

What Role of Legal Systems in Financial Intermediation? Theory and Evidence

Laura Bottazzi*

Bocconi University and IGIER

(<http://www.igier.uni-bocconi.it/bottazzi>)

Marco Da Rin

Turin University, ECGI, and IGIER

(<http://web.econ.unito.it/darin>)

Thomas Hellmann

University of British Columbia

(<http://strategy.sauder.ubc.ca/hellmann>)

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Abstract

How does the relationship between an investor and entrepreneur depend on the legal system? In a double moral hazard framework, we show how optimal contracts, corporate governance, and investor actions depend on the legal system. With better legal protection, investors want to exercise more governance, give more non-contractible support, and demand more downside protection. Moreover, investors in better legal systems have stronger incentives to develop the competencies necessary to provide governance and value-adding support. We test these predictions using a hand-collected dataset of European venture capital deals. The empirical results confirm the model predictions and show that both the investor's and entrepreneur's legal systems matter.

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1 Introduction

The work of La Porta et. al. (1997, 1998, 2000) demonstrates the importance of the legal system for economic activity. Their work, and a large ensuing literature (e.g, Acemoglu, Johnson and Robinson (2001, 2002)) shows that countries with different legal origins also systematically differ in terms of their financial systems. These studies, based on country-level data, document that variations in legal systems induce significant differences in institutions and economic outcomes. However, the aggregate nature of these data makes it difficult to go beyond documenting the existence of strong correlations. Micro-level data appear more suitable to identify the channels through which legal systems affect institutions and outcomes.

In this paper we move in this direction and ask how financial intermediation is affected by the nature of the legal system. A large theoretical literature has pointed to the importance of both contractual and non-contractual aspects of financial intermediation when an entrepreneur seeks funds for an investment project (Holmström and Tirole (1997), Hart (2001)). We build on this literature and look at how the relationship between an investor and an entrepreneur depends on the legal system.

Since it is not immediately obvious how the legal system should affect this relationship, we let our analysis be guided by theory. We examine how optimal contracts and resulting investor behavior depend on the legal system. Our theory makes three central predictions. The better the legal system, (i) the more investors exercise corporate governance, (ii) the more they provide value-adding support, and (iii) the more they demand contractual downside protection in bad states of the world, using securities such as debt, convertible debt, or preferred equity. The underlying intuition is that investing in governance and support are only worthwhile if the legal system provides investors with sufficient guarantees that these efforts will not simply be wasted. We show that in a better legal system it is optimal to give the entrepreneur stronger upside incentives. As a consequence it becomes necessary to give investors additional cash flow rights on the downside in order to satisfy their participation constraint. We also extend our theory to examine how the legal systems might affect financial intermediaries themselves. We consider the influence of the legal system on intermediaries' incentives to develop the competencies necessary to exert governance and to provide value added services. We show that intermediaries from countries with a better legal tradition will provide more governance and value added services, even when investing abroad.

To test the predictions of the theory, we use a hand-collected dataset on European venture capital investments for the period 1998-2001. We focus on venture capital as a form of financial intermediation because prior research has already established the richness of relationships between investors and companies. Venture capital firms can play a value-adding role in the companies they finance, both through contracting and by providing non-contractible inputs such as advice, support, and governance (Gompers (1995), Hellmann and Puri (2002), Hochberg (2003), Kaplan and Strömberg (2003), Lerner (1994), Lindsey (2003), Sahlman (1990), Sorensen (2004)). All of this evidence concerns the US, yet over the last decade venture capital has become a global phenomenon (Megginson (2004)), with Europe becoming a particularly important market (Bottazzi and Da Rin (2004), Da Rin, Nicodano, and Sembenelli (2004)). As the venture capital industry develops,

there is considerably debate about what investment methods are appropriate across these different countries. The suspicion arises that differences in investment methods are related to differences in legal systems. Europe is an excellent place to examine differences across legal systems. European countries are fairly comparable in their stages of economic growth, yet there is a rich variety of legal systems with Europe.

Our sample consists of over 1,400 venture deals from over 120 venture capital firms in 17 European countries. Our primary data source is a comprehensive survey of all venture capital firms in these countries. We then augmented the data with numerous secondary sources, including commercial databases and websites. Our dataset has several important strengths. We made a significant data collection effort, which required considerable time and effort, but resulted in a dataset that is significantly larger than other hand-collected datasets on venture capital, and much richer than the commercially available datasets. We also collected several measures of the interactions between venture capitalists and entrepreneurs. This allows us to assess not only the contractual, but also the non-contractual aspects of their relationship. Some of these measures cannot be obtained from standard sources of venture capital data (such as VenturExpert) or from venture capital contracts. Another notable feature of our dataset, which we exploit in the analysis, is that it provides us with investments which 'cross-over' to different legal systems.

We find clear empirical support for our theoretical predictions. Some estimates are statistically highly significant and economically large, others are statistically insignificant and/or economically small, and none contradict the theory. Overall we find that better legal systems tend to be associated with more governance, more investor involvement and more downside protection for the investors. The results hold for legal origin, using the standard interpretation that the Anglo-Saxon common law system is better for investors than systems based on civil law. They also hold for two widely used alternative index measures of the quality of the legal system: the rule of law and the degree of legal procedural complexity. These results provide new insights into how legal systems affect financial intermediation; in particular, they point to the importance of considering the relationship between investor and entrepreneur in its entirety, accounting for the interdependence between contractual and non-contractual aspects.

Our data allows us to examine whether the effects of legal systems are mainly due to company or investor characteristics. Using the information from investments that cross legal system boundaries, we find that both matter. Consistent with our theoretical predictions, investors from countries with stronger legal traditions provide more support, exercise more governance, and demand more downside protection, both within and outside their legal system. Interestingly, the reverse is also true, i.e., investors from weaker legal system do less of these things, both within and outside their legal system. This supports our theoretical prediction that the legal system affects the extent to which financial intermediaries develop competencies, which determine how they relate to entrepreneurs.

We discuss these and other results in the main body of the paper. Section 2 addresses the relationship with the literature. Section 3 develops the theoretical model. Section 4 describes the data. Section 5 discusses the empirical results. Section 6 provides some further discussion. It is followed by a brief conclusion.

2 Related Literature

A number of recent papers address issues related to this paper. On the theory side, Shleifer and Wolfenzon (2002) examine a model where an entrepreneur wants to divert funds for private use. They show how the strength of the legal system affects the willingness to go public, and thus the equilibrium size of the capital market. Burkhardt, Panunzi and Shleifer (2003) consider how the legal system affects a manager's ability to divert funds. They show that the willingness of an owner to delegate control to a manager and to sell shares to outsiders depends on the quality of the legal system. We are not aware of any theory paper that specifically addresses the role of the legal system for both the contractual and non-contractual aspects of financial intermediation.

Turning to the empirical literature, papers based on firm-level data have started looking at the effects of legal systems on financial or economic outcomes. Demirgüç-Kunt and Maksimovic (1998), for example, provide evidence on the link between legal origin, financial institutions and firm growth. Qian and Strahan (2004) look at how legal origin affects the design of bank loan contracts.

Three recent papers which use venture capital data are particularly close to ours. Lerner and Schoar (2004) (LS henceforth) collect a sample of 210 transactions in 26 countries, made by 28 venture capital firms, mostly between 1996 and 2001. They focus not only on venture capital deals, but on private equity deals more broadly defined. Their data are mainly from developing, rather than developed countries. They find statistically significant relationships between legal origin and the type of securities and contractual covenants used. These effects continue to persist after controlling for investor characteristics.

Kaplan, Martel, and Strömberg (2003) (KMS henceforth) collect a sample of 145 investments made by 70 venture capital firms in 107 firms in 23 countries, mostly between 1998 and 2001. They also compare these non-US investments with the US sample analyzed by Kaplan and Strömberg (2003), finding important differences. Their results show a correlation between legal systems and the choice of securities and other contractual features. However, the legal coefficients become insignificant once they control for the investor's degree of sophistication, measured by its ties to the US market.

Cumming, Schmidt and Walz (2004) (CSW henceforth) analyze a sample of 3,848 private equity investments in 39 developed and developing countries between 1971 and 2003. They focus on the exercise of corporate governance by venture capitalists. They find a positive correlation between the quality of the legal system and the exercise of governance, in particular the board representation of the investor.¹

Our study advances the literature on several counts. Much of the literature remains somewhat descriptive, showing mostly how investors in different countries use different securities and other contractual features. To move toward a deeper economic understanding, we need to ask how the legal system affects the *entire* relationship, both contractual and non-contractual, between investors and entrepreneurs. We address this from a new angle by first developing a theoretical model that guides our empirical analysis. This gives

¹In a related vein, Bascha and Walz (2001) examine German data, and Cumming and MacIntosh (2003) examine US and Canadian data.

us a coherent framework for explaining how the legal system affects the various aspects of the financing relationship.

We use a different data approach. KMS and LS gather venture capital contracts. This has the advantage of providing very detailed data on the contractual relationship between the venture capitalist and the entrepreneur. CSW use data from venture firms seeking investment from a large fund of funds. We choose a complementary approach of gathering survey data on venture capital activity. This has the advantage that we can obtain data not only on contracts, but also on the non-contractual aspects of the investment relationship. We are able to build a substantially larger sample than LS and KMS. And our dataset gives us with a new vantage point for looking at the role of legal systems, where we consider not only investments of Anglo-Saxon investors in civil law countries, but also the reverse—investment by civil law venture capitalists in common law countries.

Despite the different approaches, there is a remarkable consistency across these papers. We confirm (and theoretically explain) the findings of KMS and LS that investors from countries with strong legal traditions make more extensive use of securities that afford downside protection. Our results also confirm findings of KMS and LS, showing that investors retain aspects of their investment styles when investing abroad. KMS focus mainly on the investments of US investors abroad, and interpret their results as evidence of learning. LS focus on investment of Anglo-Saxon private equity groups in developing countries and interpret their results as evidence of adaptation to local practices. Our empirical analysis finds strong evidence for investor-origin effects and also some evidence for adaptation effects. In addition, we show that these effects pertain not only to investments from stronger to weaker legal systems, but also apply to investments from weaker to stronger legal systems.

