Where Are Limited Liability Companies Formed? An Empirical Analysis

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Abstract

We empirically study formation-state choices of limited liability companies (LLCs). Most firms in our large sample of almost 20,000 LLCs are formed in the state where their principal place of business is located. As their size increases, firms become more likely to be formed outside that state, with Delaware emerging as the primary destination for LLCs that are not formed in the state of the principal place of business. We demonstrate that substantive law matters when LLCs choose their formation state. Limited liability companies are less likely to incorporate locally if their home state offers lax norms for minority-investor protection or creditor-friendly rules for veil piercing. In addition to contributing to the debate on regulatory competition in the law, this paper has implications for theoretical debates pertaining to choice of law in veil-piercing cases, the role of default rules, and the relationship between corporations and LLCs.

1. Introduction

One of the most fervently discussed phenomena in U.S. corporate law is the so-called market for corporate charters: corporations can select the corporate law of a given state by incorporating in that state. States, in turn, have economic incentives to attract corporate charters. In particular, they can impose franchise

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taxes on domestic corporations. The result is said to be a market for corporate law in which states function as suppliers and corporations as consumers.

Scholars have traditionally focused on the question of how this market affects publicly traded corporations. Cary (1974, p. 705) famously perceived a "race for the bottom" in which states favor managers at the expense of shareholders. Winter (1977, p. 254), on the other hand, argued that state competition "should tend toward optimality" with regard to the relationship between shareholder and corporation. Although scholarly positions on this issue have become somewhat more moderate in recent decades, the schism between the critics of state competition (Bebchuk and Ferrell 1999; Bebchuk, Cohen, and Ferrell 2002; Bebchuk 2006) and its supporters (Romano 1985, 1992, 1993, 1998, 2002; Sitkoff 2002) persists.

Given the prominence of this debate, it is unsurprising that several empirical studies analyze the incorporation choices of publicly traded firms (including initial-public-offering firms) (Bebchuk and Cohen 2003; Daines 2002; Ferris, Lawless, and Noronha 2006; Kahan 2006). By contrast, the incorporation choices of privately held firms have traditionally escaped empirical scrutiny. In a related paper, we contribute toward filling that gap by exploring the incorporation choices of privately held corporations (Dammann and Schündeln 2011). In particular, we show that about half of all large (1,000 or more employees) privately held corporations in our sample incorporate in Delaware and that corporations are less likely to be incorporated in the state where their primary state of business is located if that state offers low-quality courts, a high level of minority-shareholder protection, or a perceived high risk of veil piercing.

However, the corporation is not the only organizational form that is available to privately held firms. Indeed, regarding newly formed firms, it typically is not even the one that is most frequently used. Rather, that role increasingly falls to the limited liability company (LLC). In many states, the number of newly formed LLCs is vastly greater than that of newly formed corporations (Table A1). For example, in New Jersey, the number of professional and business corporations that were newly formed in 2008 was 14,215, whereas the number of newly formed LLCs was 53,408.

Is it prima facie reasonable to assume that the formation choices of LLCs should be similar to those of closely held corporations? At least two considerations suggest otherwise.

Perhaps most important, differences between the rules governing corporations and those applying to LLCs may prompt firms to self-select when they decide which organizational form to use. For example, those entrepreneurs who want to give minority investors only a limited role in the governance of the firm may gravitate toward the corporate form, whereas those who wish for a more active participation of minority investors may decide to form an LLC.

In addition, LLCs and closely held corporations may well differ with respect to the extent to which their choice of domicile is distorted by the law for publicly traded corporations. At least some closely held corporations may choose their

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state of incorporation with a view to going public in the future. Accordingly, their decision in favor of a particular jurisdiction may be guided by that jurisdiction's law on publicly traded corporations. Such a scenario is less likely with respect to LLCs since, in practice, firms that plan to go public traditionally have tended to incorporate rather than form an LLC (Staley 2000).

In this paper, therefore, we analyze the formation-state choices of LLCs. Our findings show that although there are important parallels between the incorporation choices of closely held corporations and the formation choices of LLCs, there also are significant differences.

Like their corporate peers, most privately held LLCs are formed locally. Of all 19,719 LLCs in our sample, which includes LLCs with 20 or more employees, more than 92 percent are formed in the state where their business is located. However, the tendency to form LLCs locally diminishes as the number of employees increases. Of those firms that have 5,000 or more employees, more than 62 percent are formed outside their home state, and of the latter, more than 95 percent are formed in Delaware.

We also find that substantive law seems to matter in making the decision where to form an LLC. To begin, LLCs are more likely to be formed in the state where their principal place of business (PPB) is located if that state makes it more difficult to pierce the veil by providing that the failure to follow formalities is not a ground for piercing the veil.

In addition, the law governing the protection of minority members also appears to be relevant. We find statistically significant evidence that LLCs are more likely to be formed in their PPB state if that state has adopted a so-called oppression statute that allows courts to dissolve the LLC in case of oppressive behavior on the part of those who control the LLC. Although one should not generalize this finding too broadly, it has rather interesting implications for the efficiency of the market for LLC formations: because there is no obvious market failure that would explain why firms should prefer inefficiently strict norms for the protection of minority investors, our finding suggests that, at least as far as oppression statutes are concerned, the market for LLC formations tends to benefit rather than harm LLC members.

We also find some evidence that LLCs are less likely to be formed in their PPB state if that state has adopted the Uniform Limited Liability Company Act (ULLCA). This is consistent with hypotheses in the legal literature that the ULLCA does not offer a particularly attractive set of rules (Ribstein and Kobayashi 1995).

Furthermore, we find that the LLCs in our sample are less likely to be formed in their PPB state if that state has adopted lax rules on managerial liability for duty-of-care violations. However, as explained in Section 8.1, our findings regarding the duty-of-care issue may at least partially be explained by a limitation of our data set and therefore should be interpreted cautiously.

In addition, we focus on the rules for withdrawal rights, dissolution, and statutory commitments to the freedom of contract, but we do not find any

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statistically significant evidence that these rules matter. Similarly, we find no statistically significant evidence that the quality of courts correlates with formation choices.

2. Data

Our company-level data set is composed of company-level data from Bureau van Dijk's ICARUS database.[1] We use the version of ICARUS from March 2008 that includes update number 52.

The ICARUS database includes U.S. and Canadian firms of all sizes. It provides crucial information on both a firm's location and its state of incorporation. To avoid any confusion, we refer to a company's location as its primary place of business.

We extract the names of all private U.S. companies and exclude mere branch locations. In a few cases, firms are listed twice in the database. In these cases, which we identify via a comparison of company names, locations, revenue, and employment numbers, we keep only one observation.

The information provided by ICARUS does not refer to the same year for all companies. For example, for some companies, ICARUS provides information on the size of the business in the year 2005, whereas for others ICARUS indicates the size of the business in 2007. To ensure that our data are sufficiently comparable across firms, we limit our data set to those firms for which the most recent available data refer to 2006 or 2007.

We include LLCs only. Because ICARUS does not provide direct information regarding the organizational form beyond stating whether a firm is privately held or publicly owned, we identify the entity type by relying on the legal rules governing entity names. In particular, we limit our data set to those firms whose names contain the words "limited liability company," "limited company," or abbreviations thereof. For example, an entity whose name ends with the abbreviation "L.L.C." is treated as an LLC. Seventeen firms that were included in our data obtained from ICARUS have names whose components would seem to indicate both the existence of a corporation (for example, "Corp.") and the existence of an LLC (for example, "L.L.C."). We exclude these firms from our sample.

