

# Legal Traditions and Initial Endowments in Shaping the Path of Financial Development

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## ABSTRACT

This paper finds remarkable heterogeneity in the relationship between legal traditions and finance in former colonies. The effect of the British common law on financial development is conditioned by the level of initial endowments. In former colonies with low precolonial population density the common law has promoted high financial development, but where endowments were abundant this legal tradition has not worked well. In contrast, the effect of the French civil law on finance is invariant to endowments. British common law countries do not exhibit greater financial development levels than French civil law countries when endowments are sufficiently high.

Keywords: Financial development, Legal origin, Endowments, Colonialism

*JEL* codes: G2, K2, O11, P51

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## 1. INTRODUCTION

Many economists have stressed the pivotal role of the financial system in the process of economic development.<sup>1</sup> As a result, a growing number of studies have sought to explain why some countries have a well-functioning financial system and others do not. A very influential explanation is the *law and finance theory*, which emphasizes the role of legal institutions as an important engine of financial development. It is commonly believed that the British common law tends to support the protection of property rights of private investors vis-à-vis the state to a much larger extent than the French civil law, with positive ramifications on financial development. Another widely held theory focuses on the initial conditions existing in colonized territories. Factors such as disease environment, indigenous population density or resources abundance determined the colonial strategy of Western powers and shaped the incentives to create different types of institutions. Beck, Demirgüç-Kunt, and Levine (2003a) relate the *endowment theory* to financial development by arguing that sound private property rights protection is key to financial contracting, which is a prerequisite for financial systems to develop.<sup>2</sup>

The *law and finance theory* and the *endowment theory* are not mutually exclusive because they both explain in different ways the influence of colonialism on national legal systems and more particularly, on those institutions that enforce private property rights and contracts. Beck, Demirgüç-Kunt, and Levine (2003a) provide empirical evidence that both theories matter for financial development. We go one step further by asking whether the effect of

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1 Levine (1997, 2005a) provides authoritative reviews of the theories and empirics behind the finance and growth nexus. Using a deterministic nonparametric production frontier approach, Badunenko and Romero-Ávila (forthcoming) find evidence that financial development accounts for up to 20% of labor productivity growth over the period 1965-2005.

2 The original contributions regarding the *law and finance theory* correspond to La Porta *et al.* (1997, 1998) and those relative to the *endowment theory* are Engerman and Sokoloff (1997, 2000) and Acemoglu, Johnson, and Robinson (2001, 2002).

legal traditions on finance is conditioned or not by the level of endowments. It is relevant to study whether the British common law and the French civil law work better in some countries than in others depending on their initial endowments. In fact, Ross Levine (2005b, p. 84) poses the following question: “do the law and endowments interact?” Given that the French civil law is associated with worse institutions than the British common law, he suspects that the negative effect could be particularly large in territories with adverse endowments. To our surprise, these interesting questions have not yet been addressed in the literature.

This paper tries to fill this gap by testing the presence of heterogeneity in the interaction between legal traditions and endowments. Particularly, we expect the effect of the common law on finance to depend negatively on initial endowments, whereas the effect of the French civil law is expected to be constant irrespective of initial endowments. On the one hand, we argue that the common law works optimally when it is well implanted by European practitioners, as occurred in the settler colonies of North America and Australasia. In these sparsely populated places at the time of colonization, property rights and private contracts were enforced and financial markets could prosper. However, in large parts of its empire, Britain conducted a colonial policy known as “indirect rule” which did not intend to effectively introduce its legal system, particularly in territories politically organized or extensively occupied by native population, like Sub-Saharan Africa (Zweigert and Kötz 1998). Rather, local rules were left almost intact and political and judicial powers were concentrated in the hands of traditional chiefs. This led to the control of economic resources by elites, with little incentive to protect property rights and enforce contracts, thus rendering underdeveloped financial systems. On the other hand, France conducted a very different colonial policy based on the ideal of legal and cultural assimilation and a centralized conception of its colonial empire, which was considered as an intrinsic part of the Republic

(Fieldhouse 1966, Zweigert and Kötz 1998). The result was the imposition of the Civil Code in a more rigid and uniform way, which led to a more homogeneous effect of the French civil law on legal and financial systems across colonized territories. This indicates that initial endowments play a different role in each legal tradition. The British common law produces worse outcomes in territories with larger endowments, whereas the French civil law leads to similar results irrespective of the level of endowments.<sup>3</sup>

Table 1 (Panel A) provides some preliminary evidence on this issue. Rows present former colonies classified according to their legal traditions. The first two columns show the mean values of our main financial indicator (private credit over GDP) for colonies with population density in 1500 below and above the median. The third column reports the *t*-statistic of mean differences. For the full sample of colonies, those with greater precolonial population density have, on average, a level of private credit about 20 percent of GDP lower. The difference appears highly significant, which fits well with the *endowment theory*. Moreover, the last column shows that British common law countries exhibit higher financial development than French civil law countries, which is also consistent with the *law and finance theory*. However, both patterns vanish when legal traditions interact with endowments. Interestingly, only common law countries fit well with the *endowment theory*, as given by significantly lower financial development for a level of endowments above the median. In contrast, French civil law countries exhibit a level of private credit largely independent of initial endowments. These patterns are supported by Figure 1 that shows that endowments only play an important role in common law countries but do not in French civil law countries. Returning to Table 1, another remarkable observation can be made: the common law is not always associated with

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<sup>3</sup> Oto-Peralías and Romero-Ávila (forthcoming) provide preliminary evidence that the differing systems of colonial administration implanted by France and Britain as a response to initial endowments conditioned the subsequent institutional development of former colonies.

higher financial development, since civil law countries have a higher level of private credit (0.24 versus 0.17) for population density above the median.

*[Insert Table 1 and Figure 1 about here]*

This study makes another contribution by providing evidence for the need to divide the wide group of colonies labeled as French civil law into three categories, according to the way the civil law was transmitted to the recipient country. The first category brings together colonies obtaining the French civil law by France itself. The second consists of the former Spanish colonies, while the third group comprises the remaining colonies. As detailed below, their historical experiences are very different and there are reasons to believe that the reception of the French civil law varies from one group to another. More specifically, the Spanish American colonies share the Castilian law legacy and the adoption of the Civil Code by imitation, aspects that facilitated the reception of the French civil law. Thus, we expect former Spanish colonies to have higher financial development than former French colonies. In line with our predictions, Table 1 (Panel B) shows notable differences in financial development among the three French civil law groups, with the ‘Spanish law legacy’ group almost doubling the financial development level of the ‘implantation by France’ group.

This preliminary evidence is extended below with the estimation of cross-country regressions for a sample of 100 former colonies. An interaction model is proposed to explain financial development through legal traditions, endowments and their interaction. The analysis is formulated in terms of five main hypotheses and gives consistent support to our theory-based predictions: 1) the effect of the common law on financial development is influenced negatively by the level of initial endowments, 2) the effect of the French civil law on finance does not depend on initial endowments, 3) there is heterogeneity in the interaction

between legal traditions and endowments, 4) the common law is not always related to higher financial development since the French civil law equals the common law when the level of endowments is sufficiently high,<sup>4</sup> and 5) there are significant differences within the French civil law tradition, in particular, former Spanish colonies are associated with more financial development than French colonies.

The remainder of the paper is organized as follows. Section 2 reviews the *law and finance* and the *endowment* theories. It also formulates some plausible hypotheses that result from interacting legal traditions with endowments and from categorizing French civil law countries into three groups. Section 3 describes the empirical strategy and the data used. Section 4 presents the basic regression evidence as well as the results of extensive robustness checks. Section 5 puts forward some implications and concludes.

## 2. THEORETICAL AND HISTORICAL BACKGROUNDS

### 2.1 *Law and finance theory*

The *law and finance theory* stems from the pioneering work of La Porta *et al.* (1997, 1998), who trace the relationship among legal traditions, legal institutions and financial development. Beck and Levine (2005) decompose the *law and finance theory* into two broad propositions. First, financial development is promoted when legal institutions guarantee private property rights and enforce contractual arrangements. Second, countries' legal traditions can account for differences in current legal systems and financial development.

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<sup>4</sup> Throughout the analysis, when we talk about high levels of endowments we either refer to high precolonial population density (implying abundance of indigenous labor), high mineral resources abundance, land suitability for plantation crops or to high settler mortality. According to the *endowment theory*, a common feature to all endowments is that they are fundamental factors for explaining the colonial strategies followed by Western powers. High levels of endowments are generally associated with low European settlement and the prevalence of extractive institutions aimed to exploit the resources of the colonized territories.

Through conquest, colonization and imitation the British common law and the French civil law spread around the world. Both legal families exhibit different features, which can be traced back several hundred years to the British and French revolutions or even earlier (Klerman and Mahoney 2007, Glaeser and Shleifer 2002). Unlike the French civil law, the common law is thought to be more respectful with private property rights and private contracts, to be less supportive of government regulation and to promote the independence of the judiciary (La Porta, Lopez-de-Silanes, and Shleifer 2008). Two mechanisms explain the superior performance of the British common law: the “political” and the “adaptability” channels. The first implies that legal traditions differ in the weight assigned to private property vs. the rights of the State, while the second focuses on judicial formalism and the ability for each tradition to evolve. The historical victory of the coalition among the English Parliament, bourgeoisie and judges against royalists in the English civil wars in the seventeenth century promoted the protection of private property rights. Moreover, the case-law principle, based on the judicial precedent, provided Britain with a legal system that could easily adapt its law to changing circumstances (Beck and Levine 2005). In contrast, in the French Revolution the principle of separation of powers relegated judges to a secondary role of mechanical application of the law, while the state’s powers were strengthened. Beck, Demirgüç-Kunt, and Levine (2003b) provide an empirical evaluation of these two mechanisms, finding evidence more supportive of the “adaptability channel”.

Merryman (1996) states that despite the emphasis made on the principle of separation of powers and the subordination of judges to the legislator in the French revolutionary period, soon after the situation would be relaxed and French courts would be granted the power to interpret laws. However, “when the French exported their system [to their colonies] they did

not include the information [saying] that it really does not work that way” (p. 116), thus hindering the development of the judicial system in many developing countries.

When the *law and finance theory* is applied to former colonies, the massive transplant of legal systems by Western powers is considered to be an extraordinary historical event that has shaped and oriented the legal system of former colonies. European powers introduced statutes, codes, legal principles and court systems, thus determining the particular legal tradition transplanted to colonial dominions. Even nowadays, some authors find legal connections or “contemporary transplants” between origin countries like France and Britain and their former colonies (Spamann 2010).

## 2.2 *Endowment theory*

Proponents of the *endowment theory* focus on the initial conditions (or endowments) in colonized territories, which influenced the type of political and economic institutions established by European powers. Engerman and Sokoloff (1997, 2000) point out that factors such as indigenous population, mineral resources and land suitable for sugarcane crops led to the predominance of large scale-plantations and mining in the New World, which originated highly unequal societies with institutions biased to privilege the elite. In contrast, North America was sparsely populated and lacked conditions for large plantations. This led to colonies of settlement where smallholder farmers of European descent established constitutional systems with a high degree of self-government that was conducive to subsequent economic development. Acemoglu, Johnson, and Robinson (2001, 2002) argue that the economic profitability of alternative colonial policies and the suitability for European settlements are responsible for the colonial strategy followed. Hence, in those places where European settlement was discouraged by high tropical disease or where the extraction of



indigenous resources was favored by the existence of a dense (and relatively prosperous) native population, extractive institutions were established. This would lead to a reversal of fortune, since initially sparsely populated territories that received a large European settlement favoring “institutions of private property” would eventually overtake densely populated territories of indigenous majority that were initially more prosperous (Acemoglu, Johnson, and Robinson 2002).<sup>5</sup> Along similar lines, Easterly and Levine (2003) provide evidence that endowments (measured through tropical location, settler mortality and the types of crops and minerals) affect current income levels only through their effect on property rights, even after controlling for legal origin.

