

Law and Firms' Access to Finance

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Abstract: Why does a country's legal origin influence its firms' access to finance? Using data for over 4,000 firms in 38 countries, the data show that firms in countries with French legal origin face significantly higher obstacles in accessing external finance than firms in common law countries. Next, the results indicate that French legal origin countries tend to have (i) less adaptable legal systems as defined by the degree to which case law and principles of equity rather than simply statutory law are accepted foundations of legal decisions and (ii) less politically independent judiciaries as defined by the degree of tenure of supreme court judges and their jurisdiction over cases involving the government. Finally, the paper finds that the adaptability of a country's legal system is more important for explaining the obstacles that firms face in contracting for external finance than the political independence of the judiciary. Thus, the paper distinguishes among competing explanations of why law matters for financial development by empirically documenting the linkages running from international differences in legal origin to the operation of the financial system at the firm level.

Keywords: Law; Court System; Judicial Independence; Legal Adaptability

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1. Introduction

Substantial research finds a robust relationship between the origin of a country's legal tradition and the operation of its financial system. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998, henceforth LLSV) show that whether a country's commercial/company law is based on British, French, German, or Scandinavian legal origins is important for explaining the country's laws on creditor and shareholder rights. LLSV (1997) and Levine (1998, 1999, 2003) show that differences in investor protection laws explain cross-country differences in the size of the banking sector and the level of stock market development.¹ Thus, researchers have identified an empirical chain running from legal origin, to investor protection laws, to financial development.

This paper provides empirical evidence on two interrelated questions about the linkages running from legal origin to the operation of financial systems. First, why does legal origin matter for the operation of the financial system? Which legal system traits – such as judicial independence from the government and the ability of courts to adapt to changing conditions -- are critical for well-functioning financial systems? From a practical perspective, it is crucial to identify key legal system characteristics that policymakers can reform given the difficulty in changing legal origin. Second, do differences in legal origin influence the obstacles that firms face in raising capital and which legal system traits interfere with firms' access to finance? Existing work has not yet established an explicit link between legal origin and specific financing obstacles, nor does the literature identify which legal system traits influence firms' access to finance. This paper provides empirical evidence on the

¹ Research also finds legal institutions influence the efficiency with which financial systems allocate capital (Wurgler 2000; Beck and Levine 2002), the valuation of firms (Claessens et al. 2002; LLSV 2002; Caprio et al. 2003), the dividend payment policies of corporations (LLSV 2000), the efficiency of equity markets (Morck, Yeung, and Yu, 2000), and the financial fragility of firms (Johnson et al. 2000). Beck, Demirgüç-Kunt, and Levine (2003b) document the robust connection between legal origin and equity market development and property rights protection. Also, Levine, Loayza, and Beck (2000) and Beck, Levine and Loayza (2000) establish that the component of financial development explained by legal origin explains economic growth. See Beck and Levine (2003) for a survey of the law and finance literature.

linkages running from legal origin, to legal system traits, and on to the obstacles that firms face in contracting for external finance.

Consider first the question of why legal origin matters for financial development. Hayek (1960) emphasizes two major differences across legal traditions: (1) the political independence of the judiciary and (2) the adaptability of the legal system. The “political” --or “judicial independence” --channel holds that (a) the protection of private property rights forms the basis of financial activities and (b) legal traditions differ in terms of the priority they attach to private property rights vis-à-vis the rights of the State. According to Hayek (1960), Dawson (1960, 1968), Merryman (1985), and others, the English common law evolved as an independent institution that over time protected private property owners against the crown. This made private agents more confident about making financial transactions, with positive ramifications for financial development.² In contrast, LLSV (1999) argue that the French and German civil codes in the 19th century were constructed to solidify state power. Over time, state dominance of the judiciary produced legal traditions that focus more on the power of the state and less on the rights of individual investors, with negative ramifications for financial development (Mahoney 2001). Thus, the political channel argues that the degree to which the judiciary is independent of the State is a legal system trait that substantively shapes financial development.

Hayek (1960) also argues that legal systems differ in terms of their ability to adapt to changing conditions. The “adaptability channel” stresses that (a) legal traditions that adapt efficiently to minimize the gap between the contracting needs of the economy and the legal system’s capabilities will more effectively foster financial development than more rigid systems and (b) legal traditions differ in their ability to evolve with changing conditions. An influential, although not unanimous,

² Johnson, McMillan, and Woodruff (2002) show that countries with strong private property rights protection tend to have firms that reinvest their profits, but where property rights are relatively weakly enforced, entrepreneurs are less inclined to invest retained earnings.

strand of the comparative law literature holds that the common law evolves efficiently as judges respond case-by-case to unforeseen and changing conditions (Posner, 1973). Several scholars argue that since the common law grants substantial discretion to judges, inefficient laws are challenged in the courts and through repeated litigation efficient rules replace inefficient ones.³ In contrast, Dawson (1960, 1968) and Merryman (1985) argue that the French Revolution sought to change French law radically by (i) eliminating jurisprudence, (ii) reducing judges to a purely administrative role, and (iii) adhering to strict, formal legal processes that reduce judicial flexibility. These scholars add that, since the more rigid aspects of the Napoleonic legal doctrine did not work well in practice and conflicted with France's long legal history, the French courts eventually circumvented many of the inflexible characteristics of the doctrine. Unlike France, however, Merryman (1985, 1996) argues that many French Legal Origin colonies have been unable to shed the inefficient rigidity of the Napoleonic doctrine. Germany explicitly rejected the Napoleonic approach. Rather, building on Savigny's vision of legal science, Germany took a comparatively favorable view of jurisprudence and sought to create a responsive legal doctrine. Similarly, the Scandinavian countries did not follow the rigid Napoleonic approach (Zweigert and Kotz 1998). The adaptability channel, therefore, argues that the flexibility of the legal system – as characterized by the level of jurisprudence and legal formalism -- will importantly shape financial development.

While the political and adaptability views of why legal origin matters are not mutually exclusive, they emphasize different mechanisms. The political channel focuses on the political independence of the judiciary. The adaptability channel focuses on the process of law making. In this paper, we assess empirically the ability of the political and adaptability channels to explain the obstacles that firms face in obtaining finance.

³ See Rubin (1977, 1982), Priest (1977), and Bailey and Rubin (1994).

To address empirically the question of why legal origin matters for financial development, we construct measures of (1) the political independence of the judiciary and (2) the adaptability of legal systems. To measure political independence of the judiciary, we use information on the degree of tenure of Supreme Court judges and the extent to which the Supreme Court has jurisdiction over cases involving the government. To measure the adaptability of legal systems, we use information on the extent to which judicial decisions are sources of law and whether judicial decisions are based on principles of equity rather than purely on statutory law. Although we use the raw data from Djankov et al. (2003) to construct the adaptability indexes, our adaptability indexes differ from the Djankov et al. (2003) measure of legal formalism. Djankov et al (2003) seek to measure legal formalism broadly defined. In contrast, we focus narrowly on the Hayek (1960), Dawson (1960, 1968), Posner (1973), and Merryman (1985) conception of legal system adaptability. The adaptability index is a subset of the information contained in the formalism index that uses information on the degree to which rulings must be based solely on existing statutes and the extent to which judgments may include general assessments of fairness.⁴ We then test whether these measures of the political and adaptability mechanisms explain the obstacles that firms face in raising external finance.

To measure financing obstacles, we use firm-level survey data for over 4,000 firms across 38 countries. The data come from the World Business Environment Survey (WBES), which was conducted in 1999. We include information on the general financing obstacles faced by firms, the obstacles that collateral requirements constitute for firms' access to finance, the bureaucratic and paperwork barriers that firms face in obtaining external finance, and the specific obstacles associated with obtaining long-term loans. Thus, we assess whether different legal tradition traits – political

⁴ Thus, our adaptability index does not include information on the degree to which laymen are involved in dispute resolution, the extent of oral versus written presentations in legal proceedings, and the number of procedural steps, which are part of the formalism index. The correlation between our adaptability index and Djankov et al's (2003) formalism index is 72% and statistically significant at the 1% level. Furthermore, using the formalism index produces the same conclusions.

independence of the judiciary and legal system adaptability – explain specific obstacles that firms face in obtaining external finance.