To exclude small businesses, we limit our data set to firms that had at least 20 employees in 2006 or 2007. Moreover, we keep only those firms whose primary place of business is located in one of the 50 states and disregard firms whose primary place of business is located abroad or in the U.S. territories. We also exclude firms that are located in the District of Columbia, because one of our primary variables of interest, the courts variable, is not available for the District of Columbia. After cleaning the data and dropping observations for which key

[1] Bureau van Dijk, ICARUS: Instant Company Analysis and Reports for the U.S. and Canada (http://www.bvdinfo.com/Products/Company-Information/National/Icarus.aspx).

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variables of interest are missing, we arrive at a data set with 19,719 company observations.

To our company-level data set, we add state-level data from a variety of sources. For gross domestic product (GDP) data at the state level, we use data from the Bureau of Economic Analysis.[2] These data refer to the year 2006 and were last updated in June 2007. As a proxy for the industrial structure of the state, we use data on the number of manufacturing establishments, which we obtain from the U.S. Census Bureau (2004). As a proxy for the quality of judiciaries, we use the scores that the state judiciaries were awarded in U.S. Chamber of Commerce (2007).

Finally, our paper also provides a more detailed coding of various central features of the law governing LLCs than has previously been available in the literature. The coding of our state law variables is explained in general terms in the main text. More detailed information on the coding of the relevant variables is provided in Appendix B. The complete set of state-level data that are used in our econometric work can be found in Appendix A.

3. Where Are Limited Liability Companies Formed?

Little is known about where LLCs are formed. In the legal literature, some suggest that most LLCs are formed locally (Kozyris 1996), whereas others stress that LLCs are frequently formed in Delaware (Gold 2006) or that the legislature and courts in Delaware are disproportionately important in the law of unincorporated entities (Levmore 2005).

Table 1 reveals that almost 93 percent of all LLCs in our sample of LLCs with 20 or more employees are formed locally, which means that they are formed in the PPB state. However, as the number of employees increases, the tendency to form an LLC locally decreases. Of those LLCs that have between 100 and 999 employees, only approximately four-fifths (83 percent) are formed locally, and when it comes to LLCs with 5,000 or more employees, the percentage of locally formed firms decreases to less than two-fifths (38 percent).

Where are LLCs formed if they are not formed locally? For out-of-state formations, Delaware emerges as the destination of choice. Of all LLCs in our sample that are formed outside their PPB state, no less than 54 percent have chosen Delaware as their state of formation. Moreover, we find strong size effects (Table 1). Of those LLCs that have between 20 and 99 employees and that are formed outside their PPB state, about 41 percent are formed in Delaware. That percentage increases as the number of employees increases. Indeed, for LLCs with 5,000 or more employees, Delaware attracts roughly 95 percent of those firms that are formed outside their PPB state. The purpose of the following

[2] See U.S. Department of Commerce, Bureau of Economic Analysis, Gross Domestic Product (GDP) by State, 2006 (http://bea.gov/newsreleases/regional/gdp_state/2007/gsp0607.htm).

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Table 1
Distribution of Formation Choices

		Incorporated		
	N	In PPB State (%)	In Delaware (%)	In Delaware If Not in PPB State (%)
All firms (≥ 20 employees)	19,719	92.58	4.17	54.44
20–99 Employees	16,030	95.38	2.02	41.22
100–999 Employees	3,310	83.27	10.85	63.90
1,000–4,999 Employees	310	59.03	31.61	76.38
≥ 5,000 Employees	69	37.68	59.42	95.35

Note. Authors' calculations were performed using the ICARUS database (March 2008 version). PPB = principal place of business.

analysis is to study, at the firm level, the push factors that underlie these aggregate findings.

Incidentally, the dominance of Delaware in the market for out-of-state LLC formations also becomes obvious if one compares Delaware's numbers to those of the runner-up states. Whereas Delaware attracts 54.44 percent of all out-of-state LLC formations, the next most successful states are Florida and Nevada (each of which has a modest 3.14 percent of such LLC formations), followed by Texas (2.46 percent), Georgia and New York (2.19 percent each), Ohio and Virginia (2.12 percent each), Illinois (1.91 percent), California (1.84 percent), and North Carolina (1.84 percent).

4. Substantive Law

The famous debate on whether the market for corporate law leads to a race to the top or a race to the bottom assumes that firms select their state of incorporation at least in part on the basis of the content of the relevant jurisdiction's corporate law.[3] This leads to the question of whether the same is true for LLCs. To shed some light on this question, we focus on six main aspects of the law—(1) creditor protection (veil piercing), (2) minority-investor protection, (3) managerial liability, (4) the adoption of the ULLCA, (5) explicit statutory commitments to the principle of freedom of contract, and (6) the time that has passed since the state's first LLC statute went into effect.

With regard to our coding of state law, some general clarifications are in order. First, we focus on the law as it applied to an LLC formed on January 1, 2007. Second, we ignore those statutory provisions that govern special subtypes of LLCs, such as the family LLC or the professional LLC. Third, as a very rough and general principle, our state law variables take on the value one if the law

[3] Of course, other factors may matter as well. In particular, characteristics of the advising law firms may partly drive formation choices (Coates 2002; Daines 2002). Unfortunately, the ICARUS database does not provide data on the advising law firm.

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seems to favor owners over creditors, managers over members, or controlling members over minority members, whereas the relevant variables take on the value zero if the law seems to favor creditors over owners, members over managers, or minority members over controllers.

A fourth issue of general importance relates to the fact that states typically offer different rules for member-managed and manager-managed LLCs. One state—Tennessee—even offers a menu of three choices, allowing firms to be member-managed LLCs, director-managed LLCs, and manager-managed LLCs. In all of these cases, we focus on manager-managed LLCs. However, there are two states—North Dakota and Minnesota—that do not offer the manager-managed LLC as either a default or an opt-in regime. Both states let entrepreneurs instead choose between a member-managed LLC and a board-managed LLC. With respect to these two states, therefore, we look to the rules governing board-managed LLCs, and to the extent that we would normally focus on the rules governing managers, we look instead to the rules governing the board of directors. To check the robustness of our results, we run regressions without North Dakota and Minnesota. The results, which we display in Table A7, do not differ substantially from our baseline regressions.

4.1. Creditor Protection: Piercing the Veil

Both in the academic literature (Cole 2005; Miller 2007) and in guides written specifically for entrepreneurs (Spadaccini 2007), the LLC is often praised, first and foremost, for combining the principle of limited liability with partnership-style flexibility and taxation. Given this accent on liability protection, it seems reasonable to hypothesize that one of the factors guiding the decision where to form an LLC is the extent to which state laws allow courts to deviate from the principle of limited liability.

Adequate coding of the law to facilitate empirical analysis proves difficult, however. The law on veil piercing has traditionally been notoriously vague and fact intensive (Bainbridge 2001), and this continues to be true as courts apply the veil-piercing doctrine to LLCs (Bainbridge 2005). For closely held corporations, one option is to rely on an empirical study by Thompson (1991). The relevant study provides, for each state and for the District of Columbia, the percentage of veil-piercing cases in which the veil was successfully pierced. Unfortunately, we lack comparable data with respect to LLCs.

