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# LEGAL THEORIES OF FINANCIAL DEVELOPMENT

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*This paper examines legal theories of international differences in financial development. The law and finance theory stresses that legal traditions differ in terms of (i) their emphasis on the rights of private property owners* vis-à-vis *the state and (ii) their ability to adapt to changing commercial and financial conditions, so that historically determined legal traditions shape financial development today. Other theories reject the centrality of legal tradition in accounting for cross-country differences in financial development. The results are broadly consistent with legal theories of financial development, though it is difficult to identify the precise channel through which legal tradition influences financial development.*

## I. INTRODUCTION

Over the last decade, the economics profession's view of the relationship between financial development and economic growth has shifted from one of calculated neglect to a broadly held, though certainly not unanimous, view that financial systems exert a first-order impact on economic growth. For instance, a collection of essays by the 'pioneers' of development economics—including three Nobel Prize winners—does not discuss finance (Meier and Seers, 1984). More explicitly, Nobel laureate, Robert Lucas (1988), dismisses the idea that finance plays a leading role in the process of economic growth. A virtual avalanche of new research, however, has altered the conventional wisdom by showing that financial systems play a critical role in stimulating economic growth.[1] The financial system decides who gets to use society's savings and this has decisive implications for resource alloca-

[1] See the review by Levine (1997) and more recent studies by Beck and Levine (2001*a*,*b*), Levine *et al*. (2000), Rousseau and Wachtel (2000), and Wurgler (2000). This work has important antecedents. See, for instance, Goldsmith (1969), McKinnon (1974), and citations in Levine (1997).

tion, productivity enhancements, and hence long-run economic growth. Thus, unlike more dismissive views of the finance–growth nexus, Merton Miller (1998, p. 14) recently remarked, 'That financial markets contribute to economic growth is a proposition almost too obvious for serious discussion.'

The tenet that financial systems materially influence long-run economic growth rates raises critical questions. How did some countries develop well-functioning, growth-enhancing financial systems that funnel resources to worthy firms and projects, while other countries have not? How did some countries develop particular laws and contract-enforcement mechanisms that support the operation of financial markets, while other countries have not developed these laws and enforcement capabilities? If economists can discover the factors that shape the development of financial systems, this will improve our understanding of the startling differences in long-run growth rates that we observe around the world. If economists can discover the factors underlying financial development, we can provide better public-policy advice to countries and potentially improve living standards.

Given the importance of identifying the determinants of financial development, there has been a notable intensification of research into the fundamental determinants of well-functioning financial systems. Much—though certainly not all—of this research has focused on the role of the legal system in explaining cross-country differences in financial development (La Porta *et al*., 1997, 1998, 1999, 2000). This paper examines legal theories of international differences in financial development. We also use this examination to highlight—albeit briefly—alternative theories regarding the historical determinants of financial development.

Legal theories emphasize two channels via which legal systems influence financial development. The law and finance theory's political channel stresses that (*a*) legal traditions differ in terms of the priority they attach to private property rights and the rights of investors in firms, and (*b*) the protection of private property rights and outside investors form the basis of financial development, so that historically determined differences in legal tradition help explain international differences in financial development today (La Porta *et al*., 1998). More specifically, the comparative law literature stresses that English common law evolved to protect private property owners against the crown. This facilitated private contracting and financial development (North and Weingast, 1989). In contrast, the codification of the French and German civil codes in the nineteenth century under Napoleon and Bismarck solidified government dominance of the judiciary. Thus, according to the law and finance theory's political channel, civil-law systems focus comparatively less on private property rights and more on the rights of the government, with negative repercussions on financial contracting (Mahoney, 2001). These legal traditions then spread through conquest, colonization, and imitation. According to the law and finance theory, therefore, differences in legal origin can importantly explain cross-country differences in financial development today.

Legal theories emphasize a second channel through which legal tradition influences financial development: the legal-adaptability channel. This channel stresses that (*a*) legal traditions differ in terms of their abilities to adapt to changing commercial and financial conditions, and (*b*) legal systems that adapt quickly to minimize gaps between the needs of the economy and the legal system's capabilities more effectively promote contracting and financial development (Johnson *et al*., 2000; Beck *et al*., 2001*a*). The comparative law literature holds that common law is inherently dynamic, as judges respond case-by-case to changing commercial and financial transactions. French civil law, however, was conceived as a complete, unambiguous, internally consistent, and immutable legal doctrine, where the legislature has a monopoly on law-making. Since legislatures typically do not respond quickly to changing conditions, and since legal systems are inevitably incomplete, ambiguous, and plagued by inconsistencies, the French civil code's rigid nature inhibits financial development (Merryman, 1985; Zweigert and Kotz, 1998). Germany is different. Germany explicitly rejected the French approach and sought to create a dynamic legal system. Adopters of the German civil code, therefore, obtained a legal system that is specifically designed to evolve with changing conditions. Thus, like the law and finance theory's political channel, the legal-adaptability channel predicts that historically determined differences in legal tradition shape financial development today.

The law and finance theory's political and legal-adaptability channels do, however, make conflicting predictions. The political channel focuses on the differences between common- and civil-law countries. In contrast, the legal-adaptability channel emphasizes the advantages of both common law and German civil law over the French civil-law system. Furthermore, the political channel focuses on the power of the government relative to the judiciary. According to the political channel, civil law is a proxy for a powerful state (La Porta *et al*., 1999). In contrast, the legal-adaptability channel focuses on the ability of the legal system to adapt to changing conditions. According to the legal-adaptability channel, the crucial issue is not the power of the state, but how effectively legal traditions respond to evolving commercial and financial conditions, so that legal systems may influence the contracting environment beyond their particular connection to private property rights.

An initial body of empirical evidence documents the importance of legal tradition in explaining financial development (La Porta *et al*., 1997, 1998, 2000) and also traces the impact of legal tradition on financial development through to long-run growth (Levine, 1998, 1999, 2001; Levine *et al*., 2000). Thus, existing research shows that dummy variables representing the legal origin of countries explain cross-country differences in financial development, and this component of financial development explains economic growth. Existing work, however, has only recently begun to dissect the channels through which legal tradition influences financial development (Beck *et al*., 2001*a*; La Porta *et al*., 2001). Specifically, very little work tries to distinguish empirically between the law and finance theory's political channel and its legal-adaptability channel.

Scholars have rapidly responded to the evidence supporting the law and finance view and advance more critical assessments. For instance, some authors stress the importance of politics and endowments in shaping financial development. The opening salvos in this debate have only just begun and will likely intensify as scholars search for the historical determinants of financial development.