3 Theory

3.1 Assumptions

Consider an entrepreneur who requires an investment amount k_V to start a company. With this amount she purchases assets, that have a fixed value a , and invests in a risky opportunity, that generates profits π with probability p and no profits otherwise. Ownership claims on assets are perfectly enforceable, but the verifiability of profits depends on the legal system. We assume that investor's claims on profits are legally enforceable with probability λ , so that λ measures the quality of legal system. With probability $1 - \lambda$ the entrepreneur identifies a weakness in the legal system that allows her to steal the profits π . Stealing is risky or otherwise costly, so that the entrepreneur's expected returns from stealing are given by $(1 - \phi)\pi$, where ϕ measures the net loss of stealing.

The double moral hazard model, where both the entrepreneur and the venture capitalist make non-contractible contributions that affect the likelihood of the venture's success, has become the workhorse of the theoretical venture capital literature (Casamatta (2003), Hellmann (1998, 2004), Inderst and Müller (2003), Repullo and Suarez (2004), Schindele

(2004), Schmidt (2003)). In this paper, we incorporate the quality of the legal system into such a double moral hazard model. We use a simple specification, where the probability of success is given by $p = p_G + p_E e + p_V v$. We let e measure the non-contractible effort of the entrepreneur, and v measure the amount of non-contractible value-adding support of the venture capitalist. For simplicity we use quadratic private effort costs $c_E = e^2/2$ and $c_V = v^2/2$. The parameters p_E and p_V measure the relative importance or ability of the entrepreneur and venture capitalist. p_G is discussed below. Throughout we assume that p_G, p_E and p_V are sufficiently low to ensure that $p < 1$.

An important decision is what role the venture capitalist takes with respect to corporate governance (Dessein (2003), Hellmann (1998)). The corporate finance literature typically argues that governance provides a safeguard for shareholder interests. Typically this increases a firm's expected profits, but decreases the entrepreneur's private benefits (Burkart, Gromb and Panunzi (1997)). We capture this trade-off in the following simple manner. If the venture capitalist does not exercise governance (denote this by $G = 0$), the base probability of success is $p_G = p_0$, and the entrepreneur enjoys private benefit β_0 . With governance ($G = 1$), p_G rises to $p_G = p_1 > p_0$, but the entrepreneur has lower private benefits $\beta_1 < \beta_0$. The entrepreneur is wealth constrained. Her opportunity cost of doing the venture is given by k_E .

In this simple model, the value of the firm can only take two values: $a + \pi$ on the upside, and a on the downside. The venture capitalist's cash flow rights are linear, so that we can focus on debt and equity w.l.o.g.² Let d denote the face value of debt, and s the venture capitalist's percentage equity share. The venture capitalist receives $d + s(a - d)$ on the downside and $d + s(\pi + a - d)$ on the upside.³

For $\phi > s$ the entrepreneur would never want to steal, since the cost of stealing is greater than the cost of sharing. We focus on the cases where $\phi < s$, so that the entrepreneur always prefers stealing over sharing. Define

$$\Lambda = \lambda + (1 - \lambda)(1 - \phi),$$

which represents the fraction of total returns that are not lost due to stealing. Let u_E, u_V denote the utilities of the entrepreneur and venture capitalist, respectively, and u the joint utility, then:

$$\begin{aligned} u_E &= \beta_G + (1 - s)(a - d) + p\pi(\Lambda - \lambda s) - c_E - k_E \\ u_V &= d + s(a - d) + p\pi\lambda s - c_V - k_V \\ u &= \beta_G + a + p\pi\Lambda - c_E - c_V - k_E - k_V. \end{aligned}$$

²Some venture capitalists (especially in the US) use convertible preferred equity (Kaplan and Strömberg (2004)). In this simple linear model, this is equivalent to a mix debt and equity. We can map one into the other as follows: let \tilde{d} denote the face (or preferred) value before conversion, and \tilde{s} the percentage equity stake after conversion. We then have $\tilde{d} = d + s(a - d)$ and $\tilde{s}(a + \pi) = d + s(\pi + a - d) \Leftrightarrow \tilde{s} = s + \frac{(1 - s)d}{a + \pi}$.

³Let $\underline{k_E}$ such that $u_E(s^*) = 0$ for $d = a$, and $\overline{k_E}$ such that $u_E(s^*) = 0$ for $d = 0$. We assume that $k_E \in [\underline{k_E}, \overline{k_E}]$. This ensures that $d^* \in [0, a]$. This assumption is not essential for the results, but simplifies the exposition.

Suppose for simplicity that the venture capitalist has all the bargaining power. The optimal contract maximizes u_V , s.t. $u_E = 0$.

The parameters p_V and p_E can be thought of as measuring the value-adding competencies of venture capitalists. At the time of investment, these can be taken as exogenous. However, venture capital firms can also make decisions about how much they want to develop value-adding competencies. A firm's competencies may thus depend on the kind of investments it plans to do, and the associated legal environment. In section 3.2 we derive the optimal contract for a given level of competencies. In section 3.3 we examine how the legal system influences competencies, and how this affects optimal contracts.

3.2 Optimal contracts

The optimal contract maximizes u_V by choice of d and s , subject to $u_E = 0$, and subject to two incentive constraints. We derive these from the first-order conditions of maximizing u_V w.r.t. v , and u_E w.r.t. e . We obtain:

$$e = p_E \pi (\Lambda - \lambda s) \text{ and } v = p_V \pi \lambda s. \quad (1)$$

Naturally, increasing s increases v and decreases e , so that equity affects incentives. In addition, v and e are independent of d . This means that debt transfers utility between the entrepreneur and the venture capitalist. Put differently, in this simple model, downside protection gives the venture capitalist additional cash flow rights, without upsetting the balance of incentives.⁴

Using standard reasoning, the optimal s^* maximizes the joint utility u . The first-order condition for the optimal s^* is given by:

$$\pi \Lambda (p_E \frac{de}{ds} + p_V \frac{dv}{ds}) - e \frac{de}{ds} - v \frac{dv}{ds} = 0$$

Using (1), we can solve for s^* . After some transformations we obtain:

$$s^* = \frac{\Lambda}{\lambda} \frac{p_V^2}{p_E^2 + p_V^2}.$$

Clearly, s^* is larger the larger the venture capitalist's value contribution (greater p_V), and the smaller the entrepreneur's value contribution (smaller p_E). The following lemma considers the effect of λ on s^* .

Lemma 1 *The venture capitalist's optimal share s^* is decreasing in λ .*

The intuition for Lemma 1 is that a better legal environment redistributes rents from the entrepreneur to the venture capitalist. In a double moral hazard setting, this upsets

⁴Hellmann (2004) provides a richer model of venture capital contracts, which shows more generally that downside protection has exactly this function.

the balance of incentives. The optimal contract redresses this by allocating a lower share of equity to the venture capitalist. It is interesting to note that Lemma 1 is empirically supported by LS who find that venture capitalist's hold larger stakes in countries with weaker legal protection.

Given s^* , the equilibrium effort levels are given by:

$$e^* = \frac{p_E^3}{p_E^2 + p_V^2} \Lambda \pi \text{ and } v^* = \frac{p_V^3}{p_E^2 + p_V^2} \Lambda \pi.$$

Consider now the question of optimal governance. To determine the optimal value of G , we rewrite the joint utility as follows:

$$u_G = \beta_G + a + p_G \pi \Lambda + (p_E e^* + p_V v^*) \pi \Lambda - c_E - c_V - k_E - k_V$$

The net benefit of (venture capital) governance is given by:

$$u_1 - u_0 = \beta_1 - \beta_0 + (p_1 - p_0) \pi \Lambda$$

Let $\beta = \beta_0 - \beta_1$ denote the loss of private benefits from the exercise of governance. Naturally, this may differ for different entrepreneurs. Let $\hat{\beta} = (p_1 - p_0) \pi \Lambda$ be defined by $u_1 = u_0$, so that governance is efficient whenever $\beta < \hat{\beta}$.

Proposition 1 *The better the legal system, the more often governance is efficient. Formally, $\frac{d\hat{\beta}}{d\lambda} = (p_1 - p_0) \pi \phi > 0$.*

Proposition 1 yields a first testable implication, stating that the range of parameters for which governance is efficient, is increasing with the quality of the legal system. The intuition is that venture capitalists find it easier to reap the benefits of exercising governance within a better legal system.

Next, we examine the provision of value-adding support.

Proposition 2 *The optimal level of value-added support v^* is increasing with the quality of the legal system λ , i.e., $\frac{dv^*}{d\lambda} = \frac{p_V^3 \phi \pi}{p_E^2 + p_V^2} > 0$.*

Proposition 2 yields a second testable implication, that there is a positive relationship between the quality of the legal regime, and the support provided by venture capitalists.

One might wonder whether the greater effort by the venture capitalist comes at the expense of a lower effort by the entrepreneur. This is not so, since in fact $\frac{de^*}{d\lambda} = \frac{p_E^3 \phi \pi}{p_E^2 + p_V^2} > 0$. Because there is less stealing, less value is wasted, and therefore it is possible to write an optimal contract that generates more effort by both the venture capitalist and the entrepreneur.

Finally, we assess how the equilibrium level of debt d^* depend on λ .

Proposition 3 *The optimal level of debt d^* is increasing with the quality of the legal system λ .*

The proof is in the Appendix. Proposition 3 yields our third testable implication, showing that in a better legal system, the optimal contract places more emphasis on giving the venture capitalist additional downside protection. A priori, it is not immediately clear how the quality of the legal system might affect downside protection. The intuition for proposition 3 is that in a better legal system, more value is created. If the venture capitalist were to capture this additional value by increasing his equity stake, this would upset the optimal balance of incentives. The venture capitalist therefore prefers to extract the additional value through stronger downside protection. Hence d^* is an increasing function of λ .

For simplicity ϕ is a constant. As λ increases, it is possible that the cost of stealing also increases, i.e., $\frac{d\phi}{d\lambda} \geq 0$. It is straightforward to show that our results continue to hold as long as Λ is increasing in λ . This is equivalent to $(1 - \lambda)\phi$ decreasing in λ , and simply requires that a better legal system has fewer inefficiency losses.