Beck, Demirgüç-Kunt, and Levine (2003a) relate the *endowment theory* to finance since in those places where institutions limited executive powers and elites’ domination, private property rights could be protected, thus fostering financial development. In contrast, “extractive colonies” hardly generated “institutions that favor the development of free, competitive financial markets because competitive markets may threaten the position of the extractors” (p. 140). The relevant factor was not the short-run effects of exploitation policies, but the long-run consequences of “extractive institutions”, which had as a distinguishing feature “a high concentration of political power in the hands of a few who extracted resources from the rest of the population” (Acemoglu, Johnson, and Robinson 2002, p. 1264). This structure of power concentration persisted over time, hindering the emergence of institutions conducive to economic development.<sup>6</sup>

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5 Bruhn and Gallego (2012) also provide evidence of “reversal of fortunes” for a sample of 345 regions belonging to 17 American countries.

6 Comparing the development of the banking sector in the U.S. and Mexico, Acemoglu and Robinson (2012) argue that political institutions inherited from the colonial past originated, in one case, a developed and competitive banking system and, in the other, an underdeveloped and monopolistic one.

### 2.3 Interacting legal traditions with endowments

Beck, Demirgüç-Kunt, and Levine (2003a) realize that the *law and finance* and the *endowment* theories are not mutually exclusive and provide evidence that both matter for financial development. We go one step further by asking whether the effect of legal traditions on finance is conditioned by the level of endowments.

Comparing the reception of French and British laws, Zweigert and Kötz (1998) state that “French colonial policy always sought in the long run to assimilate the native populations” (p. 113). The pursuit of legal assimilation led the French colonial legislation to encourage the natives to adopt the French law. In contrast, in their words “English policy was different: true to the principle of ‘Indirect Rule’, English colonial administrators relied as much as possible on existing native rules, kept the local courts decentralized, and left mature native law almost intact” (p. 113). Interestingly, within the British empire Zweigert and Kötz differentiate two groups of colonies: the settler colonies, which at the time of colonization were “unoccupied or occupied only by natives at a very early stage of civilization and not yet politically organized” (p. 220); and the rest, which were colonies previously controlled by native kings or other European powers. In the first group the common law applied mechanically, while in the second the application of indirect rule implied that “to much the largest part of the African population the Common Law is of almost no practical significance” (p. 230).<sup>7</sup>

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<sup>7</sup> Glendon, Carozza, and Picker (2008) indicate that there was an extensive reception of the common law in territories characterized by the absence of “civilized” local law and the presence of only a small indigenous population. In their opinion, the civil law is easier to receive than the common law because of the “convenience of codes rather than a matrix of case law and statutes, the more complex language of the common law and the ability to accept a Roman based civil law which is private and [poses] little threat to a political system” (Glendon, Carozza, and Picker, p. 174). In previous work, Glendon, Gordon, and Osakwe (1985) point out that the proper functioning of the common law depends on the development of a body of judicial precedents, which is not easy to materialize. In this respect, Joireman (2004) states that the evolutionary nature of the common law is generally true in developed countries but it should not be assumed in poor countries. Kenya, for example, lacks an organized record of legal decisions, which is necessary for the application of the judicial precedent.

Whereas the French empire was highly centralized and directly ruled, Britain opted for a system of colonial administration with more flexibility, variability to local conditions and local autonomy, which in many parts of the empire took the form of indirect rule (Fieldhouse 1966).<sup>8</sup> French centralism led to a more uniform application of the law across its empire, while the British showed clear variability in the way the common law was exported to colonial societies. Also, Beck, Demirgüç-Kunt, and Levine (2003a) point out that Britain and France differ in their strategies of implanting the law. Britain applied the common law more flexibly and did not try to replace local laws and indigenous customs, while France imposed its Code rigidly despite conflicting with local customs.<sup>9</sup> Lange (2004) argues that British indirect rule strengthened the positions of traditional chiefs as customary law administrators, which led to abuses of power, control of economic resources by elites and imperfect protection of property rights. Lange uses the colonial dependence on customary courts as an indicator of indirect rule and argues that the degree of indirect rule was related to local endowments such as the disease environment and precolonial population density.<sup>10</sup>

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8 The different colonial strategies between the British and the French are well reflected in their ratios of colonial officials to population in the 1930s. This ratio equaled 3,660:15,000,000 for French West Africa, which contrasts with the ratio 1,315:20,000,000 for Nigeria (Kirk-Greene 1980).

9 A good account of the variability in the degree of application of the common law by the British to their colonial dominions is provided by Daniels, Trebilcock, and Carson (2011). In Nigeria, where indirect rule was extensively exercised, there existed two parallel courts: colonial courts applicable only to matters involving Europeans and native courts that –under indigenous customs and rules– dealt with all disputes between non-Europeans, who under certain conditions could also appeal to the British court. This dual court system implied that the common law hardly applied to the great majority of the indigenous population. In addition, since native chiefs were granted extensive executive powers by the British, and, unlike precolonial times, were no longer subject to check and balances by the native population, they undermined the historical legitimacy of the native court system as well as the effectiveness of their customary law. Unlike indirectly ruled areas in Africa, India was administered as a “direct/indirect rule hybrid” and managed to gradually adapt the colonial legal system to the needs of the Indian population, which resulted in the creation of “a court hierarchy and a body of law that was both effective and accepted by the native population” (p. 135).

10 Comparing the direct and indirect rule systems within India, Iyer (2010) finds that areas under direct rule experience significantly lower levels of schooling, health provision and roads in addition to worse poverty and infant mortality outcomes in the postcolonial period. A key to understanding why in this case indirect rule led to better outcomes lays in the fact that hereditary kings had incentives to properly govern

Berkowitz, Pistor, and Richard (2003a, b) argue that the way European laws were transplanted to the colonies is key to explaining the quality of legal systems. Receptive or successful transplants are those that adapt the imported law to local conditions or when the population is familiar with law principles. Under these conditions, countries are able to develop extensive and effective legal institutions. The transplant of the British common law to the colonies was receptive mostly in the settler colonies, and unreceptive in the extractive colonies, as in sub-Saharan Africa. In contrast, the rigid implantation of the French civil law in French colonies led to widespread unreceptive transplants, irrespective of initial endowments. This suggests that the effect of initial endowments on the effectiveness of legal systems varies across legal traditions.

The whole picture indicates that there were different patterns of transplantation of European laws to the colonies. The implantation of the French civil law appeared to be more rigid and mechanical, conducted uniformly across all colonies and was more ambitious, since the final objective was legal assimilation. As a result of this homogeneity in the exportation of the law, one would expect the relationship between the civil law and finance to be largely invariant to endowments across former French colonies. By contrast, the implantation of the British common law was not uniform across former colonies. In those places with a lower level of endowments the common law was extensively implanted and fitted well with the colonial

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their “native states”, since they could be removed in the event of misrule. In the case of British India, it is important to distinguish the type of land revenue system in place. Iyer finds that a cultivator-based land revenue system, where the ruler is in charge of collecting the revenue directly from cultivators, produced superior public goods outcomes than a landlord-based revenue system, wherein the revenue collection is carried out by landlords. These results appear in line with those of a previous study by Banerjee and Iyer (2005) that did not include those areas in India under indirect rule. Interestingly, the good performance of the indirect rule exercised by hereditary kings in the native states contrasts with that of the indirect rule applied by landlords in British India, who –unlike the former– were not subject to removal in the case of misrule. Therefore, Iyer’s overall results are not that different from those obtained for indirectly ruled areas in Africa. Whenever the incentives faced by the local administrator are not appropriate, indirect rule can lead to poor institutional governance, with negative repercussions on postcolonial development.

society, which led to the development of legal institutions promoting financial markets. In places with larger endowments where indirect rule generally prevailed, “extractive colonies” were established and the superficial application of the British law barely influenced and even distorted previous legal practices based on customary law.

The previous discussion allows us to draw a set of hypotheses, which will be tested in the empirical section. Regarding the common law tradition, our prediction is reflected in the following hypothesis *H1: The common law leads to higher financial development when the level of initial endowments is low, but at high levels of endowments it leads to lower financial development*. With respect to the civil law tradition, we formulate hypothesis *H2: The civil law has a constant (linear) effect on financial development, irrespective of the level of initial endowments*. The two previous hypotheses imply differentiated responses to endowments among legal traditions. This can be formulated as an additional hypothesis *H3: There is heterogeneity in the interaction between legal traditions and endowments*. Finally, since the *law and finance theory* predicts higher financial development for common law countries and considering the above hypotheses, we expect the following hypothesis (*H4*) to be satisfied: *At low levels of endowments the common law leads to higher financial development than the civil law, but at sufficiently high levels of endowments the difference between the common law and the civil law vanishes*.

#### *2.4 Differentiating colonies within the French civil law tradition*

Within the group of former colonies belonging to the French civil law tradition there are countries of very diverse origin. We argue for the need to distinguish among at least three categories on the basis of the way the French law was obtained. The first category includes those colonies that directly received the French civil law by France itself. This group contains

24 former French colonies in our sample. The second category consists of the former Spanish colonies (18 countries), whereas a third group comprises the remaining colonies (18 countries).<sup>11</sup>

There are two distinctive characteristics that make Spanish American colonies deserve separate treatment: the enduring legacy of the Spanish law tradition and the particular reception of the French Civil Code by imitation.<sup>12</sup> Regarding the former, Spanish American colonies were ruled by Castilian kings over three centuries before they achieved independence. Over this broad interval, these territories experienced a long and continuous process of reception of the Spanish law, which is a legal tradition with its own history and idiosyncratic features.<sup>13</sup> Initially after conquest, Spain transplanted Castilian laws to the colonies, but over time a special legislation was successively developed, which was compiled in the *Recopilación de las Indias*, a collection of 6,000 statutes published by Charles II in 1680 and applicable to all the American colonies (Gacto, Alejandre, and García 2003).<sup>14</sup> The

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11 This third group entails those territories that were colonies of countries other than France and Spain. This is a heterogeneous group that comprises territories as diverse as the British mandates of the League of Nations for the Middle East, the Portuguese colonies or the Belgian, Dutch and Italian colonies. Bringing together colonies of such diverse origin into a residual group is not ideal, but it is the best available option given the small number of observations in each sub-category. In the empirical section we show that our results are robust to different classifications and even to the omission of this residual group.

12 A third distinctive feature of these countries is their mixed influences, because legislators have increasingly incorporated other legal sources such as the American, German or Swiss law. This led to a decline of French legal influence throughout the twentieth century (e.g. Zweigert and Kötz 1998, Garro 1992, Mirow 2005).

13 One must keep in mind the singularity and importance of the Spanish law tradition. Hamilton (1917) stated that the “Spanish Civil Law is the most influential body of law on the globe today [...] It is no copy of the Code Napoleon, although that was carefully consulted”. Its singularity comes from the Spanish history and one can find on it “a Roman foundation, Gothic, Moslem, local and maritime elements” (p. 317). Commenting on the sources of the Spanish civil law, Brown (1956) places the Spanish law system in a middle point between the English doctrine of precedent and the French position.

14 William W. Howe (1903) stressed the fundamental importance of the Spanish law for Central and South America, since all these countries have derived their system of law and jurisprudence from Spain. In fact, the study of the Castilian law *Las Siete Partidas* still maintains interest in this region. It was used, for example, together with the French Civil Code, in the drafting of the prestigious Chilean Civil Code (Mirow 2001).

influence of the Spanish law in the American colonies provided a background of *ius commune* that facilitated the reception of the French Civil Code and other European sources. Many traditional concepts and ideas of the Civil Code, especially those coming from Roman law, represented no breach with the legal institutions established in Latin America. The shared Roman roots of the Spanish and French legal traditions helped the reception of the Civil Code (Zweigert and Kötz 1998, Garro 1992, Mirrow 2004).

