

Law and Firms' Access to Finance

Thorsten Beck, Asli Demirgüç-Kunt and Ross Levine

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Beck and Demirgüç-Kunt: World Bank (tbeck@worldbank.org and ademirguckunt@worldbank.org respectively); Levine: Carlson School of Management, University of Minnesota and the NBER, 321 19th Avenue South, Minneapolis, MN 55455 (rlevine@csom.umn.edu). The authors thank Andrei Shleifer and an anonymous referee for very helpful comments. This paper's findings, interpretations, and conclusions are entirely those of the authors and do not necessarily represent the views of the World Bank, its Executive Directors, or the countries they represent.

Abstract: This paper contributes to the literature on how a country's legal origin influences the operation of its financial system by using firm-level survey data on the obstacles that firms face in raising external finance. The paper assesses two channels through which legal origin may influence the financial system. It finds that the adaptability of a country's legal system is more important for explaining the obstacles that firms face in accessing external finance than the political independence of the judiciary.

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 (1997, 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 cross-country differences in aggregate measures of financial development, such as the size of the banking sector and national stock market capitalization.¹ At the microeconomic level, empirical work suggests that legal systems influence the external financing constraints faced by firms.²

Hayek (1960) emphasizes two major differences across legal traditions that may help account for the relationship between legal origin and the functioning of the financial system: (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.³ 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 the financial environment, including the ease with which firms can contract to raise external finance.

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 in general and external finance in particular than more rigid systems and (b) legal traditions differ in their ability to evolve with changing conditions. An influential, although not unanimous, 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.⁴ 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 Kötz, 1998). The adaptability channel, therefore, argues that the flexibility of the legal system – as characterized by the level of jurisprudence and legal formalism -- will shape financial contracting and hence corporate financing obstacles.

This paper contributes to a growing empirical literature on why legal origin matters by studying which legal system traits –judicial independence from the government and the ability of courts to adapt to changing conditions -- influence the obstacles that firms face in raising capital. Thus, this paper provides empirical evidence on the linkages running from legal origin, to specific legal system traits, and on to particular obstacles that firms report they confront in contracting for external finance. While Beck et al. (2003a) examine the importance of the political and adaptability channels in explaining cross-country differences in aggregate indexes of bank and stock market development, this paper examines firm-level survey data on the obstacles that firms face in raising external finance. One of the functions performed by a well-functioning financial system is to facilitate the flow of credit to firms. Thus, to provide additional evidence on why legal origin matters, we examine the comparative importance of the political and adaptability channels in explaining specific barriers to firms obtaining external finance.⁵

To measure empirically the political and adaptability channels, we use indexes 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 processes are based on principles of equity rather than purely on statutory law and legal formalities. 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, which highlights the role of case law and not adhering too rigidly to statutory law in making judgments. Thus, the adaptability index is a subset of the Djankov et al. (2003) legal formalism index that only 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.⁶ 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 how firms respond to questions about the general financing obstacles they face in raising capital, the degree to which collateral requirements impede firms' access to finance, the extent to which bank bureaucracy and paperwork represents an important barrier to obtaining external finance,

and difficulty in having access to long-term loans. Thus, we assess whether different legal tradition traits – political independence of the judiciary and legal system adaptability – explain specific obstacles that firms report they confront in obtaining external finance.

This paper is related to four recent papers seeking to discover which legal system characteristics facilitate economic interactions. First, La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2004) 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. Second 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 financing obstacles reported by firms. Third, Djankov et al. (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. Finally, as noted above, Beck et al. (2003a) find that the adaptability channel is more important than the political channel in explaining aggregate indexes of bank and stock market 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.

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 analyses. 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.

Furthermore, some may argue that the political and adaptability channels are inextricably intertwined. While the political and adaptability views of why legal origin matters for finance 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. Nevertheless, the two channels may be so interrelated that neither exerts an independent impact on firm financing obstacles. This is an empirical question that we address.