3.3 Optimal competencies

So far, we have taken the competencies of the venture capitalist as given. However, the legal system can also affect the venture capitalist's competencies. We can ask whether venture capitalists that operate predominantly in a better legal environment also have more reason to develop value-adding competencies.

One interesting aspect is that venture capital firms can invest both domestically and abroad. The optimal choice of competencies thus depends both on their domestic legal system, as well as the legal systems of their foreign investments. If venture capitalists from different countries have different competencies, they are likely to behave differently, even when investing in the same country. We now show how our simple model helps to analyze this.

Suppose that each venture capital firm faces its own distribution Ω of entrepreneurs. For simplicity we assume that Ω is exogenous. The majority of investments are domestic, but the distribution Ω can include some foreign deals with different values of λ . Ω may also differ in terms of characteristics of the entrepreneurs, such as β_0 , p_E or π (which we denote by a vector x).

The value-adding competencies of the venture capitalist are represented by the effort parameter p_V and the governance parameter p_1 (or equivalently $p_1 - p_0$). We assume that the cost of developing competencies is given by a standard convex cost function that we denote respectively by $C_V(p_V)$ and $C_1(p_1)$. Each venture capitalist maximizes $U_V = \int u_V(\lambda)d\Omega(\lambda, x) - C_V(p_V) - C_1(p_1)$ w.r.t. p_V and p_1 .

Lemma 2 *The better the legal system, the more a venture capitalist develops competencies. Formally, p_V and p_1 are both increasing for any first order stochastic dominant shift of Ω , with respect to λ .*

The proof is in the Appendix. The result shows that a venture capital firm that operates predominantly in a better legal environment has greater incentives to develop value-adding competencies. The proof shows that the marginal benefit of developing competencies is increasing in λ .

When a venture capital firm makes an investment in another country, its competencies are likely to be different than those of the typical venture capital firm in that country. The next proposition explains more generally how differences in competencies affect investment outcomes.

Proposition 4 *For a given λ , the equilibrium depends on the competencies of the venture capitalists in the following way:*

$$\frac{dv^*}{dp_V} > 0, \quad \frac{d\hat{\beta}}{dp_V} = 0, \quad \frac{dd^*}{dp_V} \leq 0,$$

$$\frac{dv^*}{dp_1} = 0, \quad \frac{d\hat{\beta}}{dp_1} > 0, \quad \frac{dd^*}{dp_1} > 0.$$

The proof is in the Appendix. Proposition 4 explains how different venture capitalists behave differently, even when they invest in the same legal system. For a given value of λ , a venture capitalist with greater competencies will provide more value-adding. Specifically, a venture capitalist with better support skills p_V provides more support v^* . A venture capitalist with better governance skills p_1 provides governance more often (higher $\hat{\beta}$). The effect of p_1 on downside protection d^* is always positive, and the appendix explains why the effect of p_V can be ambiguous.

Proposition 4 suggests that a venture capital firm develops more competencies if it operates predominantly in a better legal system. Proposition 4 states that when such a venture capital firm invests in a worse legal system, it will deliver higher levels of support and control, relative to venture capital firms that operate predominantly in that worse legal systems. Similarly, relative to venture capitalists from better legal systems, venture capitalists from worse legal systems provide less support and control, even when investing in a better legal system.

4 The Data

In this Section we discuss the sources and nature of our data. We want to point out that the European venture capital markets is an ideal setting for testing our model. European countries are broadly comparable in terms of their stages of economic development. The European venture capital market has matured considerably throughout the 1990s, growing in size and in its ability to invest in innovative companies with a potential for high-growth (Bottazzi and Da Rin (2002), Da Rin, Nicodano, and Sembenelli (2004)). And Europe has

a remarkable variety of legal systems, so that we have several countries for both common and civil law countries, and countries with diverse levels of the legal indices.

4.1 Sources of data

Our data come from a variety of sources. Our primary source is a survey that we sent to 750 venture capital firms in the following seventeen countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK. This set of countries includes all the members of the European Union in the period under study, plus Norway and Switzerland.

We contacted venture firms that satisfied three conditions: (i) in 2001 they were full members of the European Venture Capital Association (EVCA) or of a national venture capital organization, (ii) they were actively engaged in venture capital and (iii) they were still in operations in 2002.

We deliberately excluded private equity firms that only engage in non-venture private equity deals such as mezzanine finance, management buy-outs (MBOs) or leveraged buy-outs (LBOs).⁵ However, we did include private equity firms that invest in *both* venture capital and non-venture private equity deals. For these, we considered only their venture capital investments.

We collected our survey data between February 2002 and November 2003. We asked venture capital firms about the investments they made between January 1998 and December 2001. The questions centered on key characteristics of the venture firm, on the involvement with portfolio companies, and on some characteristics of these companies.⁶ The survey asked respondents a substantial amount of detailed company-level information. We also asked information on the educational background and work experience of each venture partner.

We received 127 responses with various degrees of completeness. Of these, three venture firms had been formed in 2001 but had not yet made any investments, so we do not include them in our sample. We contacted all the venture firms that had sent us incomplete answers, and attempted to complete them whenever possible. As a further step, we augmented the survey data with information from the websites of the respondents and their portfolio companies. We also turned to commercially available databases: Amadeus, Worldscope, and VenturExpert. We use information from these databases for two purposes. First, they allow us to obtain missing information, such as the dates, stages, and amounts of venture deals. Second, we use these databases to cross-check the information obtained from respondents. Such cross-validation further enhances the reliability of our data. Overall, we obtain data on 1,664 deals made by 124 venture firms. Unlike other papers, we refrain from using data from additional rounds that an investor makes in a given company. That is, we restrict our data to the first investment made by the investor in the particular company.

⁵See Fenn, Liang and Prowse (2003) for a discussion of how the venture capital market is structure in two different segments, 'venture capital' and 'non-venture private equity.'

⁶Throughout the paper we reserve the term 'firm' for the investor (i.e., the venture capital firm) and the term 'company' to the company that receives venture financing.

In the main body of the paper we focus the analysis on investments within Europe (we discuss this further in section 6.2). We thus drop also investments in other non-European countries; as a result, our sample consists of a total of 1,430 deals.

Can we assess the quality of our sample relative to the underlying population? Other papers in the literature avoid this question, because it is extremely difficult to gather information on the population. Unlike banks, venture capital firms are not heavily regulated and do not need to disclose information. For the US, commercially available databases like *VenturExpert* collect information on the vast majority of venture capital firms. In Europe *VenturExpert* has a much lower coverage, although in the last few years it improved considerably. The European Venture Capital Association (EVCA) also collects data through an annual survey which is sent to all active European venture capital and private equity firms, irrespective of EVCA membership. EVCA only reports aggregated data, which cover over 70% of the firms it polls.⁷

To gather data on the population of 750 European venture capital firms, including those that did not respond to our survey, we used both of these data sources. We also made a substantial attempt to collect additional data through direct phone calls and through websites and other trade publications. With considerable effort, we were able to gather information on more than two thirds of the population.

This additional data allows us to perform a variety of checks on how well our sample represents the population of European venture capital firms. First, we look at how the sample fares in spanning the underlying population. Table 1 compares the sample with the population it is drawn from. Panel A looks at the country composition. While there is some variation in response rates across countries, our data represent a comprehensive cross-section which provides a good coverage of all countries. The overall response rate of over 16% provides us with a substantial amount of information. No single country dominates the response, and no country is left out. Most notably, our sample performs well in terms of including firms from the larger venture capital markets: France, Germany, and the UK all have response rates above 13%. Another notable strength of our data is it does not rely on a few venture capital firms. Indeed, the single largest venture capital firm accounts for only 5% of the observations, and the largest five venture capital firms for only 16% of the observations.⁸

Panel B looks at the structure of both sample and population in terms of organizational types. We partition the sample into independent, bank, corporate, and public venture capital firms. As we show in Bottazzi, Da Rin and Hellmann (2004), different types of venture firms behave differently, and we want to make sure that our results are not driven by the sample composition. Our sample closely reflects the distribution of types in the population, with the only possible exception of public venture firms, which are slightly under-represented.

Panel C compares the size distribution of our respondents with that of the population.

⁷See the methodology section of EVCA (2002).

⁸We also consider that our respondents may report only part of their portfolio. To this purpose, in late 2003 we checked the websites of all respondents, excluding the 15 that do not list portfolio companies on their website. We find a difference between the portfolio companies listed there with those we have information about of only about 10%. We conclude that it is unlikely that under-reporting affects our results.

We consider two possible size measures: the number of partners, and the amount under management, both measured at the end of 2001. For the sample and the population the mean and median values of partners virtually coincide. The amount under management includes all funds managed by venture capital firms, including those invested in non-venture private equity. The average firm size is larger for the population, due to the fact that several large private equity firms, that invest mainly in non-venture private equity, chose not to respond to our survey. Consistent with this, the median firm size is very similar for the sample and the population.

4.2 Data Variables

Table 2 summarizes the definitions of our variables. In this Section we discuss how we construct them. Table 3 contains descriptive statistics for all the variables used in the analysis, grouped into four classes: dependent variables, legal origin, legal indices, venture firm and company variables.

4.2.1 Dependent variables

In this paper we focus on how the legal system affects the activities of venture capitalists and their interaction with portfolio companies. Led by our theoretical model, we concentrate on three different dimensions of the venture process: corporate governance, value-adding support, and the choice of securities. Table 2(a) provides formal definitions of these variables

The importance of corporate governance and control for venture investing (Proposition 1) has been extensively shown by prior research (Lerner (1995), Hellmann (1998), Hellmann and Puri (2002), Kaplan and Strömberg (2003, 2004)). Our empirical measure of governance and control is whether a venture capitalist has secured contingent control rights that increase his/her control over the board if the company performs poorly and fails to meet its milestones.

BOARD CONTROL is a dummy variable that takes the value 1 if the venture capital firm is reported to have the contractual right to take control over the board contingent on the occurrence of certain events; 0 otherwise. We obtain the data from our survey instrument, which asked: *does your firm has a right to obtain control of the board of directors contingent on the realization of certain events?* Possible answers were: *Yes, No*.