The politics and finance theory rejects the importance of legal tradition. Rajan and Zingales (2001) note that financial development has changed importantly over the last century, but the legal tradition of each country has remained fixed. Thus, they de-emphasize the role of fixed factors, such as legal tradition, and emphasize the role of political factors that change through time. More generally, the politics and finance view emphasizes that those in power influence policies and institutions to their own advantage (Marx, 1872; North, 1990; Olson, 1993). If the ruling group sees free financial markets as supporting their interests, then they will create laws and institutions that support financial development. If, however, the ruling élite seeks to use its control over government to funnel society's savings toward its own objectives, then this will thwart financial development. Furthermore, according to the politics and finance view, centralized/powerful government will more effectively implement the will of the élite than a decentralized, open, and competitive political system.

The law and finance theory's political channel is different from the politics and finance view. The law and finance theory's political channel predicts that the exportation of civil law will tend to produce a centralized, powerful state that limits private property rights, the protection of minority shareholders and creditors, and the development of competitive financial markets, regardless of the initial political structure. In contrast, the politics and finance theory holds that the driving force is political structure, not legal tradition. Empirically, researchers have only been partly successful in distinguishing among these views.

The endowment view also rejects the importance of the legal system as a determinant of financial development and instead argues that the geography, topology, and disease environment of a country shape the development of all institutions, including legal and financial institutions. According to one channel of the endowment view, lands with high rates of disease and poor agricultural yields—such as the tropics—do not support large-scale farming, which is necessary for specialization and hence innovation, institutional development, and economic growth (Gallup *et al*., 1998). Thus, these authors emphasize the direct impact of endowments on production and stress the advantages of economies of scale in agriculture. Engerman and Sokoloff (1997) note a countervailing force. They show that agriculture in southern North America and much of

South America is particularly conducive to economies of scale and therefore promotes large-scale plantations. Thus, they argue these areas developed long-lasting institutions to protect the few landholders against the many peasants. In contrast, North America's agricultural lands promote small farms, so that more egalitarian institutions emerged. These differences in endowments then shaped political institutions, governmental approaches to property rights, and the development of financial systems.

Acemoglu *et al*. (2001*a*,*b*) emphasize a different mechanism through which endowments influence institutional development. They note that Europeans found a variety of conditions in the lands that they colonized. In some places, Europeans found it difficult to settle and therefore focused on extracting resources. In other places, Europeans found hospitable conditions. They settled and established institutions to promote growth. According to this view, the initial environment profoundly influenced colonization strategies and, therefore, profoundly influenced the *long-lasting* institutions constructed by colonists. Thus, Acemoglu *et al*. (2001*a*,*b*) argue that geography and disease have helped to shape the development of a wide array of institutions, including financial institutions, today.

The remainder of this paper focuses on examining legal theories of financial development relative to alternative theories. Section II provides a more detailed description of the law and finance theory's political and legal-adaptability channels. Section III describes empirical evidence on the legal theories relative to competing views. Section IV concludes.

## II. LEGAL THEORIES OF FINANCIAL DEVELOPMENT

This section describes legal theories of the historical determinants of financial development. We first describe the law and finance theory's political channel. It stresses that (i) legal traditions differ in terms of the priority they give to private contracting rights relative to governmental rights, and (ii) private contractual arrangements form the basis of financial activities. Next, we describe the law and finance theory's legal-adaptability channel. It holds that (i) legal traditions differ in terms of their ability to adapt to changing commercial and financial circumstances, and (ii) legal systems that adapt more effectively to changing conditions will concomitantly support financial development more effectively. In describing the legal theories, we very briefly review the formation of the French, German, and English legal systems based on a more extensive description in Beck *et al*. (2001*a*). Also, while we discuss differences below, each of the law and finance channels predicts that historically determined differences in legal tradition should importantly explain cross-country differences in financial development today.

### (i) The Law and Finance Theory's Political Channel

*History*

The Roman emperor, Justinian, had Roman law compiled into what are now called the Justinian texts in the sixth century. He did this partly in a vain attempt to unify the disintegrating empire, partly to organize a vast array of legal documents that defined Roman law, and partly to exert a monopoly over the law. Hayek (1960) notes that the Justinian texts represent an important philosophical shift. While Roman law placed the law above all individuals, the Justinian texts place the king—the government—above the law. Justinian asserted that the king solely determines the laws and interpretations of those laws. The Justinian texts influenced legal structure, terminology, and thinking throughout Europe.

From the 1400s, France's legal system progressed as a regionally diverse blend of customary law, Justinian's legal texts, and judicial decisions. The fragmented nature of French law during this period is noteworthy. Voltaire mocked France's fragmented pre-Revolution legal system by writing, 'When you travel in this Kingdom, you change legal systems as often as you change horses' (quoted from Zweigert and Kotz, 1998, p. 80). There was a need for unification.

By the 1700s, the judiciary's reputation had deteriorated substantially as the monarch sold judgeships to rich families and these families used their control of the courts to support the privileged (Glaeser and Shleifer, 2001). Judges impeded progressive reform initiated by the king and facilitated corruption. Unsurprisingly, the French Revolution turned its

fury on the judiciary and moved to eliminate the role of the judge in making and interpreting the law (Merryman, 1985).

In codifying the French civil code, Napoleon—like Justinian 1,300 years earlier—sought to unify regional legal systems and place the government above the courts as a source of law (Zweigert and Kotz, 1998). The theory is that the legislature drafts laws without gaps, so judges do not make law by deciding cases. The theory is that the legislature does not draft conflicting laws, so judges do not make law by choosing among competing statutes. The theory is that the legislature provides clear laws, so judges do not make law by giving practical meaning to ambiguous laws. Thus, codification supported the unification and strengthening of the government and relegated judges to a relatively minor bureaucratic role.

According to La Porta *et al*.'s (1998, 1999) law and finance theory, there are important parallels between France and Germany's experience. As with Napoleon, the great nation builder, Bismarck, unified the country (in 1871) and placed a high priority on unifying the courts through codification. Although Bavaria and Prussia codified parts of the law during the eighteenth century, it was Bismarck's decision in 1873 to codify and unify the whole of private law in Germany that led to the adoption of the German civil law in 1900. Thus, according to the law and finance theory, Bismarck's codification—like Justinian and Napoleon before him—consolidated and strengthened the state (La Porta *et al*., 1999).

The history of English common law is very different. English common law attains its modern form in the tumultuous sixteenth and seventeenth centuries, when Parliament and the English kings battled for control of the country. The Crown attempted to reassert feudal prerogatives and sell monopolies to raise revenues. Parliament (composed mostly of landowners and wealthy merchants) took the side of property owners. The courts also took the side of private property owners against the Crown (Mahoney, 2001). Ultimately, the Crown was unable to reassert feudal privileges and its ability to grant monopolies was also severely restricted. Thus, the courts asserted that the law is supreme and limited the Crown's discretion to alter property rights.

In contrast to France, English common law has been a source of liberty, so that common-law countries tend to view the judiciary as a champion of private property rights. Common-law countries tend to view progressive reform as emanating from an independent and influential judiciary. In comparison, the French Revolution targeted the judicial aristocracy. France sought progressive reform by severely limiting the independence and influence of the judiciary. Thus, civil law seeks individual liberty through a strong government.