A number of methodological concerns need to be noted. First, we use survey data, where firms subjectively report financing obstacles. Thus a firm facing the same obstacles in two different countries may report different obstacles for reasons that do not depend on actual constraints. Although it is not clear that this would bias the results in any particular direction, we discuss evidence on the validity of the survey information below. A second and related methodological issue involves the measures of financing obstacles. None of the four measures is ideal. The general financing obstacle indicator captures a firm's broad assessment about the degree to which external financing constraints impede the operation and growth of the firm, but the indicator does not measure a specific inefficiency in the contracting environment. Furthermore, while we examine more specific financing impediments, such as collateral requirements, the availability of long-term finance, and the extent of bank paperwork and bureaucracy, each of these measures may miss crucial elements of how the legal system affects firms' ability to contract for external finance. While fully recognizing these limitations, we

believe that (a) moving from the aggregate measures of financial development used by Beck et al. (2003a) to firm-level indicators of financing obstacles provides additional evidence on how legal origin influences the operation of the financial system, (b) measurement concerns are mitigated by using a range of firm responses regarding different financing obstacles, and (c) there are material advantages to using firm level responses rather than alternative measures of firm financing constraints, which we discuss in the next section. Third, the adaptability channel is inherently dynamic in that it focuses on the efficient flexibility of legal systems. We use purely cross-sectional data on jurisprudence and legal formalism as proxies for adaptability, but we unfortunately do not have time-series information on the comparative degree of efficient legal system adaptability for a broad cross-section of countries. Pistor et al. (2000) and Keinan (2000) provide detailed comparisons of the evolution of statutes regarding corporate law and the law on secured transactions for a few key countries, but more research would be useful along these lines.

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 legal system traits and firms' access to finance, we combine firm-level survey data with country-level indicators on the operation of legal systems. The intersection of these databases produces a sample of over 4,000 firms and 38 countries. Table 1 presents observations by country. Table 2 gives descriptive statistics and correlations.

2.1. Firm's access to finance

The corporate finance literature has used different approaches for inferring the degree to which firms that 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. Demirguc-Kunt and Maksimovic (1998) rely on a financial planning model to identify firms that have access to long-term external financing.

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).

Although 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, we do not believe the survey nature of the data is distorting the results. First, 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. Also, Hellman et al. (2000) show that in a sub-sample of 20 countries there is a close connection between responses and measurable outcomes, and they find no systematic bias in the survey responses. Furthermore, Beck, Demirguc-Kunt, and Maksimovic (2005) show that reported financing obstacles slow firm growth. Thus, firms' responses to the survey on financing obstacles are capturing more than idiosyncratic differences in how firms rank obstacles. Finally, legal system traits could hurt economic growth opportunities without influencing firms' access to capital. Firms in countries with worse opportunities may blame this on financing obstacles. Thus, the causal mechanism may run from legal characteristics to growth opportunities to reported lack of access and not from legal characteristics to actual lack of access. Below, however, we show that the results hold even when controlling for growth opportunities, as measured by the overall level of economic development as well as recent rates of economic growth.

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 1 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).⁷

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 (Demirguc-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 significantly, positively correlated with each other (Table 2B). The correlation coefficient ranges from 0.34 to 0.60. This suggests that each financial obstacle indicator provides independent information on the barriers that firms report they face in raising capital.

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 governance system for 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 major decisions are primarily made 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 its board, 13% by management and 40% by an individual or family. 31% of the firms are single proprietorships or partnership, 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 2C indicate that government and foreign-owned firms, firms controlled by its 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.⁸ Similarly, 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).

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 is from La Porta, et al. (2004).

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 Courts 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 et al., 2004) 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 et al., 2003) indicates whether the legal process is based on statutory law rather than on principles of equity.⁹ 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 law. The adaptability channel predicts that firms in countries where judicial decisions are based purely on statutory law rather than principles of equity face greater rigidities in writing contracts that facilitate the flow of external capital to firms.

Firms in French legal origin countries report higher financing obstacles due to collateral requirements, access to long-term loans and paperwork and bureaucracy (Table 2B). 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) where 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 2B). 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.

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:

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

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

Importantly, we control for GDP per capita in all of the regressions. 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. As shown in Table 2B, firms in richer countries face lower obstacles raising external finance.

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. 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 3 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 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 major obstacle is two percentage points higher than in other countries; the probability that it rates the lack of access to long-term loans as major obstacle is 10 percentage points higher and the probability that it rates paperwork and bureaucracy as major obstacle is seven percentage points higher.

The results in Table 3 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 4 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 obstacles 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 4 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 five 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 4 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. 2004).