This brings us directly to this paper's second, though closely related, question: Do differences in legal origin and legal system traits explain the external financing constraints faced by firms? Rajan and Zingales (1998) and Beck and Levine (2002) show that industries that are naturally heavy users of external finance – as defined by the use of external finance in the United States -- grow faster in countries with higher levels of judicial efficiency. These analyses, however, (i) infer the degree of financing obstacles by using the United States as a benchmark, (ii) do not control for other firm-specific differences, and (iii) use an aggregate indicator of judicial efficiency that does not relate the use of external finance to specific legal system characteristics. Demirgüç-Kunt and Maksimovic (1998, 2002) show that firms in countries with more efficient legal systems grow faster than predicted by a textbook financial planning model. Again, however, this work (i) infers financing obstacles from the growth rate of the firm relative to that predicted by a financial planning model, (ii) does not control for many firm-specific traits in linking firm growth with legal system efficiency, and (iii) uses an aggregate indicator of legal system efficiency. We contribute to this line of inquiry by (1) using direct indicators of the financing obstacles faced by firms, (2), controlling for many firm-specific characteristics, and (3) examining the link between financing obstacles and both legal origin and specific legal system traits emphasized by the comparative law literature.

This paper is related to four recent papers seeking to discover which legal system characteristics facilitate economic interactions. First, and most closely related, Beck, Demirgüç-Kunt, and Levine (2003a) assess the importance of the adaptability and political channels. Using a pure cross-country methodology that employs aggregate indexes of financial development, Beck et al. (2003a) find that the adaptability dimension of legal origin is more important than the political

dimension in explaining financial development. In this paper, however, we use firm-level data to assess the importance of the political and adaptability channels in explaining corporate financing obstacles. Second, La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2002) show that judicial independence and jurisprudence are associated with greater economic and political freedom and that judicial independence is a channel through which the common law tradition influences economic freedom. Rather than examining economic and political freedom, we examine the impact of judicial independence and legal adaptability on firm financing obstacles. Third, in a cross-country study of former European colonies, Acemoglu and Johnson (2003) examine the impact of legal formalism and the risk of expropriation of private foreign investors by the government on income per capita, investment, and financial development. They find that while legal formalism influences the form of financial contracting, expropriation risk affects investment and income. In contrast, our firm-level study assesses which legal system traits influence the relationship between banks and firms. Fourth, Djankov, La Porta, Lopez-de-Silanes and Shleifer (2003) examine the influence of judicial formalism on the duration, efficiency and fairness of judiciary proceedings. Thus, they examine the impact of judicial formalism on the operation of the legal system. Djankov et al. (2003) show that civil code countries have more formalistic legal systems than common law countries, and find that firms rate the efficiency of the court system higher in countries with less formalistic legal systems. In contrast, our paper concentrates on the effect of two legal system characteristics – the political independence of the judiciary and the adaptability of the judicial system -- on the relationship between borrowers and lenders and thus the obstacles that firms face in accessing external finance.

It is important to recognize that many researchers disagree with the reasoning advanced in both the political and adaptability channel arguments, and these disputes further motivate our analysis. In contrast to the contention that legal origin shapes judicial independence and hence a

country's approach to private property, Pagano and Volpin (2001) and Rajan and Zingales (2003) contend that the comparative powers of different political interest groups, which are likely to vary over time, influence and reflect national approaches to private contracting. Furthermore, some scholars reject the contention that case law-based legal systems respond more effectively than more statutory-based systems (e.g., see Cooter and Kornhauser 1980; Cooter, Kornhauser, and Lane 1979; Blume and Rubinfeld 1982; Rubin 1982; Kaplow 1992; and Coffee 2000). For instance, as exemplified by the law on contracts for the benefit of third parties, English law has clung with remarkable tenacity to the principle that "only a person who is a party to a contract can sue on it." (ZK. 1998, p. 468) In contrast, the civil law countries granted greater rights to third parties through statutory changes. This paper focuses on assessing empirically the linkages running from legal origin, to legal system characteristics, to the financing obstacles faced by firms. We naturally, therefore, provide evidence on these competing views regarding law and finance.

The remainder of the paper is organized as follows. Section 2 presents the data and section 3 describes the methodology. Section 4 gives the results and section 5 concludes.

2. Data

To assess the relation between the legal system and firms' access to finance, we combine firm-level survey data with country-level indicators of legal traditions, judicial independence and legal system adaptability. The intersection of these databases produces a sample of over 4,000 firms and 38 countries. Table I presents observations for the countries in our sample. Table II presents descriptive statistics and correlations.

2.1. Firms' Access to Finance

The corporate finance literature has used different approaches for inferring the degree to which firms are financially constrained. Fazzari, Hubbard, and Petersen (1988) use a priori reasoning to argue that low-dividend firms are constrained. Rajan and Zingales (1998) use the external financing patterns of US firms as a benchmark for the “natural” dependence of industries on external financing around the world. Demirgüç-Kunt and Maksimovic (1998) rely on a financial planning model to identify firms that have access to long-term external financing. As described in Kaplan and Zingales (1997) and Levine (2004), however, there are shortcomings associated with inferring financing obstacles from other firm characteristics.

Rather than inferring financing constraints indirectly, we use direct measures of the obstacles that firms report contracting for external finance. We use firm-level survey data from the WBES for over 4,000 firms in 38 countries, both developed and developing, for three reasons. First, the survey acquires direct information from firms about perceived obstacles and therefore does not infer the existence of financing constraints from other information. Second, the survey not only has information on general financing obstacles. It also provides information on the specific types of obstacles that firms face in financial contracting, such as collateral requirements, paperwork and access to long-term financing. Third, the WBES database has excellent coverage of small and medium size firms (as well as large firms), while other cross-country studies use data that focus heavily on large corporations. 40% of the firms in the sample are small (between 5 and 50 employees), another 40% medium-sized (between 51 and 500 employees) and the remaining 20% large firms (over 500 employees).

Using data based on self-reporting by firms may produce concerns that a firm facing the same obstacles will respond to questions differently in different institutional and cultural environments. If

this were pure measurement error, it would bias the results against finding a relationship between legal system traits and firms' obstacles in financial contracting. Further, reported firm financing obstacles are highly, negatively correlated with firm growth. Beck, Demirgüç-Kunt, and Maksimovic (2002) show that the negative impact of reported financing obstacles on firm growth holds even after controlling for an array of firm-level and country characteristics and using instrumental variables to control for endogeneity. Thus, firms' responses to the survey on financing obstacles are capturing more than idiosyncratic differences in how firms rank obstacles.

General financing obstacle equals the response to the question: "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Table I shows that perceived financing obstacles do not only vary across firms within a country, but also across countries. Portuguese firms rate financing obstacles as relatively insignificant (1.73), while firms in Haiti rate financing obstacles as more than moderate (3.51). Overall, 31% of the firms in our sample rate financing as major obstacle, 26% as a moderate obstacle, 21% as a minor obstacle, and 21% as no obstacle.

Collateral requirements equals the response to the question: "How problematic are collateral requirements of banks/financial institutions for the operation and growth of your business?: (1) no obstacle, (2) a minor obstacle, (3) a moderate obstacle, or (4) a major obstacle?" Collateral has been shown to help overcome adverse selection and moral hazard risks in credit markets (Stiglitz and Weiss 1981; Bester 1985). The ability of the lender to effectively recover and re-sell collateral thus determines availability and terms of credit. Legal systems across countries vary in the types of assets that can be used as collateral and in the way the lender can recover collateral (Keinan 2000). We will assess whether collateral requirements as part of financial contracting constitute an obstacle for firm

growth across different legal traditions and whether judicial independence and legal system adaptability help overcome this obstacle.

Long-term loans equals the response to the question: “How problematic is the lack of access to long-term loans for the operation and growth of your business?: (1) no obstacle, (2) a minor obstacle, (3) a moderate obstacle, or (4) a major obstacle?” One of the major functions of financial intermediaries is to transform short-term savings into long-term investment resources (Levine 1997). Informational asymmetries with the resulting adverse selection and moral hazard risks, however, hamper this maturity transformation. Previous research has shown that loans to firms in financially less developed countries have significantly lower maturity (Demirgüç-Kunt and Maksimovic 1999). We assess whether difficulties in contracting for long-term finance vary across legal traditions and whether judicial independence and legal system adaptability help ease access.