*The political channel*

Given this brief history of the development of legal traditions, we can concisely define the law and finance theory's political channel. Civil law has tended to support nation-building by stressing the role of the government and diminishing the role of the judiciary. Indeed, La Porta *et al*. (1999, pp. 231–2) state that, '[A] civil legal tradition, then, can be taken as a proxy for an intent to build institutions to further the power of the State'. A powerful state will tend to create policies and institutions that divert the flow of society's resources toward favoured ends, which is antithetical to competitive financial markets. Furthermore, a powerful state with a responsive civil law at its disposal will have difficulty credibly committing itself not to interfere in financial markets, which will also hinder financial development (La Porta *et al*., 1998). In contrast, common law has historically stood on the side of private property owners against the state (Mahoney, 2001). Thus, rather than becoming a tool of the state, common law has acted as a powerful counterbalance that has promoted private property rights. Since private property rights form the basis of contractual arrangements, the law and finance theory's political channel holds that countries with common-law legal systems tend to encourage greater financial development than civil-law countries, which instead focus more on the rights of the government and comparatively less on the rights of private investors (La Porta *et al*., 1999).

**(ii) The Law and Finance Theory's Legal-adaptability Channel**

*History*

Not only did Justinian's codification break with Roman law tradition by placing the prince above the law, Justinian also broke with Roman law tradition

by attempting to eliminate jurisprudence. Roman law evolved from a law for a small community of farmers to support the needs of an imperial city through piecemeal case-made law over many centuries. Explicit legislation played a relatively minor role. Although laws in Rome evolved case-by-case through the opinions of the jurisconsults, Justinian changed this doctrine and 'asserted for himself a monopoly, not only over all law-making power, but over legal interpretation' (Dawson, 1968, p. 122). Moreover, Justinian forbade commentaries on the law since he felt his compilation would be adequate to resolve any legal problem without the assistance of further interpretations.

The French civil code reflects Justinian's static view of the law. As noted, the theory underlying the French legal doctrine is that the legislature drafts laws without gaps, without conflicts, and without ambiguity, so that judges do not make law by reconciling holes, inconsistencies, and unclear statutes. There is no need for judges to deliberate publicly about which laws, customs, and past experiences apply to new situations. Robespierre even argued that, 'the word jurisprudence . . . must be effaced from our language' (quoted from Dawson, 1968, p. 426). Like Justinian, Napoleon sought a code that was so clear, complete, and coherent that future commentaries on it were unnecessary. Indeed, Napoleon appointed loyalists to head law schools and had inspectors interrogate students and professor to assure that they followed the Code. When the first commentary on the Code was published in 1805, Napoleon is said to have exclaimed, 'My Code is lost!'

German legal history is very different from that of France. From the sixteenth century, German courts published comprehensive deliberations that illustrated how courts weighed conflicting statutes, resolved ambiguities, and tackled new situations. Law faculty and universities worked directly with courts to decide cases, and then worked to rationalize reality with the logic of the Justinian texts. Through active debate and interchange between scholars and practitioners, Germany developed a dynamic, common fund of legal ideas that formed the basis for codification in the nineteenth century.

In contrast to the revolutionary zeal and antagonism toward judges that shaped the Napoleonic Code, Germany explicitly rejected the static approach adopted by the French. Unlike the French Code, the German Code 'was not intended to abolish prior law and substitute a new legal system; on the contrary, the idea was to codify those principles of German law that would emerge from careful historical study of the German legal system' (Merryman, 1985, p. 31). Whereas French civil law was conceived of as perfect and immutable, German civil law was conceived of as dynamic and changing.

Some concrete examples may help exemplify the differences between the principles underlying the French and German systems. For instance, France technically denies judicial review of legislative actions, while Germany formally recognizes this power and German courts actively exercise it (Glendon *et al*., 1982, p. 57). Similarly, in terms of adjudicating disputes involving the government, France's administrative courts are within the executive branch itself, rather than in the judicial branch. In Germany, the judiciary handles these disputes. Further, the high courts reflect these differences. The Court of Cassation in France was originally viewed as an institution to assist the legislature. It had powers to quash decisions, but not decide cases. The judgments of the Court of Cassation are not meant to reflect the balancing of conflicts between statutes. Thus, decisions are very short and do not refer to past decisions. This is different from the Bundesgerichtshof in Germany, which can reverse, remand, modify, or enter final judgment on cases, and where the judicial decision-making process tends to be more openly debated (see Zweigert and Kotz (1998, p. 264) and Glendon *et al*. (1982, pp. 96–100, 123–33)). Also, Germany has a long history of legal scholars who publicly confront and evaluate cases and openly debate and rationalize competing statutes and customs, so that the judiciary and jurisprudence enjoy a prestigious heritage. In contrast, the French legal tradition from the thirteenth century shrouded the deliberations of judges in secrecy and by the eighteenth century the élite had purchased judgeships and abused their position, so that the public distrusted the judiciary and jurisprudence. Thus, in creating the German civil code, Germany had a much more favourable view of jurisprudence than France (Glendon *et al*., 1982).

Unlike French civil law, the English common-law tradition is inherently dynamic. While the law and

finance view stresses that common law has historically limited state power and bolstered private property rights, common law also has a unique evolutionary quality. The common-law tradition is almost synonymous with judges having broad powers of interpretation and with courts moulding and creating law as circumstances change. Common law is obsessed with facts and deciding concrete cases, rather than adhering to the logical principles of codified law. Thus, the popular dictum: 'The life of the law has not been logic: it has been experience' (Zweigert and Kotz, 1998, p. 181). Judges have played a larger role over time in civil-law countries. Nevertheless, in distinguishing the civil- and common-law traditions, legal scholars identify the degree to which judges continually—and as a matter of general practice—shape the law as a key distinguishing characteristic.

*Legal-adaptability channel*

The law and finance theory's legal-adaptability channel is built on two basic premises. First, to the extent that a legal system adapts slowly, large gaps will appear between the commercial and financial needs of an economy and the ability of the legal system to support those needs efficiently. Second, the major legal traditions differ importantly in terms of their ability to adapt to changing commercial and financial circumstances. Thus, the law and finance view holds that legal traditions differ in terms of their abilities to adapt to changing conditions and this importantly shapes financial development.

The legal-adaptability channel predicts that French legal-origin countries have a less adaptable legal tradition than German civil-law or common-law countries. Common law evolves continuously as it responds case-by-case to the changing needs of society. This limits the opportunities for large gaps to grow between the demands of society and the law. German civil law falls close to the common law in terms of adaptability. By design, Germany rejected the static nature of French civil law and instead embraced jurisprudence and sough to create a responsive legal doctrine. According to the legal-adaptability channel, the theory underlying the creation of the French civil code is inherently static. Its distrust of judges, distaste for jurisprudence, and dislike of open judicial disputations tend to make the French legal tradition less responsive than either the common or German civil-law traditions to changing conditions. Thus, according to this view, French civil-law countries have a legal system that tends to support financial development less effectively than common or German civil-law countries.