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 a major obstacle is five percentage point 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 four percentage points lower in countries that base judicial decisions on principles of equity rather than statutory law. The corresponding numbers for Collateral Requirements, Long-term Loans and Paperwork and Bureaucracy are four, four, and six percentage points for Case law and seven, 15 and 11 percentage points for Legal Justification. These are conservative estimates since we report the results from the regressions that yield the smallest economic impact. The results indicate that Case Law has an especially strong impact on paperwork and bureaucracy as a financing obstacle, while Legal Justification has an especially strong impact on access to long-term funding.

In sum, there are three main findings in Tables 3 and 4. First, firms in French Legal Origin countries face higher obstacles in accessing and contracting for 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 5-8, we check the robustness of these results by controlling for (i) creditor rights, (ii) rule of law, (iii) growth, (iv) inflation, (v) the measurement of the financing obstacles, and (vi) the availability of finance.

First, to assess the strength of the independent relationship between reported financing obstacles and the adaptability channel, we control for specific legal codes that protect the rights of creditors (La Porta et al., 1997, 1998). Specifically, we want to assess whether broad legal system traits, such as adaptability and judicial independence, matter or whether firms' financing obstacles are driven by specific legal codes. Creditor Rights measures the rights that secured creditors have vis-à-vis firms in restructuring and liquidation.

The results in Table 5 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 fosters efficient legal system adaptability and 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 Financing 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 three out of 16 regressions. Finally, when controlling for legal

system characteristics, Creditor Rights only enters significantly and negatively in the regressions where the dependent variable is of Paperwork and Bureaucracy.

Second, to provide additional information on the strength of the independent link between reported financing obstacles and legal system adaptability, we control for a general indicator of the efficiency of the legal system. We use the Rule of Law indicator compiled by International Country Risk Guide (ICRG).

The Table 6 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, economic growth and inflation could influence the results and lead to spurious findings. Perhaps the legal system influences growth but does not influence access to finance. However, firms in growing countries may report that financing obstacles are less of a constraint than firms in slow growing countries even though the actual contracting environment is similar. Thus, we control for real per capita GDP growth over the period 1995-1999. Furthermore, firms in low inflation environments may face easier contracting conditions.¹⁰ Thus, we control for the rate of inflation.

The Table 7 results, however, show that the results are robust to controlling for 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 mostly 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 8 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.

Fifth, we were concerned that the results could be driven only by the supply of intermediated funds, rather than financing obstacles. Thus, we used an additional firm-level variable from the survey as a regressor in the analyses. The survey asked firms, “Is banks' lack of money to lend: (1) no obstacle, (2) a minor obstacle, (3) a moderate obstacle, or (4) a major obstacle?” Including this additional control variable, however, did not change the results on the channels through which legal origin influences reported financing obstacles. While we do not report these regressions to save space, the

regression results are very similar to those reported above. Although the “lack of money” indicator enters all of the obstacle regressions significantly and positively, we continue to find that legal system adaptability is negatively associated with reported firm financing obstacles, while the indicators of judicial independence are unrelated to the financing obstacles.

We ran two further robustness tests. 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 the relationship between measures of two, key legal system traits –judicial independence and the adaptability of the legal system -- and the obstacles that firms report they face in contracting for external finances. First, the data indicate that firms in French Legal Origin countries face higher obstacles in contracting for external finance than firms in other countries, which suggests that legal heritage exerts a powerful influence over firms’ access to finance. Second, as documented by Djankov et al. (2003) and La Porta et al. (2004), French Legal Origin countries tend to have (a) judiciaries that are less independent from the government and (b) judiciaries that 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. Third, 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 report they face in accessing external finance. Finally, 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 do not lend much support for the political channel. In general, the results emphasize that legal system adaptability is important for corporate finance.