Paperwork and bureaucracy equals the response to the question: “How problematic is bank paperwork or bureaucracy for the operation and growth of your business?: (1) no obstacle, (2) a minor obstacle, (3) a moderate obstacle, or (4) a major obstacle?” Paperwork and bureaucracy constitute transaction costs for both borrower and lender. We therefore assess whether the degree to which firms report paperwork as major problem in financial contracting varies across legal traditions and is related to judicial independence and legal system adaptability. The four firm-level financing obstacles indicators – general financing obstacle, collateral requirements, long-term loans, and paperwork/bureaucracy -- are highly correlated with each other (Table IIB).

2.2. Firm-level Control Variables

The regressions control for several firm characteristics. Specifically, the analyses include dummy variables indicating whether the firm is partially owned by the government or a foreign entity. Similarly, the regressions include dummy variables indicating whether a firm (i) exports, (ii) is in the manufacturing sector, and (iii) is in the services sector. The study controls for firm size by including the log of sales in United States dollars (USD). The regressions control for the market structure by including the number of competitors the firm faces. Finally, the investigation includes indicators of the legal structure and governance system of each firm. Specifically, the regressions include dummy variables indicating whether the firm is (i) a single proprietorship or partnership or (ii) a corporation. Cooperatives and other legal forms are captured in the constant. Further, the analysis includes dummy variables indicating whether a firm is controlled by (i) an individual or a family, (ii) its board of directors or (iii) its management. The constant captures control by a conglomerate, a bank, workers or government.

Government-owned firms constitute 5% of the sample, while foreign-owned firms constitute 26%. 34% of the firms are controlled by their board, 13% by management and 40% by an individual or family. 31% of the firms are single proprietorships or partnerships, while 46% are corporations. Manufacturing firms constitute 40% of the sample and service firms 44%. On average, firms face 2.1 competitors. The correlations in Table IIC indicate that government- and foreign-owned firms, firms controlled by their board, corporations, service firms and larger firms face lower financing obstacles, while family-controlled firms, single proprietorships and partnerships and firms with more competition face higher financing obstacles. Many of the firm characteristics are also highly correlated with each other.

2.3. Indicators of Legal Origin, Judicial Independence and Legal Adaptability

French legal origin equals one if the country's company/commercial law has French legal origin and zero otherwise. Data on legal origin are from LLSV (1998, 1999). Except for Sweden and Germany, LLSV (1998, 1999) classify the remainder of the countries in our sample as common law countries. As discussed, Hayek (1960), Dawson (1960, 1968), and Merryman (1985) emphasize the distinction between French legal origin countries and other countries, particularly British common law countries. Hence, we include Sweden (Scandinavian law country) and Germany (German law country) as zeros in the French legal origin dummy variable. Note, however, that eliminating Germany and Sweden from the sample does not change this paper's results.⁵ Finally, we define the dummy variable **British legal origin**, which takes on the value one if the country has a British common law tradition as defined by LLSV (1999) and zero otherwise (so that Sweden and Germany have values of zero). We use this variable in the summary statistics tables.

Tenure of Supreme Court judges ranges from zero to two, increasing in the tenure of the Supreme Court judges. If tenure is for less than six years, then this variable is coded as zero. If tenure is between six years and lifelong, then the Tenure of Supreme Courts Judges variable is coded as one. If Supreme Court judges have lifelong tenure, then the variable is coded as two. In a legal system that grants longer tenure to Supreme Court judges, this increases the independence of the judiciary relative to the State. According to the political channel, firms in countries with more independent judiciaries will face lower obstacles in accessing and contracting for external finance. This indicator of the tenure of Supreme Court judges and the next indicator regarding the relative power of the judiciary vis-à-vis the executive and legislature are from La Porta, Lopez-de-Silanes, Pop-Eleches, and Shleifer (2002).

⁵ Since Germany and Sweden are the only representatives of the German and Scandinavian legal traditions in the sample, we do not capture them in separate dummies.

Supreme Court power combines the tenure of Supreme Court Judges with a dummy variable indicating whether the Supreme Court has power over administrative cases, i.e. cases involving the government. Thus, Supreme Court Power equals one if (1) Supreme Court Judges have lifelong tenure and (2) the Supreme Court has power over administrative cases, and equals zero if either of these two conditions does not hold. To the extent that the Supreme Court is independent of the government as measured by lifelong tenure and has control over cases involving the government, this represents greater judicial power relative to the State. The political channel predicts that Supreme Court judges who have life-long tenure and power over administrative cases are more independent from the State, with positive repercussions for firms' access to external finance.

Case law (La Porta, Lopez-de-Silanes, Pop-Eleches, and Shleifer 2002) is a dummy variable that indicates whether judicial decisions are a source of law. The adaptability channel predicts that countries in which judicial decisions are a source of law will adapt more easily to changing economic and financial circumstances with beneficial impacts on the operation of the financial system.

Legal justification (Djankov, La Porta, Lopez-de-Silanes, and Shleifer 2003) indicates whether the legal process is based on statutory law rather than on principles of equity.⁶ Specifically, legal justification is the normalized sum of three dummy variables: (1) *complaint* measures whether the complaint is required to include references to the applicable laws, legal reasoning or other formalities that normally require legal training or assistance, (2) *judgment* indicates whether the judgment must expressly state the applicable law or case law for the decision, and (3) *law vs. equity* indicates whether judgment has to be based on statutory law or can rather be motivated by general equitable arguments. Legal Justification takes on values of 0, 0.33, 0.67, and 1, where higher values signify the legal system imposes greater requirements that the legal process be based on statutory

⁶ Djankov, La Porta, Lopez-de-Silanes and Shleifer (2003) use survey data from law firms in 109 countries to construct indicators of the functioning of the legal system when courts confront cases involving the eviction of tenants for non-payment of rent and the collection of a bounced check.

law. The adaptability channel predicts that firms in countries where judicial decisions are based on statutory law rather than principles of equity face higher financing obstacles.

Firms in French legal origin countries report higher financing obstacles due to collateral requirements, access to long-term loans and paperwork and bureaucracy (Table IIB). Also, firms face lower financing obstacles in countries where (i) judicial decisions are a source of law, (ii) court decisions are based on principles of equity rather than solely on statutory law, and (iii) Supreme Court judges enjoy longer tenures. There is no correlation between Supreme Court power and firms' financing obstacles.

British legal origin countries are more likely to have judicial decisions as a source of law and to have judicial decisions based on principles of equity rather than based only on statutory law (Table IIB). British legal origin countries also have Supreme Court judges that have longer tenure and are more powerful. The opposite holds for French legal origin countries. The correlations also indicate, however, that judicial independence and adaptability of the legal system are highly correlated with each other, which might make it difficult to distinguish the effect of the two.

2.4. Country-level Control Variables

Table IIB also provides correlations using country-level control variables that the regressions below include. To the extent that a more independent judiciary and a more adaptable legal system reflect a generally higher level of economic and institutional development, any relation between legal system traits and firms' financing obstacles might be a spurious reflection of the level of economic development. The regressions, therefore, include the log of GDP per capita. Note that firms in richer countries face lower obstacles raising external finance.

Robustness analyses also control for other country characteristics. Specifically, the analyses control for legal codes that protect the legal rights of creditors by using the La Porta et al. (1997, 1998) indicator of creditor rights. Creditor rights measures the rights that secured creditors have vis-à-vis firms in restructuring and liquidation. Also, the robustness checks control for the general efficiency of the legal system by including the rule of law indicator compiled by International Country Risk Guide (ICRG). Further, the robustness analyses include the growth rate of GDP since firms in faster-growing countries may face lower financing obstacles. Finally, we use the inflation rate to proxy for monetary instability, conjecturing that firms in more stable monetary environments face fewer financing obstacles.⁷ Thus, the investigations include an array of country-level characteristics when assessing the relationship between legal system characteristics and specific external financing obstacles reported by firms.