The role of value-adding support (Proposition 2) has also become a central theme in venture capital research (Bottazzi, Da Rin and Hellman (2004), Hellmann (2000), Schindele (2004)). For support we use a measure of the amount of interaction, looking at the reported frequency with which a venture capitalist is in contact with the company. This is a useful summary measure of the amount of time and effort that the venture capitalist spends on the company.

INTERACTION is a dummy variable that takes the value 1 if the venture capital firm is reported to interact with the company on a monthly or weekly basis; 0 if it interacts with on an annual or quarterly basis. We obtain the data from our survey instrument, which asked: *How many times per year does (did) the responsible partner(s)/manager(s)*

personally interact with this company? (check one). Possible answers were: *annually; quarterly; monthly; weekly.*

Kaplan and Strömberg (2002) explain that while venture capitalists use a variety of securities, many of these perform equivalent functions. Of central importance is how the entire package of securities affects the distribution of cash flows rights, and especially to what extent the venture capitalist gets his returns on the upside as compared to the downside (Proposition 3). In an ideal scenario, we would be able to gather complete data on the allocation of cash flows rights, including all term sheets and valuations. However, since such data is extremely sensitive, and since our aim was to gather a large and representative dataset, we deliberately limited our inquiry. We collected data on the types of securities used, but not on the specific term sheets or valuations.

In our survey we asked about the entire set of securities used for each deal. This question allowed for multiple responses. Since we consider this data of interest by itself, Table 3 tabulates, by legal system, the types of securities used in our dataset. We clearly see that the use of securities varies across legal systems.

To move beyond a mere description of the securities used, we leverage our theory. Proposition 3 predicts that the optimal amount of debt, d^* , is increasing in λ , and Lemma 1 shows that the optimal amount of equity held by the venture capitalist, s^* , is decreasing in λ . This implies that the better the legal system, the more the optimal contract places emphasis on downside protection.

While our data does not allow us to measure the exact values d^* and s^* , we can construct proxy variables for the relative importance of downside protection. For this we use the data from Table 3. We refer to straight debt, convertible debt and preferred equity as ‘downside securities,’ since they all give the venture capitalist a larger stake on the downside.

DOWNSIDE is a dummy variable that takes the value 1 if the deal includes at least one downside security, and 0 otherwise. We obtain the data from our survey instrument, which asked: *Which of the following financial instruments has your firm used to finance this company?* Possible answers were: *common equity; straight debt; convertible debt; preferred equity; warrants.*⁹

4.2.2 Independent variables: legal origin and legal indices

We distinguish among two groups of independent variables, whose formal definitions are given in Tables 2(b) through 2(d).

Our first group of independent variables concerns the legal system of companies and investors. We employ three alternative measures of the quality of the legal system. Legal scholars classify national legal systems according to the legal origins of the Commercial Code. La Porta et. al. (1998) propose two main categories: legal systems with common law origin and legal systems with civil law origin; the former category includes Anglo-Saxon common law, while the latter includes French civil law, German civil law and Scandinavian civil law. We construct dummy variables that classify our companies according to these

⁹In the instructions to the survey we specified functional definitions of these different financial instruments in order to ensure consistency of responses.

two categories, using civil law as the default category. Table 2(b) contains their formal definitions.

An alternative approach of classifying legal systems is to use more specific indices, which measure some aspects of the legal system. We use two standard indices: the rule of law and the procedural complexity index. Table 2(c) contains their formal definitions. These two indices relate directly to our concept of the 'quality' of enforcement in a legal system. In our model the parameter λ measures the probability with which an entrepreneur can steal from her company without the investors detecting him. We look for empirical counterparts of this concept.

La Porta et. al. (1998) provide a detailed explanation of the rule of law index, which tries to measure the quality of legal enforcement in the early 1990s. Since enforcement evolves over time, we use an updated version of the original rule of law index which measures the quality of enforcement in the year 2000 and is published in the International Country Risk Guide produced by the Political Risk Services Group.

Our second index measure of the quality of the legal system is the index of procedural complexity, which measures the degree of legal formalism, by averaging the cost, length of time and number of steps necessary to perform two simple legal operations: recovering a bounced cheque and evicting a tenant. This index is discussed at length in Djankov et al. (2002) and is published by the World Bank's 'Doing Business' project

In order to make our results more easily readable, we change sign to the procedural complexity index so that a higher value indicates lower complexity. We rename this transformation 'procedural simplicity.' For both legal origin and the legal indices we construct a variety of measures which allow us to explore the effects of cross-border and cross-system investments. We discuss such measures in more detail in the next Section.

4.2.3 Independent variables: venture firm and company variables

Our second set of independent variables captures investor-level and deal-level effects. Table 2(d) contains their formal definitions. Building on Bottazzi, Da Rin and Hellmann (2004), we focus on the following effects:

INDEPENDENTVVC, is a dummy variables that takes the value 1 if the venture capitalist defines itself as an independent venture capital firm; 0 otherwise. We obtain the data from our survey instrument, which asked: *Would you define your firm as (check one): Independent venture firm, Corporate venture firm, Bank affiliated venture firm or Other (specify).*¹⁰

MARKET FOCUS is a dummy variable which takes value 1 if the venture capital firm is reported to engage only in venture capital deals (i.e., excluding other private equity deals like MBOs or LBOs); 0 otherwise. We obtain the data from our survey instrument, which asked: *Does your firm invest in non-venture private equity deals such as management buy-outs (MBOs)?* Possible answers were: *Yes, No.*

¹⁰ We carefully examined the three respondents which checked the 'other' category. One is a public university fund, and was classified as public; another is a family-controlled fund, and was classified as independent; the third is a fund owned by a government company which engages in financing for small businesses, and was classified as public.

VCSIZE is the amount under management of the venture capital firm at the end of the sample period (2001), in millions of current euros. We obtain the data by contacting directly respondent companies after receiving their main answers. For those firms for which we had not received the information directly we gathered the data from commercial databases, company websites and industry sources.

VCAGE is the age of the venture capital firm, measured in months at the end of the sample period. We obtain the data from our survey instrument, which asked: *Indicate the date of creation of your firm (mm/yy)*. For those firms for which we had not received the information directly we gathered the data from commercial databases, company websites and industry sources.

We then consider two variables which capture the effects of deal-level characteristics.

INDUSTRY is set of a dummy variables that we obtain the data from our survey instrument, which gave the following choices: *Biotech and pharma; Medical products; Software and internet; Financial services; Industrial services; Electronics; Consumer services; Telecom; Food and consumer goods; Industrial products (incl. energy); Media & Entertainment; Other (specify)*.

STAGE is an ordered variable that takes values 1 to 4 if a deal is reported as seed, start-up, expansion or bridge. We obtain the data from our survey instrument, which asked: *Indicate the type of your first round of financing to this company (check one)*. Possible answers were: *Seed; Start-up; Expansion; and Bridge*.

Table 4 shows how the means (or frequency) of our main dependent and independent variables vary across legal origins. Table 5 contains descriptive statistics for all the variables used in the analysis. The number of observations differs across regressions because of missing values for some of the variables. We discuss this further in section 6.2.

5 Empirical Results

5.1 Main findings

We are now in a position to empirically test our theoretical propositions. All our dependent variables are dummy variables, so we use Probit regressions. Since our data consists of multiple investments made by different venture capital firms, we cluster our standard errors by venture capital firms. This assumes that the error term is correlated within venture capital firms, and imposes a conservative standard for accepting statistically significant results. Clustering also includes the use of heteroskedasticity-robust standard errors.

As we argued in our theory, the legal system may matter for the interactions between investors and entrepreneurs both directly, and indirectly through the competencies of investors. Naturally, the legal system may also affect what companies are founded in a country. Our empirical analysis will take into account of the fact that different countries have different types of companies and investors. We control for firm characteristics in terms of industry and stage. We also control for investor characteristics, such as the age and size of the venture capital firm. Our prior research (Bottazzi, Da Rin and Hellmann (2004)) also shows that an important organizational variable is whether a venture capital

firm is independent or captive. Independent venture capital firms are conceived as specialized organizations, whose main purpose is to earn a profit from their venture capital investments. Captive venture capital firms are investment vehicles that are used by established firms, banks, or the government, to complement their broader strategic goals (Hellmann, Lindsey, and Puri (2002)).

Our empirical approach consists of three steps. As a first step, we examine the effect of the legal system on our outcome variables, without controlling for investor and company variables. This specification measures the total effect of the legal system, including both direct effects and indirect company or investor effects. As a second step, we consider the indirect effects separately. As a third step, we examine the effect of the legal system, now controlling for investor and company characteristics. This last specification measures the effect of the legal system beyond its effects on investor and company characteristics. The resulting coefficient of the legal system no longer measures the total effect of the legal system, but only its direct effect, holding investor and company characteristics constant. Notice that, unlike in step 1, in step 3 an insignificant coefficient does not imply that the legal system is irrelevant, but only that there is no significant direct effect.

Our empirical approach also takes into account the legal system of both the company and the investor, which may have separate effects. One explanatory variable in all the specifications is the legal system of the company. We take as the baseline case that of a company in a civil law system, and add the COMPANY-COMMON variable to measure the effect of the company being in a common law system. Since the majority of investments are made by domestic investors, multi-collinearity prevents us from simply adding the investor's legal system as a separate variable. Instead, we focus on the additional information contained in investments that are made by investors from different legal systems, and distinguish whether an investor comes from a better or worse legal system. For legal origin, we add two investor variables, capturing investments in civil law companies by common law investors (INVESTOR-COMMON), and investments in common law companies by civil law investors (INVESTOR-CIVIL).

For the legal index measures, we use two variables for the company-level effects: COMPANY-RULE and COMPANY-PROCEDURAL. We then add two investor variables: COMPANY-RULE-POSITIVE (COMPANY-PROCEDURAL-POSITIVE) measures the absolute difference between the investor's and company's rule of law (procedural simplicity) index when the investor has a higher index value than the company. Likewise, COMPANY-RULE-NEGATIVE (COMPANY-PROCEDURAL-NEGATIVE) measures the absolute difference between the investor's and company's rule of law (procedural simplicity) index when the investor has a lower index value than the company.