References

- Acemoglu, Daron, and Simon Johnson. 2003. "Unbundling Institutions," National Bureau of Economic Research Working Paper, Number 9934.
- Bailey, Martin J., and Paul H. Rubin. 1994. "A Positive Theory of Legal Change," 14 *International Review of Law and Economics* 467-77.
- Beck, Thorsten, Ross Levine, and Norman Loayza. 2000. "Finance and the Sources of Growth," 58 *Journal of Financial Economics* 261-300.
- Beck, Thorsten, and Ross Levine. 2002. "Industry Growth and Capital Allocation: Does Having a Market- or Bank-based System Matter?," 64 *Journal of Financial Economics* 147-80.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. 2003a. "Law and Finance: Why Does Legal Origin Matter?," 31 *Journal of Comparative Economics* 653-75.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. 2003b. "Law, Endowments, and Finance," 70 *Journal of Financial Economics* 137-81.
- Beck, Thorsten, and Ross Levine. 2004. "Legal Institutions and Financial Development," in Mary Shirley, ed., *Handbook of New Institutional Economics*. Norwell, MA: Kluwer Academic Press, forthcoming.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Vojislav Maksimovic. 2005. "Financial and Legal Constraints to Firm Growth: Does Size Matter?," *Journal of Finance*, forthcoming.
- Berkowitz, Daniel and Karen B. Clay. 2004. "The effect of judicial independence on courts: Evidence from the American states," University of Pittsburgh, mimeo
- Bester, Helmut. 1985. "Screening vs. Rationing in Credit Markets with Imperfect

- Information,” *75 American Economic Review* 850-55.
- Blume, Lawrence E., and Daniel L. Rubinfeld. 1982. “The Dynamics of the Legal Process,” *11 Journal of Legal Studies* 405-19.
- Boyd, John H., Ross Levine, and Bruce D. Smith. 2001. “The Impact of Inflation on Financial Sector Performance,” *47 Journal of Monetary Economics* 221-48.
- Caprio, Gerard, Luc Laeven, and Ross Levine. 2003. “Governance and Bank Valuation,” World Bank mimeo.
- Coffee, John. 2000. “Privatization and Corporate Governance: The Lessons from the Securities Market Failure,” Unpublished Working Paper 158. New York: Columbia Law School.
- Cooter, Robert, Lewis Kornhauser, and David Lane. 1979. “Liability Rules, Limited Information, and the Role of Precedent,” *10 Bell Journal of Economics* 366-81.
- Cooter, Robert, and Lewis Kornhauser. 1980. “Can Litigation Improve the Law without the Help of Judges?,” *9 Journal of Legal Studies* 139-63.
- Dawson, John P. 1960. *A History of Lay Judges*. Cambridge, MA: Harvard University Press.
- Dawson, John P. 1968. *The Oracles of the Law*. Ann Arbor, MI: University of Michigan Law School (Reprinted in 1986 by William S. Hein & Co., Inc. Buffalo, New York).
- Demirgüç-Kunt, Asli, and Vojislav Maksimovic. 1998. “Law, Finance, and Firm Growth,” *53 Journal of Finance* 2107-37.
- Demirgüç-Kunt, Asli, and Vojislav Maksimovic. 1999. “Institutions, Financial Markets and Firm Debt Maturity,” *54 Journal of Financial Economics* 295-336.

- Demirgüç-Kunt, Asli, and Vojislav Maksimovic. 2002. "Funding Growth in Bank-based and Market-based Financial Systems: Evidence from Firm Level Data," 65 *Journal of Financial Economics* 337-63.
- Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2003. "Courts," 117 *Quarterly Journal of Economics* 1-37.
- Fazzari, Steven M., Robert G. Hubbard, and Bruce C. Petersen. 1988. "Financing Constraints and Corporate Investment," 19 *Brookings Papers on Economic Activity* 141-95.
- Hayek, Friedrich. 1960. *The Constitution of Liberty*. Chicago, IL: The University of Chicago Press.
- Hellman, Joel, Geraint Jones, Daniel Kaufmann, and Mark Schankerman. 2000. "Measuring Governance and State Capture: The Role of Bureaucrats and Firms in Shaping the Business Environment," European Bank for Reconstruction and Development, WP #51.
- Johnson, Simon, Peter Boone, Alasdair Breach, and Eric Friedman. 2000. "Corporate Governance in the Asian Financial Crisis," 58 *Journal of Financial Economics* 141-86.
- Johnson, Simon, John McMillan, and Christopher Woodruff. 2002. "Property Rights and Finance," 92 *American Economic Review* 1335-56.
- Kaplow, Louis. 1992. "Rules versus Standards: An Economic Analysis," 42 *Duke Law Journal* 557-629.
- Keinan, Yoram. 2000. "The Evolution of Secured Transactions," Unpublished Working Paper, University of Michigan Law School.

