriation. While the work reviewed thus far explores the relationship between legal origin and these two components of property rights, Acemoglu and Johnson (2003) seek to examine the separate effects of (1) private contracting efficiency and (2) freedom from political coercion on income per capita.<sup>9</sup> Since the goal of this essay is to assess the impact of the law and endowment views on property rights, I do not describe this work here and simply note that assessing the linkages between economic development and the components of property rights is an important, though complex, challenge for researchers.

#### *Regression Results on Private Property*

Beck, Demirguc-Kunt, and Levine (2003a) examine the relationship between legal origin and measures of private property rights protection while controlling for other explanations of cross-country differences in property rights. They measure property rights in 1997 using an index from the Heritage Foundation that ranges from one to five, where higher values signify that the country more effectively enforces laws that protect private property. This index does not measure specific statutes governing property rights, the design of particular enforcement mechanism, nor explicit clauses in national constitutions concerning equality before the law. Rather, the property rights index is a measure of “outcomes;” it is an assessment of the degree to which the country protects property rights and facilitates private contracting. In Beck, Demirguc-Kunt, and

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<sup>9</sup> This line of inquiry is important because it will provide information on the comparative impact of the two components of property rights on economic development and therefore foster better public policies. This line of inquiry is extraordinarily complex because private contracting efficiency and freedom from government expropriation may be inextricably interconnected. Thus, it may be exceptionally difficult to identify confidently the independent effect of each component of property rights on economic development. To measure the contracting environment, Acemoglu and Johnson use the measures of judicial formalism from Djankov, La Porta, Lopez-de-Silanes and Shleifer (2003). To measure government coercion, they use a measure of constraints on the executive from the Polity IV database. They find that the constraints variable enjoys a particularly strong link with economic development.

Levine's core results, they restrict their sample to former colonies with French or British legal origins to simplify comparisons with research on the endowment view of property rights.

However, they show that their results are robust to using alternative measures of property rights or to using the full sample of 103 countries.

They find a strong negative relationship between a country having a French civil law tradition and its level of property rights.<sup>10</sup> Figure 1 charts the average value of the property rights variable for French and British law countries. British law countries have an average property rights value of 3.6, while French civil law countries have an average value of 3. In Table 1, the regression in the first column presents an ordinary least squares regression in which the property rights variable is the dependent variable and the explanatory variable is a dummy variable that takes on the value one if the country has a French legal tradition and zero otherwise. (As noted, all the countries in this core calculation are either of French or British legal origins.) The coefficient on French legal origin suggests that switching a country from a French civil law to a British common law tradition would boost the property rights index by almost one, which is large considering that the sample mean value of property rights is about three with a standard deviation of one. This conceptual experiment is a bit ludicrous, because it is difficult to imagine an exogenous change in legal heritage while holding everything else constant, but it does illustrate that legal origin has an economically meaningful relationship with property rights.

Beck, Demirguc-Kunt, and Levine (2003a) also control for other country characteristics that may affect property rights.<sup>11</sup> An extensive literature argues that religion shapes national

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<sup>10</sup> Beck, Demirguc-Kunt, and Levine (2003a) confirm their results using other property rights measures, but Acemoglu and Johnson (2004) present specifications in which the relationships between legal origin and some property rights indexes are not robust.

<sup>11</sup> Numerous studies find that countries in sub-Saharan Africa and Latin America perform more poorly than countries in other regions, even after controlling for many explanatory factors. The results in Table 1 hold when including dummy variables for sub-Saharan Africa and Latin America. While Africa enters the property rights regression negatively and significantly, the coefficient on French legal origin remains large and significant. It may

views regarding property rights and the role of the state (Stulz and Williamson, 2003). For example, Landes (1998) and Putnam (1993) argue that the Catholic and Muslim religions tend to foster “vertical bonds of authority” that limit the security of property rights and private contracting.<sup>12</sup> Thus, Table 1 also includes the variables Catholic, Muslim, and Other Religion – each of which equals the fraction of the population that is Catholic, Muslim, or of another (non-Protestant) religion. The Protestant share of the population is omitted (and therefore captured in the regression constant). The religion data are from La Porta, Lopez-de-Silanes, Shleifer and Vishny (1999). The regression in the second column shows that none of these religion variables are statistically significant, and that controlling for religious composition does not change the finding of a strong negative relationship between French legal origin and property rights.

Merryman (1996) suggests that colonies may have a difficult time creating well-functioning legal systems. A longer period of independence may provide greater opportunities for countries to develop sound property rights institutions and eliminate inefficiencies from their colonial past. The independence variable equals the fraction of years since 1776 that a country has been independent. The third regression shows that an independence variable is positively associated with property rights, but adding this variable actually strengthens the magnitude of the relationship between French legal origin and property rights.

Ethnic heterogeneity is often cited as a factor that may lead governments to use their coercive power to extract resources for small elites. For example, Easterly and Levine (1997) find that in highly ethnically diverse economies, the group that comes to power tends to

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be inappropriate to include continent dummy variables, because continent dummies do not explicitly proxy for an economic explanation of why countries have worse property rights institutions. Also, Latin America is primarily a French legal-origin continent, so that including continent dummies may weaken the link between legal origin and property rights without offering an alternative explanation. Also, the regression results are not meant to assess the robustness of the control variables. Rather, the regression results assess the robustness of the findings on legal origin when controlling for other potential explanations of cross-country differences in property rights.