The second feature shared by former Spanish American colonies is the specific way of importation of the French civil law. Since these territories achieved their independence at the beginning of the nineteenth century, they were free to choose and build by themselves their legal systems. Thus, they received the French civil law by imitation, that is, through voluntary transplant, which increases the chances of receptivity by allowing the adaptation of foreign law to local conditions (Berkowitz, Pistor, and Richard 2003a). The civil codes of Chile and Argentina are good examples of adaptation to national circumstances, and many countries in the region took them as models (Mirrow 2001, Zweigert and Kötz 1998). In contrast, as noted by Merryman (1996), colonies receiving the French Civil Code directly by France itself did so more rigidly and did not receive the blueprints of how courts could interpret the law rather than simply apply it –as held by the Napoleonic doctrine. This led to inefficient outcomes and expectedly hindered the development of the judicial system and in turn inhibited financial development in former French colonies (Beck, Demirgüç-Kunt, and Levine 2003b).

For all these reasons, there is no point in assimilating the reception of the French civil law in Spanish America to that in other regions such as West and Central Africa.<sup>15</sup> Therefore, we

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<sup>15</sup> In addition, the substance of the law is also different because in one case legal systems are impregnated with the Spanish legal culture, while in the other with African and tribal customs. Further arguments

expect the Spanish civil law tradition to lead to higher financial development than when the civil law is implanted by France itself. Regarding the impact of endowments, we expect hypothesis *H2* to hold for both ‘Spanish law legacy’ and ‘implantation by France’ groups. This is because Spain, like France, implanted its legal system homogeneously and in a centralized way across its empire, irrespective of precolonial endowments. This created similar conditions among its colonies for the reception of the French civil law, which must be reflected in a constant effect of the Spanish law legacy on financial development.<sup>16</sup> The above discussion leads us to formulate hypothesis *H5*: *There are differences in the effect of the Spanish civil law tradition on financial development relative to the case when the civil law is implanted by France itself, but no significant differences across both civil law groups in their response to endowments.*

Finally, with respect to the third group within the French legal tradition, i.e., the group ‘others’, we do not make specific predictions because this residual group comprises former colonies occupied by different colonial powers and we lack an appropriate theory for the way each of these powers transplanted the civil law to their colonial dominions. However, we can at least suggest that since they belong to the civil law tradition, they share features with the other civil law countries and, therefore, we expect a similar behavior.

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justify the creation of the ‘Spanish law legacy’ category. The use of years since independence as a discriminating factor among civil law countries supports our classification, since 17 of the 19 colonies that became independent before 1850 were Spanish. Furthermore, although there is variability within Spanish American legal systems, differences with respect to the other French civil law groups are higher. Thus, we observe more homogeneity within the ‘Spanish law legacy’ group than in the whole group of civil law countries. For example, the Spanish law group presents a coefficient of variation for the indicator “creditor rights aggregate score” (from La Porta, Lopez-de-Silanes, and Shleifer 2008) of 0.80, lower than the value for the whole civil law group (1.02) and that for civil law countries not belonging to the Spanish law tradition (1.14). Regarding the ratio of private credit to GDP, the Spanish law group presents the highest level of homogeneity, as reflected in the lowest coefficient of variation 0.57 versus 0.76 for the whole civil law group and 0.85 for civil law countries not belonging to the Spanish law tradition.

16 As far as hypotheses *H3* and *H4* are concerned, they are equally applicable to both French civil law groups.



### 3. EMPIRICAL METHODOLOGY AND DATA

#### 3.1 Empirical strategy

The general approach to assessing the role played by legal traditions and endowments has been the estimation of additive models (Beck, Demirgüç-Kunt, and Levine 2003a, Levine 2005b). This type of model only allows for constant (linear) effects of legal origin on financial development, thus being unable to test the set of hypotheses formulated above. Towards that end, we need an interaction model that allows for the possibility of heterogeneity in the coefficient on endowments such that:

$$\begin{aligned} finance_i = & \alpha + \beta_1 \cdot civil\_law_i + \beta_2 \cdot common\_law*endow_i \\ & + \beta_3 \cdot civil\_law*endow_i + \varepsilon_i \end{aligned} \quad (1)$$

where *finance* is the indicator of financial development,  $\alpha$  is the constant term, *civil\_law* is a dummy variable capturing whether the legal tradition is the French civil law (taking the British common law as the reference group, reflected in the constant term), *common\_law\*endow* and *civil\_law\*endow* represent the interaction terms between the two legal traditions and the endowments indicator, and  $\varepsilon_i$  is the error term.<sup>17</sup>

We test hypothesis *H1* through the coefficient on the interaction term *common\_law\*endow*. If  $\beta_2$  is consistently negative and statistically significant, the proposition that the effect of the common law depends negatively on initial endowments will be accepted. Likewise, we test hypothesis *H2* through the coefficient on the interaction term *civil\_law\*endow*. If  $\beta_3$  is neither consistently negative and significant nor consistently positive and significant, then we can accept *H2* and assume that the effect of the civil law on finance is invariant to initial endowments.

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<sup>17</sup> Throughout the paper, we use ordinary least squares and report heteroscedasticity-consistent standard errors.

Regarding hypothesis *H3* that supports the heterogeneity in the interaction between legal traditions and endowments, it is tested by comparing the  $\beta_2$  and  $\beta_3$  coefficients. If both are significantly different, then *H3* is accepted. Hypothesis *H4* –concerning the relative effects on financial development of the common law vs. the civil law– can be tested by comparing the predicted values of financial development for both legal traditions at low and high levels of endowments.

Moreover, we argued above for the need to differentiate among three groups within the French civil law tradition on the basis of the way the civil law was received, namely, ‘implantation by France’, ‘Spanish law legacy’ and ‘others’. This leads us to estimate a more complete model, which constitutes our reference specification:

$$\begin{aligned} finance_i = & \alpha + \beta_1 \cdot implantation\_France_i + \beta_2 \cdot Spanish\_law_i + \beta_3 \cdot Others_i + \\ & \beta_4 \cdot common\_law * endow_i + \beta_5 \cdot implantation\_France * endow_i + \\ & \beta_6 \cdot Spanish\_law * endow_i + \beta_7 \cdot Others * endow_i + \varepsilon_i \end{aligned} \quad (2)$$

This model allows us to test hypothesis *H5* by statistically comparing the coefficients on the variables corresponding to the ‘implantation by France’ and the ‘Spanish law legacy’ categories. We expect statistically significant differences between the  $\beta_1$  and  $\beta_2$  coefficients, but no significant differences between the  $\beta_5$  and  $\beta_6$  coefficients, as given by the similar response across both civil law groups with respect to endowments. We will also be able to check whether  $\beta_1$  is lower than  $\beta_2$ , as implied by the more adverse effect of the civil law tradition on financial development when it is implanted by France itself relative to Spanish colonies.

### 3.2 Data

The sample is restricted to overseas former colonies of Western powers, which excludes for example Japanese colonialism and colonies within the European continent. The restriction to

former colonies is due to two reasons. First, legal traditions are arguably exogenous only for colonized territories since European powers transplanted their legal systems irrespective of the will and the endogenous development of indigenous societies. In this sense, colonialism is seen as a kind of natural experiment to assess the impact of legal traditions (Beck, Demirgüç-Kunt, and Levine 2003a). Second, the *endowment theory* is applicable only to former colonies since what matters is the influence of initial conditions on the colonial strategies and policies implemented by colonizers. The resulting sample contains only countries within the British common law and French civil law traditions. There are a maximum of 100 ex-colonies for which data on our main indicators of financial development, legal traditions and endowments are available.

As a first concern, it is necessary to choose a proxy for financial development. Finance theory focuses on the role of financial institutions in channeling funds from savers to investors, gathering information and allocating capital to the highest-yield investment projects, exerting corporate control, pooling funds, managing risks and facilitating the exchange of goods and services, and how all these functions translate into a better allocation of resources and economic growth. Ideally, our measure of financial development should account for these functions provided by the financial system. However, there is little consensus on how to properly measure them. As noted by Rajan and Zingales (1998), what the extant literature has done so far is to use some imperfect proxies that may miss many of the key aspects to a modern financial system.

Among all the possible financial development proxies, our preferred measure is private credit by deposit money banks and other non-bank financial institutions over GDP, which we denote by *private credit*. Following Beck, Demirgüç-Kunt, and Levine (2003a) we also employ indicators of equity market development and private property rights protection. *Stock*

*market capitalization* equals the total value of listed shares over GDP and is used because some economies rely more on financing directly through markets than via financial intermediaries. *Protection of property rights* is an indicator provided by the Heritage Foundation which measures the degree of protection of property rights by laws and the government, the possibility of expropriation, the independence of the judiciary and the enforcement of contracts. The *law and finance* and the *endowment* theories emphasize that legal traditions and endowments influence property rights and other elements of the legal environment, which are key to financial development.

Regarding the measure of endowments, our preferred choice is the logarithm of population density in 1500, which comes from Acemoglu, Johnson, and Robinson (2002) and represents the precolonial level of development, since only rich territories could afford to be densely populated. The importance of precolonial population density as an initial endowment is based on the fact that it was a key factor that conditioned colonial strategies through various channels. On the one hand, a high level of indigenous population limited European settlements (Easterly and Levine 2012),<sup>18</sup> which is a central factor for the type of legal-administrative institutions established in the colonies. On the other hand, where Europeans found more prosperous and densely populated societies, they had incentives to build institutions to exploit indigenous resources.<sup>19</sup> Moreover, the presence of highly dense native

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18 Easterly and Levine (2012) find that population density in 1500 is a robust determinant of European settlers. In contrast, potential settler mortality does not influence European settlers once precolonial population density, indigenous mortality and latitude are controlled for. Likewise, Lange (2004) stresses the importance of this variable by arguing that “large local populations limited settlement by obstructing access to land and greatly increased the costs and risks of large-scale settlement” (p. 908).

19 The Spaniards employed a system of coercive labor known as *encomienda* with the aim of exploiting the densely populated territories of the Aztec and Inca empires. Indeed, Acemoglu and Robinson (2012, Ch. 1) point out that the key factor for the different colonial strategies of Spain and England in the New World was the presence of native population that could be used as forced labor. Apart from Acemoglu and his coauthors, indigenous population density is often quoted and widely used in the literature as endowment indicator for explaining the colonial strategies and policies of European powers. See, among

populations implies the existence of a society with its own rules (“*Ubi Societas, Ibi Ius*”), which influenced the application of the common law to the colonies, as stressed by Zweigert and Kötz (1998) and Glendon, Carozza, and Picker (2008). Another advantage of indigenous population density over other alternatives is its availability for a larger cross-section of countries, which enables us to expand the sample in Beck, Demirgüç-Kunt, and Levine (2003a) by about 30 countries. In addition, population density constitutes a more comprehensive indicator of endowments, because it is also related to the disease environment, as “malaria and yellow fever [...] were endemic in many of the densely settled areas” (Acemoglu, Johnson and Robinson 2002, p. 1266).<sup>20</sup>

Finally, the French civil law and the British common law are the dummy variables of legal traditions, which come from La Porta *et al.* (1999). We refer the reader to Appendix A for descriptions and sources of the rest of the variables. Appendix B contains the list of former colonies categorized by legal origin and the identity of the colonizer.

## 4. REGRESSION RESULTS

### 4.1 Main regression results

Table 2 reports the basic results with *private credit* as the dependent variable. As a starting point, we estimate a simple additive model in the first column. The signs of the variables are as expected, with endowments and the French civil law carrying highly significant negative

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others, Fieldhouse (1966), Engerman and Sokoloff (2000), Mahoney (2003), Lange (2004), Lange, Mahoney, and vom Hau (2006) and Bruhn and Gallego (2012).

<sup>20</sup> Precolonial urbanization rate may be a better proxy for pre-existing wealth, but it implies a drastic reduction of the sample (for example, it does not include sub-Saharan Africa). Regarding potential settler mortality rate, there is controversy on the reliability of the data (Albouy 2012) and also entails a significant reduction in the sample. Moreover, after 1850 the widespread use of quinine meant that tropical diseases declined in importance as an obstacle to European settlements (Olsson 2009), which implies that settler mortality as an endowment indicator may be less appropriate for the imperialist wave of colonization. Other variables such as geo-climatic conditions are rough indicators of endowments and do not reflect the level of precolonial development.

coefficients. In line with Beck, Demirgüç-Kunt, and Levine (2003a), these preliminary results are consistent with the *endowment* and the *law and finance* theories.