- Klerman, Daniel M. and Paul G. Mahoney. 2004. "The Value of Judicial Independence: Evidence from 18th Century England," *American Law and Economic Review*, forthcoming.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, Robert W. Vishny. 1997. "Legal Determinants of External Finance," *52 Journal of Finance* 1131-50.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 1998. "Law and Finance," *106 Journal of Political Economy* 1113-55.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 1999. "The Quality of Government," *15 Journal of Law, Economics, and Organization* 222-79.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 2000. "Agency Problems and Dividend Policies around the World," *55 Journal of Finance* 1-33.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 2002. "Investor Protection and Corporate Governance," *57 Journal of Finance* 1147-70.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Cristian Pop-Eleches, and Andrei Shleifer. 2004. "Judicial Checks and Balances," *112 Journal of Political Economy* 445-70.
- Levine, Ross. 1997. "Financial Development and Economic Growth: Views and Agenda," *35 Journal of Economic Literature* 688-726.
- Levine, Ross. 1998. "The Legal Environment, Banks, and Long-run Economic Growth," *30 Journal of Money, Credit, and Banking* 596-613.

- Levine, Ross. 1999. "Law, Finance, and Economic Growth," 8 *Journal of Financial Intermediation* 36-67.
- Levine, Ross. 2003. "Napoleon, Bourses, and Growth: With a Focus on Latin America," in Azfar Omar and Charles Cadwell, eds., *Market Augmenting Government: Essays in Honor of Mancur Olson*. Ann Arbor, MI: University of Michigan Press.
- Levine, Ross. 2005. "Finance and Growth: Theory, Evidence, and Mechanisms," in Philippe Aghion and Steven Durlauf, eds., *Handbook of Economic Growth*. Amsterdam: North-Holland Elsevier Publishers, forthcoming.
- Levine, Ross, Norman Loayza, and Thorsten Beck. 2000. "Financial Intermediation and Growth: Causality and Causes," 46 *Journal of Monetary Economics* 31-77.
- Mahoney, Paul. 2001. "The Common Law and Economic Growth: Hayek Might Be Right," 30 *Journal of Legal Studies* 503-25.
- Merryman, John H. 1985. *The Civil Law Tradition: An Introduction to the Legal Systems of Western Europe and Latin America*. Stanford, CA: Stanford University Press.
- Merryman, John H. 1996. "The French Deviation," 44 *The American Journal of Comparative Law* 109-19.
- Morck, Randall, Bernard Yeung, and Wayne Yu. 2000. "The Information Content of Stock Markets: Why Do Emerging Markets Have Synchronous Stock Price Movements?," 58 *Journal of Financial Economics* 215-60.
- Pagano, Marco, and Paolo Volpin. 2001. "The Political Economy of Finance," 17 *Oxford Review of Economic Policy* 502-19.
- Pistor, Katharina, Yoram Keinan, Jan Kleinheisterkamp, and Mark D. West. 2000. "The Evolution of Corporate Law," Unpublished Working Paper, Harvard University

- (Kennedy School of Government).
- Posner, Richard A. 1973. *Economic Analysis of the Law*. Boston, MA: Little-Brown.
- Priest, George L. 1977. "The Common Law Process and the Selection of Efficient Rules," 6 *Journal of Legal Studies* 65-82.
- Rajan, Raghuram G., and Luigi Zingales. 1998. "Financial Dependence and Growth," 88 *American Economic Review* 559-86.
- Rajan, Raghuram G., and Luigi Zingales. 2003. "The Great Reversals: The Politics of Financial Development in the 20th Century," 69 *Journal of Financial Economics* 5-50.
- Rubin, Paul H. 1982. "Common Law and Statute Law," 11 *Journal of Legal Studies* 205-33.
- Stiglitz, Joseph E., and Allan Weiss. 1981. "Credit Rationing in Markets with Imperfect Information," 71 *American Economic Review* 393-410.
- Wurgler, Jeffrey. 2000. "Financial Markets and the Allocation of Capital," 58 *Journal of Financial Economics* 187-214.
- Zweigert, Konrad, and Hein Kötz. 1998. *An Introduction to Comparative Law*. New York: Oxford University Press.

¹ For more on the links between legal origin and financial development, see Levine (1998, 1999, 2003). Moreover, research finds that legal institutions influence the efficiency with which financial systems allocate capital (Wurgler, 2000; Beck and Levine, 2002), the valuation of firms (LLSV 2002 and 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, Demirguc-Kunt, and Levine (2003b) document the robust connection between legal origin and equity market development and the 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 (2004) for a survey of the law and finance literature.