<sup>12</sup> Also, see Tabellini (2004), who examines the relationship between historically determined differences in culture and differences in economic development across regions in Europe today.

implement policies that expropriate resources from other ethnic groups – a pattern which suggests that ethnically diverse economies have a lower probability of creating sound, credible property rights. Easterly and Levine create a data series on ethnic fractionalization that measures the probability that two randomly selected individuals from a country are from different ethnolinguistic groups. The fourth regression in Table 1 indicates that although ethnically diverse countries tend to have lower levels of property rights, the negative relationship between French legal heritage and property rights continues to hold with little change in magnitude.

Finally, many critics of the law and property rights view hold that political systems influence both the functioning of legal institutions and the security of property rights. From this perspective, legal origin per se is a relatively unimportant exogenous determinant of cross-country differences in property rights. For instance, *Finer (1997)* and *Damaska (1986)* argue that governments with few checks on executive power and with minimal legitimate competition will be more responsive to and efficient at implementing the interests of small elites than more competitive political systems with checks and balances on executive discretion.<sup>13</sup> Other research suggests that laws relevant to property rights have varied over time in certain countries, although legal origin does not change. For example, *Rajan and Zingales (2003)* find empirically the financial contracting environment in Europe changed substantively over the nineteenth and twentieth centuries. Along similar lines, *Franks, Mayer and Rossi (2003)* and *Aganin and Volpin (2003)* show that although laws governing investor protection varied substantially over the twentieth century in the United Kingdom and Italy, respectively. Thus, these authors question the usefulness of legal origin as an explanatory variable, and instead stress that political forces play a leading role in accounting for variation in the financial contracting environment.

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<sup>13</sup> *De Long and Shleifer (1993)* show that during the 800 years prior to the Industrial Revolution, more absolutist governments (as measured by the discretionary power of the prince) are associated with slower growth (as measured by city growth) than less absolutist regimes.

Beck, Demirguc-Kunt and Levine (2003a) control for political factors by including measures of political competition and of checks and balances on executive and legislative power. They include a variable for legislative competition, which is an index of the degree of competitiveness during the last legislative election, ranging from 1 (non-competitive) to 7 (most competitive). They also include checks, which measures the number of influential veto players in legislative and executive initiatives.<sup>14</sup> These measures are computed over the period 1990-1995. Adding these proxies for the political system to the regressions does not change any of the results reported in Table 1.

## **Endowments and Property Rights**

The endowment view stresses that the distribution of property affects how legal and political systems protect private property, apply the law equally to all, and limit government interference in private contracting. Very unequal distributions of wealth make it difficult to protect individuals from coercion by economic and political elites and by the government itself. The endowment view emphasizes that the distributions of wealth and people during the initial phases of European colonization have had an enduring influence over property rights.

Building on this reasoning, the endowment view highlights factors that influenced the distributions of wealth and people during the early stages of colonization -- including differences

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<sup>14</sup> Although these authors also confirm their results (1) using measures of political openness and competition from the POLITY III database and (2) using instrumental variables to extract the exogenous component of the current political system, they note that many readers will not view these results with political variables as providing strong support for the law view. Measuring the operation of a political system with a couple of index numbers is quite imprecise. Furthermore, legal origin, legal institutions, political institutions and property rights are closely intertwined. For these reasons, finding that these indicators of the political regime do not drive out the French legal origin variable provides at best weak support for the law view, and if these indicators did drive out the French legal origin variable, such a finding would not necessarily invalidate the importance of legal tradition in shaping both political and legal institutions and hence property rights.

in geography, disease, minerals, indigenous population, and crops. The endowment view also argues that property rights are self-propagating – they endure over the centuries even when the importance of the original endowments for economic activity declines. In this section, I review descriptions of how endowments shape property rights institutions. Engerman and Sokoloff (1997) emphasize endowments that involve mining and crops, while Acemoglu, Johnson, and Robinson (2001) emphasize endowments that involve the prevalence of disease at the time of European settlement.<sup>15</sup> Furthermore, both Engerman and Sokoloff (2002) and Acemoglu, Johnson, and Robinson (2002) stress people: The concentration of the indigenous population and population density affected the formation of policies toward property rights.

### *The Endowment View*

Engerman and Sokoloff (1997, 2002) stress natural resource endowments related to mining and crops in a comparison of development patterns between the northern parts of North America on the one hand and Latin America and the southern parts of North America on the other.<sup>16</sup> In much of Latin America, the Spanish granted mining monopolies to a fortunate few. The ruling elite also enjoyed huge land holdings for farming and ranching. In much of the Caribbean, Brazil, and the southern United States, the land was particularly conducive to crops with economies of scale, such as sugar cane, tobacco and cotton, which encouraged slave labor and large scale plantations. Europeans seized Africans and shipped them to the Americas to work the mines and plantations in the Caribbean, Colombia, Brazil, Venezuela, the southern United

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<sup>15</sup> Many others have emphasized the impact of endowments on economic development (for example, Beckford, 1972; Cain and Hopkins, 1993; Chasteen, 2000; Crosby, 1989; Diamond, 1997; Gann and Duignan, 1962; Jones, 1981; McNeill, 1963; Robinson and Gallagher, 1961; Taylor, 2001). Acemoglu, Johnson and Robinson and Engerman and Sokoloff, however, provide conceptual arguments and empirical evidence running from endowments to various policies and property rights. I borrow liberally from Easterly's (2006) summary of this literature.