[Insert Table 2 about here]

Yet this is not the whole story. The results of the interaction model estimated in column 2 are appealing and give support to hypotheses *H1* to *H4*. First, the interaction between the common law and population density is negative and statistically significant at the 1% level. This is consistent with *H1* that predicts that the effect of the common law on finance depends negatively on initial endowments. Second, the interaction between the civil law and population density is close to zero and highly insignificant, which clearly fits with *H2*, i.e., the civil law has a constant effect irrespective of the level of endowments. Third, the coefficients on the interaction terms are clearly different (-0.144 vs. 0.006 for the common law and the civil law, respectively),<sup>21</sup> which supports *H3* and indicates heterogeneity in the responses of the legal traditions to initial endowments. And fourth, we can show that *H4* is also satisfied. At relatively low values of population density, for example, for a value of 1 (i.e. natural logarithm equal to 0), the predicted value of *private credit* for common law countries is higher than that for civil law countries (0.49 vs. 0.22, respectively), being the difference statistically significant.<sup>22</sup> In contrast, for a level of population density of 10 (natural logarithm equal to 2.3), the predicted value of *private credit* for the British common law is lower than that for the French civil law (0.16 vs. 0.23),<sup>23</sup> though the difference is not

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21 The Wald test strongly rejects the equality of coefficients at the 1% significance level. The Wald tests for testing hypotheses *H3*, *H4* and *H5* are presented in the bottom part of the tables.

22 The statistical significance of the coefficient on the civil law dummy reflects whether the civil law group is statistically different from the reference group (the common law) when the log of population density is equal to 0.

23 The value for the common law is calculated as the constant –which measures the omitted group (i.e. the British common law)– plus the coefficient on the interaction between the common law and endowments

statistically significant. Therefore, the evidence indicates that at high levels of endowments, French civil law countries at least equal the financial development level of common law countries.<sup>24</sup>

Column 3 presents our reference model that divides the French civil law tradition into three groups. It is remarkable that hypotheses *H1* to *H4* are also largely satisfied in this case and hold for the three groups of French civil law tradition.<sup>25</sup> It remains to be shown whether hypothesis *H5* is fulfilled. The dummy ‘implantation by France’ presents a larger negative coefficient (-0.42) than the dummy ‘Spanish law legacy’ (-0.20), the difference being statistically significant at the 1% level. Since the coefficients on the interaction terms for both civil law categories are not significantly different (*p-value* of 0.14), we can assume the differences reflected in the dummy variables to be largely invariant to the level of endowments.<sup>26</sup> Both findings account for the fact that the Spanish civil law tradition leads to higher financial development than when the civil law is implanted by France itself. Regarding the category ‘others’, it presents similar patterns to the Spanish law legacy group, with a

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times the log of population density. Likewise, the value for the civil law is calculated as  $0.49 - 0.274 + 0.006 * \text{endow}$ .

24 The relatively poorer performance of the common law at high levels of endowments can be related to the findings of Acemoglu and Johnson (2005), since they show that political institutions (instrumented by endowments –population density in 1500 and settler mortality–) are more critical to economic growth, investment, and financial development than contracting institutions (instrumented by legal origin). Hence, Acemoglu and Johnson’s evidence suggests that endowments matter much more for financial development than having a common law tradition; and arguably, when large endowments are present the adverse effect on financial development dominates the positive effect from being a common law colony. Thus, it can be inferred that the common law by itself does not guarantee financial development.

25 Note that the marginally significant positive coefficient on the interaction term ‘implantation by France x Pop. dens.’ does not imply the rejection of *H2*, since it becomes insignificant once we introduce additional control variables. Regarding *H4*, we also point out that for a level of population density of 10, the predicted value of private credit for the ‘implantation by France’, ‘Spanish law legacy’ and ‘others’ groups equal 0.233, 0.288 and 0.262, which are larger than the predicted value for the common law group (0.16), though again the differences between the predicted value of each civil law group and that of the common law group are not statistically significant.

26 This holds throughout the analysis since the coefficients on the interaction terms for the civil law groups are generally positive but insignificant once additional control variables are incorporated into the specification.

slightly larger negative coefficient on the dummy variable (-0.26) and an insignificant coefficient on the interaction term.

All other columns of Table 2 introduce additional factors that may affect financial development. We begin by including the logarithm of per capita GDP in column 4, which corrects for the possibility that cross-country differences in income could be driving financial development differences (La Porta, Lopez-de-Silanes, and Shleifer 2008), thereby controlling for the existence of fixed costs in credit markets. Column 5 adds ‘years since independence’ because a long post-colonial period allows countries to develop institutions according to their needs and eliminate inefficiencies from their colonial past (Beck, Demirgüç-Kunt, and Levine 2003a). From the work of Max Weber (1976), religion is seen as a potential determinant of key capitalistic institutions. More recently, La Porta *et al.* (1999) use religion as a proxy for culture to explain the quality of institutions. To control for this factor, column 6 introduces the fractions of population professing the different confessions. Another factor susceptible to influencing finance is ethnolinguistic fractionalization, which is included in column 7. Beck, Demirgüç-Kunt, and Levine argue that greater fractionalization is related to policies and institutions intended to maintain the political and economic power instead of creating a competitive financial system. In the last three columns, we introduce latitude, the percentage of land in tropics and regional (continental) dummies. This will allow us to discard the possibility that the results are due simply to a correlation between financial development and colonies concentrated in areas with particular geographic features.

Table 2 offers a consistent pattern indicating the robustness of our baseline results. In general, we find significantly negative coefficients on the civil law dummies, and the dummy ‘implantation by France’ appears with a larger negative coefficient than the other civil law



categories. In addition, the interaction term ‘common law x pop. dens.’ always exhibits a highly significant negative coefficient, whereas the coefficients on the interaction terms for the civil law groups are never negative and in most cases are insignificant and close to zero. Overall, these results appear in line with those obtained in the specification with no controls, which imply that the five hypotheses formulated in Section 2 are largely satisfied.<sup>27</sup> Regarding the control variables, per capita income, years since independence and latitude are positively correlated with *private credit*, whereas the Africa dummy presents an expected negative sign. Finally, Tables 3 and 4 use *stock market capitalization* and *protection of property rights* as dependent variables. Remarkably, in both cases we find the same patterns in the estimated coefficients as in the specification for *private credit*, though the evidence supportive of hypotheses *H3* and *H5* is less clear-cut for the case of property rights protection when the civil law tradition is disaggregated into three groups.

[Insert Tables 3 and 4 about here]

#### 4.2 Sensitivity Analyses

In the previous tables we have controlled for a number of alternative factors in order to ensure that our results are not affected by omitted variable bias. However, other problems may still persist. In this subsection we apply extensive tests to control for political structure

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<sup>27</sup> The statistical difference between former French and Spanish colonies –as implied by *H5*– disappears when controlling for geographic regions, years since independence and per capita income. The fact that the Latin America and Caribbean dummy overlaps with former Spanish American colonies drives the difference between both civil law categories insignificant. Something similar occurs due to the high correlation between years since independence and Spanish law legacy, because all the Spanish American colonies included in our analysis achieved their independence early in the nineteenth century (between 1811 and 1825). Finally, the endogeneity of per capita income may spuriously reduce the coefficient on the independent variables, as argued in La Porta *et al.* (1999). This is what we observe for the coefficient on ‘implantation by France’ that almost halves and becomes close in size to that on the ‘Spanish law legacy’ group.

variables, alternative indicators of endowments, sample selection and outliers. Table 5 reports the results from these robustness checks for *private credit*.

The political environment is often seen as a potential determinant of finance. Groups in power use their influence to shape policies and institutions to their own benefit (North 1990). Acemoglu, Johnson, and Robinson (2005) argue that economic institutions derive from political power, which is the combination of political institutions and “de facto” political power. Beck and Levine (2005) and La Porta, Lopez-de-Silanes, and Shleifer (2008) make reference to a number of studies that challenge the explanatory power of legal origins using political arguments. Our aim is to test whether our findings remain unchanged after controlling for differences in the political structure of countries, since centralized and powerful governments are more likely to be conditioned by the elite than competitive political systems (Beck, Demirgüç-Kunt, and Levine 2001b). Columns 1 to 3 introduce three political variables: ‘legislative competition’, ‘checks’ and ‘executive constraints’. The first two are also employed by Beck, Demirgüç-Kunt, and Levine (2003a) with the same purpose. ‘Legislative competition’ captures the degree of competition of the last legislative election and ‘checks’ measures the number of influential veto players in legislative and executive initiatives. ‘Executive constraints’ measures the “checks and balances between the various parts of the decision-making process” (Marshall, Gurr, and Jagers 2010, p. 24). In the three cases, the results remain robust and only the indicator ‘checks’ appears correlated with *private credit*.<sup>28</sup>

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28 Following Beck, Demirgüç-Kunt, and Levine (2003a), we also estimated these regressions through two-stage least squares, using as instruments for political structure the religion variables, years since independence and ethnolinguistic fractionalization. The political structure variables never appeared statistically significant whereas our previous results remained unchanged. Moreover, we regressed financial development indicators only on political structure variables, using as instruments our legal origins and endowments variables. Although political variables often exhibited significant coefficients, the overidentification tests were rejected, reflecting that our independent variables influence financial

[Insert Table 5 about here]

Another concern could be the particular indicator of endowments employed. Although we previously argued that population density in 1500 is the best possible indicator of endowments available, the next four columns incorporate alternative indicators. Potential mortality rate of European settlers (column 4) is an indicator introduced by Acemoglu, Johnson, and Robinson (2001) to account for the feasibility of settlements by Europeans. According to the *endowment theory* we expect a negative relation between potential settler mortality and financial development. Acemoglu, Johnson, and Robinson (2002) provide another indicator, the rate of precolonial urbanization, which is used as a proxy for precolonial wealth. Since precolonial prosperity gave the incentive to set up “extractive institutions” as a mechanism for extracting resources from colonial territories, we also expect a negative relationship between this variable and financial development (column 5).

Column 6 introduces the inverse of the “wheat/sugar ratio” that represents the suitability of land for sugarcane relative to wheat (Easterly 2007). Sugarcane was a widespread crop in plantation colonies, whereas wheat was not advantageous in large-scale cultivation. Column 7 employs an indicator of mineral resources endowments that calculates the average of mineral rents over GDP during the period 1960-2000. According to Engerman and Sokoloff (1997, 2000), the plantation system and the exploitation of mineral resources in the New World led to highly unequal societies that favored institutions built to benefit elites. For both indicators the *endowment theory* suggests that the larger the endowments the lower the level of financial development. The block of regressions devoted to alternative endowment indicators provides a picture totally consistent with our previous results. Endowments are

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development beyond the political structure of countries. All this holds for the other two indicators of financial development considered.

negatively related to finance only for the common law tradition, but not for civil law countries.

The influence of outliers is another usual problem in econometric analysis. We consider several statistical methods to identify outliers such as leverage, standardized residuals, Cook's distance and DFITS.<sup>29</sup> Once outliers are detected, we exclude these countries and re-run the regressions. Columns 8 to 10 clearly show that our findings remain unaltered when outliers are excluded. In the remaining columns, we verify that the results are not driven by specific regions or particular groups of countries. Column 11 removes the colonies known as neo-Europes (USA, Canada, Australia and New Zealand), which are considered extreme cases of British colonialism, with initially low indigenous population density and currently highly developed financial systems. Column 12, 13 and 14 drop the regions Middle East and North Africa, Latin America and Africa, respectively. It is remarkable that our findings are highly robust to the presence of outliers as well as to the exclusion of several groups of countries.<sup>30</sup>

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<sup>29</sup> The cut-offs of the detection methods are the following: leverage,  $2 \cdot k/n$ ; standardized residuals,  $|2|$ ; Cook's distance,  $4/n$ ; DFITS,  $|2 \cdot \sqrt{k/n}|$ ; where  $k$  is the number of parameters and  $n$  is the number of observations. For outliers diagnostics and methods, see Belsley, Kuh, and Welsch (2004).