3. Methodology

To assess the relation between legal system characteristics – judicial independence from the government and legal system adaptability -- and firms' access to finance, we assume that the enterprise's underlying response can be described by the following equation, where the j and k subscripts indicate firm and country, respectively:

$$\begin{aligned}
 \text{General Financing Obstacle}_{j,k} = & \beta_1 \text{Government}_{j,k} + \beta_2 \text{Foreign}_{j,k} + \beta_3 \text{Exporter}_{j,k} + \beta_4 \\
 & \text{Private}_{j,k} + \beta_5 \text{Corporation}_{j,k} + \beta_6 \text{Family}_{j,k} + \beta_7 \text{Board}_{j,k} + \beta_8 \text{Management}_{j,k} + \beta_9 \\
 & \text{Manufacturing}_{j,k} + \beta_{10} \text{Services}_{j,k} + \beta_{11} \text{Sales}_{j,k} + \beta_{12} \text{No. of Competitors}_{j,k} + \beta_{13} \text{GDP per capita}_k \\
 & + \beta_{14} \text{Law}_k + \varepsilon
 \end{aligned} \tag{1}$$

Law is either French legal origin, or one of our judicial independence from the government or legal adaptability measures.

⁷ Boyd, Levine and Smith (2001) show that countries with higher and more volatile inflation have lower levels of financial development, a relation that is robust to controlling for reverse causation and simultaneity bias.

Unlike the underlying variable, the observed variable general financing obstacle is a polychotomous dependent variable with a natural order. Specifically, the enterprise classifies the obstacle with $k = 1, 2, 3,$ or 4 if the underlying variable is between α_{k-1} and α_{k+1} , with the α -vector being estimated together with the coefficient vector β . We therefore use the ordered probit model to estimate equation (1). We use standard maximum likelihood estimation with heteroskedasticity-robust standard errors.⁸ The coefficients, however, cannot be interpreted as marginal effects of a one-unit increase in the independent variable on the dependent variable, given the non-linear structure of the model. Rather, the marginal effect is calculated as $\phi(\beta'x)\beta$, where ϕ is the standard normal density at $\beta'x$. We use the same estimation procedure when using (a) the importance of collateral requirements in accessing finance, (b) the importance of the lack of access to long-term loans and (c) the importance of bank paperwork and bureaucracy for obtaining external finance as dependent variables.

4. Results

4.1. Legal Origin and Firms' Access to Finance

The results in Table III indicate that firms in French Legal Origin countries face larger obstacles to accessing external finance than firms in common law countries. Specifically, firms in French legal origin countries report higher obstacles due to collateral requirements, the lack of access to long-term loans and bank paperwork and bureaucracy. While the French legal origin dummy enters significantly only at the 8% level in the general financing obstacle regression, it enters significantly at the 5% level in the regressions of collateral requirements, long-term loans and paperwork and bureaucracy. We get similar results when we (i) use the British legal origin dummy – firms in

⁸ Alternatively, we can assume a logistic function for the distribution of ε and use a logit model, which yields the same conclusions.

common law countries face lower financing obstacles than firms in Civil Code countries – and (ii) when we leave out Germany and Sweden and thus focus exclusively on British legal origin versus French legal origin countries.

The effect of legal tradition on firms' access to finance is not only statistically but also economically significant. The probability that a firm in a French legal origin country rates collateral requirements as a major obstacle is 3 percentage points higher than in other countries; the probability that it rates the lack of access to long-term loans as a major obstacle is 10 percentage points higher and the probability that it rates paperwork and bureaucracy as a major obstacle is 7 percentage points higher.

The results in Table III also indicate that foreign-owned and large firms face lower financing obstacles than domestic or small firms, while incorporated and family-owned firms face particularly high obstacles. Finally, firms in economically more developed countries face lower obstacles than firms in countries with lower levels of GDP per capita.

4.2. Firms' Access to Finance, Legal Adaptability and Judicial Independence

Table IV presents regressions that assess whether legal system adaptability and judicial independence from the government influence the obstacles that firms face in raising external finance. For each financing obstacle variable – general financing obstacle, collateral requirements, long-term loans, and paperwork and bureaucracy, we present four regressions. We present regressions with one of the two adaptability channel indexes and one of the two political channel indexes. We present all combinations. As noted, the regressions control for firm-level characteristics and the level of GDP per capita. For brevity, we only report the country-level variables.

The Table IV regressions indicate that firms in countries with more adaptable legal systems face lower financing obstacles than countries with more rigid legal systems. Case law and legal

justification enter significantly at the 5 percent level and with the expected sign in all but one regression; legal justification enters significantly at the 10% level when controlling for Supreme Court power. Thus, these results are consistent with the adaptability channel view of why legal origin matters for financial development.

In contrast, the Table IV results do not lend strong support to the political channel view of why legal origin matters for firm financing obstacles. There is not a robust relation between judicial independence and firms' access to finance. Supreme Court power either enters insignificantly or with the opposite sign of that predicted by the political channel view. Supreme Court tenure only enters significantly and negatively in the regressions of collateral requirements. While we do not find evidence that judicial independence explains firms' access to finance, this does not imply that judicial independence is an unimportant feature of legal systems. Our findings only focus on the impact of judicial independence on financial contracting, whereas legal system traits may influence a wide array of economic and political outcomes (La Porta et al. 2002).

As in the case of legal tradition, the economic impact of legal adaptability on firms' access to finance is large. The probability that a firm reports financing as major obstacle is 5 percentage points lower in countries that use judicial decisions as sources of laws. Similarly, the probability that a firm reports financing as a major obstacle to firm growth is 4 percentage points lower in countries that base judicial decisions on principles of equity rather than statutory law.

In sum, there are three main findings in Tables III and IV. First, firms in French legal origin countries face higher obstacles in accessing and contracting external finance. Second, firms in countries with more adaptable legal systems face lower financing obstacles. Finally, variations in judicial independence do not explain a significant amount of the cross-country variation in the external financing obstacles faced by firms.

4.3. Robustness Tests

In Tables V-VIII, we check the robustness of these results to controlling for (i) creditor rights, (ii) rule of law, (iii) macroeconomic country characteristics and (iv) the measurement of the financing obstacles.

First, we control for creditor rights. The results in Table V show that legal adaptability explains firms' access to finance even after controlling for the statutory rights of creditors. Case law enters all eight of the regressions in which it is included negatively and significantly. This is consistent with the view that jurisprudence foster efficient legal system adaptability reduces the gap between financial needs and legal system capabilities. As predicted by the adaptability channel, legal justification enters all of the collateral requirements, long-term loans, and paperwork and bureaucracy regressions significantly at the 5% level. Consistent with the results noted earlier, the link between legal justification and general financial obstacle is not as strong. In terms of the political channel, the indicators of judicial independence enter significantly at the 5% level and with the expected sign in only two out of 16 regressions. Finally, when controlling for legal system characteristics – judicial independence and adaptability, Creditor Rights only enters significantly and negatively in the regressions where the dependent variable is of paperwork and bureaucracy.

Second, we control for rule of law. The Table VI results suggest that the earlier findings are robust. Case law and legal justification enter significantly at the 5% level and with the expected sign in 12 of the 16 regressions, which is consistent with the earlier findings and supports the adaptability channel. The indicators of judicial independence, on the other hand, enter either insignificantly or with a sign opposite to the one predicted by the political channel. Rule of law enters significantly and negatively in 12 out of the 16 regressions, but does not affect the significance of our legal

adaptability indicators. This suggests that these indicators capture specific legal system traits beyond the general efficiency of the legal system as measured by the rule of law.

Third, the Table VII results suggest that our results are robust to controlling for cross-country differences in GDP growth and inflation. Case law and legal justification enter significantly at the 5% level and with the expected sign in 15 of the 16 regressions. However, the indicators of judicial independence enter either insignificantly or with the “wrong” sign. Growth enters significantly and negatively in all regressions, while inflation enters significantly only in the collateral requirements regressions, but surprisingly with a negative sign. Again, these robustness checks are broadly consistent with the adaptability channel but do not provide empirical support for the political channel.

Fourth, the Table VIII results indicate that our findings are robust to the measurement of the obstacles. Specifically, we reclassify responses according to whether firms rate an obstacle (i) as minor or non-existing or (ii) as moderate or major. We convert the obstacle variables into dummy variables, with the new variables taking the value zero if the underlying obstacle is one or two and taking the value one if the underlying obstacle is three or four. Then we run a probit regression. Again, the results confirm the conclusions discussed above. When we use random effect probit estimations, to control for a potential country-specific error term, the results are confirmed.

We ran two further robustness tests, which are available on request. Since the number of firms varies substantially across countries, we assess the robustness of the results using a weighted ordered probit. The weights are the inverse of the number of firms to correct for this potential bias. The weighted regressions confirm the earlier conclusions. Also, excluding Germany and Sweden from our sample, thereby focusing only on French and British legal origin countries, confirms this paper’s findings.