However, the statutory law on LLCs allows us to take an alternative approach: Traditionally, one factor that courts have considered in deciding whether or not to pierce the veil in corporate law has been the failure to observe corporate formalities. And as courts have applied the principles on veil piercing to LLCs, they have also considered the failure to follow formalities (see *Litchfield Asset Management Corporation v. Howell,* 799 A.2d 298, 313, 315 [Conn. App. Ct. 2002]). Against this background, it is noteworthy that some LLC statutes seek to reduce the risk of veil piercing by providing that a failure to observe certain

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formalities shall not justify the piercing of the corporate veil. Other states have adopted no such provision. To capture this difference in the statutory law on veil piercing, we create a variable that we call Formalities. That variable takes on the value one if the LLC statute of a state contains a provision of the type described above; otherwise, it assumes the value zero. The precise coding is reported in Section B5.

4.2. Minority-Investor Protection

In closely held firms, the most prominent agency conflict is the one between controlling investors and minority investors. Accordingly, to the extent that a race to the bottom unfolds, one would expect it to lead to lower levels of protection for minority investors. The question, therefore, is whether firms select their state of formation in part based on the level of protection that the law accords minority investors. To shed some light on this question, we focus on three different features of state law, all of which are related to the protection of minority investors—oppression statutes, withdrawal rights, and the provisions governing the dissolution of LLCs.

4.2.1. Oppression Statutes

One mechanism to protect minority investors lies in so-called oppression statutes—statutes that allow the court to dissolve the company, either directly or as a means of last resort, when the managers or those in control of the company have oppressed the minority. However, not all states have adopted statutes of this type, and we use the variable Oppression to capture the relevant differences.

For coding purposes, it is worth noting that the wording of these statutes varies somewhat. Some explicitly use the words "oppressively" or "oppressive" to describe the behavior that will allow the courts to dissolve the LLC (for example, Idaho Code sec. 30-6-701). Others provide that the relevant conduct has to be unfairly prejudicial (Minn. Stat. sec. 322B.833; N.D. Cent. Code sec. 10-32-119) or require persistent unfairness toward any member (Miss. Code Ann. sec. 79-29-802). Two states—California and North Carolina—use an approach that is particularly generous to the minority members because it allows the court to dissolve the LLC whenever dissolution is "necessary for the protection of the rights or interests of the complaining [members]" (Cal. Corp. Code sec. 17351; N.C. Gen. Stat. sec. 57C-6-02). Two other states—Washington and Tennessee—are even more generous in that they allow dissolution on general equitable grounds. Washington allows dissolution as long as it is equitable (Wash. Rev. Code Ann. sec. 25.15.275), and Tennessee authorizes its courts to grant any equitable relief, including dissolution, as long as it is just and reasonable (Tenn. Code Ann. sec. 48-245-901). For the purposes of our variable Oppression, we treat all of the aforementioned approaches identically. If a state has enacted a

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statute that falls into any one of the aforementioned categories, Oppression takes on the value zero; otherwise, it takes on the value one.

On occasion, the relevant provisions impose additional requirements that must be met in order for the court to dissolve the corporation. For example, under Iowa law, the oppressive conduct must be directly harmful to the member seeking the dissolution of the LLC (Iowa Code sec. 489.701[1][e][2]). In Michigan, the LLC statute requires willfully unfair and oppressive conduct for the court to be able to dissolve the LLC (Mich. Comp. Laws sec. 450.4515). For the purpose of this analysis, we ignore such limitations.

4.2.2. Withdrawal Rights

Another mechanism to protect minority investors lies in so-called withdrawal rights. Originally, most LLC statutes gave members the right to withdraw or resign from the LLC and be paid the fair value of their membership (Miller 2001). This allowed minority investors to liquidate their membership and escape oppressive controllers. The inclusion of withdrawal rights in most LLC statutes had its origin in tax law rather than in corporate law. Partnership-style taxation was originally reserved for those LLCs that had more partnership characteristics than corporate characteristics, and one of the relevant factors was the existence—or the lack—of corporate-style continuity of life (Ribstein 1997; Weisbach 1999). By giving members withdrawal rights that could potentially lead to the dissolution of the LLC, state lawmakers hoped to make partnership-like tax treatment more likely (Miller 2001). In 1996, the Internal Revenue Service adopted the so-called check-the-box regulations, which generally treat unincorporated business entities as partnerships unless they choose to be taxed as corporations (Miller 2001; Weisbach 1999). Consequently, withdrawal rights had outlived their usefulness for tax purposes.

Despite the tax changes described above, some states still give LLC members an unconditional and unilateral right to liquidate their membership via withdrawal. Indeed, such a right can be provided in two ways. In some states, such as Hawaii (Haw. Rev. Stat. secs. 428-601, 603, 701), a member has the unilateral right to withdraw and can then demand to be paid the fair value of her membership. In other states, the member has the unilateral right to withdraw. This withdrawal then dissolves the company without the other members being able to prevent this dissolution, and as a result of the dissolution, the company is wound up, allowing the withdrawing member to obtain the value of her membership.

By contrast, a majority of states no longer allow members to liquidate their membership via withdrawal. These states can also be divided into two groups: some, such as Delaware (6 Del. Code sec. 18-603), simply do not grant LLC members the right to withdraw. Others, such as Ohio (Ohio Rev. Code Ann. 1705.12), allow LLC members to withdraw, but treat the dissociated member as an assignee rather than give her the right to be paid the fair value of her membership.

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To capture existing differences regarding withdrawal rights, we create the variable Withdrawal. Very roughly stated, Withdrawal takes on the value zero if the LLC statute expressly gives an LLC member the unconditional right to liquidate her membership via unilateral declaration. In more technical terms, Withdrawal takes on the value zero if and only if the statute expressly recognizes that (1) the member has the right to cease her membership by voluntary unilateral declaration, either immediately or after giving notice, (2) the company then has to pay the member the value of her membership interest either immediately or within a reasonable or otherwise limited period, and (3) the remaining members cannot prevent the withdrawing member from obtaining the value of her membership.

Because of the complexity of LLC law, various aspects of this definition deserve to be laid out in more detail, and we therefore provide more detailed coding rules in Section B1. One point is particularly noteworthy, however: for the purpose of Withdrawal, it does not matter whether the unilateral cessation of membership directly creates a right to be paid the value of the membership or whether it achieves that result indirectly by causing the dissolution and winding up of the company. In other words, Withdrawal also takes on the value zero in those cases in which the member has the right to cease her membership by voluntary unilateral declaration (either immediately or after giving notice) if this cessation of membership then necessarily leads to the dissolution of the company, the other members cannot prevent or reverse this dissolution, and, as a result of the dissolution, the member then has a right to receive the value of her membership.

4.2.3. Dissolution

We also focus on the rules governing the dissolution of LLCs. These rules, too, are relevant to the protection of minority investors because controllers may use dissolution as a way of ridding themselves of minority investors (Dent 2005). The controlling investor may be happy enough to share ownership of the firm with the minority investors while the firm is getting started. Once it starts making profits, however, the controller may try to dissolve the company, acquire its assets, and pursue its line of business without other members (see, for example, the partnership case *Page v. Page,* 359 P.2d 41 [Cal. 1961]). In many cases, the minority investors will be able to protect themselves against such conduct. They simply have to join the bidding for the assets of the firm (Gevurtz 1995). However, in some situations, this may not be an option (Dent 2005; Gevurtz 1995). For example, the minority investor may not have access to sufficient funds (Dent 2005; Gevurtz 1995), or the relevant expertise may be concentrated in the person of the controller.