Table 6 reports our results. Consider the first step; for each dependent variable, column (i) reports the results of Probit regressions without investor and company controls. Panels A, B and C report, respectively, the results for legal origin, rule of law and procedural simplicity. We find that the legal system has strong effects on all three outcome variables. All coefficients are either statistically significant with the sign that is predicted by our theory, or they are insignificant. As suggested by Propositions 1 to 3, companies in better legal systems give up more control, receive more support from their investors, and give their investors more downside protection. As suggested by Proposition 4, investors that come

from better legal systems provide more support, and ask for more control and downside protection. Interestingly, we find that the equivalent result applies for investors that come from worse legal systems: they provide less support, and ask for less control and downside protection.

For the second step, Table 7 shows pairwise correlations between our legal systems measures and company and investor characteristics. There are some significant correlations between the legal systems measures and the companies' stage or industry. The same applies for the investor's age and size. The most interesting result is the strongly positive correlation between independent venture capitalists and better legal systems.

For the third step, we consider the effect of the legal system, now also controlling for company and investor characteristics. For each dependent variable, column (ii) of Table 6 reports our results. The results provide clear support for all four theoretical hypotheses. Indeed, the results are rather similar to column (i), except that the legal system coefficients tend to be slightly lower, and sometimes slightly less significant. This is precisely because the estimated coefficients only represent the direct effects, and no longer capture any of the indirect effects.

5.2 Further evidence from international investments

Table 6 shows that investors that come from a stronger legal system provide more support, and ask for more control and downside protection, relative to domestic investors in the company's country. An equivalent effect exists for investors that come from a weaker legal system. To further investigate this finding, we may ask to whether this effect could be due to a selection effect, where those investors which invest abroad also have different investment behavior, that could explain this result. To examine whether 'international' investors are different from purely domestic investors, we compare their behavior in the domestic markets. For this we separate venture capital firms into those that only invest in their domestic market versus those that also make investments abroad.

For the legal origin measure, we divide our deals into six mutually exclusive groups, the default category being civil law companies that receive investments from purely domestic firms. Table 8 reports the results. For deals in common law countries, the coefficients for domestic and international investors are very similar, and their difference is never statistically different from each other (although they both are statistically different from the default category). For domestic deals in civil law countries, the coefficients for domestic and international investors are also fairly similar, except for our support measure (INTERACTION), where international investors have a positive coefficient. Once we control for the difference between domestic and international venture capitalists, we still find an effect for investments that cross legal systems. Specifically, for civil law companies, common law investors are significantly different from civil law (domestic) investors. And for common law companies, civil law investors are significantly different from common law (domestic) investors. These results suggest that accounting for differences between domestic and international venture capital firms does not change the basic insights from Table 6.

We repeat a similar exercise for our index measures, taking into account that they are continuous variables. We add a control for whether investors are domestic or international.

The effect of international investors is generally positive but insignificant. Again we find that the effect of investors from stronger countries investing in weaker legal systems, and vice versa, remains strong.

The analysis so far controls for whether an investor is domestic or international. We can go one step further, and control for each investor separately. This essentially means using investor fixed effects, which in our case requires a conditional logit model. The advantage of this estimation approach is that it relies only on variation within investor portfolios. It tells us how a given investor adapts his investment style when financing companies in a better or worse legal system. The disadvantage is that, by construction, the conditional logit cannot estimate the effects of the investors' legal system themselves. Table 9 reports our results. The results are statistically much weaker, with several t-values approaching 0. This is a reflection of the fact that the conditional logit only utilizes a very specific and limited type of variation. Moreover, we lose a large number of observations because several investors do not present any variation in their behavior across companies. Nonetheless we note that all the significant coefficients have the predicted sign. This provides further evidence that, when investing in different countries, venture capital firms adapt their investment styles to companies' legal regime.

6 Further Discussion

6.1 Alternative interpretations

In this paper we develop a simple theory for how legal systems affect venture capital activities. When we take the model to the data, we find considerable empirical support. The model thus provides a simple and intuitive explanation for the empirical findings. Naturally, one may still wonder whether there are complementary or alternative explanations for our empirical results.

The empirical analysis shows that countries with different legal origins have different kinds of venture capital activity. One strength of the legal origin variables are that they are clearly exogenous and easy to understand. One weakness is that it is difficult to extract a more detailed interpretation from these variables. They broadly point to the importance of legal systems, but they cannot tell, what exactly it is in the legal system that explains the observed behavior. Naturally, the legal indices are an important step in that direction, since they try to pinpoint more precisely what aspects of the legal system matter most. A careful reader might have noticed that we have focussed on rule of law and procedural complexity, without considering some one commonly used legal indices. While this reflects our intention to stick to our theory model and find empirical counterparts for the quality of the legal system, we also consider alternative indices, which are less suitable to our purpose because they point to specific roles of the legal system but are nonetheless widely used. As a robustness check we reran our results considering the quality of accounting standards and the index of antidirector rights developed by Laporta et al. (1998), and found qualitatively very similar results.

One important question for the legal systems literature is whether the legal system

matters because it forbids investors to take certain actions (or write certain contracts), or because it influences, in subtle and possibly indirect ways, what investors prefer to do—along the lines of our model. We can address this question in our context by asking whether certain investor actions, such as providing governance or asking for downside protection, are actually precluded by the legal system. The first six rows of Table 4 tabulate our dependent variables across the four legal systems. While there are clear differences in the relative frequency of these activities, there are no cells with 0% or 100%. This shows that none of the legal systems preclude venture capitalists from doing these activities. We can therefore reject one important alternative interpretation of our results, namely that the legal systems matters because it simply doesn't allow investors to take certain actions. This finding is also consistent with Lerner and Schoar (2004).

6.2 Sample issues

In section 2 we show that our sample is highly representative of underlying population. With a hand-collected dataset there are always missing observations for individual data items. While we made an enormous effort to complete missing observations, we are still left with different numbers of observations across variables. To verify that this does not induce a selectivity bias we perform additional test. We estimate a Heckman's two-step method (using the maximum likelihood approach). In the first step an ordinary Probit model is used to obtain consistent estimates of the selection equation. We find no particular patterns of the missing observations. Still, we perform a variety of checks on the second step, and verify that there is no correlation between the selection equation and our main regressions. We cannot find any evidence that our results are affected by sample selection problems.

As part of our data-collection, we obtained data not only on the deals European venture capitalist do in Europe, but also on deals that they do in the US. Since beyond the legal system, there are many other reasons why a trans-Atlantic deal would be different, we believe it is conceptually more appropriate to only look at European deals. Therefore, our main analysis looked at European investments only. We also run our regressions adding data on US deals, where we include a US dummy. The results are very intuitive. Adding the US data does not affect the results of the main model. The US dummy has a negative and significant coefficient for the governance and support variables. And US deals have more downside protection.

Yet another sample-related concern might be that within our sample we have multiple deals made by the same investor. One may argue that these observations are not fully independent. We therefore consider clustering standard errors. Naturally, this too imposes a fairly strong assumption, namely that all deals by the same investor have a single common error structure. We find that clustering tends to increase our standard errors. This occasionally reduces the statistical significance of an individual coefficient, but it does not affect the overall pattern of results.

6.3 Robustness checks

As with any empirical analysis, there is always a question about whether we have controlled for enough other effects. With hand-collected data, there is an additional trade-off that adding variables comes at a cost of losing observations. Our base specification focuses on a few important investor and company variables. We did numerous additional checks to see whether other variables affect our results.

In our base specifications we aggregate the three families of civil law countries (French, German, and Scandinavian). One could fear that the effects we find are driven by just one of these. To this purpose we run our regressions using the common law system as our default category, and adding separate dummies for the three civil law families. The results clearly show that the effects we find come fairly evenly from all of the three.

Our base model controls for the stage of the deal, and whether the deal is in high technology. Instead of using stage, one can use the closely related (and correlated) measure of company age, and obtain analogous results. Since the stage variable is actually an ordered categorical variable, we also reran our regressions using a set of dummy variables for the four stage categories, and found no notable differences. Instead of using a control for high technology, which aggregates across a number of industries, we also reran our regressions using individual industry controls. Again no notable differences emerged.

One concern might be that our sample period includes the “dotcom” period. Although still over-hyped, the dotcom wave was much smaller in Europe than in the US. Nonetheless we ask whether time periods affect our results. For this we add a set of time dummies (one for each sample year), but find that they do not affect our results. It might also be argued that the dotcom period involved software deals that do not fit the traditional notion of a high technology deal. We reran all of our results reclassifying software as a low technology sector, but found that this does not affect any of our results.

Another deal-related concern is that venture capitalists may assume different roles, depending on syndicate structures. For the deals where we have the data, we include two additional controls, one for whether a deal is syndicated, and one for whether the investor is the lead syndicator. Again we find that this does not affect our results. Kaplan and Strömberg (2003) note that the size of an investor’s stake affects his/her incentive to be involved with the company. While we do not have data on equity stakes, we do have some data on the amount of money invested. First, we consider the total amount of money that a venture capitalist invests in the deal. And second we consider what percentage of the total money raised in the round is provided by our investor. Again, we find that including these additional variables does not affect our main results.

We also did some robustness checks on our dependent variables. Our measure of downside protection aggregates across a number of securities. It is possible to provide a more detailed ranking for the strength of downside protection, or degree of concavity. It is commonly argued that debt is the most concave, that preferred equity and convertible debt are less concave, that equity is linear, and that warrants are convex. We can thus construct a simple categorical proxy for concavity (1 for debt, 2 for convertible debt and preferred equity, 3 for equity and 4 for warrants). For the exclusive measure we use the concavity of the main instrument. For the inclusive measure we build the concavity proxy on the most concave instrument used. To re-estimate our models we use an ordered Probit.

We find that none of our results were affected by replacing the downside measures with these concavity measures. This suggests that our results does not depend on the details of exactly how we measure downside protection.

7 Conclusion

In this paper we develop a theory of how the legal system affects optimal contracts, investor actions, and their incentives to invest in value-adding competencies. Testing the theory on a hand-collected dataset of European venture capital deals, we confirm the model predictions. We provide a broader perspective than previous studies, which have more narrowly focussed on either contractual or non-contractual aspects of the financing relationship. Our evidence shows that the legal system affects financial intermediation in a rich way. It also shows that the effect of the legal system may operate not only through its direct impact on individual choices of contracts and actions, but also more broadly by affecting the way intermediaries develop their skills and capabilities—an aspect largely ignored by the literature so far.