² See Demirguc-Kunt and Maksimovic (1998, 2002), Rajan and Zingales (1998), and Beck and Levine (2002).

³ 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.

⁴ See, Rubin (1977, 1982), Priest (1977), and Bailey and Rubin (1994).

⁵ For two fascinating case-studies of the importance of judicial independence in England and the United States, see Klerman and Mahoney (2004) and Berkowitz and Clay (2004) respectively. They do not, however, consider the potential role of the adaptability channel.

⁶ 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.

⁷ 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.

⁸ 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. 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.

⁹ Djankov et al. (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-payments of rent and the collection of a bounced check.

¹⁰ 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.

Table 1. Legal origin, judicial independence and legal adaptability across countries

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

Note: 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.

Table 2. Summary Statistics and Correlations**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

Note: 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 British 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 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***	-0.33***				
Legal Justification	0.06***	0.11***	0.26***	0.18***	0.62***	-0.39***			
Supreme Court Tenure	-0.07***	-0.11***	-0.18***	-0.07***	-0.38***	0.26***	-0.29***		
Supreme Court Power	-0.02	-0.01	-0.04*	0.02	-0.12***	0.45***	-0.28***	0.44***	
GDP per capita	-0.24***	-0.15***	-0.39***	-0.12***	-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***								
Management	0.03*	0.02	0.04**	0.03**	-0.03**	0.01	-0.28***							
Family	0.13***	0.11***	0.08***	0.09***	-0.15***	-0.30***	-0.58***	-0.31***						
Private	0.13***	0.13***	0.14***	0.12***	-0.10***	-0.23***	-0.28***	-0.03*	0.38***					
Corporation	-0.11***	-0.14***	-0.19***	-0.16***	0.00	0.23***	0.17***	0.03**	-0.26***	-0.62***				
Manufacturing	0.02	0.01	0.05**	0.03	-0.01	0.08***	0.01	-0.00	-0.00	-0.05***	0.05***			
Services	-0.07***	-0.03*	-0.07***	-0.03*	-0.01	-0.06***	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***	-0.01	0.11***	-0.11***	-0.08***	0.04**	0.12***		
No. competitors	0.07***	0.00	0.05***	0.01	-0.01	0.05***	-0.07***	-0.02	0.05***	-0.01	0.15***	-0.10***	-0.16***	

Table 3. Financing Obstacles and Legal Origin

	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

Note: The underlying model is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. \text{ of Competitors} + \beta_{13} GDP \text{ per capita} + \beta_{14} French \text{ legal origin} + \epsilon$. 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.

Table 4. Financing Obstacles, Legal Adaptability and Judicial Independence**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

Note: The underlying model is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. of Competitors + \beta_{13} GDP per capita + \beta_{14} Law + \epsilon$. 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). 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.

Table 5. Financing Obstacles, Legal Adaptability and Judicial Independence: Controlling for Creditor Rights

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

Note: The underlying model is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. of Competitors + \beta_{13} GDP per capita + \beta_{14} Law + \beta_{15} Creditor Rights + \epsilon$. 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. 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.

Table 6. Financing Obstacles, Legal Adaptability and Judicial Independence: Controlling for Rule of Law

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

Note: The underlying model is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. of Competitors + \beta_{13} GDP per capita + \beta_{14} Law + \beta_{15} Rule of Law + \epsilon$. 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). 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.

Table 7. Obstacles to Growth, Legal Adaptability and Judicial Independence: Controlling for Growth and Inflation

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

Note: The underlying model is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. of Competitors + \beta_{13} GDP per capita + \beta_{14} Law + \beta_{15} Growth + \beta_{16} Inflation + \epsilon$. 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. 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

Table 8. Firms' Obstacles to Growth, Legal Adaptability and Judicial Independence: Probit regressions

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

Note: The underlying model is: $Obstacle = \beta_1 Government + \beta_2 Foreign + \beta_3 Exporter + \beta_4 Private + \beta_5 Corporation + \beta_6 Family + \beta_7 Board + \beta_8 Management + \beta_9 Manufacturing + \beta_{10} Services + \beta_{11} Sales + \beta_{12} No. of Competitors + \beta_{13} GDP per capita + \beta_{14} Law + \epsilon$. 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 on 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