Against this background, it is noteworthy that state laws differ regarding the rules that govern the dissolution of LLCs. Whereas all states allow the LLC to

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be dissolved via a resolution of the members, state statutes differ on whether this resolution has to be unanimous.

To capture existing differences regarding the dissolution of the company, we use our variable Dissolution. This variable takes on the value zero if the resolution to dissolve the company has to be unanimous. By contrast, it takes on the value one if a less than unanimous resolution is sufficient.

This definition of Dissolution has one potential drawback. For a controller seeking to dissolve the company to get rid of one or more minority investors, a resolution by the members may not be the only way to accomplish this goal. As previously mentioned, some state statutes provide that the unilateral withdrawal of a member from the LCC causes the company to dissolve. In other states, the dissociation of a member does not dissolve the LLC but does allow the remaining members to dissolve the LLC via a less than unanimous vote. Under either type of statute, a controller can make use of the withdrawal mechanism to achieve the dissolution of the company without having to obtain the consensus of all other members. With this said, the relevance of withdrawal rights as a way of getting rid of minority investors is not entirely clear. Even those statutes under which a member's withdrawal leads the company to be dissolved typically allow the remaining members to continue the company via a unanimous or even less than unanimous vote. Accordingly, a member exercising a withdrawal right to force dissolution of the company may end up getting the opposite of what she wants, as the company continues without her.

Nonetheless, the possibility that withdrawal rights are used to get rid of minority investors via the dissolution of the company cannot be excluded. Therefore, we introduce a second dissolution variable named Dissolution_Alt. This variable takes on the value one either if the LLC statute allows the LLC to be dissolved via a less than unanimous vote or if a member has the right to dissociate via unilateral decision and thereby create a situation where the company will be dissolved, despite the fact that at least one member is opposed to the dissolution. It does not matter, in this context, whether the member's withdrawal automatically dissolves the company or whether it only allows the other members to dissolve the company via a less than unanimous vote.

Because of the complexity of LLC law, some further clarifications seem justified. We therefore provide a fuller account of our dissolution variables in Section B2.

4.3. Managerial Liability

As previously mentioned, the central agency conflict tends to be the one between controlling investors and minority investors. That does not mean, however, that agency conflicts between managers and owners should be entirely neglected. Even in privately held firms, managers may be imperfectly monitored and may find ways to steer the LLC toward a state of formation that benefits them at the expense of the firm's owners. Moreover, in some LLCs, a controlling member doubles as the firm's manager. In that case, the controlling member

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may benefit from rules that benefit managers at the expense of members, because she reaps all of the benefits of the relevant rules in her capacity as the manager of the firm while bearing only a fraction of the costs—namely, the fraction that corresponds to her share of the ownership of the firm.

Against this background, we examine the provisions governing managerial liability for violations of the duty of care. These rules differ along two main dimensions. First, LLC statutes contain different provisions regarding the default standard of care. Second, they differ with respect to the extent to which firms can opt out of the legal default.

4.3.1. Legal Default

Our variable Care_One seeks to capture differences in the default norms on the duty of care. Some LLC statutes make it clear that managers—in the absence of a conflict of interest, improper personal benefits, bad faith, a violation of criminal law, unlawful distributions, or failure to pay taxes—cannot be held liable for mere duty-of-care violations unless they have acted with at least gross negligence. This limitation of managerial liability is achieved either by limiting the personal liability of managers or by defining the duty of care itself in a sufficiently restrictive manner. Other LLC statutes contain no comparable provision. In the latter case, Care_One takes on the value zero; in the former case, it takes on the value one. A more detailed definition of Care_One is provided in Section B3.

4.3.2. Ability to Opt Out of the Legal Default

Whereas Care_One is designed to capture differences in the default rules on the duty of care, the purpose of Care_Two is to capture differences in the rules that determine to what extent firms can opt out of the legal default. Some states have adopted provisions that expressly provide that the duty of care or the liability for violations of that duty can be limited (or reduced), at least to some extent. For example, under Alabama's LLC statute, the articles of organization can modify the duty of care as long as the articles do not unreasonably reduce that duty (Ala. Code sec. 10-12-21). Other states have adopted no provision allowing reductions in the duty of care or in the liability resulting from duty-of-care violations.

To capture this difference, we make use of the variable Care_Two. This variable takes on the value one if the state's law expressly allows for a reduction either in the duty of care or in the extent of liability for duty-of-care violations; otherwise, it takes on the value zero. Further information on Care_Two can be found in Section B4.

Two states—California and New Mexico—have adopted provisions that expressly allow modifications of the duty of care, but they do not provide guidance on whether these modifications may lead to a reduction in the duty of care. Because our coding emphasizes the clarity with which a state allows modifications

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of the duty of care, we do not classify these states as states that expressly allow a reduction in the duty of care or the liability flowing from duty-of-care violations. In other words, Care_Two takes on the value zero for these two states. However, for the purpose of robustness checks, we create a special variable (Care_Two_Alt) in which these states are coded in the same way as states that expressly allow a reduction in the duty of care—namely, with the value one.

4.3.3. Interactions

Using the two variables Care_One and Care_Two may not capture the decisive difference between state laws, because these variables may well interact. Firms that prefer relatively lax norms on managerial liability may not care whether these lax norms represent the legal default or whether they have to be included in the LLC's articles of organization or operating agreement. In that case, one would expect firms to migrate away from their home state only if that state neither offers lax default rules nor allows corporations to opt out of the default. To account for such a relationship between Care_One and Care_Two, we create the composite variable Care_Three. Care_Three takes on the value zero if both Care_One and Care_Two are zero. Otherwise, Care_Three takes on the value one.

4.4. Uniform Law: The Uniform Limited Liability Company Act

In the corporate law literature, it has been suggested that the attractiveness of a particular jurisdiction may in part depend on network effects arising from the fact that a large number of corporations are subject to identical legal norms (Klausner 1995). Against that background, empirical studies on incorporation choices have analyzed the question of whether adoption of the (Revised) Model Business Corporation Act is one of the factors guiding incorporation choices (Bebchuk and Cohen 2003).

An equivalent question can be asked with respect to the law on LLCs. The National Conference of Commissioners on Uniform State Laws has sought to promote the uniformity of LLC law by creating the ULLCA, which was originally completed in 1995, amended in 1996, and revised in 2006. Relatively few states have adopted the ULLCA. As of January 1, 2007, only eight states—Alabama, Hawaii, Illinois, Montana, South Carolina, South Dakota, Vermont, and West Virginia—had LLC statutes based on the original ULLCA (Ribstein 2008, p. 36 n.2). None had adopted the Revised Uniform Limited Liability Company Act, although Idaho and Iowa both did so in 2008, and Nebraska and Wyoming followed suit in 2010.[4] Hence, potential network benefits are likely to be limited. Nonetheless, we create the variable ULLCA to account for this factor. If a state has adopted the ULLCA, this variable takes on the value one; otherwise, it takes on the value zero.