This evidence opens up some important questions for future research. Exactly which aspects of the legal system matter most for venture capital? A closely related question concerns policy: To what extent it is possible to alter a country’s legal system, to promote venture capital markets? Clearly, to fully answer these questions, future research would benefit from also looking at the regulatory environment, and possible even the institutional and social constraints that affect venture capital activity. We hope that the analysis of this paper provides inspiration and justification for this broader research agenda.

Appendix

Proof of Proposition 3:

We note that d^* is determined by $u_E(d^*) = \beta_G + (1-s)(a-d^*) + p\pi(\Lambda - \lambda s) - c_E - k_E = 0$. Totally differentiating w.r.t. λ we obtain $\frac{du_E}{d\lambda} + \frac{du_E}{dd^*} \frac{dd^*}{d\lambda} = 0 \Leftrightarrow \frac{dd^*}{d\lambda} = \frac{1}{1-s} \frac{du_E}{d\lambda}$. We have $\frac{du_E}{d\lambda} = \frac{\partial u_E}{\partial \lambda} + \frac{\partial u_E}{\partial s^*} \frac{\partial s^*}{\partial \lambda} + \frac{\partial u_E}{\partial e^*} \frac{\partial e^*}{\partial \lambda} + \frac{\partial u_E}{\partial v^*} \frac{\partial v^*}{\partial \lambda}$. Using $\frac{\partial u_E}{\partial \lambda} = p\pi(\phi - s)$, $\frac{\partial u_E}{\partial s^*} = -(a - d^*) - \lambda p\pi$, $\frac{ds^*}{d\lambda} = -\frac{p_V^2}{p_E^2 + p_V^2} \frac{1-\phi}{\lambda^2}$, $\frac{\partial u_E}{\partial e^*} = 0$, $\frac{\partial u_E}{\partial v^*} = p_V\pi(\Lambda - \lambda s)$ and $\frac{dv^*}{d\lambda} = \frac{p_V^3}{p_E^2 + p_V^2} \phi\pi$ we obtain $\frac{du_E}{d\lambda} = p\pi(\phi - s) + [(a - d^*) + \lambda p\pi] \frac{p_V^2}{p_E^2 + p_V^2} \frac{1-\phi}{\lambda^2} + p_V\pi(\Lambda - \lambda s) \frac{p_V^3}{p_E^2 + p_V^2} \phi\pi$. Using $s^* = \frac{\Lambda}{\lambda} \frac{p_V^2}{p_E^2 + p_V^2} = s^* \frac{\lambda}{\Lambda}$ we rewrite this as $\frac{du_E}{d\lambda} = p\pi(\phi - s^*) + p\pi s^* \frac{1-\phi}{\Lambda} + (a - d^*) s^* \frac{1-\phi}{\lambda\Lambda} + p_V^2(\Lambda - \lambda s^*) s^* \frac{\lambda}{\Lambda} \phi\pi^2$. The third and first terms are clearly positive. The first and second term can be rewritten as $\frac{p\pi}{\Lambda} [\Lambda\phi - \Lambda s^* + s^* - \phi s^*]$. Using $1 - \Lambda = (1 - \lambda)\phi$ we obtain $\frac{p\pi}{\Lambda} [\Lambda\phi - \phi s^* + (1 - \lambda)\phi s^*] = \frac{p\pi\phi}{\Lambda} [\Lambda - \lambda s^*] > 0$. It follows that $\frac{du_E}{d\lambda} > 0$ and thus $\frac{dd^*}{d\lambda} > 0$ ■

Proof of Lemma 2:

Note that in equilibrium we have $u_E = 0$, so that $u_V = u$, so that $\frac{du_V}{d\lambda} = \frac{du}{d\lambda}$. We use the optimal values $e^* = p_E\pi(\Lambda - \lambda s)$ and $v^* = p_V\pi\lambda s$ to obtain $u = [p_G + p_E^2\pi(\Lambda - \lambda s) + p_V^2\pi\lambda s]\pi\Lambda - \frac{[p_E\pi(\Lambda - \lambda s)]^2}{2} - \frac{[p_V\pi\lambda s]^2}{2} + \beta_G + a - k_E - k_V$. From the envelope theorem we have $\frac{du}{ds^*} = 0$. Thus $\frac{du_V}{dp_1} = \frac{du}{dp_1} = \pi\Lambda > 0$ for $\beta < \hat{\beta}$ and $\frac{du_V}{dp_1} = 0$ for $\beta > \hat{\beta}$. Moreover, $\frac{du_V}{dp_V} = \frac{du}{dp_V} = p_V\pi^2\lambda s(2\Lambda - \lambda s) = \Lambda^2 \frac{p_V^2}{p_E^2 + p_V^2} (2 - \frac{p_V^2}{p_E^2 + p_V^2}) > 0$. We have thus established that u_V is increasing in p_1 and p_V . The optimal levels of p_1 and p_V are determined by $\int \frac{du_V}{dp_1} d\Omega(\lambda, x) = C'_1$ and $\int \frac{du_V}{dp_V} d\Omega(\lambda, x) = C'_V$. To see how these optimal choices depend on the distribution of λ , we simply note that $\frac{d^2u_V}{dp_1 d\lambda} = \phi\pi > 0$ for $\beta < \hat{\beta}$ and $\frac{d^2u_V}{dp_1 d\lambda} = 0$ for $\beta > \hat{\beta}$. Moreover, $\frac{d^2u_V}{dp_V d\lambda} = 2\Lambda\phi \frac{p_V^2}{p_E^2 + p_V^2} (2 - \frac{p_V^2}{p_E^2 + p_V^2}) > 0$. The marginal benefit of investing in p_1 and p_V is thus an increasing function of λ . It follows that the optimal choice of p_1 and p_V are always higher for any first order stochastic dominant shift with respect to λ ■

Proof of Proposition 4:

We evaluate the comparative statics of v^* , $\hat{\beta}$ and d^* w.r.t. p_1 (for $\beta < \hat{\beta}$) and p_V . From $v^* = \frac{p_V^3}{p_E^2 + p_V^2} \Lambda \pi$ we note that $\frac{dv^*}{dp_1} = 0$ and $\frac{dv^*}{dp_V} = \frac{3p_V^2 p_E^2 + 5p_V^4}{(p_E^2 + p_V^2)} \Lambda \pi > 0$. From $\hat{\beta} = (p_1 - p_0) \pi \Lambda$ we have $\frac{d\hat{\beta}}{dp_1} = \pi \Lambda$ and $\frac{d\hat{\beta}}{dp_V} = 0$. Totally differentiating $u_E(d^*) = 0$ w.r.t. p_1 , we have $\frac{dd^*}{dp_1} = \frac{\pi(\Lambda - \lambda s)}{1 - s} > 0$. Finally, to see that the effect of p_V on d^* is ambiguous, note that $\frac{dd^*}{dp_V} = \frac{1}{1 - s} \frac{du_E}{dp_V}$ as before. We have $\frac{du_E}{dp_V} = \frac{\partial u_E}{\partial p_V} + \frac{\partial u_E}{\partial s^*} \frac{\partial s^*}{\partial p_V} + \frac{\partial u_E}{\partial e^*} \frac{\partial e^*}{\partial p_V} + \frac{\partial u_E}{\partial v^*} \frac{\partial v^*}{\partial p_V}$. Using $\frac{\partial u_E}{\partial p_V} = v^* \pi (\Lambda - \lambda s) > 0$, $\frac{\partial u_E}{\partial s^*} = -(a - d^*) - \lambda p \pi$, $\frac{ds^*}{dp_V} = \frac{\Lambda}{\lambda} \frac{2p_V p_E^2}{(p_E^2 + p_V^2)} > 0$, $\frac{\partial u_E}{\partial e^*} = 0$, $\frac{\partial u_E}{\partial v^*} = p_V \pi (\Lambda - \lambda s)$ and $\frac{dv^*}{dp_V} = \frac{3p_V^2 p_E^2 + 5p_V^4}{(p_E^2 + p_V^2)} \Lambda \pi > 0$ we obtain $\frac{du_E}{dp_V} = p_V \lambda s (\Lambda - \lambda s) \pi^2 - [(a - d^*) + \lambda p \pi] \frac{\Lambda}{\lambda} \frac{2p_V p_E^2}{(p_E^2 + p_V^2)} + p_V \pi (\Lambda - \lambda s) \frac{3p_V^2 p_E^2 + 5p_V^4}{(p_E^2 + p_V^2)} \Lambda \pi$. The second term is negative. Depending on the size of a , it might be bigger or smaller than the sum of the first and third term. The reason for the ambiguity is that a higher value of p_V already requires a higher value of s (i.e. giving the venture capitalist more equity). Whether it also requires a higher value of debt is ambiguous. ■

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Table 1: Sample properties

This table compares our sample to the population it is drawn from. Panel A looks at the country composition and response rates, Panel B at the composition by venture firm type, Panel C at the size composition, and Panel D at the age composition. Variables are defined in Table 2. Partners are measured in units, the amount managed in million of current euros, and age in months in December 2001.

Panel A: COUNTRY COMPOSITION AND RESPONSE RATE

	POPULATION	SAMPLE	RESPONSE RATE
Austria	23	8	34.8%
Belgium	34	5	14.7%
Denmark	29	4	13.8%
Finland	33	6	18.2%
France	101	15	14.9%
Germany	146	19	13.0%
Greece	8	4	50.0%
Ireland	15	3	20.0%
Italy	37	6	16.2%
Luxembourg	3	1	33.3%
The Netherlands	52	5	9.6%
Norway	22	2	9.1%
Portugal	10	2	20.0%
Spain	38	10	26.3%
Sweden	17	6	35.3%
Switzerland	43	6	14.0%
UK	139	22	15.8%
<i>TOTAL</i>	<i>750</i>	<i>124</i>	<i>16.5%</i>

Panel B: COMPOSITION BY VENTURE FIRM TYPE

	POPULATION	SAMPLE
Independent	65.7%	67.7%
Corporate	8.0%	9.7%
Bank	19.3%	17.8%
Public	6.9%	4.8%

Panel C: COMPOSITION BY SIZE

	POPULATION			
	Mean	Median	Min.	Max.
Partners	4.3	3	1	25
Amount managed	333.4	60	1	14,200
	SAMPLE			
	Mean	Median	Min.	Max.
Partners	4.2	3	1	20
Amount managed	179.8	52	2	4,500

Table 2(a): Dependent variables

Variable	Description
BOARD CONTROL	dummy variable that takes the value 1 if the venture capitalist is reported to have a contractual right to obtain control of the board if the company fails to meet a specified contingency; 0 otherwise.
INTERACTION	dummy variable that takes the values 1 if the venture firm interacts with the portfolio company monthly, or weekly; 0 if it interacts quarterly or annually.
DOWNSIDE-ALL	dummy variable that takes the value 1 if the the finacing instruments used for the deal include straight debt, convertible debt, or preferred equity; 0 otherwise.