<sup>16</sup> For an overview of the Engerman and Sokoloff thesis, see their paper in the Summer 2000 issue of this journal.

States, and elsewhere. The result was extreme inequality in which the elites did not permit the development of institutions that fostered equality before the law; rather, the elites created institutions to maintain their hegemony.

In contrast, the natural resource endowments in the northern part of North America were more suitable for crops like wheat and corn which were efficiently produced on small-scale farms. These crops promoted the growth of family farming and a large middle class, rather than the extreme income inequality associated with plantations and mining in the southern part of North America, the Caribbean, and South America. For example, only 2.4 percent of households in Mexico owned land in 1910, while the percentage was closer to 75 percent in the United States. The northern part of the New World, therefore, had a greater tendency to create more egalitarian institutions than in southern parts.<sup>17</sup> For instance, Canada and the northern United States adopted universal male suffrage and public education much earlier than in other parts of the western hemisphere.

In short, the Engerman and Sokoloff story runs from particular crop and mineral endowments to the degree of economic inequality. With extreme inequality, the elite created institutions to protect their positions by limiting the opportunities of the masses. With a more equal distribution of wealth, the northern part of the New World created more egalitarian institutions. Equality before the law and sound property rights institutions were ultimately more conducive to industrialization in the nineteenth and twentieth centuries.

Acemoglu, Johnson and Robinson (2001, 2002) also search through colonial history for evidence on the determinants of property rights. Three critical building blocks form their

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<sup>17</sup> Engerman and Sokoloff recognize that there was also more European migration to North America than to Latin America. However, they stress that Latin American states discouraged European immigration because it would threaten the privileged position of the owners of mines and plantations. In contrast, the northern part of the United States permitted immigration because there was abundant land for family farms, which made new immigrants less threatening. Thus, they argue that the patterns of immigration were shaped by the natural resource endowments.

endowment view. First, Europeans employed different colonization strategies. At one end of the spectrum, called the “settler colony,” Europeans settled and created institutions to define and enforce property rights, facilitate private contracting, and limit the ability of the state to expropriate private property or intervene in private arrangements. Leading examples of this “settler colony” strategy include the former colonies of Australia, Canada, New Zealand, and the United States. At the other end of the spectrum, Europeans sought to extract as much wealth from the colony as possible in the form of gold, silver, and slaves. In these “extractive colonies,” Europeans did not settle and they did not develop institutions to support property rights for all; rather, they developed institutions to enrich and protect the elite. Examples of extractive colonies include the Congo, the Ivory Coast, much of the Caribbean, and Brazil.

Second, Acemoglu, Johnson, and Robinson argue that the mortality rates of early European migrants along with the density of the indigenous population shaped which colonization strategy was chosen. In areas where disease produced high mortality rates, Europeans tended not to settle and instead established extractive colonies. For instance, in the first year of the Sierra Leone Company, 72 percent of the Europeans died. In the 1805 Mungo park expedition in Gambia and Niger, all of the Europeans perished. In more hospitable places, Europeans formed settler colonies. For example, the Pilgrims decided on the American colonies rather than Guyana partially because of high mortality rates in Guyana. Indeed, the European press published information on colonial mortality rates, so that potential migrants had information on cross-colony mortality (Curtin, 1964, 1989, 1998). Similarly, sparsely populated areas enabled and encouraged Europeans to settle in large numbers and create settler institutions. In contrast, a large indigenous population both discouraged European settlement and made extractive institutions more profitable because colonizers could force the indigenous population

to work in mines and plantations. Thus, European mortality and indigenous population density affected colonization strategies and the entire apparatus of political and legal institutions that colonizers created to define and enforce property rights.

Third, they argue that the property rights created by European colonizers endured after the end of colonization. Settler colonies with political and legal systems that efficiently and equitably protect private property rights and contracting tended to maintain these institutions after colonization. In extractive colonies, postcolonial rulers tended to assume control of the pre-existing tools designed to enrich the elite and then exploit these colonial institutions in the post-colonial regime. Young (1994) provides numerous country examples of how post-independence rulers used pre-existing institutions to expropriate resources. Thus, according to the endowment view, differences in endowments shaped the initial formation of property rights and the initial systems for defining, defending, and interpreting property rights have had long-lasting ramifications on property rights and private contracting today.