[4] See Uniform Law Commission, Legislation (http://www.uniformlaws.org/legislation.aspx), using keyword "limited liability company" and bill date "all."

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4.5. Freedom of Contract

The LLC statutes of many states explicitly provide that it is their policy—or that the act shall be construed—to give maximum effect to the principle of freedom of contract. Our variable Freedom takes on the value one if an LLC statute contains a provision of this type, whereas it takes on the value zero if the LLC statute contains no such provision.

For the sake of clarity, we should note that we define this variable strictly. To be captured, it has to use the words "maximum effect" and "freedom of contract." Accordingly, for Freedom to take on the value one, it is not sufficient for an LLC statute to provide that the certificate of formation can contain additional provisions as long as they are not prohibited by the statute. For example, under our coding rules, Freedom takes on the value zero for Pennsylvania even though Pennsylvania's LLC statute provides that an LLC's certificate of organization may contain "[a]ny . . . provision . . . that the members elect to set out in the certificate of organization . . . except where a provision of this chapter expressly provides that the certificate of organization shall not relax or contravene any provision on a specified subject" (Pa. Code sec. 8913.8 [2010]). The reason is that provisions of this latter type do not seem to contain as drastic a commitment to the principle of freedom of contract as the provisions targeted with Freedom.

4.6. Enactment

Some states allowed the formation of LLCs much earlier than others. For example, Wyoming's LLC statute took effect in 1977, whereas Hawaii's first LLC statute did not enter into force until 1997. This divergence may be relevant for at least two reasons. First, entrepreneurs from states that were slow to enact an LLC statute may have chosen to form LLCs elsewhere and, because of transaction costs, may have failed to return when their PPB state finally offered an equivalent statute. Second, states that were quick to enact LLC statutes may offer various advantages, such as attorneys and judges who are experienced in LLC cases. We therefore use the variable Enactment to capture the time that has passed between July 1, 2007, and the date that a state's first LLC statute went into effect.

It should be stressed that we focus on a state's first LLC statute. The fact that a state may later have replaced that LLC statute with a new LLC statute is irrelevant to Enactment. The intuition behind this approach is that the experience with LLCs that judges and attorneys have gained under the old LLC statute likely transfers in large part to any new statute that the state may enact.

It should also be mentioned that some states, even before adopting statutes allowing the formation of domestic LLCs, adopted provisions governing foreign LLCs. For coding purposes, we ignore statutes of this type and instead focus solely on those statutes that allow the creation of domestic LLCs.

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5. Courts

The quality of Delaware's judiciary is widely thought to be an important factor behind the success of Delaware in attracting public corporations (Alva 1990; Black 1990; Kamar 1998; McDonnel 2004). The view that court quality matters to the incorporation choices of public corporations also finds support in the empirical literature (Kahan 2006). Moreover, the same appears to be true for closely held corporations (Dammann and Schündeln 2011).

Against this background, it would not be surprising if court quality also mattered to the formation choices of LLCs. We hypothesize that LLCs are more likely to be formed in their PPB state if that state offers higher quality courts. As a measure of the quality of a state's judiciary, we follow Kahan (2006) in using the scores that state judiciaries obtained in U.S. Chamber of Commerce (2007).

6. Results

In this section, we describe the results regarding the factors that determine the formation-state choices of LLCs. The baseline results are presented in Table 2. The dependent variable in our regression analysis is equal to one if an LLC is formed in the PPB state (in the home state); otherwise, it is zero. Because the dependent variable is a binary variable, we estimate the parameters of our models with the probit estimator, and we always show the marginal probit coefficients. In all regressions, we cluster the standard errors at the state level. In addition to the variables that summarize the substantive law, we also include firm-level variables that represent the size of the firm, as well as some state-level variables (such as total state population) that we chose on the basis of the specification in Bebchuk and Cohen (2003), which provides a benchmark specification in this literature. Finally, we also control for industry effects by including industry fixed effects at the two-digit standard industrial classification (SIC) level.[5]

6.1. Creditor Protection: Piercing the Veil

We find evidence that the rules on veil piercing matter: we find a positive correlation between Formalities and the decision of an LLC to be formed in the PPB state. This means that LLCs are more likely to be formed locally if their PPB state makes veil piercing more difficult by declaring the failure to follow formalities to be irrelevant. The statistical significance varies. In one specification,

[5] Our econometric approach is to use all the available firm-level data, which allows us to control for various dimensions of firm-level heterogeneity. The main downside is that it weighs larger states (that is, those with more observations) more heavily. An alternative approach, advocated by Kahan (2006), would be to aggregate all information to the state level and run regressions at the state level. Although this circumvents weighting issues, it does not allow us to control for firm-level heterogeneity, such as size and industry. We prefer the econometrics based on firm-level data, but we note that we have confirmed that our central results are qualitatively robust to using state-level aggregates instead of firm-level information.

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Table 2

Baseline Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**
	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)	(.002)	(.002)
log(Employees)	−.020**	−.019**	−.019**	−.019**	−.020**	−.019**	−.019**	−.019**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
log(TotalStatePopulation)	.011	−.001	−.006	−.010	.006	−.010	−.007	−.011
	(.024)	(.023)	(.025)	(.025)	(.024)	(.025)	(.025)	(.024)
log(Establishments2002)	−.019	−.007	−.003	.002	−.015	.002	−.004	.001
	(.020)	(.019)	(.021)	(.022)	(.020)	(.022)	(.021)	(.022)
log(GDP per Capita)	−.099*	−.096**	−.102**	−.093**	−.103**	−.093**	−.105**	−.097**
	(.040)	(.037)	(.035)	(.034)	(.037)	(.034)	(.033)	(.032)
Oppression	−.016*	−.017*	−.016*	−.018*	−.016*	−.018*	−.016*	−.018*
	(.008)	(.008)	(.007)	(.008)	(.008)	(.008)	(.008)	(.008)
Courts_Quality (score)	−.000	−.000	.000	−.000	−.000	−.000	.000	−.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Care_One	−.008		−.016		−.008		−.014	
	(.012)		(.011)		(.011)		(.010)	
Care_Two	−.018*		−.022**		−.017*		−.020**	
	(.008)		(.007)		(.008)		(.008)	
Formalities	.014	.014	.019+	.016+	.014	.016+	.018*	.015+
	(.009)	(.008)	(.010)	(.010)	(.008)	(.010)	(.009)	(.009)
ULLCA	−.033*	−.043**	−.027+	−.042**	−.035*	−.042**	−.030+	−.044**
	(.015)	(.014)	(.014)	(.016)	(.016)	(.016)	(.015)	(.016)
Care_Three		−.024*		−.026*		−.026*		−.021
		(.011)		(.011)		(.011)		(.013)
Freedom			−.000	−.000		−.000	−.001	−.002
			(.008)	(.011)		(.011)	(.008)	(.011)
Enactment			.003*	.002		.002	.002+	.001
			(.001)	(.001)		(.001)	(.001)	(.001)
Withdrawal					.014		.010	.013
					(.009)		(.008)	(.010)
Dissolution					−.003		−.000	−.002
					(.008)		(.007)	(.007)

Note. Marginal coefficients from a probit model are shown. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 19{,}708$.

$^{+}$ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

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the correlation is not statistically significant at conventional levels, whereas in others it is significant at the 10 percent or even 5 percent level.