The law and finance theory's legal-adaptability channel stresses different mechanisms via which legal tradition influences financial development from the law and finance theory's political channel. First, these two 'channels' provide conflicting predictions regarding French versus German civil-law countries. The political channel holds that the civil-law tradition—both French and German—tends to centralize and intensify state power and therefore takes a more wary stance toward the development of free financial systems than common law. In contrast, the legal-adaptability channel stresses that common-law and German civil-law countries have notably more adaptable legal traditions than French civil-law countries.

The second conflicting prediction between the law and finance theory's political and legal-adaptability channels involves political structure. As noted by La Porta *et al.*'s (1999) description of the law and finance view, the civil-law tradition is a proxy for the intent to build a centralized, powerful government, so that civil-law countries are less amendable to financial development than common-law countries. One implication of this law and finance tenet is that after controlling for the power and centrality of the government, legal tradition should not provide additional explanatory power of cross-country differences in financial development. Also, the political channel tends to focus on the protection of private property rights. The legal-adaptability channel is different. It predicts that even after controlling for differences in government authority, legal tradition matters: differences in legal tradition influence legal system adaptability, which in turn shapes financial development. Also, it stresses that legal system adaptability influences the contracting environment beyond the protection of private property rights. We assess these different predictions below.

## III. EVIDENCE ON LEGAL THEORIES

To assess legal theories of financial development, we first examine whether the legal origin of a country is closely associated with an assortment of

measures of financial development. Then, we present empirical evidence on the law and finance theory's political and legal-adaptability channels. As emphasized, much additional work is needed more fully to characterize the channels through which legal tradition is connected to financial development.

### (i) Data

*Financial development*

There does not exist a single, accepted empirical definition of financial development. A large theoretical literature suggests that financial contracts, markets, and intermediaries arise to ameliorate information and transaction costs and thereby promote information acquisition, risk diversification, liquidity transformation, and financial transactions (see Levine, 1997). These concepts, however, are difficult to measure consistently across countries. Consequently, past work has used indicators of financial intermediary and stock-market size and activity to measure financial development (Goldsmith, 1969; King and Levine, 1993; Levine and Zervos, 1998). We use a variety of measures of the size and activity of equity markets and financial intermediaries and obtain consistent results. We also use an array of indicators of the level of development of ancillary institutions and laws that facilitate financial contracting. More specifically, we examine indicators of financial intermediary development, stock-market development, specific laws concerning the rights of creditors and minority shareholders, accounting system efficiency, and the overall level of private property rights protection.

*Market capitalization* equals the value of listed equity shares divided by GDP over the 1975–95 period and is from Beck *et al*. (2001*b*). We also confirmed the findings in this paper using a measure of market activity, i.e. the value of equity transactions as a share of GDP and market capitalization.[2]

*Intermediary credit* equals the value of credits by financial intermediaries to the private sector divided by GDP. This includes credit by banks and other credit-issuing intermediaries, but it excludes credits to the public sector and public enterprises. The data are from Beck *et al*. (2001*b*). We have also confirmed this paper's findings using measures that focus only on commercial banks and not all credit-issuing intermediaries.

*Shareholder rights* equals an index aggregating the following six measures. The index is created by adding one when (*a*) the country allows shareholders to mail their proxy vote to the firms, (*b*) shareholders are not required to deposit their shares prior to the General Shareholders Meeting, (*c*) cumulative voting or proportional representation of minorities in the board of directors is allowed, (*d*) an oppressed minorities mechanism is in place, (*e*) the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders Meeting is less than the sample median (10 per cent), or (*f*) shareholders have pre-emptive rights that can only be waived by a shareholders' vote. Higher values indicate greater minority shareholder rights such that majority shareholders have less discretion in exploiting minority shareholders. As shown by La Porta *et al*. (1997), greater shareholder rights are positively associated with stock-market development. The data are from La Porta *et al*. (1998).

*Creditor rights* is an index that is formed by adding one when (*a*) the country imposes restrictions, such as creditors' consent or minimum dividends, to file for reorganization, (*b*) secure creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay on assets), (*c*) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm, and (*d*) the debtor does not retain the administration of its property pending the resolution of the reorganization. Higher values indicate greater creditor rights. As shown by La Porta *et al*. (1997) and Levine (1998, 1999), greater creditor rights is positively associated with financial intermediary development. The data are from La Porta *et al*. (1998).

*Accounting standards* is an index created by examining and rating the quality of company annual reports. The data are for 1990 and were assembled by the Center for International Financial Analysis

[2] Although it would be valuable also to examine bond-market development, comparable data are not available for many countries as discussed in Beck *et al*. (2001*b*).

and Research (CIFAR). We obtained the data from La Porta *et al*. (1998).

*Property rights* is an index of the degree to which the legal system protects private property. The maximum value is five, while one indicates the weakest private property rights protection. The data are from 1997 and were collected by Index of Economic Freedom. We obtained the data from La Porta *et al*. (1999).

*Legal tradition*

Based on La Porta *et al*. (1997, 1998, 2000), we designate legal tradition as either common law, French civil law, German civil law, or Scandinavian civil law, based on the source of each country's company or commercial law.

La Porta *et al*. (1998) note that the major legal families spread throughout the world via conquest, colonization, and imitation. Napoleon made it a priority to secure the adoption of the Code in all conquered territories, including Italy, Poland, the Low Countries, and the Habsburg Empire. Also, France extended her legal influence to parts of the Near East, Northern and Sub-Saharan Africa, Indochina, Oceania, French Guyana, and the French Caribbean islands during the colonial era. Furthermore, the French Civil Code was a major influence on the Portuguese and Spanish legal systems, which helped spread the French legal tradition to Central and South America. The German Civil Code was not imposed but rather was studied and used by other countries. It has exerted a big influence on Austria and Switzerland, as well as China (and hence Taiwan), Czechoslovakia, Greece, Hungary, and Yugoslavia. Also, the German Civil Code heavily influenced the Japanese Civil Code, which helped spread the German legal tradition to Korea. The Scandinavian countries developed their Civil Codes in the seventeenth and eighteenth centuries. These countries have remained relatively unaffected by the far-reaching influences of the English, German, and French legal traditions. While the Scandinavian countries did not create a vast empire, England did. English common law spread through colonization and conquest to all corners of the world.