Easterly (2006) notes that expected riches from crops and minerals (the Engerman and Sokoloff story) sometimes trumped the disease environment (the Acemoglu, Johnson, and Robinson story) in triggering European migration, and stresses that the crucial issue is how crops, minerals, and disease interacted to shape the initial degree of inequality. He notes that from 1630 to 1780, net British emigration to low mortality New England was zero! In contrast, over this period, 35 percent of British migrants settled in the Caribbean, 45 percent in the American south, and 20 percent in the Middle Atlantic. Similarly, Easterly notes that the French, Dutch, and Portuguese settled in high mortality areas in the tropics and subtropics. There were large financial incentives to settle in high mortality environments. Engerman and Sokoloff show that whites in the southern colonies were 50 percent wealthier than whites in New England, and

whites in Jamaica were more than thirteen times richer than whites from the southern colonies in 1774. While the possibility of becoming very wealthy on sugarcane, tobacco, and cotton plantations worked by slaves sometimes outweighed the risk of disease and death, the resultant high degree of inequality between whites and slaves fostered extractive institutions. Similarly, while low mortality rates in New England attracted fewer Europeans than the Caribbean, greater equality exerted a quite different effect on property rights.

The different endowment-based explanations need not be mutually exclusive. Where colonists established “extractive colonies” either because the environment was inhospitable to Europeans, or because the geography and composition of the indigenous population fostered large plantations and mining operations, Europeans did not construct institutions focused on limiting government coercion and facilitating private contracting. Rather, they established institutions to protect and promote the welfare of the privileged. Where colonists settled in large numbers and where the geography fostered small-scale farming and a burgeoning middle class, Europeans were much more likely to develop sound property rights institutions. Both sets of authors stress that these initial institutions endured after colonization and continue to influence property rights institutions and economic activity today (Engerman, Mariscal and Sokoloff, 1998; Coatsworth, 1999).

### *Regression Evidence*

In turning to cross-country regression results, I focus on the Acemoglu, Johnson, and Robinson (2001, 2002) endowment story because they compile a broad cross-country database on settler mortality rates. The empirical approach is similar to the earlier work of La Porta et al. (1997, 1998), who also use colonial history -- specifically the transplantation of legal systems --

as predictors of the modern property rights environment. Acemoglu, Johnson, and Robinson (2001) focus on settler mortality in the colonies rather than on who colonized them.

Rather than using cross-country regressions, Engerman and Sokoloff (1997, 2002) provide detailed evidence on migration, voting rights, public education, and patenting costs during the colonization of the New World. For example, consistent with the endowment view, Engerman and Sokoloff (2005) show that sparsely populated areas with few indigenous people tended to have more equal distributions of wealth that produced more egalitarian suffrage rules than areas with higher concentrations of indigenous people or slaves. As another example, Engerman, Mariscal, and Sokoloff (2002) show that cross-regional patterns of public education across the New World are consistent with the view that the initial endowments of crops and minerals shaped public policies in predictable ways. As a final example, patenting fees in the northern United States were less than one-tenth of the cost of obtaining a patent in much of Latin America, where patenting fees were between 2.5 and 9.5 times the average annual wage (Khan and Sokoloff, 2004). These detailed studies of the process of colonization provide evidence consistent with the view that the cross-colony distribution of crops, minerals, and population density drove institutional development in the western hemisphere.

To measure the natural endowments related to disease and mortality, Acemoglu, Johnson, and Robinson (2001) compile data on the death rates experienced by European settlers and soldiers. From disparate data sources, Curtin (1989, 1998) pieces together data on the mortality rates of European soldiers over the period 1817-1848. He adds similar data on soldier mortality during the second half of the nineteenth century. To fill in gaps in the data, Acemoglu, Johnson, and Robinson (2001) use Gutierrez's (1986) data on the mortality rates of bishops in Latin America from 1604 to 1876 based on Vatican records. Acemoglu, Johnson, and Robinson

construct a measure of annualized deaths per thousand settlers. There is extraordinary cross-country variation. Some countries have settler mortality rates greater than 100 per 1000 settlers, including Angola, Cameroon, Congo, Cote d'Ivoire, Gambia, Ghana, Jamaica, Kenya, Mali, Niger, and Panama. Other countries had settler mortality rates of less than 20 per 1000 settlers, including Australia, Canada, Hong Kong, Malaysia, Malta, New Zealand, Singapore, South Africa, and the United States. Acemoglu, Johnson, and Robinson find that settler mortality rates are negatively associated with the percentage of the population of European descent (both in 1900 and 1975).

Acemoglu, Johnson, and Robinson (2001) also find that settler mortality explains cross-country differences in property rights. In particular, countries with higher values of settler mortality tend to have both a greater risk today that the government will expropriate the property of private foreign investment and also fewer formal and informal constraints on executive power. (Data on the risk of expropriation is collected by Political Risk Services. Data on constraints on executive power is from the Polity III database, which is available at the Inter-University Consortium of Political and Social Research.) Acemoglu, Johnson, and Robinson use cross-country regressions to show that the disease environments encountered by the Europeans help explain property rights today. Acemoglu, Johnson, and Robinson compute that settler mortality accounts for about one quarter of the cross-country variation in measures of the current level of property rights. They go an additional step and find that the component of these measures of property rights explained by settler mortality is very strongly linked with current levels of economic development. Thus, they stress that endowments affect property rights, which in turn influence economic development.