Table 2(b): Independent variables: Legal origin

Variable	Description
COMPANY-COMMON	dummy variable that takes the value 1 if the company is located in a legal system of common law, from Laporta et al. (1998); 0 otherwise.
INVESTOR-COMMON	dummy variable equal to 1 if the venture investor is located in a legal system of common law and the portfolio company in a legal system of civil law; 0 otherwise.
INVESTOR-CIVIL	dummy variable equal to 1 if the venture investor is located in a legal system of civil law and the portfolio company in a legal system of common law; 0 otherwise.

Table 2(c): Independent variables: Legal indices

Variable	Description
COMPANY-RULE	measure of the quality of enforcement of legal rules, on a scale from 0 to 10; originally developed by Laporta et al. (1998) as updated by the Political Risk Services Group.
INVESTOR-RULE-POSITIVE	variable equal to the value of rule-of-law for the investor minus the value of rule-of-law for the portfolio company if the difference is positive; 0 otherwise; from Laporta et al. (1998) as updated by the Political Risk Services Group.
INVESTOR-RULE-NEGATIVE	variable equal to the value of rule-of-law for the investor minus the value of rule-of-law for the portfolio company multiplied by minus one if the difference is negative; 0 otherwise; from Laporta et al. (1998) as updated by the Political Risk Services Group.
COMPANY-PROCEDURAL	measure of the degree of legal formalism of a legal system, on a scale from 0 to 100, from the World Bank Doing Business 2001 database. Rescaled to an index of procedural simplicity by taking the opposite of a country's value.
INVESTOR-PROCEDURAL-POSITIVE	variable equal to the value of the difference of the procedural simplicity index for the investor and the company if this is positive; 0 otherwise; from Laporta et al. (1998) as updated by the World Bank Doing Business 2001 database.
INVESTOR-PROCEDURAL-NEGATIVE	variable equal to the opposite of the value of the difference of the procedural simplicity index for the investor and the company if this is positive; 0 otherwise; from Laporta et al. (1998) as updated by the World Bank Doing Business 2001 database.

Table 2(d): Independent variables: investor-level and deal level controls

Variable	Description
INDEPENDENTVC	dummy variable that takes the value 1 if the venture capitalist defines itself as an independent venture firm; 0 otherwise.
VC-SIZE	is the amount under management at the venture capital firm.
VC-AGE	is the age of the venture capital firm, measured in months at the end of the sample period.
INDUSTRY	set of a mutually exclusive dummy variables that take the value 1 if the company is reported to operate in one the following industries Biotech and pharma; Medical products; Software and internet; Financial services; Industrial services; Electronics; Consumer services; Telecom; Food and consumer goods; Industrial products (incl. energy); Media & Entertainment; Other; 0 otherwise.
STAGE	ordered dummy variable that takes the values 1 to 4 if a deal is reported as a seed, start-up, expansion, or bridge.

Table 3: Frequency of securities used as financing instruments, by legal system

This Table provides the frequency with which the five securities are used, by the legal system of the company financed. Panel A provides the frequency for *all* the financing instruments used in a deal, while Panel B provides the frequency for the *main* financing instrument. Notice that in Panel A the frequencies add up to more than 1. The definition of each variable is found in Table 2.

Security:	Common		Civil		<i>Obs</i>
	Anglo-Saxon	French	German	Scandinavian	
Straight Debt	.251	.052	.092	.069	<i>1,396</i>
Convertible debt	.138	.131	.157	.190	<i>1,394</i>
Preferred equity	.489	.269	.167	.347	<i>1,401</i>
Pure equity	.546	.757	.877	.742	<i>1,396</i>
Warrants	.063	.131	.071	.055	<i>1,365</i>
<i>Obs</i>	<i>228</i>	<i>610</i>	<i>342</i>	<i>250</i>	<i>1,430</i>

Table 4: Frequency and mean values, by legal system

This table provides mean values (frequency for dummy variables) for all our dependent and independent variables. Variables are defined in Table 2.

VARIABLE	Common		Civil		<i>Obs</i>
	Anglo-Saxon	French	German	Scandinavian	
Board Control	.519	.270	.460	.433	<i>1,272</i>
Interaction	.874	.523	.808	.836	<i>1,259</i>
Downside	.745	.344	.336	.536	<i>1,401</i>
Investor-Common	0	.028	.029	.032	<i>1,430</i>
Investor-Civil	.158	0	0	0	<i>1,430</i>
Company-Rule	2.024	1.410	1.987	2.023	<i>1,430</i>
Investor-Rule-positive	.013	.028	.012	.012	<i>1,430</i>
Investor-Rule-negative	.055	.010	.056	.021	<i>1,430</i>
Company-Procedural	36.658	73.320	57.866	44.832	<i>1,424</i>
Investor-Procedural-positive	3.877	.566	1.886	.816	<i>1,424</i>
Investor-Procedural-negative	.079	1.602	1.053	.464	<i>1,424</i>
IndependentVC	.767	.446	.667	.576	<i>1,430</i>
VC-Size	127.329	340.846	199.925	176.300	<i>1,418</i>
VC-Age	93.167	105.505	77.956	80.624	<i>1,430</i>
Stage	2.366	2.299	2.130	2.156	<i>1,265</i>
Company age	40.576	72.987	48.683	44.611	<i>1,078</i>

Table 5: Descriptive statistics

This table provides descriptive statistics for all our dependent and independent variables. Variables are defined in Table 2. For dummy variables the MEAN column reports the frequency of observations.

VARIABLE	MEAN	MEDIAN	MIN	MAX	OBS
Board Control	0.390	-	0	1	1,272
Interaction	0.705	-	0	1	1,259
Downside	0.441	-	0	1	1,401
Origin-Common	0.159	-	0	1	1,430
Investor-Common	.024	-	0	1	1,430
Investor-Civil	.025	-	0	1	1,430
Company-Rule	1.753	1.9	.66	2.36	1,430
Investor-Rule-positive	.019	0	0	1,07	1,430
Investor-Rule-negative	.030	0	0	1,07	1,430
Company-Procedural	58.737	61	36	83	1,424
Investor-Procedural-positive	1.458	0	0	47	1,420
Investor-Procedural-negative	1.025	0	0	43	1,420
IndependentVC	0.573	-	0	1	1,430
VC-Size	243.864	85	1.3	4,500	1,418
VC-Age	92.599	54	12	390	1,430
Stage	2.244	2	1	4	1,265
Company age	57.317	24	0	1,179	1,078

Table 6: Model with direction of foreign investments

This table reports results from probit regressions for our model with direction of foreign investments. The dependent variables are BOARD CONTROL, INTERACTION, and DOWNSIDE. For each independent variable, column (i) reports the estimated coefficients for a model without investor and company controls ; column (ii) reports the estimated coefficients for a model with investor and company controls. Panel A reports results for legal origin. The main independent variables are COMPANY-COMMON, INVESTOR-COMMON and INVESTOR-CIVIL. Panel B reports results for rule of law. The main independent variables are COMPANY-RULE, INVESTOR-RULE-POSITIVE, and INVESTOR-RULE-NEGATIVE. Panel C reports results for procedural simplicity. The main independent variables are COMPANY-PROCEDURAL, INVESTOR-PROCEDURAL-POSITIVE, and INVESTOR-PROCEDURAL-NEGATIVE. VC controls are VC-INDEPENDENT, VC-AGE, AND VC-SIZE. Deal Controls (unreported) are STAGE and INDUSTRY. Variables are defined in Table 2. For each independent variable, we report the estimated coefficient and the T-ratio (in parenthesis), computed using (Huber-White) heteroskedasticity-robust standard errors, clustered by venture firm. Values significant at the 1%, 5% and 10% level are identified by ***, **, *.

Panel A: Legal origin

	BOARD CONTROL		INTERACTION		DOWNSIDE	
	(i)	(ii)	(i)	(ii)	(i)	(ii)
Company-Common	0.594 (1.55)	0.519 (1.29)	1.071*** (3.22)	1.039*** (3.27)	1.118*** (4.65)	0.994*** (3.92)
Investor-Common	1.127*** (2.62)	0.830* (1.74)	1.493*** (3.14)	1.143** (2.07)	0.807* (1.82)	0.792** (2.19)
Investor-Civil	-1.321*** (-2.87)	-1.289*** (-2.62)	-1.299*** (-2.85)	-1.123** (-2.48)	-0.758** (-2.14)	-0.823** (-2.22)
IndependentVC		0.033 (0.10)		0.409 (1.38)		0.564** (2.20)
VC-Size		-0.001* (-1.95)		-0.001 (-1.15)		0.001 (0.33)
VC-Age		-0.007*** (-2.92)		-0.005*** (-2.66)		0.003 (1.64)
Deal Controls	No	Yes	No	Yes	No	Yes
Observations	1,272	1,123	1,259	1,105	1,401	1,233
χ^2	14.54	56.11	16.70	33.83	23.98	55.74
Model p-value	0.002	0.000	0.001	0.013	0.000	0.000
Pseudo R ²	0.038	0.164	0.058	0.188	0.066	0.126