One may further refine the categorization of legal systems. For instance, Franks and Sussman (1999) describe differences in the adaptability of two common-law countries: the United Kingdom and the United States. Furthermore, France has partially shaken loose from the shackles of the Napoleonic legal doctrine over the last two centuries. Despite its origins, France has re-instilled jurisprudence and created a more responsive, dynamic legal system than that characterized by the theory underlying French civil law. Moreover, different colonization strategies may have intensified differences across legal traditions. England did not try to replace Islamic, Hindu, or African law. English courts in the colonies, therefore, used local laws and customs in deciding cases. This quickly produced an Indian common law distinct from English common law. While perhaps chaotic, this allowed for the dynamic integration of common law with local circumstances. In contrast, the French imposed the Code, although serious conflicts frequently existed between the Code and local customs. Also, legal scholars study differences across the French civil-law countries of Latin America. While recognizing that each country's legal system is special, legal theories hold that there are key differences across the major legal families. Thus, we stay with the standard classification of legal systems.

The data suggest that common-law countries tend to have greater financial development than civil-law countries, especially French civil-law countries. Table 1 presents data for the 49 countries examined by La Porta *et al*. (1998). The countries are categorized by legal tradition. On average the common-law countries have greater market capitalization, shareholder rights, and creditor rights than countries in the other legal traditions. Furthermore, the common-law countries have greater accounting standards than the French and German civil-law countries and greater property rights and intermediary credit than the French civil-law countries.

*Political structure, power, and natural-resource endowments*

To assess the law and finance theory's political channel, we test whether legal origin explains financial development after controlling for political structure and power. To measure political structure, we construct a summary indicator of four individual indicators: (i) *executive competition* is the extent to which executives are chosen through competitive elections, ranging from zero to three, and with higher values indicating a higher degree of competitive-

**Table 1**
**Law and Finance Around the World**

| Country | Market capitalization | Intermediary credit | Shareholder rights | Creditor rights | Accounting standards | Property rights |
|---|---|---|---|---|---|---|
| Australia | 0.39 | 0.75 | 4 | 1 | 75 | 5 |
| Canada | 0.42 | 0.74 | 5 | 1 | 74 | 5 |
| Hong Kong | 1.41 | 1.36 | 5 | 4 | 69 | 5 |
| India | 0.13 | 0.25 | 5 | 4 | 57 | 3 |
| Ireland | | 0.59 | 4 | 1 | | 5 |
| Israel | 0.30 | 0.48 | 3 | 4 | 64 | 4 |
| Kenya | | 0.28 | 3 | 4 | | 3 |
| Malaysia | 0.98 | 0.69 | 4 | 4 | 76 | 4 |
| New Zealand | 0.40 | 0.49 | 4 | 3 | 70 | 5 |
| Nigeria | 0.04 | 0.13 | 3 | 4 | 59 | 3 |
| Pakistan | 0.08 | 0.23 | 5 | 4 | 4 | |
| Singapore | 1.23 | 0.89 | 4 | 4 | 78 | 5 |
| South Africa | 1.18 | 0.75 | 5 | 3 | 70 | 3 |
| Sri Lanka | 0.13 | 0.18 | 3 | 3 | | 3 |
| Thailand | 0.22 | 0.60 | 2 | 3 | 64 | 5 |
| UK | 0.68 | 0.63 | 5 | 4 | 78 | 5 |
| USA | 0.55 | 1.25 | 5 | 1 | 71 | 5 |
| Zimbabwe | 0.13 | 0.22 | 3 | 4 | | 3 |
| **Common law average** | **0.52** | **0.58** | **4.00** | **3.11** | **69.62** | **4.17** |
| | | | | | | |
| Argentina | 0.05 | 0.15 | 4 | 1 | 45 | 4 |
| Belgium | 0.23 | 0.33 | 0 | 2 | 61 | 5 |
| Brazil | 0.12 | 0.25 | 3 | 1 | 54 | 3 |
| Chile | 0.42 | 0.41 | 5 | 2 | 52 | 5 |
| Colombia | 0.06 | 0.27 | 3 | 0 | 50 | 3 |
| Ecuador | | 0.18 | 2 | 4 | | |
| Egypt | 0.05 | 0.26 | 2 | 4 | 24 | 3 |
| France | 0.17 | 0.89 | 3 | 0 | 69 | 4 |
| Greece | 0.09 | 0.41 | 2 | 1 | 55 | 4 |
| Indonesia | 0.05 | 0.22 | 2 | 4 | | 3 |
| Italy | 0.10 | 0.54 | 1 | 2 | 62 | 4 |
| Jordan | 0.52 | 0.58 | 1 | | | 4 |
| Mexico | 0.14 | 0.19 | 1 | 0 | 60 | 3 |
| Netherlands | 0.36 | 1.18 | 2 | 2 | 64 | 5 |
| Peru | 0.06 | 0.11 | 3 | 0 | 38 | 3 |
| Philippines | 0.18 | 0.30 | 3 | 0 | 65 | 4 |
| Portugal | 0.07 | 0.63 | 3 | 1 | 36 | 4 |
| Spain | 0.18 | 0.73 | 4 | 2 | 64 | 4 |
| Turkey | 0.05 | 0.15 | 2 | 2 | 51 | 4 |
| Uruguay | 0.01 | 0.28 | 2 | 2 | 31 | 4 |
| Venezuela | 0.08 | 0.40 | 1 | | 40 | 3 |
| **French civil law average** | **0.15** | **0.40** | **2.33** | **1.58** | **51.17** | **3.80** |

**Table 1 (continued)**

| Country | Market capitalization | Intermediary credit | Shareholder rights | Creditor rights | Accounting standards | Property rights |
|---|---|---|---|---|---|---|
| Austria | 0.06 | 0.81 | 2 | 3 | 54 | 5 |
| Germany | 0.17 | 0.88 | 1 | 3 | 62 | 5 |
| Japan | 0.64 | 1.59 | 4 | 2 | 65 | 5 |
| Korea | 0.22 | 0.71 | 2 | 3 | 62 | 5 |
| Switzerland | 0.64 | 1.63 | 2 | 1 | 68 | 5 |
| Taiwan | 0.43 | 0.82 | 3 | 2 | 65 | |
| **German civil law average** | **0.36** | **1.07** | **2.33** | **2.33** | **62.67** | **5.00** |
| Denmark | 0.20 | 0.41 | 2 | 3 | 62 | 5 |
| Finland | 0.18 | 0.61 | 3 | 1 | 77 | 5 |
| Norway | 0.15 | 0.91 | 4 | 2 | 74 | 5 |
| Sweden | 0.32 | 1.02 | 3 | 2 | 83 | 4 |
| **Scandinavian civil law average** | **0.21** | **0.74** | **3.00** | **2.00** | **74.00** | **4.75** |

**Table 2**
**Test of Differences in Financial Development Across Legal Origins**

| Comparison | Market capitalization | Intermediary credit | Shareholder rights | Creditor rights | Accounting standards | Property rights |
|---|---|---|---|---|---|---|
| Common law vs civil law | ++ | | ++ | ++ | ++ | |
| Common law vs French civil law | ++ | + | ++ | ++ | ++ | |
| Common law vs German civil law | | — | ++ | | ++ | – |
| German civil law and French civil law | ++ | ++ | | | ++ | ++ |