Beck, Demirguc-Kunt and Levine (2003a) provide complementary evidence on the endowment view using the Heritage Foundation measure of property rights defined above. After breaking the settler mortality measure into quartiles, Figure 2 charts the relationship between the settler mortality and property rights indicators. On average, countries with lower settler mortality have higher values of the property rights index. Table 2 presents cross-country regression results which control for various country traits. Following Acemoglu, Johnson, and Robinson (2001), Settler Mortality is measured as the log of the annualized deaths per thousand European soldiers in European colonies in the early nineteenth century. Settler Mortality has a negative and statistically significant correlation with Property Rights. In terms of economic size, the estimated coefficients suggest that if Mexico had the same settler mortality rate as the United States (15 per 1000 instead of 71), then this would reduce the property rights gap between the U.S. and Mexico by 25 percent, raising property rights in Mexico to 3.5 from 3 (relative to the U.S. level of 5).<sup>18</sup> These results hold when adding the same control variables used in Table 1. The exception is that when including a dummy variable for whether a country is in sub-Saharan African, the correlation between Settler Mortality and Property Rights becomes statistically insignificant. Settler mortality rates were extremely high in much of sub-Saharan Africa. This finding may suggest that one characteristic of sub-Saharan African explaining its poor growth performance is the poor level of property rights, which in turn could be due to the incentives faced by European settlers to establish extractive colonies.

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<sup>18</sup> To compute this, note that the regressions are run using the logarithm of settler mortality. So, a change in settler mortality from 71 to 15 involves a drop in the logarithm of settler mortality of about 1.6. Using an estimated coefficient on the logarithm of settler mortality of -0.34, this implies an increase in property rights of 0.54.

### *Countervailing Views*

Two main sets of critical questions have been posed to the endowment view. One set of criticisms questions the cause and effect relationship. In the endowments theory, endowments affect property rights, which in turn affect economic growth. But perhaps endowments affect economic growth in a direct way, which then affects property rights. The second set of criticisms questions the data on settler mortality. The first major critique of the endowments view stresses that natural resource endowments directly influence work effort and prospects for economic development. For instance, Machiavelli (1519 [1987]) argues that in fertile, tropic lands where it is easy to pick food from the trees, people become lazy and unproductive. Montesquieu (1748 [1990]) and Landes (1998) argue that in hot, humid climates people become lethargic and enervated. Similarly, Kamarck (1978), Bloom and Sachs (1998) and Sachs (2001) argue that tropical environments have low soil fertility, many crop pests, and other factors that produce poor agricultural yields, which in turn directly hinders economic development. They also stress that tropical locations lead to underdevelopment because of (1) the ecological conditions that foster the growth and spread of infectious diseases, (2) the lack of coal deposits, and (3) high transport costs. These arguments challenge the causal chain running from endowments, to colonization strategy, to property rights and on to the level of economic development. Instead, this critique argues that the logical chain runs from endowments to economic development to the efficiency with which political and legal systems define and enforce private property rights.

However, some evidence suggests that endowments do influence economic development by affecting property rights. Easterly and Levine (2003a) test whether endowments *only* influence economic development indirectly by influencing property rights, or whether

endowments also influence economic developments directly.<sup>19</sup> They find that endowments – such as measures of settler mortality rates, whether the country is in a tropical environment, and the types of crops and minerals in the country – shape property rights directly, which in turn influence economic development. They find no evidence, however, that endowments affect economic development beyond the channel through property rights. Furthermore, they find no evidence that macroeconomic policies over the period 1960-95 influenced economic growth over this period, after accounting for the growth effects of how endowments affect property rights.

Acemoglu, Johnson, and Robinson (2002) present additional evidence that the causal channel runs from endowments to private property to economic development. They note that former colonies with greater population density in 1500 had several distinguishing features: 1) they were richer than thinly populated areas (since population density is a good proxy for income); 2) they attracted fewer European settlers than less densely populated areas; and 3) they established extractive institutions, since Europeans did not settle there. Moreover, they note that the endowment view makes an additional testable prediction: There should be a reversal of fortunes. Initially rich, densely populated areas will attract few European settlers, but these settlers will create extractive institutions that thwart economic development. In contrast, initially poor areas without many indigenous people will attract lots of European settlers that construct sound property rights institutions and grow quickly. Consistent with the endowment view, Acemoglu, Johnson, and Robinson (2002) present evidence of a “Reversal in Fortunes.”

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<sup>19</sup> They run a two-stage least squares regression where the first-stage regresses measures of property rights protection (and other measures such as the rule of law, corruption, political openness and competitiveness) on endowments. In the second stage, the dependent variable is gross domestic product per capita and the regressors included the predicted component of property rights from the first stage along with various control variables. They also run a test of overidentifying restrictions, where the null hypothesis is that the instruments do not explain gross domestic product per capita beyond their affect on property rights. They do not reject the null hypothesis. Acemoglu, Johnson and Robinson (2001) also provide these overidentifying tests using their settler mortality data.