<sup>30</sup> Fairly similar results follow from these sensitivity analyses when the dependent variable is either *stock market capitalization* or *protection of property rights*, though for the latter the evidence supportive of hypotheses *H3* and *H5* is less clear-cut. For reasons of space, these results are not reported but are available as unpublished appendices from the authors upon request. For similar reasons, we do not report the results from the following robustness checks to alternative classifications of civil law countries. First, we disaggregated the residual group 'others' at the highest possible level, resulting in five new subcategories: British colonies (6 countries), Portuguese colonies (5), Belgian colonies (3), Dutch colonies (2) and others (one Italian and one US colonies). The results for the common law and for the categories 'implantation by France' and 'Spanish law legacy' remain unchanged. Regarding the other civil law subcategories, Portuguese colonies often report a negative and significant coefficient on the interaction term, which does not fit with what we observe for the other civil law groups. Second, to be sure that our findings are not driven by the residual group, we redo the analysis without the 18 countries belonging to that group. The results remain remarkably robust with this reduced sample. Third, we use years since independence rather than the colonizing country as a discriminating factor among civil law countries. We can distinguish two well-differentiated groups: those countries enjoying more than 150 years of independence and the rest. Using these two categories, we find the same pattern of heterogeneity in the

## 5. CONCLUSIONS

This paper extends the *law and finance theory* by demonstrating heterogeneity in the interaction between legal traditions and endowments. We find that the effect of the common law on finance is conditioned by the level of endowments. Thus, for common law countries a negative relation between endowments and financial development is consistently observed. When one turns to civil law countries, the picture is quite different. We find that the impact of the civil law on finance does not depend on the level of endowments. This heterogeneity leads us to an interesting result in the relative effect of legal traditions: at low levels of endowments the common law is associated with higher financial development, but as the level of endowments rises, the difference between the British and French legal traditions shrinks and becomes statistically insignificant. In that case, the prediction by the *law and finance theory* that the common law tradition leads always to higher financial development than the French civil law tradition does no longer hold. Also, it is interesting to note that the *endowment theory* only fits with the group of common law colonies.

The different patterns of implantation of European legal systems in colonial territories are key to understanding the results. According to Zweigert and Kötz (1998), Britain transplanted its legal system in a heterogeneous way across its empire. Some territories received the British common law extensively (e.g., settler colonies) and developed the legal requirements for well-functioning financial markets. In other territories with large endowments the implantation of the British law was very superficial and the system of colonial administration known as indirect rule prevailed. This led to the concentration of power in the hands of

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interaction between legal traditions and endowments. Also, the civil law group of early independence (with 90 percent of former Spanish colonies) is associated with more financial development than that gaining independence later.

traditional chiefs and to ineffective legal systems, with negative consequences for the development of financial markets. In contrast, France pursued legal assimilation throughout the empire and its colonial legal policies were set accordingly (Zweigert and Kötz). The French empire was more centralized than the British, and colonial dominions were considered as an intrinsic part of the Republic (Fieldhouse 1966). These particularities led to a more rigid and uniform application of the law across the empire, which can largely account for the fact that the impact of the French civil law on finance does not depend on initial endowments.

We make another contribution to the law and finance literature by arguing strongly in favor of distinguishing former Spanish colonies from the other civil law countries. We do so for a couple of reasons: 1) they share the legacy of the Spanish law tradition, which facilitated the reception of the Civil Code, and 2) all the Spanish American colonies imported the Civil Code by a common procedure, namely, imitation. The evidence supports our argument since former Spanish colonies show a higher level of financial development than those territories where the civil law was implanted by France itself. The effect of the Spanish law legacy is also independent of the level of initial endowments, which can be explained because Spain also applied Castilian laws uniformly across its American colonial possessions and all the American colonies adopted the Civil Code through voluntary transplant (Garro 1992, González 1992).

Although this paper focuses on historical events, the consequences of the processes set in motion in the distant past continue to persist today. Those territories where European legal systems were not adapted to local circumstances or were hardly implanted deserve maximal attention from a policy perspective. Also, it is interesting to analyze the possible advantages of certain regions sharing the same legal influence. In this sense, the more rigid

implementation of the civil law in French colonies, although negative in some aspects, can provide some advantages. For example, since 1993 sixteen countries in the francophone Sub-Saharan Africa adopted uniform commercial and financial legislation within the framework of the OHADA,<sup>31</sup> which is a useful policy tool to promote trade, financial integration and economic growth. These developments in regional integration and other topics related to legal traditions are fields of great interest for researchers.

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31 The French acronym for “Organisation pour l’Harmonisation du Droit des Affaires en Afrique” ([www.ohada.com](http://www.ohada.com)).

## LITERATURE CITED

- Acemoglu, Daron, and Simon Johnson. (2005) “Unbundling Institutions.” *Journal of Political Economy*, 113 (5), 949–995.
- Acemoglu, Daron, Simon Johnson, and James A. Robinson. (2001) “The Colonial Origins of Comparative Development: An Empirical Investigation.” *American Economic Review*, 91 (5), 1369–1401.
- Acemoglu, Daron, Simon Johnson, and James A. Robinson. (2002) “Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution.” *Quarterly Journal of Economics*, 117 (4), 1231–1294.
- Acemoglu, Daron, Simon Johnson, and James A. Robinson. (2005) “Institutions as a Fundamental Cause of Long-Run Growth.” In *Handbook of Economic Growth*, edited by Philippe Aghion and Steven Durlauf, pp. 385–472. North Holland: Elsevier.
- Acemoglu, Daron, and James A. Robinson. (2012) *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. New York: Crown Publishers.
- Albouy, David Y. (2012) “The Colonial Origins of Comparative Development: An Empirical Investigation: Comment.” *American Economic Review*, 102 (6), 3059–3076.
- Alesina, Alberto, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg. (2003) “Fractionalization.” *Journal of Economic Growth*, 8, 155–194.
- Badunenko, Oleg and Diego Romero-Ávila. (forthcoming) “Financial Development and the Sources of Growth and Convergence.” *International Economic Review*, in press.
- Banerjee, Abhijit, and Lakshmi Iyer. (2010) “History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India.” *Review of Economics and Statistics*, 95 (4), 1190–1213.



- Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh. (2001a) “New Tools in Comparative Political Economy: The Database of Political Institutions.” *World Bank Economic Review*, 15 (1), 165–176.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. (2001b) “Legal Theories of Financial Development.” *Oxford Review of Economic Policy*, 17, 483–501.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. (2003a) “Law, Endowments, and Finance.” *Journal of Financial Economics*, 70, 137–181.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. (2003b) “Law and Finance: Why Does Legal Origin Matter?” *Journal of Comparative Economics*, 31, 653–675.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. (2010) “Financial Institutions and Markets across Countries and over Time: The Updated Financial Development and Structure Database.” *World Bank Economic Review*, 24, 77–92.
- Beck, Thorsten, and Ross Levine. (2005) “Legal Institutions and Financial Development.” In *Handbook of New Institutional Economics*, edited by Claude Ménard and Mary M. Shirley, pp. 251–278. Netherlands: Springer.
- Belsley, David A., Edwin Kuh, and Roy E. Welsch. (2004) *Regression Diagnostics. Identifying Influential Data and Sources of Collinearity*. New Jersey: John Wiley & Sons.
- Berkowitz, Daniel, Katharina Pistor, and Jean-Francois Richard. (2003a) “The Transplant Effect.” *American Journal of Comparative Law*, 51 (1), 163–203.
- Berkowitz, Daniel, Katharina Pistor, and Jean-Francois Richard. (2003b) “Economic Development, Legality, and the Transplant Effect.” *European Economic Review*, 47, 165–195.
- Brown, L. Neville. (1956) “The Sources of Spanish Civil Law.” *International and Comparative Law Quarterly*, 5 (3), 364–377.

- Bruhn, Miriam, and Francisco A. Gallego. (2012) “Good, Bad, and Ugly Colonial Activities: Do They Matter for Economic Development?” *Review of Economics and Statistics*, 94 (2), 433–461.
- Daniels, Ronald J., Michael J. Trebilcock, and Lindsey D. Carson. (2011) “The Legacy of the Empire: The Common Law Inheritance and Commitments to Legality in Former British Colonies.” *American Journal of Comparative Law*, 59, 111–178.
- Easterly, William. (2007) “Inequality Does Cause Underdevelopment: Insights from a New Instrument.” *Journal of Development Economics*, 84, 755–776.
- Easterly, William, and Ross Levine. (2003) “Tropics, Germs, and Crops: How Endowments Influence Economic Development.” *Journal of Monetary Economics*, 50, 3–39.
- Easterly, William, and Ross Levine. (2012) “The European Origins of Economic Development.” NBER Working Paper No. 18162.
- Engerman, Stanley L., and Kenneth L. Sokoloff. (1997) “Factor Endowments, Institutions, and Differential Paths of Growth Among New World Economies.” In *How Latin America Fell Behind*, edited by Stephen Haber, pp. 260–304. Stanford, CA: Stanford University Press.
- Engerman, Stanley L., and Kenneth L. Sokoloff. (2000) “Institutions, Factor Endowments, and Paths of Development in the New World.” *Journal of Economic Perspectives*, 14 (3), 217–232.
- Fieldhouse, David K. (1966) *The Colonial Empires: A Comparative Survey from the Eighteenth Century*. London: Weidenfeld and Nicolson.
- Gacto, Enrique, Juan A. Alejandre, and José M. García. (2003) *Manual Básico de Historia del Derecho*. Madrid: Laxes.

- Gallup, John L., Andrew D. Mellinger, and Jeffrey D. Sachs. (2001) "Geographic Datasets: Köppen-Geiger Climate Zones." Manuscript, Center of International Development, Harvard University.
- Garro, Alejandro M. (1992) "Unification and Harmonization of Private Law in Latin America." *American Journal of Comparative Law*, 40 (3), 587–616.
- Glaeser, Edward L., and Andrei Shleifer. (2002) "Legal Origins." *Quarterly Journal of Economics*, 117 (4), 1193–1229.
- Glendon, Mary A., Paolo G. Carozza, and Colin B. Picker. (2008) *Comparative Legal Traditions in a Nutshell*. St. Paul, MN: Thomson/West.
- Glendon, Mary A., Michael W. Gordon, and Christopher Osakwe. (1985) *Comparative Legal Traditions*. St. Paul, MN: West Group.
- González, Juan C. (1992) *Influencia del Derecho Español en América*. Madrid: MAPFRE.
- Hamilton, Peter J. (1917) "Germanic and Moorish Elements of the Spanish Civil Law." *Harvard Law Review*, 30 (4), 303–318.
- Howe, William Wirt. (1903) "Roman and Civil Law in America." *Harvard Law Review*, 16 (5), 342–358.
- Iyer, Lakshmi. (2010) "Direct versus Indirect Colonial Rule in India: Long-term Consequences." *Review of Economics and Statistics*, 92 (4), 693–713.
- Joireman, Sandra F. (2004) "Colonization and the Rule of Law: Comparing the Effectiveness of Common Law and Civil Law Countries." *Constitutional Political Economy*, 15, 315–338.
- Kirk-Greene, Anthony H. M. (1980) "The Thin White Line: The Size of the British Colonial Service in Africa." *African Affairs*, 79 (314), 25–44.
- Klerman, Daniel, and Paul G. Mahoney. (2007) "Legal Origin?" *Journal of Comparative Economics*, 35, 278–293.

- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. (1997) "Legal Determinants of External Finance." *Journal of Finance*, 52 (3), 1131–1150.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. (1998) "Law and Finance." *Journal of Political Economy*, 106 (6), 1113–1155.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. (1999) "The Quality of Government." *Journal of Law, Economics and Organization*, 15 (1), 222–279.
- La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer. (2008) "The Economic Consequences of Legal Origins." *Journal of Economic Literature*, 46 (2), 285–332.
- Lange, Matthew. (2004) "British Colonial Legacies and Political Development." *World Development*, 32 (6), 905–922.
- Lange, Matthew, James Mahoney, and Matthias vom Hau. (2006) "Colonialism and Development: A Comparative Analysis of Spanish and British Colonies." *American Journal of Sociology*, 111 (5), 1412–1462.
- Levine, Ross. (1997) "Financial Development and Economic Growth: Views and Agenda." *Journal of Economic Literature*, 35, 688–726.
- Levine, Ross. (2005a) "Finance and Growth: Theory and Evidence." In *Handbook of Economic Growth*, edited by Philippe Aghion and Steven Durlauf, pp. 865–934. North Holland: Elsevier.
- Levine, Ross. (2005b) "Law, Endowments and Property Rights." *Journal of Economic Perspectives*, 19 (3), 61–88.
- Mahoney, James. (2003) "Long-Run Development and the Legacy of Colonialism in Spanish America." *American Journal of Sociology*, 109 (1), 50–106.