*Note*: ++ signifies that the values for countries of the first legal tradition are significantly greater than those of the second at the 0.05 significance level; + signifies that the values for countries of the first legal tradition are significantly greater than those of the second at the 0.10 significance level; — signifies that the values for countries of the first legal tradition are significantly smaller than those of the second at the 0.05 significance level; – signifies that the values for countries of the first legal tradition are significantly smaller than those of the second at the 0.10 significance level.

ness; (ii) *executive openness* indicates the degree to which there are opportunities, in principle, for non-élites to attain executive offices, ranging from zero to four, with higher values indicating more opportunities; (iii) *non-élite* indicates the extent to which non-élites are able to access institutional structures for political expression, ranging from zero to five, with higher values indicating a higher degree of competitiveness and inclusion; and (iv) *autocracy* is an indicator of the general closeness of political institutions, ranging from zero to ten, with higher values indicating a more closed political system. These political structure variables are from Beck *et al*., (2001*a*); the Appendix lists the summary indicator.

*Trade*: to measure the incentives of the élite, we follow Rajan and Zingales (2001) who use openness to trade as a proxy for whether the élite favours a competitive environment. They assume that greater openness to trade—as measured by international trade as a share of GDP—is positively associated with a political agenda that favours competition and hence well-developed financial markets. Data on trade are from Beck *et al*. (2001*b*) and are listed in the Appendix.

*Latitude*: to measure endowments, we use the (absolute value of the) latitude of the country. Countries that are close to the equator tend to have a more tropical environment. Data are from La Porta *et al*. (1999) and are listed in the Appendix. We also conducted the analyses using a dummy variable that equals one if the World Bank classifies the country as have a tropical environment and zero otherwise. The results are the same.

**(ii) Legal Tradition and Financial Development**

Table 1 indicates that the data are broadly consistent with the law and finance theory. Common-law countries rank higher than French civil-law countries along *all* the dimensions of financial development presented in Table 1. This conclusion is supported by the statistical tests presented in Table 2. Table 2 presents t-tests of the equality of the means across the different legal traditions. As shown, common law has significantly greater market capitalization, shareholder rights, creditor rights, and accounting standards than the combined group of civil-law countries.

**(iii) Robustness and Evidence on the Political and Legal-adaptability Channels**

*Robustness*

This sub-section assesses whether legal origin continues to explain cross-country differences in financial development after controlling for other influences. As noted in the introduction, the politics and finance view predicts that political factors determine financial development (North, 1990; Olson, 1993). These theories stress that those in power shape policies and institutions—including financial institutions—to stay in power and enrich themselves. Furthermore, centralized/powerful governments can more effectively respond to the desires of the élite than a more de-centralized, open political structure. Furthermore, the élite may or may not favour financial development (Pagano and Volpin, 2000) and these interests may fluctuate over time Rajan and Zingales, 2001). Thus, the politics and finance view predicts that countries with centralized/uncompetitive political structures where the élite feels threatened by competitive financial markets will thwart financial development.

At an even more basic level, the endowment view stresses that differences in geography and disease have critically shaped patterns of political, institutional, and economic development (McNeill, 1963; Jones, 1981; Diamond, 1997; Acemoglu *et al*., 2001*a*,*b*). According to this line of research, areas with poor endowments—such as the tropics—have a correspondingly lower probability of developing the political, legal, and institutional foundations that support the highly specialized economic interactions underlying long-run economic growth.

We test whether legal tradition significantly explains international differences in financial development after controlling for differences in the power/competitiveness of the government, perspectives of the élite toward competitive financial markets, and environmental endowments. Specifically, we first explain cross-country differences in financial development using the political structure index, openness to trade, and latitude. We then compute that part of financial development that is *unexplained* by these three indicators. Finally, we assess whether legal tradition can account for this unexplained component of financial development.

Tables 3 and 4 present the results. Table 3 lists the values for all of the financial development indicators that are unexplained by cross-country differences in political structure, trade, and latitude.[3] These 'adjusted' financial development indicators hold political power, openness to international trade, and latitude constant. Table 4 presents t-tests of the equality of the means of these adjusted financial development indicators across the different legal traditions.

The connection between legal tradition and financial development is robust. The results show that legal origin continues to explain cross-country differences in financial development even after controlling for the politics and endowment views. These findings are confirmed in a more extensive econometric evaluation of the connection between legal tradition and financial development (Beck *et al*., 2001*a*).[4] While endowments and politics are important, they are not the whole story. Historically determined differences in legal tradition explain financial development today.

*Common law versus civil law and German versus French civil law*

While the data are broadly consistent with the law and finance theory, the analysis also shows that German civil-law countries are quite different from French civil-law countries. German civil-law countries have significantly greater market capitalization, intermediary credit, accounting standards, and property rights than French civil-law countries (Table 2) and creditor-rights protection is also greater, on average, in German civil-law countries (Table 1). These general conclusions hold after controlling for political structure, openness to trade, and geographical endowments (Tables 3 and 4)

Furthermore, differences in financial development between common-law countries and German civil-law countries are not as distinct as those between the common-law countries and French civil-law countries. Specifically, while the average common-law country dominates the average French civil-law country across all of the financial-development indicators, this is not the case for the average German civil-law country. German civil-law countries have significantly greater intermediary credit and property rights protection.

The law and finance theory's political channel does not easily account for the difference between German and French civil-law countries. In contrast, these results are fully consistent with the legal-adaptability channel. An important caveat is necessary, however. We have not used—and the literature has not developed—a direct empirical proxy for cross-country differences in legal adaptability. Thus, we are careful to use the phrase, existing empirical findings *are more consistent with* the legal-adaptability channel than they are with the political channel, rather than concluding that they reject the political channel in favour of the legal-adaptability channel.

*Political structure and legal theories*

The law and finance theory's political channel holds that civil-law countries tend to construct centralized, powerful, uncompetitive governments that hinder the development of free, competitive financial markets. One implication of this prediction is that if we control for centralization, power, and competitiveness of the state, then legal tradition should not further explain cross-country differences in financial development.

In contrast, the results in Tables 3 and 4 indicate that legal origin explains financial development even after controlling for the centrality and power of the political system. Indeed, Beck *et al*. (2001*a*) show that various measures of state power and competi-

[3] Specifically, we regress each financial development indicator on political structure, trade, and latitude and collect the residuals. We then add back the mean of each financial development indicator, so that the values in Table 3 correspond in magnitude to those in Table 1. Complete multivariate regression results are available on request.

[4] These results, however, do not overturn Rajan and Zingales's (2001) critique that financial development changes and legal origin does not. They argue that political factors have importantly altered the course of financial development across some European countries and the United States. Pistor *et al*. (2000) disagree with Rajan and Zingales (2001). Pistor *et al*. (2000) argue that even acute political changes in Germany, France, and England during the 20th century did not substantively alter the evolution of corporate law. Without entering this important debate, it seems safe to conclude that while time-varying factors certainly play a role, legal tradition does help account for cross-country differences in financial development even after controlling for many other factors.