However, controversy continues. Przeworski (2004a, b) does not find a reversal of fortunes using new income data (and expanding the sample beyond the western hemisphere) and also does not find that past political systems like democracy and dictatorship predict current institutions. These observations question whether the political systems planted by European settlers are the cause of international differences in property rights today.

Glaeser, La Porta, Lopez-de-Silanes and Shleifer (2004) dispute the third building block of Acemoglu, Johnson, and Robinson's (2001) endowment view, which holds that early European settlers planted property rights institutions that have endured to today. They argue that the Acemoglu, Johnson and Robinson methodology suffers from the econometric problem that settler mortality is not a valid instrument for institutions, since settlers brought with them not only institutions but also themselves, their culture, and other attributes that may still matter today. In particular, they stress that Europeans brought educated people and schools, and these factors are what endured after colonization, not political institutions governing property rights.<sup>20</sup> Easterly (2006) notes that colonies with a higher percentage Europeans tended to have more highly educated people, which fostered economic growth and the creation of better institutions. However, in colonies with few Europeans, the population was not as highly educated and this fostered slower growth and the absence of property rights protection. These observations challenge the logical chains of the endowment view.

The second major concern about the endowment view is the trustworthiness of the settler mortality data. Much of the data used to measure settler mortality are based on observations in

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<sup>20</sup> Glaeser, La Porta, Lopez-de-Silanes and Shleifer (2004) find that education predicts changes in political institutional outcomes (such as the level of democracy), but these political outcome indicators do not predict changes in education, which leads the authors to question the causal mechanisms underlying the third building block of Acemoglu, Johnson, Robinson's endowment view. Acemoglu, Johnson, Robinson and Yared (2005), however, question the validity of the econometric specifications in Glaeser, La Porta, Lopez-de-Silanes and Shleifer. They argue that when one includes time dummy variables in the panel specification with education, then the results support the Acemoglu, Johnson, and Robinson view.

the nineteenth century, one to two centuries *after* Europeans first arrived in many of these colonies. Thus, some may question whether the settler mortality data accurately capture the endowments encountered by early European settlers.<sup>21</sup>

The empirical validity of the endowment theory does not hinge solely on the settler mortality data. First, the evidence produced by Engerman and Sokoloff and others linking natural resource endowments with patenting costs, suffrage laws, public education and migration does not rely on settler mortality data, but still provides empirical evidence consistent with some theories of how endowments influence property rights. Second, other recent work has used latitude as a proxy for endowments: that is, whether the country is in a high-disease, poor agricultural tropical environment, or in a less disease-plagued, higher yielding temperate climate (Hall and Jones, 1999; Beck, Demirguc-Kunt, and Levine, 2003; Easterly and Levine, 2003). Clearly, latitude is a highly imperfect indicator of endowments – but at least it is measured with a high degree of accuracy! Beck, Demirguc-Kunt, and Levine run regressions similar to those in Tables 1 and 2, and find that latitude has a positive, large, and statistically significant relationship with the property rights index, both before and after inserting the other control variables. Finally, without relying on settler mortality data, Acemoglu, Johnson, and Robinson (2002) and Engerman and Sokoloff (2005) find evidence consistent with the view that the distribution of the indigenous population during colonization influenced the construction of political and suffrage systems in ways that have had an enduring effect on property rights. These findings are consistent with the endowment view, but as noted above, some researchers challenge whether a strong correlation between endowments and property rights should be interpreted as confirming the causal chain running from endowments to property rights.

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<sup>21</sup> Furthermore, in as yet unpublished papers, Albouy (2004) questions the coding of the Acemoglu, Johnson and Robinson (2001) settler mortality data, while Acemoglu, Johnson, and Robinson (2005) have drafted a rebuttal.

*Law and Endowments: Similarities, Differences, and a Horseshoe*

According to both the law and endowment views of property rights, exogenous factors shaped the formation of property rights centuries ago, but these views differ on the crucial historical conditions that shaped property rights. From the law point of view, the critical “exogenous” event is the identity of the colonizer. If a land was colonized by the British, it got the common law. If the French, Portuguese, Spanish, Belgian, or Dutch were the colonizers, then the country became a French legal origin country. According to the endowment view, however, the identity of the colonizer is irrelevant. The endowment view stresses that disease, geography, and the composition of the population created incentives for the establishment of distinct property rights – and these incentives should operate regardless of the nationality of the colonizer. These two theories are substantially different, but they are not contradictory: Both may operate.

Beck, Demirguc-Kunt, and Levine (2003a) run a statistical race between the law and endowment views. They use the same measure of property rights as a dependent variable, but then use both French legal origin and settler mortality as explanatory variables, along with the same set of control variables appearing in Tables 1 and 2. Table 3 presents some results.

French legal origin enters all of the regressions with a relatively large magnitude and is statistically significant at the 1 percent level. Settler mortality is also statistically significant at the 1 percent level in all regressions. For both legal origin and settler mortality, the size of the estimated coefficients falls in absolute terms by about 20 percent from those estimates in Tables 1 and 2 that do not include both legal origin and settler mortality. In an alternative calculation, Beck, Demirguc-Kunt, and Levine (2003a) use latitude as a proxy for natural

endowments, rather than settler mortality, and find that it is statistically significant in all of these regressions. The results suggest strongly that the inherited legal system matters for property rights today, and suggest further that the natural resource endowments encountered by colonizers matter for property rights, too.