That the correlation is a positive one in all specifications is in line with the legal literature, in which it has long been surmised that there might be a race to the bottom with respect to the rights of third-party creditors (Bebchuk 1992). Consequently, it is not surprising that PPB states that make it hard to pierce the veil find it easier to keep local businesses from forming LLCs elsewhere.

To be sure, not all states apply the law of the state of formation in veil-piercing cases. Rather, precedents in the area of corporate law suggest that some states will instead apply the law of the state that has the closest relationship with the case. However, because a firm will often be exposed to litigation in many jurisdictions, and because at least some of these jurisdictions will apply the law of formation in veil-piercing cases, there is at least some benefit to being formed in a state that makes it difficult to pierce the veil (Dammann and Schündeln 2011).

6.2. Minority-Investor Protection

With regard to the protection of minority investors, the adoption of lax norms seems to decrease rather than increase the likelihood that LLCs will be formed locally.

6.2.1. Oppression

Thus, we find a negative correlation between Oppression and the decision of an LLC to be formed in the PPB state. In other words, LLCs are more likely to be formed out of state if their PPB state has failed to enact an oppression statute. In all specifications, this correlation is significant at the 5 percent level. In other words, with respect to oppression statutes, LLCs are more likely to avoid their PPB state if the rules of that state are relatively lax regarding the protection of minority investors.

6.2.2. Dissolution

Our variable Dissolution_One does not yield statistically significant results. However, it is noteworthy that we do find a negative correlation between Dissolution and the decision of an LLC to be formed in the PPB state.

6.2.3. Withdrawal Rights

Our findings on withdrawal rights do not fit neatly into the picture painted above in that we find a positive correlation between Withdrawal and the local formation decisions of LLCs. In other words, LLCs are more likely to be formed outside of their PPB state if the PPB state grants LLC members the right to withdraw and obtain the fair value of their membership interest.

However, that relationship is not statistically significant at conventional levels. In any case, it is not difficult to see why LLCs may wish to avoid withdrawal

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rights. Although offering a high degree of protection to minority shareholders, such rights impose a considerable burden on the other members of the LLC. After all, the LLC may not have the necessary liquidity to pay out the withdrawing member, and, accordingly, the company may be forced into liquidation. It follows that withdrawal rights of the type at issue provide minority investors with a powerful tool that can easily be abused (Ribstein 2001).

Moreover, it is noteworthy that any tendency to move away from states that allow members to withdraw and be paid the fair value of their shares may at least in part be due to tax reasons. For the purpose of the gift and estate tax, minority investors in family firms can be entitled to a marketability discount in valuing their membership interest (Miller 2001). That discount, however, is unavailable if members have the right to withdraw and obtain the fair value of the membership interest (Moll 2005). Moreover, if the default rules provide for such a withdrawal right, opting out of that default is not enough to secure the discount. This is because, under certain conditions, section 2704(b) of the Internal Revenue Code allows restrictions on the right to liquidate the investment to be ignored if these restrictions are not imposed by federal or state law. Consequently, tax law provides an incentive to choose states whose default rules fail to provide for a right to be bought out.

6.3. Managerial Liability

Our findings regarding the duty of care suggest that the LLCs in our sample are less likely to be formed locally, if their PPB state has adopted lax norms on managerial liability. Consider, first, Care_One, which captures differences in the default rules on managerial liability. We find a negative correlation between this variable and the probability that an LLC is formed in its PPB state. In other words, PPB states with lax default rules on the duty of care are less likely to retain LLCs. Admittedly, our findings are not statistically significant. Nonetheless, they provide a first hint that the adoption of lax provisions on the duty of care may not be a suitable way of keeping LLCs from being formed out of state.

Our results on Care_Two also fit into this picture. Once more, we find a negative correlation with the probability that an LLC is formed in its PPB state. This time, however, the correlation is statistically significant at the 5 percent level and, in some specifications, at the 1 percent level. In other words, the LLCs in our sample seem to be migrating away from states that allow firms to reduce the duty of care vis-à-vis the legal default.

The variable Care_Three is also negatively correlated with an LLC's decision to be formed in its PPB state, although the statistical significance of this relationship again varies.[6]

[6] In unreported results, we find that the negative effect of lax rules regarding managerial liability increases with the size of the firm. It is statistically insignificant for small firms (with fewer than 100 employees) and is largest for very large firms (with 1,000 or more employees).

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6.4. *Uniform Law: The Uniform Limited Liability Company Act*

With regard to the relevance of the ULLCA, we find a negative correlation between the variable ULLCA and the decision of an LLC to be formed in the PPB state. Moreover, this relationship is statistically significant in most of our specifications. In other words, LLCs are less likely to be formed in their PPB state if that state has adopted the ULLCA. At first glance, this may seem to be surprising given that network benefits should be attractive to LLCs. However, it must be kept in mind that we cannot separate the presence of network benefits from the overall quality of the ULLCA. It had long been surmised that the ULLCA was not a well-designed statute (Ribstein and Kobayashi 1995), and this may be what is behind our findings regarding the variable ULLCA.

6.5. *Time Since First Limited Liability Company Statute Went into Effect: Enactment*

Our variable Enactment reflects the time that has passed since a state's first LLC statute went into effect. Consistent with the hypothesis that states that were early adopters of an LLC statute should be more attractive, we find a positive correlation between Enactment and the decision to form an LLC locally. However, the relationship is statistically significant in only two specifications: one at the 5 percent level and one at the 10 percent level.

6.6. *Courts*

We find no evidence that the quality of courts, as measured by the U.S. Chamber of Commerce (2007), matters with regard to where LLCs are formed. The relationship between court quality and the decision whether to form an LLC locally is negative in some specifications, positive in others, and never statistically significant.

7. Robustness Checks for Data Limitations

7.1. *Missing Data on State of Incorporation*

Although ICARUS generally provides information regarding a company's state of formation, there unfortunately are many companies for which such information is lacking. For the median state, we lack state-of-formation data for 52 percent of LLCs. This would not matter if the missing observations were distributed randomly. However, one might be concerned that this is not the case. For example, one might be worried that the state of formation is more likely to be recorded in ICARUS if it is unusual because it differs from the PPB state. To be clear, the mere fact that the probability of being formed in the home state may be different for firms for which ICARUS lacks information on the state of formation is not, per se, important for the present analysis. Instead, the decisive

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question is whether this probability differs systematically with state-level characteristics of the type analyzed in this paper.

To investigate this possibility, we created a random sample composed of companies for which state-of-formation data are lacking. The sample includes 50 firms per state or a lower number if, for the relevant state, there are fewer than 50 firms for which state-of-formation data are lacking.[7] For this random sample of approximately 2,500 companies—call this the "subsample with missing information"—we retrieved the missing state-of-formation data by hand, relying on the information filed with state authorities, usually the secretary of state. By collecting this additional information by hand, we are able to find the state of formation for 81 percent of the companies in the subsample with missing information, but for approximately 19 percent of companies in this subsample, we are unable to determine the state of incorporation.