**Table 3**
**Law and Finance, Holding Other Things Constant**

| Country | Market capitalization adjusted | Intermediary credit adjusted | Shareholder rights adjusted | Creditor rights adjusted | Accounting standards adjusted | Property rights adjusted |
|---|---|---|---|---|---|---|
| Australia | 0.36 | 0.69 | 3.72 | 0.97 | 74.24 | 4.95 |
| Canada | 0.41 | 0.59 | 4.91 | 1.20 | 70.50 | 4.57 |
| Hong Kong | 1.52 | 1.50 | 4.97 | 3.98 | 75.82 | 5.55 |
| India | 0.20 | 0.33 | 4.89 | 3.98 | 61.79 | 3.39 |
| Ireland | | 0.34 | 4.24 | 1.35 | | 4.09 |
| Israel | 0.26 | 0.42 | 2.72 | 3.94 | 62.86 | 3.92 |
| Kenya | | 0.52 | 2.67 | 3.33 | | 3.97 |
| Malaysia | 0.78 | 0.80 | 3.54 | 3.16 | 77.87 | 4.55 |
| New Zealand | 0.34 | 0.36 | 3.74 | 3.00 | 66.74 | 4.71 |
| Nigeria | 0.06 | 0.39 | 2.98 | 3.53 | 67.58 | 3.89 |
| Pakistan | 0.09 | 0.20 | 4.74 | 4.00 | | 4.06 |
| Singapore | 0.36 | 0.66 | 3.70 | 2.17 | 59.37 | 4.17 |
| South Africa | 1.14 | 0.71 | 4.67 | 2.88 | 69.43 | 3.01 |
| Sri Lanka | 0.25 | 0.56 | 3.59 | 2.69 | | 4.06 |
| Thailand | 0.19 | 0.74 | 1.84 | 2.60 | 68.59 | 5.54 |
| UK | 0.76 | 0.50 | 5.29 | 4.49 | 75.81 | 4.49 |
| United States | 0.59 | 1.22 | 4.86 | 1.10 | 71.88 | 5.00 |
| Zimbabwe | 0.14 | 0.33 | 2.77 | 3.74 | | 3.50 |
| **Common law average** | **0.47** | **0.60** | **3.88** | **2.89** | **69.42** | **4.30** |
| | | | | | | |
| Argentina | 0.06 | 0.05 | 3.61 | 1.10 | 43.91 | 3.88 |
| Belgium | 0.27 | 0.18 | 0.29 | 2.42 | 57.73 | 4.43 |
| Brazil | 0.19 | 0.40 | 2.96 | 0.86 | 60.51 | 3.57 |
| Chile | 0.36 | 0.30 | 4.59 | 1.94 | 49.52 | 4.83 |
| Colombia | 0.05 | 0.49 | 2.65 | –0.54 | 57.70 | 3.90 |
| Ecuador | | 0.74 | 3.07 | 3.77 | | |
| Egypt | 0.09 | 0.28 | 1.94 | 4.01 | 26.17 | 3.14 |
| France | 0.10 | 0.61 | 2.55 | 0.22 | 61.58 | 3.30 |
| Greece | 0.24 | 0.46 | 2.39 | 1.32 | 58.96 | 4.08 |
| Indonesia | 0.13 | 0.54 | 2.21 | 3.62 | | 4.01 |
| Italy | 0.17 | 0.45 | 1.22 | 2.36 | 61.25 | 3.69 |
| Jordan | 0.42 | 0.52 | 0.93 | | | 3.81 |
| Mexico | 0.42 | 0.62 | 2.15 | 0.12 | 76.08 | 4.06 |
| Netherlands | 0.26 | 0.92 | 2.12 | 2.23 | 55.54 | 4.09 |
| Peru | 0.28 | 0.52 | 3.81 | –0.07 | 52.81 | 4.10 |
| Philippines | 0.11 | 0.37 | 2.46 | –0.46 | 67.58 | 4.46 |
| Portugal | 0.04 | 0.53 | 2.98 | 1.09 | 33.59 | 3.70 |
| Spain | 0.21 | 0.68 | 3.98 | 2.15 | 64.01 | 3.89 |
| Turkey | 0.13 | 0.05 | 2.00 | 2.29 | 51.37 | 3.85 |
| Uruguay | 0.23 | 0.48 | 2.93 | 2.39 | 39.63 | 4.35 |
| Venezuela | –0.01 | 0.51 | 0.45 | | 43.44 | 3.59 |
| **French civil law average** | **0.19** | **0.46** | **2.44** | **1.62** | **53.41** | **3.94** |

**Table 3 (continued)**

| Country | Market capitalization adjusted | Intermediary credit adjusted | Shareholder rights adjusted | Creditor rights adjusted | Accounting standards adjusted | Property rights adjusted |
|---|---|---|---|---|---|---|
| Austria | 0.05 | 0.63 | 2.03 | 3.30 | 49.49 | 4.42 |
| Germany | 0.20 | 0.70 | 0.81 | 3.34 | 58.24 | 4.51 |
| Japan | 0.70 | 1.57 | 3.97 | 2.16 | 66.43 | 5.01 |
| Korea | 0.18 | 0.60 | 1.81 | 3.05 | 59.48 | 4.74 |
| Switzerland | 0.65 | 1.45 | 1.81 | 1.31 | 64.01 | 4.51 |
| Taiwan | 0.33 | 0.77 | 2.62 | 1.73 | 63.36 | |
| **German civil law average** | **0.35** | **0.95** | **2.18** | **2.48** | **60.17** | **4.64** |
| Denmark | 0.20 | 0.17 | 2.08 | 3.47 | 55.91 | 4.21 |
| Finland | 0.26 | 0.39 | 3.28 | 1.65 | 72.13 | 4.20 |
| Norway | 0.22 | 0.70 | 4.38 | 2.65 | 69.36 | 4.20 |
| Sweden | 0.32 | 0.75 | 3.09 | 2.53 | 75.88 | 3.09 |
| **Scandinavian civil law average** | **0.25** | **0.50** | **3.21** | **2.57** | **68.32** | **3.92** |

*Note*: The financial development indicators are adjusted by controlling for the centrality and power of political institutions, the degree of openness to international trade, and the latitude of the country (whether it is in the tropics). Thus, the values in the table hold political structure, openness to trade, and geographical location constant. More specifically, we regress each financial indicator on politics, trade, and latitude, collect the residuals, and then add back the sample mean of the financial indicator.