## **Conclusion**

Property rights affect individual liberty and national prosperity. While scholars have hypothesized about the sources of variation in property rights for over 2500 years, researchers have begun to test these theories empirically only recently. Researchers have made enormous strides in empirically assessing different theories of the determinants of property rights, but these investigations are in their nascent stages. The law and endowment views offer compelling theories of how legal heritage and natural resource endowments shape property rights today and each view provides empirical support. I see no reason to reject either explanation but believe that considerably more work is needed on each.

In closing, I speculate on research directions. In terms of the law view, many French civil law developing countries rank very highly in terms of property rights, like Chile, Morocco, Philippines, and Turkey. Why does the civil law operate effectively in some countries and not others? At a broader level, there is some evidence that legal systems that embrace jurisprudence have better property rights and better financial systems. Although this finding is consistent with the argument that jurisprudence facilitates the efficient adaptability of the law, we do not have direct cross-country measures of “adaptability.” Furthermore, legal systems and political systems are intimately related, but I do not believe that the interplay between legal and political

institutions in influencing private property rights has been adequately clarified at a theoretical or empirical level. In terms of endowments, we need to provide more information on the relationship between endowments and the initial construction of rules, procedures, and policies by Europeans for a broad cross-section of countries. Can we then empirically trace the evolution of these initial institutions through time to assess the hypothesis that the initial institutions endured for centuries? Finally, do the law and endowments interact? Is the French civil law particularly pernicious when accompanied by endowment-generated political institutions that thwart socially efficient change?

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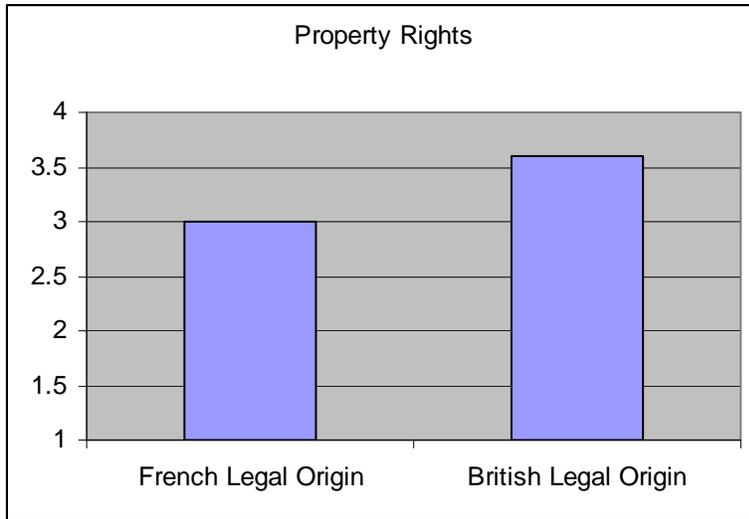
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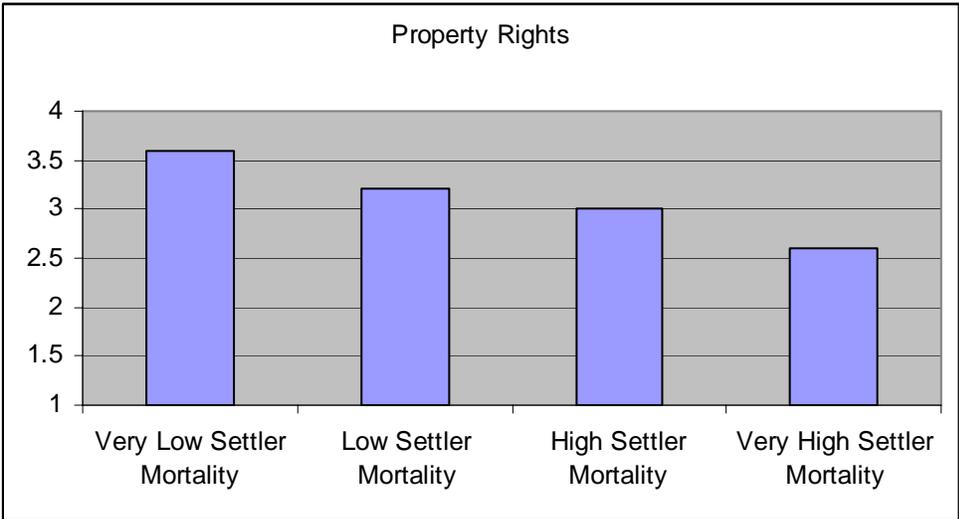
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Figure 1  
Legal Origin and Property Rights



Note: The figure charts the average value of Property Rights for countries with either a French and British legal tradition. Property Rights reflects the degree to which the government enforces laws that protect private property (Source: Heritage Foundation). It ranges from one to five, with higher numbers indicating better property rights enforcement. The French Legal Origin and British Legal Origin classifications are based on their Commercial/Company law. Source: La Porta, Lopez-de-Silanes, Shleifer and Vishny (1999).