To study systematically whether firms in this sample of companies lacking data on state of formation are different with respect to their formation decisions, we now proceed as follows. We combine the data set that we have used thus far—that is, the one for which we have full information from the ICARUS database, with the subsample with missing information for a pooled data set of 21,700 companies. We generate the variable SubSampleWithMissingInfo, which takes the value one if a company is in the random sample of 50 companies per state for which we looked up information on the state of formation from other sources and zero otherwise. We further generate interaction terms between all our legal state-level variables that are included in our baseline regression. Adding to our baseline regressions all these interaction terms as well as the variable SubSampleWithMissingInfo allows us to test whether there is a statistical difference between the original sample and SubSampleWithMissingInfo with regard to the extent that state-level legal variables matter in the formation choice.

Table 3 presents the results. We find that SubSampleWithMissingInfo, although large in absolute value, is statistically insignificant. In other words, after controlling for all the other variables and interactions, there is no statistically significant difference between firms in the baseline data set and subsample with missing information in their probability to incorporate locally. Similarly, the interaction terms SubSample_Oppression, SubSample_Courts, SubSample_Formalities, SubSample_ULLCA, SubSample_Freedom, SubSample_Enactment, SubSample_Withdrawal, and SubSample_Dissolution are all statistically insignificant, which suggests that companies for which we do not have information on the state of incorporation in the baseline data but for which we were able to find this information in other sources do not have a different correlation with those state characteristics—that is, whether a state has enacted an oppression statute, and so on.

However, it is noteworthy, that the interaction term SubSample_Care_Two is

[7] These states, North Dakota, South Dakota, Vermont, and Wyoming, had fewer than 50 companies with missing information regarding the state of incorporation.

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statistically significant in these regressions. On the other hand, neither SubSample_Care_One nor SubSample_Care_Three is significant. Thus, for two of the three care variables, which do not show a statistically significant difference, there is no statistical reason to think that companies with full data in the ICARUS database and those with missing information on the state of incorporation behave differently in response to these state-level characteristics. Still, these results suggest that the findings regarding managerial liability should be interpreted more carefully. In particular, they apply only to the companies for which we do have full information from the ICARUS database.

7.2. Wholly Owned Subsidiaries

The data set that we use for our baseline regressions includes LLCs that are wholly owned subsidiaries of other firms. This may potentially impact our analysis because the formation-state choices of wholly owned subsidiaries may depend, at least in part, on the choice of formation/incorporation-state choice made by the parent company. We therefore examine whether the inclusion of wholly owned subsidiaries in our data set can explain our findings. Unfortunately, for most companies in our data set, we lack information on whether the company is a wholly owned subsidiary. However, for a subset of firms, ICARUS does allow us to determine whether the company is wholly owned. To test the robustness of our results, we exclude all wholly owned firms that we are able to identify. The results, in Table 4, show that the findings at baseline are robust. In interpreting these results, however, it has to be kept in mind that ownership data are available only for 180 LLCs and hence less than 1 percent of the firms in our sample.

7.3. Number of Shareholders

One might be concerned that the number of owners (members) is an omitted variable that can explain some of our findings. Unfortunately, ICARUS contains information regarding the number of shareholders for only 2,176 firms—that is, for approximately 11 percent of all LLCs in our data set. To investigate the relevance of the number of shareholders, we include the logarithm of the number of shareholders in our regression and rerun our baseline regressions on the now much smaller sample.

The results are shown in Table 5. It should be noted, first, that the relationship between log*N*_Shareholders and formation in the PPB state is negative and significant at the 10 percent level. In other words, LLCs with more shareholders are less likely to be formed in their PPB state. This finding is intuitively plausible. After all, most LLCs that are formed outside of their PPB state are formed in Delaware, and in light of Delaware's dominance in the market for publicly traded firms, one would expect Delaware to be particularly attractive to those privately held firms that have many owners and are thus more similar to public firms than is the average closely held LLC.

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Table 3
Missing Data on State of Incorporation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.021**	−.021**	−.021**	−.021**	−.021**	−.021**	−.021**	−.021**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
log(Employees)	−.022**	−.022**	−.022**	−.022**	−.022**	−.022**	−.022**	−.022**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
log(TotalStatePopulation)	.010	−.000	−.004	−.008	.006	−.008	−.004	−.008
	(.018)	(.018)	(.018)	(.019)	(.018)	(.019)	(.019)	(.020)
log(Establishments2002)	−.019	−.008	−.006	−.001	−.016	−.001	−.007	−.003
	(.016)	(.016)	(.017)	(.019)	(.016)	(.019)	(.017)	(.021)
log(GDP per Capita)	−.076*	−.074*	−.078*	−.072*	−.082*	−.072*	−.083*	−.077*
	(.037)	(.035)	(.035)	(.033)	(.037)	(.033)	(.035)	(.033)
SubSampleWithMissingInfo	−.123	−.136	−.082	−.114	−.121	−.114	−.088	−.121
	(.098)	(.114)	(.110)	(.125)	(.102)	(.125)	(.109)	(.127)
Oppression	−.017^{+}	−.019^{+}	−.018*	−.020*	−.019*	−.020*	−.018*	−.021*
	(.009)	(.010)	(.009)	(.009)	(.009)	(.009)	(.009)	(.010)
SubSample_Oppression	.027	.031	.029	.033^{+}	.031	.033^{+}	.032^{+}	.037^{+}
	(.018)	(.019)	(.018)	(.019)	(.020)	(.019)	(.019)	(.019)
Courts_Quality	−.000	−.000	.000	−.000	.000	−.000	.000	−.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
SubSample_Courts	−.001	−.001	−.001	−.001	−.001	−.001	−.001	−.001
	(.002)	(.002)	(.001)	(.002)	(.001)	(.002)	(.001)	(.002)
Care_One	−.006		−.014		−.006		−.012	
	(.014)		(.013)		(.012)		(.012)	
SubSample_Care_One	.003		.010		−.001		.006	
	(.021)		(.019)		(.020)		(.018)	
Care_Two	−.021*		−.025**		−.019*		−.023*	
	(.009)		(.009)		(.009)		(.009)	
SubSample_Care_Two	.039*		.044*		.037^{+}		.042*	
	(.020)		(.020)		(.020)		(.019)	

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Formalities	.013	.015	.019	.017	.013	.017	.018	.016
	(.011)	(.010)	(.013)	(.011)	(.010)	(.011)	(.011)	(.011)
SubSample_Formalities	−.009	−.013	−.013	−.014	−.003	−.014	−.007	−.010
	(.017)	(.016)	(.018)	(.017)	(.018)	(.017)	(.019)	(.018)
ULLCA	−.034*	−.045**	−.028+	−.044*	−.038*	−.044*	−.032+	−.048**
	(.016)	(.016)	(.015)	(.017)	(.018)	(.017)	(.017)	(.018)
SubSample_ULLCA	−.001	.016	−.011	.011	.015	.011	.005	.024
	(.024)	(.023)	(.026)	(.026)	(.027)	(.026)	(.028)	(.028)
Care_Three		−.026*		−.027*		−.027*		−.022
		(.012)		(.013)		(.013)		(.016)
SubSample_Care_Three		.036		.041		.041		.040
		(.026)		(.027)		(.027)		(.028)
Freedom			.001	−.000		−.000	−.000	−.002
			(.010)	(.013)		(.013)	(.010)	(.013)
SubSample_Freedom			−.008	−.008		−.008	−.007	−.008
			(.019)	(.021)		(.021)	(.019)	(.021)
Enactment			.003+	.002		.002	.002	.001
			(.002)	(.001)		(.001)	(.001)	(.001)
SubSample_Enactment			−.002	−.001		−.001	−.002	−.001
			(.003)	(.003)		(.003)	(.003)	(.003)
Withdrawal					.015		.010	.013
					(.011)		(.010)	(.013)
SubSample_Withdrawal					.009		.013	.011
					(.022)		(.021)	(.023)
Dissolution					−.006		−.003	−.005
					(.010)		(.008)	(.008)
SubSample_Dissolution					.018		.015	.014
					(.021)		(.020)	(.022)