5. Conclusions

This paper assessed two interconnected questions: (1) Why does legal origin matter for the operation of financial systems, and (2) Which specific legal system traits – such as judicial independence and the adaptability of the legal system -- are crucial for explaining differences in the obstacles that firms face in contracting for external finances?

The motivations for addressing these questions are three-fold. From a theoretical perspective, this paper distinguishes empirically between differing views on why legal origin matters for finance. While some scholars stress that judicial independence from the government is crucial for the development of a finance-enhancing legal system, others emphasize legal system adaptability as the most important legal system trait. From a conceptual perspective, the paper more fully documents the linkages running from legal origin to the operation of the financial system at the firm level. While past works links legal origin with aggregate measures of financial development, this paper first provides evidence on the connections between legal origin and specific legal system traits and next the paper documents the connection between these specific legal system characteristics and the obstacles that firms face in contracting for capital. Finally, from a policy perspective, this paper seeks to understand the relationship between legal origin, legal system traits, and financial system performance to provide practical policy guidance. While it is essentially impossible to change legal origin, countries can implement changes in judicial independence and legal adaptability.

First, this paper establishes an empirical connection between legal origin and both the financing obstacles faced by firms and specific legal system traits. First, firms in French legal origin countries face higher obstacles in contracting for external finance than firms in other countries. This addresses the first question: legal heritage does exert a powerful influence over firms' access to

finance. Second, French legal origin countries tend to have (a) judiciaries that are less independent from the government and (b) judiciaries that are less likely to embrace jurisprudence and to base judicial decisions on principles of equity rather than purely on statutory law than countries with a common law tradition. Thus, consistent with Hayek (1960), Dawson (1960, 1968), and Merryman (1985), legal heritage helps explain contemporary legal system characteristics.

Next, the paper examines why law matters. First, cross-country variation in legal system adaptability – the degree to which judicial decisions are a source of law and are based on equity rather than statutory law – helps explain variation in the obstacles that firms face in accessing external finance. Second, cross-country variation in judicial independence does not help explain differences in firms' financing obstacles. These findings provide empirical confirmation of the adaptability channel, but are broadly inconsistent with the political channel. In general, the results emphasize that legal system adaptability is important for corporate finance.

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Table I
Legal origin, judicial independence and legal adaptability across countries

GDP per capita is real GDP per capita, averaged over 1995-99. General Financing Obstacle is the response to question whether financing is an obstacle to the operation and growth of the firm. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Collateral requirements, Long-term Loans and Paperwork and Bureaucracy are defined similarly. Tenure of Supreme Court Judges indicates the length of tenure of Supreme Court judges. Supreme Court Power is a dummy variable that takes on the value one if Supreme Court Judges have life-long tenure and jurisdiction over administrative cases. Case Law is a dummy variable that takes on the value one if judges base their decision on case law. Legal Justification indicates whether judgments are based on statutory law rather than on principles of equity. F indicates French legal origin, C Common legal origin, G German legal origin and S Scandinavian legal origin.

Country	GDP per capita	General Financing Obstacle	Collateral requirements	Paperwork and Bureaucracy	Long-term Loans	Case law	Legal Justification	Supreme Court Tenure	Supreme Court Power	Legal Origin
Argentina	8,000	3.02	2.75	2.80	3.18	1	1	2	1	F
Brazil	4,492	2.69	2.89	3.01	2.91	0	1	2	1	F
Canada	20,549	2.06	2.08	2.38	1.50	1	0	2	1	B
Chile	5,003	2.47	2.37	2.36	2.43	0	0.67	2	1	F
Colombia	2,381	2.69	2.81	2.67	2.92	0	1	1	0	F
Ecuador	1,538	3.32	2.85	2.92	3.52	1	0.67	2	1	F
Egypt	1,108	3.00	2.46	2.82		0	1	2	1	F
Ethiopia	109	2.94	3.11	2.79		0		2	1	F
France	27,720	2.80	2.30	2.96	1.71	0	1	2	0	F
Germany	30,794	2.53	2.71	2.55	2.14	1	1	2	0	G
Ghana	393	3.08	2.33	2.52		1	0	2	1	B
Haiti	369	3.51	2.75	2.12	3.35	0		1	0	F
Honduras	708	2.86	2.84	2.58	3.18	1	1	0	0	F
India	414	2.52	2.48	2.54		1	1	2	1	B
Indonesia	1,045	2.86	2.52	2.53	2.76	1	0.67	2	1	F
Italy	19,646	2.11	2.44	2.49	1.88	0	1	2	0	F
Kenya	339	2.85	2.35	2.27		1	0.33	2	1	B
Malaysia	4,536	2.66	2.66	2.39	2.27	1	0	2	1	B
Mexico	3,395	3.37	2.87	2.96	3.56	0	1	1	0	F
Nicaragua	435	3.17	2.97	2.94	2.89	0		1	0	F
Nigeria	254	3.11	2.26	2.33		1	0.33	2	1	B
Pakistan	506	3.33	3.21	2.95	2.94	1	0.67	2	1	B
Panama	3,124	2.10	2.40	2.51	1.88	0	1	1	0	F
Peru	2,335	3.03	2.71	2.91	3.40	1	1	2	1	F
Philippines	1,126	2.68	2.65	2.29	2.38	1	1	2	1	F
Portugal	11,582	1.74	1.59	1.85	1.78	1	1	2	0	F
Singapore	24,948	1.86	1.98	1.78	1.62	1	0	2	1	B
South Africa	3,925	2.46	1.79	1.77		1	0.33	2	1	B
Spain	15,858	2.27	1.91	2.21	1.83	0	1	2	1	F
Sweden	28,258	1.88	2.08	1.63	1.44	1	0.33	2	0	S
Thailand	2,836	3.09	2.42	2.37	3.14	0	0.67	2	0	B
Turkey	2,994	3.20	2.42	2.49	3.02	1	0.67	2	0	F
Uganda	324	3.13	2.66	2.58		1	0.67	2	1	B
United Kingdom	20,187	2.24	2.17	2.11	1.68	1	0.33	2	1	B
United States	29,250	2.29	2.11	2.40	1.66	1	0.33	2	1	B
Venezuela	3,483	2.50	2.82	2.88	2.77	0	1	1	0	F
Zambia	394	2.67	2.68	2.43		1	0.33	2	1	B
Zimbabwe	693	3.05	2.07	2.29		1	0.67	2	1	B

Table II
Summary Statistics and Correlations

General Financing Obstacle is the response to question whether financing is an obstacle to the operation and growth of the firm. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Collateral requirements, Long-term Loans and Paperwork and Bureaucracy are defined similarly. Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Private and Corporation are dummy variables that indicate whether the firm is (i) a single proprietorship or a partnership or (ii) a corporation. Family, Board and Management are dummy variables that indicate whether the firm is controlled by (i) and individual or family, (ii) its board, or (iii) its management. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US\$. Number of Competitors is the logarithm of the number of competitors the firm has. GDP per capita is real GDP per capita, averaged over 1995-99. French legal origin and Common legal origin are dummy variables that take on the value one for countries with a French Legal Origin tradition and a British Legal Origin tradition, and zero otherwise. Tenure of Supreme Court Judges indicates the length of tenure of Supreme Court judges. Supreme Court Power is a dummy variable that takes on the value one if Supreme Court Judges have life-long tenure and jurisdiction over administrative cases. Case Law is a dummy variable that takes on the value one if judges base their decision on case law. Legal Justification indicates whether judgments have to be based on statutory law rather than on principles of equity. Creditor rights is an indicator of the rights of secured creditor in the restructuring or liquidation of a company. Rule of Law is an indicator of the extent to which the population of a country trusts in the legal system to uphold their legal rights. GDP growth is averaged over 1995 –99 and inflation is based on the CPI.