Panel B: Rule of Law

	BOARD CONTROL		INTERACTION		DOWNSIDE	
	(i)	(ii)	(i)	(ii)	(i)	(ii)
Company–Rule	0.830*	0.756*	1.480***	1.327***	0.847**	0.713**
	(1.92)	(1.76)	(4.14)	(3.41)	(2.32)	(2.26)
Investor–Rule–positive	0.388	0.142	1.946***	1.922**	2.106***	1.330**
	(0.59)	(0.18)	(3.26)	(2.43)	(3.38)	(2.16)
Investor–Rule–negative	–1.553***	–1.073**	–2.208***	–1.754***	0.132	–0.235
	(–2.60)	(–2.30)	(–3.34)	(–3.76)	(0.19)	(–0.55)
IndependentVC		0.005		0.312		0.573**
		(0.02)		(1.11)		(2.13)
VC–Size		0.001		–0.001**		–0.001
		(–1.62)		(–2.03)		(–0.18)
VC–Age		–0.006***		–0.004***		0.003*
		(2.62)		(–3.15)		(1.67)
Deal Controls	No	Yes	No	Yes	No	Yes
<i>Observations</i>	1,272	1,123	1,259	1,105	1,401	1,233
χ^2	6.80	46.80	24.73	103.06	14.88	58.68
<i>Model p-value</i>	0.786	0.000	0.000	0.000	0.002	0.000
<i>Pseudo R²</i>	0.044	0.164	0.141	0.232	0.049	0.102

Panel C: Procedural simplicity

	BOARD CONTROL		INTERACTION		DOWNSIDE	
	(i)	(ii)	(i)	(ii)	(i)	(ii)
Company-Procedural	-0.021** (-2.16)	0.019** (2.02)	-0.042*** (-5.23)	0.040*** (4.73)	-0.020** (-2.13)	0.021*** (2.76)
Investor-Procedural –positive	0.019 (1.33)	0.015 (1.02)	0.056*** (3.24)	0.048*** (2.65)	0.041*** (3.00)	0.030*** (2.75)
Investor-Procedural –negative	-0.042*** (-2.88)	-0.034** (-2.07)	-0.063*** (-5.09)	-0.055*** (-4.28)	-0.002 (-0.09)	-0.014 (-1.29)
Independent VC		-0.034 (-0.10)		0.288 (1.08)		0.528** (2.07)
VC-Size		-0.001 (-1.57)		-0.001 (-0.81)		0.001 (0.30)
VC-Age		-0.006*** (-2.63)		-0.004*** (-2.98)		0.004* (1.93)
Deal Controls	No	Yes	No	Yes	No	Yes
Observations	1,263	1,114	1,249	1,095	1,391	1,223
χ^2	8.96	48.63	37.19	112.04	11.33	59.62
Model p-value	0.030	0.000	0.000	0.000	0.010	0.000
Pseudo R ²	0.062	0.171	0.226	0.301	0.059	0.126

Table 7: Pairwise correlations between legal systems and investor and company characteristics

	COMMON	RULE-OF-LAW	PROCEDURAL-SIMP.	STAGE	INDEPENDENTVC	VC-AGE	VC-SIZE
COMMON	1.000						
RULE-OF-LAW	0.341 (0.00)	1.000					
PROCEDURAL-SIMP.	0.588 (0.00)	0.757 (0.00)	-1.000				
STAGE	0.071 (0.01)	-0.062 (0.03)	0.038 (0.17)	1.000			
INDEPENDENTVC	0.174 (0.00)	0.195 (0.00)	0.220 (0.00)	-0.114 (0.00)	1.000		
VC-AGE	-0.001 (0.10)	-0.015 (0.56)	-0.069 (0.01)	0.057 (0.04)	0.060 (0.02)	1.000	
VC-SIZE	-0.084 (0.00)	-0.052 (0.05)	-0.116 (0.00)	0.095 (0.00)	0.109 (0.00)	0.107 (0.00)	1.000

Table 8: Model with international investor effects

This table reports results from probit regressions for our model with international investors effects. The dependent variables are BOARD CONTROL, INTERACTION, and DOWNSIDE. Panel A reports results for legal origin. The main independent variables are DOMESTIC-COMMON, INT'L-COMMON-COMMON, INT'L-CIVIL-CIVIL, INT'L-COMMON-CIVIL, and INT'L-CIVIL-COMMON. Panel B reports results for rule of law. The main independent variables are COMPANY-RULE, INTERNATIONALVC, INVESTOR-RULE-POSITIVE, and INVESTOR-RULE-NEGATIVE. Panel C reports results for procedural simplicity. The main independent variables are COMPANY-PROCEDURAL, , INTERNATIONALVC, INVESTOR-PROCEDURAL-POSITIVE, and INVESTOR-PROCEDURAL-NEGATIVE. VC controls (unreported) are VC-INDEPENDENT, VC-AGE, AND VC-SIZE. Deal Controls (unreported) are STAGE and INDUSTRY. Variables are defined in Table 2. For each independent variable, we report the estimated coefficient and the T-ratio (in parenthesis), computed using (Huber-White) heteroskedasticity-robust standard errors, clustered by venture firm. Values significant at the 1%, 5% and 10% level are identified by ***, **, *.

Panel A: Legal origin

	BOARD CONTROL	INTERACTION	DOWNSIDE
Domestic-Common	0.323 (0.58)	1.388*** (3.43)	0.988*** (2.93)
Int'l-Common-Common	0.681 (1.23)	1.385** (2.34)	1.392*** (2.83)
Int'l-Civil-Civil	-0.128 (-0.38)	0.611** (1.97)	0.191 (0.72)
Int'l-Common-Civil	0.751 (1.45)	1.527*** (2.63)	0.922** (2.38)
Int'l-Civil-Common	-0.845** (-2.03)	0.299 (0.66)	0.296 (0.84)
VC Controls	Yes	Yes	Yes
Deal Controls	Yes	Yes	Yes
<i>Observations</i>	1,123	1,105	1,233
χ^2	56.69	47.79	67.40
<i>Model p-value</i>	0.000	0.001	0.000
<i>Pseudo R²</i>	0.167	0.215	0.130

Panel B: Rule of Law

	BOARD CONTROL	INTERACTION	DOWNSIDE
Company-Rule	0.763* (1.76)	1.264*** (3.36)	0.715** (2.27)
InternationalVC	-0.128 (-0.41)	0.060 (1.35)	-0.012 (-0.05)
Investor-rule-positive	0.256 (0.31)	1.168** (2.06)	1.342** (2.13)
Investor-rule-negative	-0.979** (-2.18)	-1.963*** (-4.39)	-0.228 (-0.59)
VC Controls	Yes	Yes	Yes
Deal Controls	Yes	Yes	Yes
<i>Observations</i>	1,123	1,105	1,233
χ^2	48.76	100.89	61.73
<i>Model p-value</i>	0.000	0.000	0.000
<i>Pseudo R²</i>	0.166	0.242	0.102

Panel C: Procedural Simplicity

	BOARD CONTROL	INTERACTION	DOWNSIDE
Company-Procedural	-0.019** (-2.02)	-0.038*** (-4.91)	-0.021*** (-2.78)
InternationalVC	-0.116 (-0.38)	0.384 (1.50)	-0.001 (-0.03)
Investor-procedural-positive	0.032** (-2.07)	0.060*** (-4.80)	0.014 (-1.40)
Investor-procedural-negative	-0.017 (1.06)	-0.042** (2.37)	-0.030*** (2.67)
VC Controls	Yes	Yes	Yes
Deal Controls	Yes	Yes	Yes
<i>Observations</i>	1,114	1,095	1,223
χ^2	51.97	121.91	66.14
<i>Model p-value</i>	0.000	0.000	0.000
<i>Pseudo R²</i>	0.172	0.312	0.126

Table 9: Conditional Logit

This table reports results from probit regressions for base model with direction of foreign investments. The dependent variables are BOARD CONTROL, INTERACTION, and DOWNSIDE. Panel A reports results for legal origin. The independent variables are INVESTOR-COMMON and INVESTOR-CIVIL. Panel B reports results for rule of law. The independent variables are INVESTOR-RULE-POSITIVE and INVESTOR-RULE-NEGATIVE. Panel C reports results for procedural simplicity. The independent variables are INVESTOR-PROCEDURAL-POSITIVE and INVESTOR-PROCEDURAL-NEGATIVE. Deal Controls (unreported) are STAGE and INDUSTRY. Variables are defined in Table 2. For each independent variable, we report the estimated coefficient and the T-ratio (in parenthesis), computed using (Huber-White) heteroskedasticity-robust standard errors, clustered by venture firm. Values significant at the 1%, 5% and 10% level are identified by ***, **, *.

Panel A: Legal origin

	BOARD CONTROL	INTERACTION	DOWNSIDE
Investor-Common	0.013 (0.01)	-33.203 (-0.00)	-0.345 (-0.48)
Investor-Civil	-2.075* (-1.66)	-1.268 (-1.124)	-0.534 (-0.93)
Deal Controls	Yes	Yes	Yes
<i>Observations</i>	320	474	781
χ^2	4.25	3.66	3.19
<i>Model p-value</i>	0.374	0.453	0.526
<i>Pseudo R²</i>	0.019	0.011	0.005

Panel B: Rule of Law

	BOARD CONTROL	INTERACTION	DOWNSIDE
Investor-Rule-positive	-0.764 (-0.43)	-1.780 (-0.84)	0.449 (0.42)
Investor-Rule-negative	- 1.435 (- 1.18)	- 2.606** (-2.52)	0.008 (0.01)
Deal Controls	Yes	Yes	Yes
<i>Observations</i>	320	474	781
χ^2	2.39	8.06	2.22
<i>Model p-value</i>	0.664	0.089	0.695
<i>Pseudo R²</i>	0.011	0.023	0.003

Panel B: Procedural Simplicity

	BOARD CONTROL	INTERACTION	DOWNSIDE
Investor-Procedural-positive	-0.003 (-0.12)	0.018 (0.88)	0.009 (0.51)
Investor-Procedural-negative	-0.122* (-1.81)	0.004 (0.16)	-0.020 (-0.87)
Deal Controls	Yes	Yes	Yes
<i>Observations</i>	320	642	778
χ^2	7.77	9.43	3.39
<i>Model p-value</i>	0.100	0.051	0.495
<i>Pseudo R²</i>	0.034	0.020	0.005