**Table 4**
**Test of Differences in Financial Development Across Legal Origins, Holding Other Things Constant**

| Comparison | Market capitalization adjusted | Intermediary credit adjusted | Shareholder rights adjusted | Creditor rights adjusted | Accounting standards adjusted | Property rights adjusted |
|---|---|---|---|---|---|---|
| Common law vs civil law | ++ | | ++ | ++ | ++ | |
| Common law vs French civil law | ++ | + | ++ | ++ | ++ | + |
| Common law vs German civil law | | — | ++ | | ++ | |
| German civil law and French civil law | ++ | ++ | | | | ++ |

*Note*: ++ signifies that the values for countries of the first legal tradition are significantly greater than those of the second at the 0.05 significance level; + signifies that the values for countries of the first legal tradition are significantly greater than those of the second at the 0.10 significance level; — signifies that the values for countries of the first legal tradition are significantly smaller than those of the second at the 0.05 significance level; – signifies that the values for countries of the first legal tradition are significantly smaller than those of the second at the 0.10 significance level. The financial-development indicators are adjusted by controlling for the centrality and power of political institutions, the degree of openness to international trade, and the latitude of the country (whether it is in the tropics). Thus, the values in the table hold political structure, openness to trade, and geographical location constant. More specifically, we regress each financial indicator on politics, trade, and latitude, collect the residuals, and then add back the sample mean of the financial indicator.

tiveness do not explain cross-country differences in financial development. Thus, legal tradition must proxy for something more than state power. Another possible mechanism via which legal tradition influences financial development is through adaptability. The data are consistent with this emphasis that legal-system adaptability is crucial for financial development. As we emphasized earlier, however, we must be very circumspect in drawing conclusions. While the data seem to be more consistent with the law and finance theory's legal-adaptability channel than with the political channel, we do not have an empirical proxy for legal system adaptability across countries.

## IV. CONCLUSIONS

This paper has described and empirically assessed legal theories of financial development. The law and finance theory's political channel holds that legal traditions differ in terms of the priority they give to private property rights. Since private property rights form the basis of financial development, historically determined differences in legal tradition materially explain financial development. The law and finance theory's legal-adaptability channel stresses that legal traditions differ in terms of their abilities to adapt to changing conditions. Since inflexible legal traditions produce gaps between legal capabilities and financial needs, historically determined differences in legal tradition substantively explain financial development today.

The data are consistent with the main prediction of legal theories of financial development. Legal traditions—which were formed over a century ago—explain cross-country differences in financial development today. These results hold even when controlling for the competitiveness of the political system, openness to international trade, and whether the country lies farther away from the equator, along with a wide variety of other factors (Beck *et al*., 2001*a*).

The data also highlight the advantages of the legal-adaptability channel over the political channel. The political channel stresses that the civil-law tradition supports the creation of a powerful state that tends to protect society's élite from competition by limiting, among other things, the development of free, competitive financial markets. Legal tradition, however, helps explain differences in financial development even after controlling for the power and competitiveness of the political system and policies toward competitiveness as reflected in the international trade measure. Thus, legal tradition must proxy for something else besides the power/openness of the political system and policies toward competitiveness. This finding is consistent with the legal-adaptability channel's tenet that the adaptability of the legal system importantly influences financial development. Also, the legal-adaptability channel predicts that German civil-law countries will have substantially greater financial development than French civil-law countries. This arises because the framers of the German civil code explicitly rejected the static nature of the French code and created a dynamic legal system that supports financial development. The data support this prediction. While the results are more consistent with the legal-adaptability channel, existing work does not use a direct measure of legal system adaptability. Additional research is clearly needed better to understand legal and other theories of financial development.

**Appendix: Latitude, Trade, and Political Openness Indices**

| Country | Latitude | Trade | Politics |
|---|---|---|---|
| Argentina | 36.68 | 30.72 | 0.33 |
| Australia | 32.22 | 79.49 | 0.27 |
| Austria | 48.23 | 127.05 | 0.18 |
| Belgium | 50.84 | 128.55 | 0.09 |
| Brazil | 19.56 | 31.72 | 0.15 |
| Canada | 43.73 | 106.90 | 0.22 |
| Chile | 33.55 | 86.77 | 0.33 |
| Colombia | 4.79 | 45.96 | 0.24 |
| Denmark | 55.72 | 121.82 | 0.18 |
| Ecuador | 2.06 | 74.48 | –0.32 |
| Egypt | 30.00 | 64.97 | 0.18 |
| Finland | 60.21 | 99.25 | 0.11 |
| France | 48.86 | 96.15 | 0.37 |
| Germany | 48.16 | 59.18 | 0.27 |
| Greece | 38.06 | 52.64 | 0.03 |
| Hong Kong | 22.70 | 231.93 | |
| India | 25.27 | 20.02 | 0.19 |
| Indonesia | 6.56 | 64.43 | 0.03 |
| Ireland | 54.61 | 206.95 | 0.11 |
| Israel | 32.08 | 90.52 | 0.27 |
| Italy | 45.42 | 86.92 | 0.11 |
| Japan | 35.71 | 48.64 | 0.18 |
| Jordan | 31.60 | 173.77 | 0.18 |
| Kenya | 0.51 | 78.03 | 0.22 |
| Korea | 37.55 | 106.10 | 0.25 |
| Malaysia | 3.27 | 191.15 | 0.27 |
| Mexico | 16.76 | 54.93 | –0.32 |
| Netherlands | 51.87 | 224.32 | 0.15 |
| New Zealand | 36.89 | 116.30 | 0.27 |
| Nigeria | 6.54 | 80.05 | 0.11 |
| Norway | 59.98 | 116.27 | 0.08 |
| Pakistan | 31.17 | 51.81 | 0.26 |
| Peru | 11.79 | 51.14 | –0.19 |
| Philippines | 13.92 | 71.69 | 0.33 |
| Portugal | 38.82 | 130.42 | 0.18 |
| Singapore | 1.36 | 794.98 | 0.18 |
| South Africa | 29.13 | 86.77 | 0.29 |
| Spain | 37.40 | 75.59 | 0.18 |
| Sri Lanka | 6.87 | 97.23 | –0.12 |
| Sweden | 59.28 | 126.73 | 0.18 |
| Switzerland | 47.41 | 69.61 | 0.27 |
| Taiwan | 25.89 | 130.42 | 0.29 |
| Thailand | 13.77 | 102.55 | 0.18 |
| Turkey | 41.20 | 42.43 | 0.18 |
| UK | 51.51 | 95.86 | 0.09 |

**Appendix continued**

| Country | Latitude | Trade | Politics |
|---|---|---|---|
| United States | 34.36 | 50.14 | 0.22 |
| Uruguay | 34.82 | 70.19 | –0.19 |
| Venezuela | 8.89 | 84.74 | 0.33 |
| Zimbabwe | 17.88 | 54.11 | 0.22 |

*Notes*: Latitude = absolute value of the distance from the equator. Trade = exports + imports / GDP. Politics: indicator of political openness/competitiveness in 1800 or first year of independence.

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