Figure 2: Settler Mortality and Property Rights



Note: The figure charts the average value of Property Rights for countries in each quartiles of Settler Mortality. Property Rights reflects the degree to which the government enforces laws that protect private property (Source: Heritage Foundation). The four Settler Mortality categories are as follows: very low settler mortality rates (between 9 and 68 deaths per thousand), low settler mortality rates (between 69 and 80 deaths per thousand), high settler mortality rates (between 81 and 270 deaths per thousand), and very settler mortality rates (greater than 270 deaths per thousand) Property Rights reflects the degree to which the government enforces laws that protect private property (Source: Heritage Foundation). It ranges from one to five, with higher numbers indicating better property rights enforcement.  
Source: Acemoglu, Johnson and Robinson (2001).

**Table 1**  
**Property Rights and Legal Origin**  
*(dependent variable: property rights on a one to five scale)*

	(1)	(2)	(3)	(4)
French Legal Origin	-0.947***	-1.065***	-1.103***	-0.995***
Catholic		-0.002		
Muslim		-0.005		
Other Religion		-0.007		
Independence			0.692**	
Ethnic Fractionalization				-0.813**
Adjusted R <sup>2</sup>	0.198	0.182	0.232	0.253
Obs	69	69	69	69

Note: The estimated regression: Property Rights =  $\alpha + \beta_1$  French Legal Origin +  $\beta_2 X + u$ . Property Rights reflects the degree to which government enforces laws that protect private property, with higher numbers indicating better enforcement. French Legal Origin is a dummy variable that takes on the value one for countries with French civil law tradition, and zero otherwise. The regressions also include a vector of control variables, X. Catholic, Muslim, and Other Religion indicate the percentage of the population that is Catholic, Muslim, or religions other than Catholic, Muslim, or Protestant. Independence is the percentage of years since 1776 that a country has been independent. Ethnic Fractionalization is the probability that two randomly selected individuals in a country will not speak the same language. Regressions estimated using ordinary least squares. The constant is not reported. The symbols \*, \*\*, \*\*\* indicate significance at the 10, 5, and 1 percent levels, respectively.  
Source: Beck, Demirguc-Kunt, and Levine (2003a).

**Table 2**  
**Property Rights and Endowments**  
*(dependent variable: property rights measured on a scale from one to five)*

	(1)	(2)	(3)	(4)
Settler Mortality	-0.349***	-0.339***	-0.377***	-0.338***
Catholic		-0.015*		
Muslim		-0.012		
Other Religion		-0.01		
Independence			-0.336	
Ethnic Fractionalization				-0.102
Adjusted-R2	0.177	0.194	0.175	0.166
Obs	69	69	69	69

Note: The estimated regression:  $\text{Property Rights} = \alpha + \beta_1 \text{Settler Mortality} + \beta_2 X + u$ . Property Rights reflects the degree to which government enforces laws that protect private property, with higher numbers indicating better enforcement. Settler Mortality is the log of the annualized deaths per thousand European soldiers in European colonies in the early 19<sup>th</sup> century. The regressions also include a vector of control variables, X. Catholic, Muslim, and Other Religion indicate the percentage of the population that is Catholic, Muslim, or religions other than Catholic, Muslim, or Protestant, respectively. Independence is the percentage of years since 1776 that a country has been independent. Ethnic Fractionalization is the probability that two randomly selected individuals in a country will not speak the same language. Regressions estimated using ordinary least squares. The constant is not reported. The symbols \*, \*\*, \*\*\* indicate significance at the 10, 5, and 1 percent levels, respectively.

Source: Beck, Demirguc-Kunt and Levine (2003a).

**Table 3**  
**Property Rights, Law, and Endowments**  
*(dependent variable: property rights measured on a scale from one to five)*

	(1)	(2)	(3)	(4)
French Legal Origin	-0.781***	-0.853***	-0.856***	-0.833***
Settler Mortality	-0.279***	-0.277***	-0.251***	-0.232**
Catholic		-0.004		
Muslim		-0.003		
Other Religion		-0.008		
Independence			-0.256	
Ethnic Fractionalization				-0.398
Adjusted-R2	0.304	0.281	0.299	0.307
Obs	69	69	69	69

Note: The estimated regression:  $\text{Property Rights} = \alpha + \beta_1 \text{Settler Mortality} + \beta_2 X + u$ . Property Rights reflects the degree to which government enforces laws that protect private property, with higher numbers indicating better enforcement. Settler Mortality is the log of the annualized deaths per thousand European soldiers in European colonies in the early nineteenth century. The regressions also include a vector of control variables, X. Catholic, Muslim, and Other Religion indicate the percentage of the population that is Catholic, Muslim, or religions other than Catholic, Muslim, or Protestant, respectively. Independence is the percentage of years since 1776 that a country has been independent. Ethnic Fractionalization is the probability that two randomly selected individuals in a country will not speak the same language. Regressions estimated using ordinary least squares. The constant is not reported. The symbols \*, \*\*, \*\*\* indicate significance at the 10, 5, and 1 percent levels, respectively.

Source: Beck, Demirguc-Kunt, and Levine (2003a).