- Marshall, Monty G., Ted R. Gurr, and Keith Jagers. (2010) “Polity IV Project: Political Regime Characteristics and Transitions, 1800-2009: Dataset Users’ Manual.” Manuscript, Center for Systemic Peace, Vienna.
- Merryman, John H. (1996) “The French Deviation.” *American Journal of Comparative Law*, 44 (1), 109–119.
- Mirow, Matthew C. (2001) “Borrowing Private Law in Latin America: Andrés Bello’s Use of the Code Napoleon in Drafting the Chilean Civil Code.” *Louisiana Law Review*, 61 (2), 291–329.
- Mirow, Matthew C. (2004) *Latin American Law: A History of Private Law and Institutions in Spanish America*. Austin: University of Texas Press.
- Mirow, Matthew C. (2005) “The Code Napoleon: Buried but Ruling in Latin America.” *Denver Journal of International Law and Policy*, 33, 179–194.
- North, Douglass C. (1990) *Institutions, Institutional Change, and Economic Performance*. Cambridge, UK: Cambridge University Press.
- Olsson, Ola. (2009) “On the Democratic Legacy of Colonialism.” *Journal of Comparative Economics*, 37, 534–551.
- Oto-Peralías, Daniel, and Diego Romero-Ávila. (2012) “The Interplay between Colonial Origin and Endowments in the Course of Institutional Development”. Manuscript, Pablo de Olavide University.
- Rajan, Raghuram G., and Luigi Zingales. (1998) “Financial Dependence and Growth.” *American Economic Review*, 88, 559–586.
- Spamann, Holger. (2010) “Contemporary Legal Transplants —Legal Families and the Diffusion of (Corporate) Law.” *BYU Law Review*, 2009 (6), 1813–1878.

Teorell, Jan, Marcus Samanni, Sören Holmberg, and Bo Rothstein. (2011) "The Quality of Government Dataset, Version 6Apr11." Manuscript, The Quality of Government Institute, University of Gothenburg, <http://www.qog.pol.gu.se>.

Weber, Max. (1976) [1904-1905] *The Protestant Ethic and the Spirit of Capitalism*. London: Allen and Unwin.

World Bank (2011) *World Development Indicators 2011 Database*. Washington, DC: World Bank Publishing Services.

Zweigert, Konrad, and Hein Kötz. (1998) *An Introduction to Comparative Law*. Oxford: Clarendon Press.

## TABLES AND FIGURES

TABLE 1  
LEGAL TRADITIONS, INITIAL ENDOWMENTS AND FINANCIAL DEVELOPMENT

	Private Credit: mean values			All colonies
	Less than or equal to the median of population density in 1500	Greater than the median of population density in 1500	Mean differences ( <i>t</i> -statistic)	
<i>Panel A: Comparing British common law and French civil law countries</i>				
All colonies	0.41 <i>52</i>	0.22 <i>48</i>	0.20 (3.257)	0.32 <i>100</i>
- British Common law	0.65 <i>25</i>	0.17 <i>15</i>	0.47 (4.186)	0.47 <i>40</i>
- French civil law	0.20 <i>27</i>	0.24 <i>33</i>	-0.04 (-0.924)	0.22 <i>60</i>
<i>Panel B: Distinguishing among French civil law countries</i>				
• Implantation by France	0.09 <i>9</i>	0.19 <i>15</i>	-0.10 (-1.866)	0.15 <i>24</i>
• Spanish law legacy	0.28 <i>9</i>	0.29 <i>9</i>	-0.01 (-0.083)	0.29 <i>18</i>
• Others	0.22 <i>9</i>	0.26 <i>9</i>	-0.04 (-0.481)	0.24 <i>18</i>

NOTES: Dependent variable is private credit by deposit money banks and other non-bank financial institutions over GDP. Variable descriptions are provided in Appendix A. The sample contains non-European countries colonized by Western powers (Appendix B). The number of countries appears in italics.

TABLE 2  
MAIN REGRESSION RESULTS: PRIVATE CREDIT

	Additive model	Interaction model	Splitting civil law	Controlling additional factors						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Population density in 1500	-0.073*** (0.023)									
- Common law (Ref. group)										
- Civil law	-0.202*** (0.054)	-0.274*** (0.059)								
• Implantation by France			-0.420*** (0.061)	-0.231*** (0.064)	-0.470*** (0.065)	-0.427*** (0.060)	-0.351*** (0.068)	-0.335*** (0.070)	-0.330*** (0.071)	-0.271*** (0.079)
• Spanish law legacy			-0.203*** (0.068)	-0.221*** (0.064)	-0.476*** (0.106)	-0.236*** (0.086)	-0.195*** (0.069)	-0.164** (0.068)	-0.114 (0.078)	-0.260*** (0.053)
• Others			-0.264*** (0.069)	-0.231*** (0.058)	-0.296*** (0.065)	-0.300*** (0.066)	-0.214*** (0.068)	-0.215*** (0.068)	-0.182** (0.080)	-0.269*** (0.059)
- Common law x Pop. dens.		-0.144*** (0.030)	-0.144*** (0.031)	-0.080*** (0.025)	-0.129*** (0.030)	-0.146*** (0.030)	-0.126*** (0.030)	-0.109*** (0.029)	-0.114*** (0.031)	-0.136*** (0.024)
- Civil law x Pop. dens.		0.006 (0.019)								
• Implantation by France x Pop. dens.			0.071* (0.038)	0.018 (0.041)	0.126*** (0.046)	0.046 (0.039)	0.042 (0.037)	0.025 (0.040)	0.062 (0.037)	0.019 (0.063)
• Spanish law legacy x Pop. dens.			0.000 (0.029)	0.012 (0.035)	0.013 (0.031)	-0.002 (0.032)	0.013 (0.030)	0.049 (0.038)	0.015 (0.032)	0.008 (0.029)
• Others x Pop. dens.			0.016 (0.025)	0.043* (0.023)	0.004 (0.016)	0.007 (0.023)	0.011 (0.026)	0.008 (0.020)	0.013 (0.025)	0.040* (0.020)
Ln GDP pc				0.113*** (0.019)						
Years since independence					0.002*** (0.001)					
Religion (p-value)						[0.182]				
Ethnic fractionalization							-0.165 (0.100)			
Latitude								0.623** (0.260)		
Land in tropics									-0.065 (0.058)	
Latin America and Caribbean										-0.060 (0.070)
Africa										-0.288*** (0.071)
Constant	0.479*** (0.057)	0.490*** (0.055)	0.490*** (0.056)	-0.487*** (0.159)	0.389*** (0.071)	0.303 (0.187)	0.552*** (0.071)	0.345*** (0.082)	0.440*** (0.080)	0.620*** (0.070)
R <sup>2</sup>	0.28	0.41	0.44	0.56	0.51	0.42	0.41	0.45	0.35	0.57
Number of observations	100	100	100	98	96	99	98	99	89	100
<i>Wald tests</i>										
H3: Differences in the interaction terms										
Common law x PD = Civil law x PD		0.00								
Common law x PD = Imp. by France x PD			0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.02
Common law x PD = Spanish law leg. x PD			0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.00
Common law x PD = Others x PD			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H4 <sup>a</sup> : Differences in predicted values when pop. dens. is equal to 10 (log=2.3)										
Common law = Civil law		0.29								
Common law = Imp. by France			0.39	0.96	0.21	0.86	0.65	0.74	0.39	0.43
Common law = Spanish law leg.			0.21	0.94	0.31	0.47	0.23	0.09	0.10	0.46
Common law = Others			0.22	0.43	0.88	0.53	0.23	0.42	0.18	0.03
H5: Differences between Implantation by France and Spanish law legacy										
Spanish law leg. = Imp. by France			0.00	0.89	0.96	0.02	0.01	0.00	0.00	0.90
Spanish law leg. x PD = Imp. by France x PD			0.14	0.92	0.04	0.36	0.55	0.69	0.35	0.87

NOTES: Dependent variable is private credit by deposit money banks and other non-bank financial institutions over GDP. Variable descriptions are provided in Appendix A. The sample contains non-European countries colonized by Western powers (Appendix B). Robust standard errors are in parentheses. \*, \*\* and \*\*\* denote statistical significance at the 10, 5 and 1% level, respectively. In the bottom part of the table we show the p-values of the Wald tests of equality of coefficients. PD means population density.

<sup>a</sup> For low levels of endowments, this hypothesis is tested for a value of population density equal to 1 (log=0). In this case the statistical significance of the coefficient on the civil law dummy reflects whether the civil law group is statistically different from the reference group (the common law).



TABLE 3  
MAIN REGRESSION RESULTS: STOCK MARKET DEVELOPMENT

	Additive model	Interaction model	Splitting civil law	Controlling additional factors						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Population density in 1500	-0.088** (0.034)									
- Common law (Ref. group)										
- Civil law	-0.269*** (0.084)	-0.341*** (0.097)								
• Implantation by France			-0.487*** (0.093)	-0.221** (0.087)	-0.500*** (0.088)	-0.394*** (0.084)	-0.402*** (0.092)	-0.384*** (0.114)	-0.352*** (0.088)	-0.247*** (0.091)
• Spanish law legacy			-0.324*** (0.104)	-0.331*** (0.084)	-0.422*** (0.133)	-0.024 (0.132)	-0.277*** (0.088)	-0.253** (0.099)	-0.196** (0.097)	-0.21* (0.107)
• Others			-0.208 (0.128)	-0.167* (0.088)	-0.227* (0.133)	-0.101 (0.109)	-0.141 (0.118)	-0.128 (0.125)	-0.081 (0.118)	-0.241** (0.102)
- Common law x Pop. dens.		-0.161*** (0.051)	-0.161*** (0.052)	-0.053* (0.029)	-0.155** (0.060)	-0.145*** (0.038)	-0.116*** (0.034)	-0.106** (0.043)	-0.077*** (0.026)	-0.143*** (0.047)
- Civil law x Pop. dens.		-0.001 (0.027)								
• Implantation by France x Pop. dens.			0.034** (0.015)	-0.040 (0.032)	0.047** (0.023)	-0.033 (0.045)	0.018 (0.027)	0.002 (0.040)	0.009 (0.024)	-0.064 (0.055)
• Spanish law legacy x Pop. dens.			-0.022 (0.042)	-0.006 (0.041)	-0.018 (0.042)	0.002 (0.059)	-0.015 (0.043)	0.008 (0.053)	0.010 (0.045)	-0.019 (0.043)
• Others x Pop. dens.			0.007 (0.041)	0.051 (0.035)	-0.026 (0.031)	-0.016 (0.035)	0.001 (0.044)	0.003 (0.037)	0.000 (0.037)	0.020 (0.028)
Ln GDP pc				0.145*** (0.030)						
Years since independence					0.001 (0.001)					
Religion (p-value)						[0.018]				
Ethnic fractionalization							-0.098 (0.134)			
Latitude								0.391 (0.457)		
Land in tropics									-0.138 (0.091)	
Latin America and Caribbean										-0.388*** (0.140)
Africa										-0.473*** (0.118)
Constant	0.464*** (0.091)	0.473*** (0.091)	0.473*** (0.093)	-0.807*** (0.243)	0.435*** (0.138)	0.259 (0.306)	0.466*** (0.094)	0.335** (0.147)	0.426*** (0.086)	0.751*** (0.128)
R <sup>2</sup>	0.22	0.30	0.33	0.48	0.34	0.37	0.30	0.31	0.28	0.48
Number of observations	92	92	92	90	88	91	91	91	85	92
<i>Wald tests</i>										
H3: Differences in the interaction terms										
Common law x PD = Civil law x PD		0.01								
Common law x PD = Imp. by France x PD			0.00	0.80	0.00	0.02	0.00	0.15	0.02	0.23
Common law x PD = Spanish law leg. x PD			0.04	0.35	0.05	0.05	0.06	0.03	0.09	0.05
Common law x PD = Others x PD			0.01	0.02	0.04	0.01	0.04	0.07	0.10	0.00
H4 <sup>a</sup> : Differences in predicted values when pop. dens. is equal to 10 (log=2.3)										
Common law = Civil law		0.79								
Common law = Imp. by France			0.67	0.01	0.73	0.14	0.22	0.17	0.04	0.58
Common law = Spanish law leg.			0.97	0.06	0.65	0.10	0.72	0.95	0.98	0.62
Common law = Others			0.19	0.47	0.55	0.09	0.33	0.30	0.40	0.15
H5: Differences between Implantation by France and Spanish law legacy										
Spanish law leg. = Imp. by France			0.00	0.20	0.62	0.01	0.05	0.02	0.00	0.73
Spanish law leg. x PD = Imp. by France x PD			0.21	0.53	0.17	0.65	0.54	0.94	0.99	0.52

NOTES: Dependent variable is stock market capitalization, which represents the total value of listed shares over GDP. Variable descriptions are provided in Appendix A. The sample contains non-European countries colonized by Western powers (Appendix B). Robust standard errors are in parentheses. \*, \*\* and \*\*\* denote statistical significance at the 10, 5 and 1% level, respectively. In the bottom part of the table we show the p-values of the Wald tests of equality of coefficients. PD means population density.