Appendix Table: Variables and Sources

Variable	Definition	Original source
Bank paperwork and bureaucracy	Is bank paperwork/bureaucracy no obstacle (1), a minor obstacle (2), a moderate obstacle (3) or a major obstacle (4)?	World Business Environment Survey (WBES)
Banks lack money to lend	Is banks' lack of money to lend no obstacle (1), a minor obstacle (2), a moderate obstacle (3) or a major obstacle (4)?	World Business Environment Survey (WBES)
Board	Dummy variable that takes on value one if major decisions concerning the enterprise's direction are taken by its board of directors, zero otherwise.	World Business Environment Survey (WBES)
Caselaw	Dummy variable that takes on value one if judicial decisions are a source of law, zero otherwise.	La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2004)
Collateral requirements	Are collateral requirements of banks/financial institutions no obstacle (1), a minor obstacle (2), a moderate obstacle (3) or a major obstacle (4)?	World Business Environment Survey (WBES)
Corporation	Dummy variable that takes on value one if the firm is a corporation, zero otherwise.	World Business Environment Survey (WBES)
Creditor Rights	Index of secured creditor rights during restructuring or liquidation. Ranges from zero to four, with higher values indicating better creditor right protection.	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1998)
Exporter	Dummy variable that takes on the value one if firm exports, zero otherwise.	World Business Environment Survey (WBES)
Family	Dummy variable that takes on value one if major decisions concerning the enterprise's direction are taken by an individual or a family, zero otherwise.	World Business Environment Survey (WBES)
Foreign	Dummy variable that takes on the value one if any foreign company or individual has a financial stake in the ownership of the firm, zero otherwise.	World Business Environment Survey (WBES)
French legal origin	Dummy variable that takes on value one if the country's legal origin is French, zero otherwise	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998, 1999)
GDP per capita	Real per capita GDP in US dollars, average 1995-99	World Development Indicators
General Financing Obstacle	How problematic is financing for the operation and growth of your business: no obstacle (1), a minor obstacle (2), a moderate obstacle (3) or a major obstacle (4)?	World Business Environment Survey (WBES)
Government	Dummy variable that takes on the value one if any government agency or state body has a financial stake in the ownership of the firm, zero otherwise.	World Business Environment Survey (WBES)
Growth	Growth rate of GDP, average 1995-99	World Development Indicators
Inflation rate	Log difference of Consumer Price Index	International Financial Statistics (IFS), line 64
Legal justification	Sum of three dummy variables: (1) <i>Complaint</i> 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) <i>Judgment</i> indicates whether the judgment must expressly state the	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2003)

	applicable law or case law for the decision, and (3) <i>Law vs. Equity</i> indicates whether judgment has to be based on statutory law or can rather be motivated by general equitable arguments.	
Long-term loans	Is the access to long-term finance no obstacle (1), a minor obstacle (2), a moderate obstacle (3) or a major obstacle (4)?	World Business Environment Survey (WBES)
Management	Dummy variable that takes on value one if major decisions concerning the enterprise's direction are taken by its management, zero otherwise.	World Business Environment Survey (WBES)
Manufacturing	Dummy variable that takes on the value one if firm is in the manufacturing industry, zero otherwise.	World Business Environment Survey (WBES)
No. of Competitors	Regarding your firm's major product line, how many competitors do you face in your market?	World Business Environment Survey (WBES)
Private	Dummy variable that takes on value one if the firm is a single proprietorship or partnership, zero otherwise.	World Business Environment Survey (WBES)
Rule of Law	Measure of the law and order tradition of a country. It is an average over 1995-97. It ranges from 6, strong law and order tradition, to 1, weak law and order tradition.	International Country Risk Guide (ICRG).
Sales	Logarithm of firm sales	World Business Environment Survey (WBES)
Services	Dummy variable that takes on the value one if firm is in the service industry, zero otherwise.	World Business Environment Survey (WBES)
Supreme Court Power	Dummy variable that takes on value one if administrative law judges have lifelong tenure and if either the administrative court is the Supreme Court or if cases judged by administrative courts can be appealed to the Supreme Court, zero otherwise.	La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2004)
Supreme Court Tenure	Takes on the value two if tenure is lifelong, one if tenure is at least six years but not lifelong and zero if tenure is less than six years	La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2004)