Panel A: Summary Statistics

	Obs	Mean	Median	Std. Dev.	Min	Max
General Financing Obstacle	3704	2.69	3	1.12	1	4
Collateral	3733	2.52	3	1.10	1	4
Long-term loans	2743	2.52	3	1.22	1	4
Paperwork	3760	2.52	3	1.03	1	4
Government	4111	0.05	0	0.21	0	1
Foreign	4111	0.26	0	0.44	0	1
Exporter	4111	0.43	0	0.50	0	1
Board	4111	0.34	0	0.47	0	1
Management	4111	0.13	0	0.34	0	1
Family	4111	0.40	0	0.49	0	1
Private	4111	0.31	0	0.46	0	1
Corporation	4111	0.46	0	0.50	0	1
Manufacturing	4111	0.40	0	0.49	0	1
Services	4111	0.44	0	0.49	0	1
Sales	4111	15.79	15.79	4.65	-2.12	25.33
No. competitors	4111	0.76	0.69	0.31	0	2.20
GDP per capita	38	7,501	2,915	9,961	109	30,794
British Legal Origin	38	0.39	0	0.50	0	1
French Legal Origin	38	0.55	1	0.50	0	1
Caselaw	38	0.63	1	0.49	0	1
Legal justification	35	0.68	0.67	0.36	0	1
Supreme Court Tenure	38	1.79	2	0.47	0	2
Supreme Court Power	38	0.63	1	0.49	0	1
Creditor rights	29	2.34	2	1.56	0	4
Rule of Law	38	4.05	4	1.29	2	6
GDP growth	38	1.32	1.61	1.72	-2.46	4.24
Inflation	38	10.78	6.89	12.67	-0.40	58.05

Panel B: Correlations of financing obstacles with country variables

	General Financing Obstacle	Collateral	Long-term loans	Paperwork	British Legal Origin	French Legal Origin	Case Law	Legal Justification	Supreme Court Tenure	Supreme Court Power
Collateral	0.43***									
Long-term loans	0.51***	0.45***								
Paperwork	0.34***	0.60***	0.38***							
British Legal Origin	-0.03	-0.09***	-0.21***	-0.13***						
French Legal Origin	0.07***	0.10***	0.28***	0.17***	-0.91***					
Case Law	-0.06**	-0.08***	-0.11***	-0.12***	0.24***	-0.33***				
Legal Justification	0.06***	0.11***	0.26***	0.18***	-0.62***	0.62***	-0.39***			
Supreme Court Tenure	-0.07***	-0.11***	-0.18***	-0.07***	0.34***	-0.38***	0.26***	-0.29***		
Supreme Court Power	-0.02	-0.01	-0.04*	0.02	0.25***	-0.12***	0.45***	-0.28***	0.44***	
GDP per capita	-0.24***	-0.15***	-0.39***	-0.12***	0.07***	-0.08***	-0.02	-0.14***	0.23***	-0.17***

Panel C: Correlations of financing obstacles with firm-level variables

	General financing obstacle	Collateral	Long-term loans	Paperwork	Government	Foreign	Exporter	Board	Management	Family	Private	Corporation	Manufacturing	Services	Sales
Collateral	0.43***														
Long-term loans	0.51***	0.45***													
Paperwork	0.34***	0.60***	0.38***												
Government	-0.04**	-0.06***	-0.04*	-0.06***											
Foreign	-0.15***	-0.14***	-0.10***	-0.08***	0.01										
Exporter	-0.02	-0.06***	-0.04*	-0.05***	0.03*	0.22***									
Board	-0.12***	-0.06***	-0.10***	-0.07***	0.09***	0.13***	0.11***								
Management	0.03*	0.02	0.04**	0.03**	-0.03**	0.05***	0.01	-0.28***							
Family	0.13***	0.11***	0.08***	0.09***	-0.15***	-0.30***	-0.17***	-0.58***	-0.31***						
Private	0.13***	0.13***	0.14***	0.12***	-0.10***	-0.23***	-0.17***	-0.28***	-0.03**	0.38***					
Corporation	-0.11***	-0.14***	-0.19***	-0.16***	0.00	0.23***	0.17***	0.17***	0.03**	-0.26***	-0.62***				
Manufacturing	0.02	0.01	0.05**	0.03	-0.01	0.08***	0.31***	0.01	-0.00	-0.00	-0.05***	0.05***			
Services	-0.07***	-0.03*	-0.07***	-0.03*	-0.01	-0.06***	-0.32***	0.00	0.03*	0.01	0.07***	-0.08***	-0.72***		
Sales	-0.13***	-0.11***	-0.13***	-0.09***	0.02	0.13***	0.02	-0.01	0.11***	-0.11***	-0.08***	0.04**	-0.04**	0.12***	
No. competitors	0.07***	0.00	0.05***	0.01	-0.01	-0.03*	0.05***	-0.07***	-0.02	0.05***	-0.01	0.15***	-0.03	-0.10***	-0.16***

Table III
Financing Obstacles and Legal Origin

The regression estimated is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. \text{ of Competitors} + \beta_{13} GDP \text{ per capita} + \beta_{14} \text{ French legal origin} + \epsilon$. Managers were asked about the obstacles they face to the growth and operation of their firm. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Private and Corporation are dummy variables that indicate whether the firm is (i) a single proprietorship or a partnership or (ii) a corporation. Family, Board and Management are dummy variables that indicate whether the firm is controlled by (i) and individual or family, (ii) its board, or (iii) its management. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US\$. Number of Competitors is the logarithm of the number of competitors the firm has. French legal origin is a dummy variable that takes on the value one for countries with French Legal Origin tradition and zero otherwise. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

	General financing obstacle	Long-term loans	Collateral requirements	Paperwork/bureaucracy
Government	-0.117 (0.160)	-0.026 (0.802)	-0.224 (0.010)***	-0.228 (0.013)**
Foreign	-0.268 (0.000)***	-0.146 (0.010)***	-0.250 (0.000)***	-0.075 (0.086)*
Exporter	0.027 (0.502)	0.024 (0.625)	-0.035 (0.381)	-0.052 (0.178)
Private	-0.011 (0.850)	-0.042 (0.598)	0.128 (0.027)**	0.050 (0.374)
Corporation	0.239 (0.001)***	0.193 (0.035)**	0.273 (0.000)***	0.197 (0.005)***
Family	0.236 (0.000)***	0.086 (0.297)	0.246 (0.000)***	0.145 (0.016)**
Board	0.135 (0.011)**	0.074 (0.216)	0.059 (0.241)	0.045 (0.363)
Management	-0.024 (0.634)	-0.110 (0.069)*	-0.140 (0.005)***	-0.187 (0.000)***
Manufacturing	-0.102 (0.050)*	-0.200 (0.010)***	-0.004 (0.935)	0.015 (0.770)
Services	-0.144 (0.006)***	-0.246 (0.001)***	-0.032 (0.559)	-0.060 (0.249)
Sales	-0.012 (0.005)***	-0.013 (0.005)***	-0.015 (0.000)***	-0.013 (0.001)***
No. competitors	-0.065 (0.318)	0.049 (0.557)	-0.155 (0.016)**	0.030 (0.641)
GDP per capita	-0.176 (0.000)***	-0.288 (0.000)***	-0.114 (0.000)***	-0.067 (0.000)***
French Legal Origin	0.071 (0.078)*	0.314 (0.000)***	0.082 (0.045)**	0.265 (0.000)***
Observations	3704	2743	3733	3760

Table IV
Financing Obstacles, Legal Adaptability and Judicial Independence

The regression estimated is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. \text{ of Competitors} + \beta_{13} GDP \text{ per capita} + \beta_{14} Law + \varepsilon$. Managers were asked about the obstacles they face to the growth and operation of their firm. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Private and Corporation are dummy variables that indicate whether the firm is (i) a single proprietorship or a partnership or (ii) a corporation. Family, Board and Management are dummy variables that indicate whether the firm is controlled by (i) and individual or family, (ii) its board, or (iii) its management. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US\$. Number of Competitors is the logarithm of the number of competitors the firm has. Law is one of four variables. Tenure of Supreme Court Judges indicates the length of tenure of Supreme Court judges. Supreme Court Power is a dummy variable that takes on the value one if Supreme Court Judges have life-long tenure and jurisdiction over administrative cases. Case Law is a dummy variable that takes on the value one if judges base their decision on case law. Legal Justification indicates whether judgments are based on statutory law rather than on principles of equity. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

Panel A:

	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	Collateral requirements	Collateral requirements	Collateral requirements	Collateral requirements
GDP per capita	-0.187 (0.000)***	-0.188 (0.000)***	-0.178 (0.000)***	-0.176 (0.000)***	-0.102 (0.000)***	-0.111 (0.000)***	-0.091 (0.000)***	-0.094 (0.000)***
Case law	-0.167 (0.001)***	-0.137 (0.009)***			-0.142 (0.003)***	-0.166 (0.001)***		
Legal justification			0.159 (0.022)**	0.123 (0.098)*			0.251 (0.000)***	0.291 (0.000)***
Supreme Court Tenure	0.023 (0.650)		0.084 (0.114)		-0.104 (0.034)**		-0.109 (0.033)**	
Supreme Court Power		-0.063 (0.174)		-0.034 (0.485)		0.021 (0.650)		0.034 (0.479)
Observations	2925	2925	2754	2754	2959	2959	2790	2790

Panel B:

	Long-term loans	Long-term loans	Long-term loans	Long-term loans	Paperwork/ bureaucracy	Paperwork/ Bureaucracy	Paperwork/ Bureaucracy	Paperwork/ bureaucracy
GDP per capita	-0.344 (0.000)***	-0.333 (0.000)***	-0.333 (0.000)***	-0.320 (0.000)***	-0.065 (0.000)***	-0.050 (0.001)***	-0.059 (0.000)***	-0.035 (0.039)**
Case law	-0.138 (0.015)**	-0.135 (0.022)**			-0.230 (0.000)***	-0.296 (0.000)***		
Legal justification			0.525 (0.000)***	0.564 (0.000)***			0.455 (0.000)***	0.551 (0.000)***
Supreme Court Tenure	0.067 (0.285)		0.047 (0.474)		0.039 (0.449)		0.017 (0.752)	
Supreme Court Power		0.023 (0.650)		0.071 (0.216)		0.175 (0.000)***		0.184 (0.000)***
Observations	2246	2246	2115	2115	2978	2978	2806	2806

Table V
Financing Obstacles, Legal Adaptability and Judicial Independence: Controlling for Creditor Rights

The regression estimated is: Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4 Private + β_5 Corporation + β_6 Family + β_7 Board + β_8 Management + β_9 Manufacturing + β_{10} Services + β_{11} Sales + β_{12} No. of Competitors + β_{13} GDP per capita + β_{14} Law + β_{15} Creditor Rights + ϵ . Managers were asked about the obstacles they face to the growth and operation of their firm. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Private and Corporation are dummy variables that indicate whether the firm is (i) a single proprietorship or a partnership or (ii) a corporation. Family, Board and Management are dummy variables that indicate whether the firm is controlled by (i) and individual or family, (ii) its board, or (iii) its management. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US\$. Number of Competitors is the logarithm of the number of competitors the firm has. Law is one of four variables. Tenure of Supreme Court Judges indicates the length of tenure of Supreme Court judges. Supreme Court Power is a dummy variable that takes on the value one if Supreme Court Judges have life-long tenure and jurisdiction over administrative cases. Case Law is a dummy variable that takes on the value one if judges base their decision on case law. Legal Justification indicates whether judgments are based on statutory law rather than on principles of equity. Creditor Rights is an index of the extent to which secured creditors are protected in the case of restructuring or liquidation of a company. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

Panel A:

	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	Collateral requirements	Collateral requirements	Collateral requirements	Collateral requirements
GDP per capita	-0.200 (0.000)***	-0.215 (0.000)***	-0.186 (0.000)***	-0.215 (0.000)***	-0.117 (0.000)***	-0.119 (0.000)***	-0.094 (0.000)***	-0.100 (0.000)***
Creditor rights	-0.019 (0.326)	-0.021 (0.229)	-0.012 (0.540)	-0.025 (0.188)	-0.023 (0.215)	-0.035 (0.039)**	-0.002 (0.933)	-0.021 (0.247)
Case law	-0.171 (0.003)***	-0.150 (0.013)**			-0.119 (0.031)**	-0.153 (0.008)***		
Legal justification			0.137 (0.085)*	0.064 (0.454)			0.241 (0.002)***	0.245 (0.003)***
Supreme Court Tenure	-0.107 (0.349)		-0.192 (0.084)*		-0.195 (0.071)*		-0.269 (0.010)**	
Supreme Court Power		-0.094 (0.081)*		-0.125 (0.019)**		0.042 (0.429)		0.040 (0.447)
Observations	2463	2463	2463	2463	2495	2495	2495	2495

Panel B:

	Long-term loans	Long-term loans	Long-term loans	Long-term loans	Paperwork/bureaucracy	Paperwork/bureaucracy	Paperwork/bureaucracy	Paperwork/bureaucracy
GDP per capita	-0.377 (0.000)***	-0.397 (0.000)***	-0.321 (0.000)***	-0.340 (0.000)***	-0.117 (0.000)***	-0.089 (0.000)***	-0.080 (0.000)***	-0.048 (0.019)**
Creditor rights	-0.017 (0.403)	-0.024 (0.234)	0.052 (0.025)**	0.027 (0.214)	-0.079 (0.000)***	-0.078 (0.000)***	-0.047 (0.016)**	-0.049 (0.005)***
Case law	-0.204 (0.002)***	-0.199 (0.003)***			-0.243 (0.000)***	-0.297 (0.000)***		
Legal justification			0.658 (0.000)***	0.619 (0.000)***			0.394 (0.000)***	0.493 (0.000)***
Supreme Court Tenure	-0.198 (0.098)*		-0.356 (0.002)***		0.139 (0.209)		-0.001 (0.990)	
Supreme Court Power		-0.108 (0.061)*		-0.011 (0.859)		0.201 (0.000)***		0.208 (0.000)***
Observations	1935	1935	1935	1935	2509	2509	2509	2509

Table VI

Financing Obstacles, Legal Adaptability and Judicial Independence: Controlling for Rule of Law

The regression estimated is: Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4 Private + β_5 Corporation + β_6 Family + β_7 Board + β_8 Management + β_9 Manufacturing + β_{10} Services + β_{11} Sales + β_{12} No. of Competitors + β_{13} GDP per capita + β_{14} Law + β_{15} Rule of Law + ϵ . Managers were asked about the obstacles they face to the growth and operation of their firm. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Private and Corporation are dummy variables that indicate whether the firm is (i) a single proprietorship or a partnership or (ii) a corporation. Family, Board and Management are dummy variables that indicate whether the firm is controlled by (i) and individual or family, (ii) its board, or (iii) its management. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US\$. Number of Competitors is the logarithm of the number of competitors the firm has. Law is one of four variables. Tenure of Supreme Court Judges indicates the length of tenure of Supreme Court judges. Supreme Court Power is a dummy variable that takes on the value one if Supreme Court Judges have life-long tenure and jurisdiction over administrative cases. Case Law is a dummy variable that takes on the value one if judges base their decision on case law. Legal Justification indicates whether judgments are based on statutory law rather than on principles of equity. Rule of law is a survey-based country-level variable of the degree to which its citizen trust the legal system to uphold their rights. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

Panel A:

	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	Collateral requirements	Collateral requirements	Collateral requirements	Collateral requirements
GDP per capita	-0.155 (0.000)***	-0.155 (0.000)***	-0.140 (0.000)***	-0.144 (0.000)***	-0.088 (0.000)***	-0.091 (0.000)***	-0.066 (0.004)***	-0.063 (0.007)***
Rule of Law	-0.059 (0.008)***	-0.057 (0.007)***	-0.063 (0.012)**	-0.050 (0.034)**	-0.028 (0.214)	-0.036 (0.092)*	-0.042 (0.093)*	-0.050 (0.033)**
Case law	-0.153 (0.002)***	-0.113 (0.031)**			-0.137 (0.004)***	-0.153 (0.002)***		
Legal justification			0.120 (0.087)*	0.079 (0.302)			0.227 (0.001)***	0.250 (0.001)***
Supreme Court Tenure	0.061 (0.259)		0.127 (0.024)**		-0.086 (0.100)*		-0.078 (0.149)	
Supreme Court Power		-0.075 (0.105)		-0.044 (0.367)		0.014 (0.761)		0.025 (0.606)
Observations	2925	2925	2754	2754	2959	2959	2790	2790

Panel B:

	Long-term loans	Long-term loans	Long-term loans	Long-term loans	Paperwork/ Bureaucracy	Paperwork/ Bureaucracy	Paperwork/ Bureaucracy	Paperwork/ bureaucracy
GDP per capita	-0.245 (0.000)***	-0.231 (0.000)***	-0.279 (0.000)***	-0.275 (0.000)***	-0.024 (0.204)	-0.013 (0.503)	-0.008 (0.709)	0.008 (0.724)
Rule of Law	-0.142 (0.000)***	-0.141 (0.000)***	-0.073 (0.030)**	-0.059 (0.075)*	-0.082 (0.000)***	-0.068 (0.001)***	-0.087 (0.000)***	-0.071 (0.002)***
Case law	-0.063 (0.284)	-0.035 (0.568)			-0.216 (0.000)***	-0.272 (0.000)***		
Legal justification			0.454 (0.000)***	0.490 (0.000)***			0.406 (0.000)***	0.493 (0.000)***
Supreme Court Tenure	0.102 (0.110)		0.081 (0.229)		0.095 (0.080)*		0.081 (0.153)	
Supreme Court Power		-0.030 (0.556)		0.053 (0.367)		0.163 (0.000)***		0.172 (0.000)***
Observations	2246	2246	2115	2115	2978	2978	2806	2806

Table VII
Obstacles to Growth, Legal Adaptability and Judicial Independence: Controlling for Growth and Inflation

The regression estimated is: Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4 Private + β_5 Corporation + β_6 Family + β_7 Board + β_8 Management + β_9 Manufacturing + β_{10} Services + β_{11} Sales + β_{12} No. of Competitors + β_{13} GDP per capita + β_{14} Law + β_{15} Growth + β_{16} Inflation + ε . Managers were asked about the obstacles they face to the growth and operation of their firm. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Private and Corporation are dummy variables that indicate whether the firm is (i) a single proprietorship or a partnership or (ii) a corporation. Family, Board and Management are dummy variables that indicate whether the firm is controlled by (i) and individual or family, (ii) its board, or (iii) its management. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US\$. Number of Competitors is the logarithm of the number of competitors the firm has. Law is one of four variables. Tenure of Supreme Court Judges indicates the length of tenure of Supreme Court judges. Supreme Court Power is a dummy variable that takes on the value one if Supreme Court Judges have life-long tenure and jurisdiction over administrative cases. Case Law is a dummy variable that takes on the value one if judges base their decision on case law. Legal Justification indicates whether judgments are based on statutory law rather than on principles of equity. Growth is GDP growth averaged over 1995-99. Inflation is the log difference in the CPI, averaged over 1995-99. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

Panel A:

	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	Collateral requirements	Collateral requirements	Collateral requirements	Collateral requirements
GDP per capita	-0.164 (0.000)***	-0.154 (0.000)***	-0.138 (0.000)***	-0.105 (0.000)***	-0.089 (0.000)***	-0.097 (0.000)***	-0.066 (0.000)***	-0.044 (0.027)**
Growth	-7.109 (0.000)***	-7.183 (0.000)***	-9.264 (0.000)***	-9.857 (0.000)***	-9.876 (0.000)***	-10.014 (0.000)***	-11.932 (0.000)***	-13.414 (0.000)***
Inflation	0.397 (0.068)*	0.360 (0.104)	0.296 (0.177)	0.298 (0.180)	-1.103 (0.000)***	-0.956 (0.000)***	-1.137 (0.000)***	-0.949 (0.000)***
Case law	-0.139 (0.006)***	-0.136 (0.012)**			-0.068 (0.157)	-0.102 (0.046)**		
Legal justification			0.192 (0.006)***	0.228 (0.003)***			0.257 (0.000)***	0.359 (0.000)***
Supreme Court Tenure	0.087 (0.096)*		0.184 (0.001)***		-0.131 (0.011)**		-0.089 (0.098)*	
Supreme Court Power		0.029 (0.557)		0.135 (0.015)**		0.032 (0.507)		0.147 (0.007)***
Observations	2925	2925	2754	2754	2959	2959	2790	2790

Panel B:

	Long-term loans	Long-term loans	Long-term loans	Long-term loans	Paperwork/ Bureaucracy	Paperwork/ Bureaucracy	Paperwork/ Bureaucracy	Paperwork/ Bureaucracy
GDP per capita	-0.271 (0.000)***	-0.256 (0.000)***	-0.248 (0.000)***	-0.198 (0.000)***	-0.056 (0.000)***	-0.032 (0.048)**	-0.039 (0.024)**	0.017 (0.378)
Growth	-10.063 (0.000)***	-10.127 (0.000)***	-9.139 (0.000)***	-10.113 (0.000)***	-4.608 (0.002)***	-5.217 (0.000)***	-7.304 (0.000)***	-9.533 (0.000)***
Inflation	0.328 (0.208)	0.384 (0.154)	0.402 (0.130)	0.605 (0.028)**	-0.246 (0.241)	-0.017 (0.937)	-0.411 (0.055)*	-0.164 (0.451)
Case law	-0.120 (0.039)**	-0.133 (0.028)**			-0.208 (0.000)***	-0.292 (0.000)***		
Legal justification			0.526 (0.000)***	0.640 (0.000)***			0.471 (0.000)***	0.635 (0.000)***
Supreme Court Tenure	0.077 (0.227)		0.098 (0.138)		0.046 (0.375)		0.051 (0.352)	
Supreme Court Power		0.074 (0.166)		0.203 (0.001)***		0.223 (0.000)***		0.310 (0.000)***
Observations	2246	2246	2115	2115	2978	2978	2806	2806

Table VIII

Firms' Obstacles to Growth, Legal Adaptability and Judicial Independence: Probit regressions

The regression estimated is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. \text{ of Competitors} + \beta_{13} GDP \text{ per capita} + \beta_{14} Law + \epsilon$. Managers were asked about the obstacles they face to the growth and operation of their firm. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). We recode a dummy variable that takes the value zero if the respective obstacle takes the value one or two and one otherwise. Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Private and Corporation are dummy variables that indicate whether the firm is (i) a single proprietorship or a partnership or (ii) a corporation. Family, Board and Management are dummy variables that indicate whether the firm is controlled by (i) and individual or family, (ii) its board, or (iii) its management. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US\$. Number of Competitors is the logarithm of the number of competitors the firm has. Law is one of four variables. Tenure of Supreme Court Judges indicates the length of tenure of Supreme Court judges. Supreme Court Power is a dummy variable that takes on the value one if Supreme Court Judges have life-long tenure and jurisdiction over administrative cases. Case Law is a dummy variable that takes on the value one if judges base their decision on case law. Legal Justification indicates whether judgments are based on statutory law rather than on principles of equity. The regression is run with probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses

Panel A:

	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	General Financial Obstacle	Collateral requirements	Collateral requirements	Collateral requirements	Collateral requirements
GDP per capita	-0.180 (0.000)***	-0.183 (0.000)***	-0.170 (0.000)***	-0.174 (0.000)***	-0.082 (0.000)***	-0.106 (0.000)***	-0.074 (0.000)***	-0.093 (0.000)***
Case law	-0.168 (0.004)***	-0.130 (0.033)**			-0.157 (0.005)***	-0.164 (0.005)***		
Legal justification			0.190 (0.019)**	0.140 (0.103)			0.330 (0.000)***	0.350 (0.000)***
Supreme Court Tenure	0.019 (0.769)		0.057 (0.404)		-0.211 (0.001)***		-0.217 (0.002)***	
Supreme Court Power		-0.085 (0.120)		-0.072 (0.213)		-0.062 (0.246)		-0.046 (0.419)
Observations	2925	2925	2754	2754	2959	2959	2790	2790

Panel B:

	Long-term loans	Long-term loans	Long-term loans	Long-term loans	Paperwork/ bureaucracy	Paperwork/ Bureaucracy	Paperwork/ Bureaucracy	Paperwork/ bureaucracy
GDP per capita	-0.389 (0.000)***	-0.364 (0.000)***	-0.376 (0.000)***	-0.351 (0.000)***	-0.064 (0.000)***	-0.061 (0.000)***	-0.061 (0.002)***	-0.051 (0.013)**
Case law	-0.173 (0.009)***	-0.173 (0.012)**			-0.251 (0.000)***	-0.314 (0.000)***		
Legal justification			0.569 (0.000)***	0.609 (0.000)***			0.532 (0.000)***	0.620 (0.000)***
Supreme Court Tenure	0.147 (0.040)**		0.125 (0.091)*		-0.059 (0.354)		-0.090 (0.191)	
Supreme Court Power		0.066 (0.277)		0.101 (0.122)		0.129 (0.016)**		0.132 (0.020)**
Observations	2246	2246	2115	2115	2978	2978	2806	2806