<sup>a</sup> For low levels of endowments, this hypothesis is tested for a value of population density equal to 1 (log=0). In this case the statistical significance of the coefficient on the civil law dummy reflects whether the civil law group is statistically different from the reference group (the common law).

TABLE 4  
MAIN REGRESSION RESULTS: PROTECTION OF PROPERTY RIGHTS

	Additive model	Interaction model	Splitting civil law	Controlling additional factors						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Population density in 1500	-5.057*** (1.279)									
- Common law (Ref. group)										
- Civil law	-15.097*** (3.954)	-17.197*** (4.240)								
• Implantation by France			-26.230*** (5.723)	-14.297** (5.792)	-26.947*** (6.203)	-25.744*** (5.376)	-21.449*** (7.068)	-21.796*** (6.209)	-20.900*** (5.523)	-21.289*** (7.404)
• Spanish law legacy			-15.679*** (5.256)	-17.535*** (4.382)	-21.664*** (6.981)	-12.548 (8.659)	-17.986*** (5.036)	-14.123*** (5.228)	-10.523** (5.224)	-22.695*** (7.790)
• Others			-12.865** (5.064)	-12.733*** (4.563)	-14.063** (5.295)	-12.108** (4.762)	-11.319** (4.763)	-11.111** (5.063)	-10.866** (4.447)	-14.053*** (5.192)
- Common law x Pop. dens.		-7.449*** (1.458)	-7.449*** (1.492)	-4.172*** (1.343)	-7.022*** (1.556)	-7.321*** (1.551)	-7.004*** (1.441)	-6.155*** (1.699)	-6.097*** (1.645)	-7.387*** (1.285)
- Civil law x Pop. dens.		-2.680 (1.712)								
• Implantation by France x Pop. dens.			1.564 (2.629)	-1.937 (2.805)	2.560 (3.583)	1.566 (2.642)	-1.723 (3.622)	-1.297 (2.864)	0.457 (2.564)	0.223 (3.603)
• Spanish law legacy x Pop. dens.			-4.103 (4.933)	-3.297 (4.960)	-3.820 (5.037)	-4.136 (5.007)	-2.673 (4.965)	-1.088 (4.896)	-2.292 (4.890)	-3.667 (4.998)
• Others x Pop. dens.			-2.989 (2.102)	-0.924 (2.192)	-3.685 (2.512)	-3.155 (1.994)	-3.668* (1.947)	-3.390* (1.895)	-2.538 (1.860)	-1.509 (2.373)
Ln GDP pc				7.462*** (1.567)						
Years since independence					0.050 (0.052)					
Religion (p-value)						[0.867]				
Ethnic fractionalization							-19.055** (9.345)			
Latitude								38.777** (15.450)		
Land in tropics									-7.840* (4.223)	
Latin America and Caribbean										4.394 (7.425)
Africa										-9.252** (4.486)
Constant	54.142*** (3.487)	54.381*** (3.422)	54.381*** (3.503)	-9.780 (13.448)	51.864*** (4.897)	61.804*** (19.172)	64.691*** (6.601)	46.241*** (5.070)	53.901*** (4.094)	57.782*** (3.413)
R <sup>2</sup>	0.33	0.36	0.39	0.55	0.41	0.40	0.43	0.43	0.39	0.44
Number of observations	92	92	92	91	88	92	91	92	87	92
<i>Wald tests</i>										
H3: Differences in the interaction terms										
Common law x PD = Civil law x PD		0.04								
Common law x PD = Imp. by France x PD			0.00	0.50	0.02	0.00	0.20	0.18	0.03	0.05
Common law x PD = Spanish law leg. x PD			0.52	0.87	0.54	0.54	0.40	0.32	0.46	0.47
Common law x PD = Others x PD			0.09	0.15	0.24	0.10	0.18	0.28	0.15	0.03
H4 <sup>a</sup> : Differences in predicted values when pop. dens. is equal to 10 (log=2.3)										
Common law = Civil law		0.24								
Common law = Imp. by France			0.32	0.05	0.45	0.35	0.11	0.07	0.29	0.50
Common law = Spanish law leg.			0.49	0.17	0.27	0.70	0.48	0.83	0.88	0.26
Common law = Others			0.70	0.35	0.37	0.72	0.57	0.46	0.66	0.93
H5: Differences between Implantation by France and Spanish law legacy										
Spanish law leg. = Imp. by France			0.08	0.62	0.58	0.17	0.65	0.18	0.08	0.89
Spanish law leg. x PD = Imp. by France x PD			0.31	0.81	0.31	0.32	0.88	0.97	0.62	0.53

NOTES: Dependent variable is protection of property rights, which reflects the level of protection of property rights and ranges from 0 to 100, where higher values mean stronger protection. Variable descriptions are provided in Appendix A. The sample contains non-European countries colonized by Western powers (Appendix B). Robust standard errors are in parentheses. \*, \*\* and \*\*\* denote statistical significance at the 10, 5 and 1% level, respectively. In the bottom part of the table we show the p-values of the Wald tests of equality of coefficients. PD means population density.

<sup>a</sup> For low levels of endowments, this hypothesis is tested for a value of population density equal to 1 (log=0). In this case the statistical significance of the coefficient on the civil law dummy reflects whether the civil law group is statistically different from the reference group (the common law).

TABLE 5  
ADDITIONAL ROBUSTNESS CHECKS: PRIVATE CREDIT

	Political structure indicators			Alternative endowments indicators			Outliers			Sample selection				
	Legislative competition	Veto players	Executive constraints	Settler mortality	Urbanization rate	Sugar/wheat ratio	Mineral resources	Leverage	Standard residuals	Cook's D/Dfits	Drop neo-Europes	Drop Middle East & North Africa	Drop Latin Am. & Caribbean	Drop Africa
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
- Common law (Ref. group)														
- Civil law:														
• Implantation by France	-0.379*** (0.064)	-0.377*** (0.065)	-0.344*** (0.074)	-0.898*** (0.367)	-0.919*** (0.212)	-0.235*** (0.078)	-0.348*** (0.073)	-0.445*** (0.063)	-0.356*** (0.053)	-0.377*** (0.055)	-0.382*** (0.073)	-0.406*** (0.060)	-0.394*** (0.078)	-0.529*** (0.072)
• Spanish law legacy	-0.177** (0.071)	-0.169** (0.070)	-0.153* (0.080)	-1.835*** (0.868)	-0.705*** (0.208)	-0.049 (0.086)	-0.247*** (0.077)	-0.192*** (0.076)	-0.138** (0.061)	-0.177*** (0.065)	-0.165** (0.079)	-0.201*** (0.070)	-0.391*** (0.073)	-0.357*** (0.068)
• Others	-0.205*** (0.070)	-0.207*** (0.069)	-0.170** (0.082)	-0.644* (0.355)	-0.682*** (0.196)	-0.005 (0.123)	-0.234*** (0.080)	-0.253*** (0.076)	-0.200*** (0.062)	-0.242*** (0.064)	-0.226*** (0.079)	-0.296*** (0.070)	-0.255*** (0.092)	-0.337*** (0.072)
- Common law x endowments	-0.131*** (0.030)	-0.135*** (0.030)	-0.129*** (0.030)	-0.227*** (0.044)	-0.070** (0.026)	-1.338** (0.714)	-0.023** (0.009)	-0.144*** (0.031)	-0.116*** (0.025)	-0.123*** (0.024)	-0.119*** (0.043)	-0.144*** (0.031)	-0.150*** (0.033)	-0.154*** (0.030)
- Civil law x endowments:														
• Implantation by France x endowments	0.068* (0.039)	0.086** (0.040)	0.070 (0.042)	-0.076 (0.050)	0.016 (0.009)	0.106 (0.252)	0.002 (0.008)	0.109** (0.045)	0.071* (0.038)	0.041 (0.025)	0.071* (0.038)	0.046 (0.031)	0.073* (0.039)	0.004 (0.019)
• Spanish law legacy x endowments	0.001 (0.030)	-0.010 (0.030)	0.003 (0.029)	0.148 (0.192)	0.000 (0.009)	-0.162 (0.156)	0.041*** (0.013)	-0.033 (0.085)	0.000 (0.030)	0.000 (0.030)	0.000 (0.030)	0.000 (0.030)	N. A. (N. A.)	0.008 (0.031)
• Others x endowments	0.015 (0.025)	0.020 (0.026)	0.013 (0.029)	-0.130** (0.054)	0.000 (0.006)	-0.388 (0.704)	-0.012 (0.008)	-0.038* (0.020)	0.016 (0.026)	-0.008 (0.020)	0.016 (0.026)	-0.021 (0.015)	0.026 (0.033)	0.051 (0.037)
Legislative competition	0.019 (0.014)													
Number of veto players			0.021** (0.009)											
Executive constraints			0.011 (0.016)											
Constant	0.332*** (0.100)	0.385*** (0.065)	0.372*** (0.096)	1.481*** (0.220)	1.007*** (0.193)	0.354*** (0.076)	0.499*** (0.066)	0.490*** (0.056)	0.425*** (0.047)	0.464*** (0.052)	0.452*** (0.068)	0.488*** (0.058)	0.459*** (0.073)	0.657*** (0.055)
R <sup>2</sup>	0.40	0.41	0.39	0.60	0.45	0.26	0.20	0.46	0.40	0.43	0.31	0.47	0.45	0.67
Number of observations	96	95	86	76	44	68	110	92	95	95	96	87	69	56
<i>Wald tests</i>														
H3: Differences in the interaction terms														
Common law x EN = Imp. by France x EN	0.00	0.00	0.00	0.03	0.00	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Common law x EN = Spanish law leg. x EN	0.00	0.00	0.00	0.06	0.02	0.11	0.00	0.22	0.00	0.00	0.03	0.00	N. A.	0.00
Common law x EN = Others x EN	0.00	0.00	0.00	0.17	0.01	0.35	0.38	0.01	0.00	0.00	0.01	0.00	0.00	0.00
H4: Differences in predicted values when endowments are high <sup>a</sup>														
Common law = Imp. by France	0.38	0.16	0.23	0.62	0.72	0.35	0.37	0.16	0.37	1.00	0.55	0.69	0.22	0.03
Common law = Spanish law leg.	0.22	0.25	0.16	0.18	0.96	0.19	0.00	0.73	0.20	0.29	0.31	0.21	N. A.	0.88
Common law = Others	0.13	0.09	0.09	0.69	0.92	0.30	0.22	0.91	0.20	0.74	0.35	0.88	0.11	0.27
H5: Differences between Implantation by France and Spanish law legacy														
Spanish law leg. = Imp. by France <sup>b</sup>	0.00	0.00	0.01	0.84	0.07	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.91	0.01
Spanish law leg. x EN = Imp. by France x EN	0.18	0.06	0.20	0.27	0.22	0.37	0.01	0.14	0.14	0.30	0.14	0.29	N. A.	0.92

NOTES: Dependent variable is private credit by deposit money banks and other non-bank financial institutions over GDP. The endowments indicator is population density in 1500, except in columns 4 to 7. Variable descriptions are provided in Appendix A. The sample contains non-European countries colonized by Western powers (Appendix B). Robust standard errors are in parentheses. \*, \*\* and \*\*\* denote statistical significance at the 10, 5 and 1% level, respectively. Outliers in column 8 are Argentina, Brazil, Egypt, Jordan, Lebanon, Suriname, Syrian and Uruguay. Outliers in column 9 are Botswana, Hong Kong, Malaysia, United States and South Africa. Outliers in column 10 are Botswana, Hong Kong, Jordan, Tunisia and United States. In the bottom part of the table we show the p-values of the Wald tests of equality of coefficients.

<sup>a</sup>The values for endowments indicators are: population density: 10 (log=2.3); settler mortality: 500 (log=6.2); urbanization rate: 1.75/1.25 (log=-0.34); mineral resources: 10.

<sup>b</sup>In column 4, the test is computed for a value of settler mortality equal to 60 (log=-4.09), since there are no former Spanish or French colonies with values lower than this. EN means endowments.

## APPENDIX A

TABLE A1  
DESCRIPTION OF VARIABLES

Variable	Description	Source
Number of veto players	Number of influential veto players in legislative and executive initiatives. A higher value means more veto players. The reference year is 2005.	Beck <i>et al.</i> (2001a), from Teorell <i>et al.</i> (2011).
Ethnic fractionalization	Probability that two randomly selected individuals from a given country do not belong to the same ethnolinguistic group.	Alesina <i>et al.</i> (2003), from Teorell <i>et al.</i> (2011).
Executive constraints	The extent of institutionalized constraints on the decision-making powers of chief executives. The scale ranges from 1 to 7, where a higher score means higher constraints. The reference year is 2005.	Polity IV (Marshall, Gurr, and Jaggers, 2010), from Teorell <i>et al.</i> (2011).
Land in geographical tropics (%)	Percentage of land in geographical tropics, from Center of International Development (Geographic datasets).	Gallup, Mellinger, and Sachs (2001).
Latitude	The absolute value of the latitude of the capital city divided by 90.	La Porta <i>et al.</i> (1999), from Teorell <i>et al.</i> (2011).
Legal origin	Legal origin variable: English Common Law and French Commercial Code. We complement this variable for three countries (Cambodia, Lao PDR and Vietnam) with information from La Porta, Lopez-de-Silanes, and Shleifer (2008).	La Porta <i>et al.</i> (1999), from Teorell <i>et al.</i> (2011).
Legislative competition	Degree of competition of the last legislative election. The scale ranges from 1 to 7, where a higher score means higher political competition. The reference year is 2005.	Beck <i>et al.</i> (2001a), from Teorell <i>et al.</i> (2011).
Mineral resources	Average of mineral rents over GDP during the period 1960-2000.	World Bank (2011).
Per capita GDP	GDP per capita, PPP (Constant International USD). Year 2005.	World Bank (2011), from Teorell <i>et al.</i> (2011)
Population density	Logarithm of population density in 1500 (total population divided by total arable land).	Acemoglu, Johnson, and Robinson (2002)
Private credit	Private credit by deposit money banks and other non-bank financial institutions over GDP. We take the average 1991-2005 to reflect a structural measure of financial development.	Beck, Demirgüç-Kunt, and Levine (2010) and (2003a).
Protection of property rights	This variable measures the degree of protection of property rights by laws and the government, the possibility of expropriation, the independence of the judiciary and the enforcement of contracts. The scale ranges from 0 to 100, where higher values mean stronger protection. The reference year is 2005.	Heritage Foundation (from Teorell <i>et al.</i> , 2011)
Religion	Protestants, Catholics, Muslims and others as a percentage of population in 1980.	La Porta <i>et al.</i> (1999), from Teorell <i>et al.</i> (2011).
Settler mortality	Logarithm of potential European settler mortality, measured in terms of deaths per annum per 1,000.	Acemoglu, Johnson, and Robinson (2002)
Stock market capitalization	Represents the total value of listed shares over GDP. We take the average 1991-2005 to reflect a structural measure of financial development.	Beck, Demirgüç-Kunt, and Levine (2010) and (2003a).
Sugar/Wheat ratio	The indicator is calculated as: $\log[(1 + \text{share of arable land suitable for sugarcane}) / (1 + \text{share of arable land suitable for wheat})]$ . It is derived from the "Wheat/Sugar ratio" indicator of Easterly.	Easterly (2007).
Urbanization in 1500	Percent of population living in urban areas with at least 5,000 inhabitants, in 1500. Data for sub-Saharan Africa are not available.	Acemoglu, Johnson, and Robinson (2002)
Years since independence	2000 minus year of independence.	Olsson (2009).

## APPENDIX B

**TABLE B1**  
**LIST OF FORMER COLONIES**

<b>British Common Law</b>		St. Kitts and Nevis*	British	Eritrea	British
Antigua and Barbuda	British	St. Lucia*	British	Gabon*	French
Australia*	British	St. Vincent & the G.*	British	Guatemala*	Spanish
Bahamas, The*	British	Sudan*	British	Guinea*	French
Bahrain*	British	Swaziland*	British	Guinea-Bissau*	Portuguese
Bangladesh*	British	Tanzania*	British	Haiti*	French
Barbados*	British	Tonga	British	Honduras*	Spanish
Belize*	British	Trinidad and Tobago*	British	Indonesia*	Dutch
Bhutan	British	Tuvalu	British	Iraq	British
Botswana*	British	Uganda*	British	Jordan*	British
Brunei	British	United Arab Emirates	British	Kuwait*	British
Canada*	British	United States*	British	Lao PDR*	French
Cyprus	British	Vanuatu	British-French	Lebanon*	French
Dominica*	British	Zambia*	British	Libya*	Italian
Fiji	British	Zimbabwe*	British	Madagascar*	French
Gambia, The*	British			Mali*	French
Ghana*	British	<b>French Civil Law</b>		Mauritania*	French
Grenada*	British	Algeria*	French	Mauritius	British
Guyana*	British	Angola*	Portuguese	Mexico*	Spanish
Hong Kong*	British	Argentina*	Spanish	Morocco*	French
India*	British	Benin*	French	Mozambique*	Portuguese
Jamaica*	British	Bolivia*	Spanish	Nicaragua*	Spanish
Kenya*	British	Brazil*	Portuguese	Niger*	French
Kiribati	British	Burkina Faso*	French	Oman*	British
Lesotho*	British	Burundi*	Belgian	Panama*	Spanish
Malawi*	British	Cambodia*	French	Paraguay*	Spanish
Malaysia*	British	Cameroon*	French	Peru*	Spanish
Maldives	British	Cape Verde*	Portuguese	Philippines*	US
Marshall Islands	US	Central African R.*	French	Qatar*	British
Micronesia, Fed. Sts.	US	Chad*	French	Rwanda*	Belgian
Namibia*	British	Chile*	Spanish	Senegal*	French
Nauru	Australian	Colombia*	Spanish	Seychelles	British
New Zealand*	British	Comoros	French	Suriname*	Dutch
Nigeria*	British	Congo, Dem. Rep.*	Belgian	Syria*	French
Pakistan*	British	Congo, Rep.*	French	São Tomé and P.	Portuguese
Papua New Guinea*	Australian	Costa Rica*	Spanish	Togo*	French
Samoa	British	Côte d'Ivoire*	French	Tunisia*	French
Sierra Leone*	British	Djibouti	French	Uruguay*	Spanish
Singapore*	British	Dominican Republic*	Spanish	Venezuela, RB*	Spanish
Solomon Islands	British	Ecuador*	Spanish	Vietnam*	French
Somalia	Italian	Egypt, Arab Rep.*	British	Yemen, Rep.*	British
South Africa*	British	El Salvador*	Spanish		
Sri Lanka*	British	Equatorial Guinea*	Spanish		

NOTES: \* indicates former colonies with no missing values for private credit and population density in 1500. Colonizing countries appear on the right.

# FIGURES

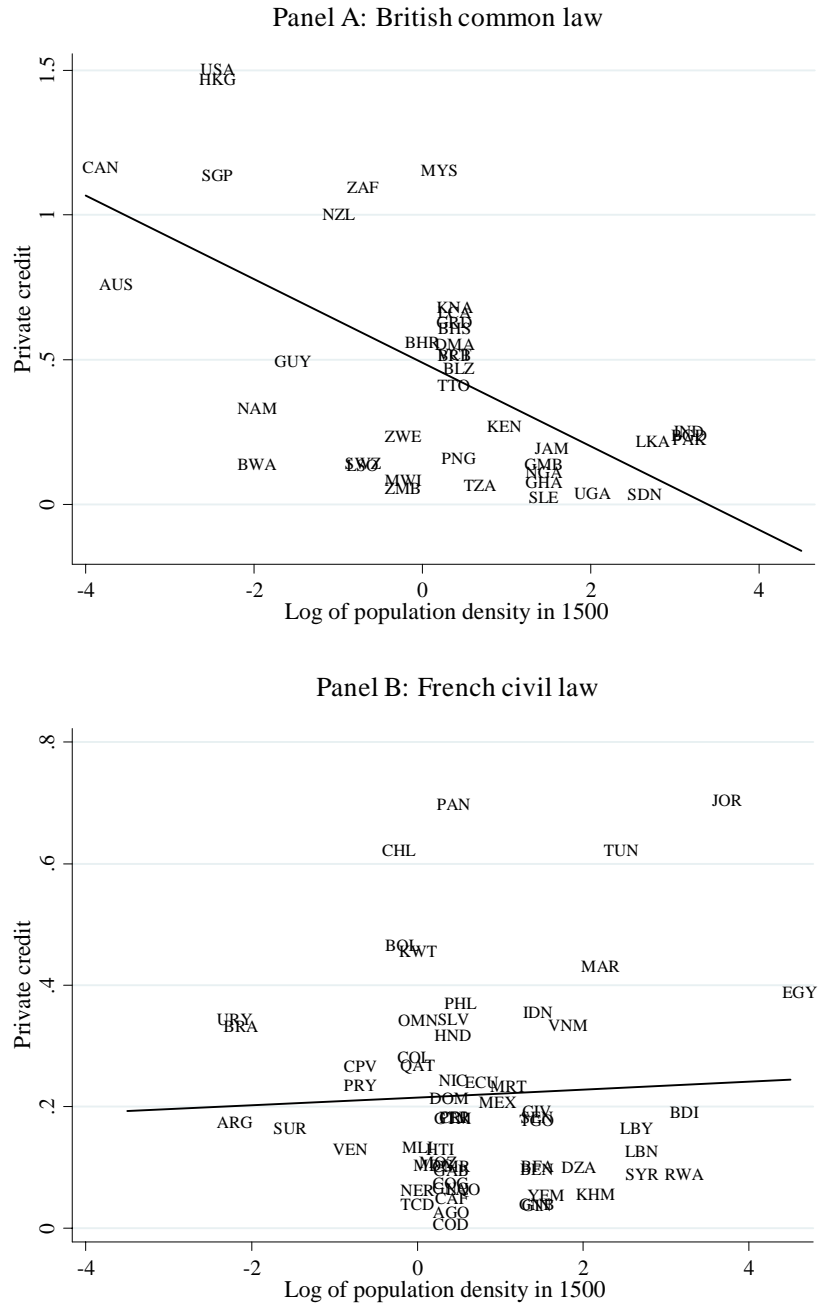


FIG. 1. Legal Traditions, Initial Endowments and Financial Development.