Note. Marginal coefficients from a probit model are shown. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 21{,}700$.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

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Table 4

Wholly Owned Firms Excluded

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**
	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)	(.002)	(.002)
log(Employees)	−.019**	−.019**	−.019**	−.019**	−.020**	−.019**	−.019**	−.019**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
log(TotalStatePopulation)	.012	.000	−.004	−.009	.007	−.009	−.005	−.009
	(.024)	(.023)	(.025)	(.025)	(.023)	(.025)	(.025)	(.024)
log(Establishments2002)	−.020	−.008	−.005	.001	−.016	.001	−.005	−.001
	(.020)	(.019)	(.021)	(.022)	(.019)	(.022)	(.021)	(.021)
log(GDP per Capita)	−.097*	−.093**	−.099**	−.091**	−.100**	−.091**	−.102**	−.095**
	(.039)	(.036)	(.034)	(.033)	(.036)	(.033)	(.032)	(.031)
Oppression	−.016*	−.017*	−.016*	−.018*	−.017*	−.018*	−.016*	−.018*
	(.007)	(.008)	(.007)	(.008)	(.008)	(.008)	(.008)	(.008)
Courts_Quality (score)	−.000	−.000	.000	−.000	.000	−.000	.000	−.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Care_One	−.008		−.015		−.008		−.014	
	(.012)		(.011)		(.010)		(.010)	
Care_Two	−.018*		−.021**		−.016*		−.019*	
	(.008)		(.007)		(.007)		(.007)	
Formalities	.013	.014	.019+	.015	.013	.015	.018*	.015+
	(.009)	(.008)	(.010)	(.009)	(.008)	(.009)	(.009)	(.009)
ULLCA	−.033*	−.042**	−.027+	−.041**	−.035*	−.041**	−.030*	−.044**
	(.014)	(.014)	(.014)	(.016)	(.015)	(.016)	(.015)	(.016)
Care_Three		−.024*		−.026*		−.026*		−.020
		(.011)		(.011)		(.011)		(.013)
Freedom			−.000	−.000		−.000	−.001	−.002
			(.008)	(.011)		(.011)	(.008)	(.011)
Age			.003+	.002		.002	.002	.001
			(.001)	(.001)		(.001)	(.001)	(.001)
Withdrawal					.014+		.010	.013
					(.008)		(.008)	(.010)
Dissolution					−.003		−.001	−.003
					(.008)		(.007)	(.006)

Note. Marginal coefficients from a probit model are shown. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 19{,}600$.

+ Significant at the 10% level.

* Significant at the 5% level.

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Table 5
Number of Shareholders

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.001	−.001	−.001	−.001	−.001	−.001	−.001	−.000
	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)
log(Employees)	−.084**	−.085**	−.084**	−.085**	−.084**	−.085**	−.085**	−.086**
	(.012)	(.012)	(.012)	(.012)	(.012)	(.012)	(.013)	(.012)
log(TotalStatePopulation)	.142	.131	.130	.121	.119	.121	.133	.125
	(.087)	(.082)	(.090)	(.084)	(.085)	(.084)	(.093)	(.083)
log(Establishments2002)	−.138^{+}	−.130^{+}	−.122	−.118	−.117	−.118	−.130	−.132^{+}
	(.078)	(.073)	(.079)	(.075)	(.077)	(.075)	(.084)	(.074)
log(GDP per Capita)	−.550**	−.550**	−.554**	−.548**	−.523**	−.548**	−.522**	−.524**
	(.125)	(.122)	(.126)	(.123)	(.127)	(.123)	(.131)	(.123)
Oppression	−.009	−.011	−.010	−.011	−.021	−.011	−.023	−.021
	(.030)	(.032)	(.031)	(.032)	(.028)	(.032)	(.028)	(.031)
Courts_Quality (score)	.006^{+}	.005	.006^{+}	.005	.005	.005	.005	.004
	(.003)	(.003)	(.003)	(.004)	(.003)	(.004)	(.003)	(.003)
Care_One	.008		−.003		.017		.024	
	(.037)		(.041)		(.033)		(.039)	
Care_Two	−.029		−.038		−.018		−.013	
	(.039)		(.039)		(.038)		(.038)	
Formalities	.082*	.087**	.084*	.088**	.074*	.088**	.068^{+}	.078**
	(.038)	(.033)	(.037)	(.033)	(.032)	(.033)	(.035)	(.030)
ULLCA	−.092^{+}	−.108*	−.073	−.103^{+}	−.125*	−.103^{+}	−.130*	−.147**
	(.055)	(.049)	(.055)	(.055)	(.054)	(.055)	(.057)	(.055)
log$N$_Shareholders	−.087^{+}	−.087^{+}	−.088^{+}	−.087^{+}	−.089^{+}	−.087^{+}	−.090^{+}	−.088^{+}
	(.048)	(.047)	(.048)	(.047)	(.048)	(.047)	(.048)	(.048)
Care_Three		.015		.009		.009		.053
		(.061)		(.066)		(.066)		(.067)
Freedom			.016	.005		.005	.003	−.010
			(.035)	(.042)		(.042)	(.035)	(.040)
Enactment			.003	.002		.002	−.003	−.003
			(.005)	(.004)		(.004)	(.005)	(.004)
Withdrawal					.060^{+}		.066*	.071*
					(.032)		(.033)	(.034)
Dissolution					−.053*		−.056*	−.059*
					(.026)		(.028)	(.025)

Note. Marginal coefficients from a probit model are shown. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 2{,}176$.

$^{+}$ Significant at the 10% level.
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With regard to our other variables, there are some important changes. Most striking, Oppression and our duty-of-care variables lose their statistical significance once log*N*_Shareholders is included in the regressions. Of course, this may simply be due to the much smaller size of the sample.

On the other hand, CourtsQuality is now statistically significant at the 10 percent level in two specifications. Both Formalities—which captures the ease of veil piercing—and ULLCA retain their significance. In any case, it is unclear why the number of shareholders is included in the ICARUS database for some firms but not for others, which raises the possibility of a selection bias. Against that background, great caution is appropriate in interpreting the results presented in this subsection.

8. Robustness Checks for State Law

To test the robustness of our state law variables, we test alternative approaches to coding them.

8.1. Duty of Care

As mentioned above, two states allow modifications regarding the manager's liability for duty-of-care violations, but they do not provide guidance as to whether these modifications can reduce as well as increase exposure to liability. Although we do not code the relevant states as allowing liability waivers for purposes of Care_Two, we create an alternative variable (Care_Two_Alt) that takes the opposite approach. The results are displayed in Table 6. Under the alternative coding, the ability to opt out of the default rules on managerial liability for duty-of-care violations is no longer as significant as it is in the baseline regressions. In two specifications, Care_Two_Alt is significant only at the 10 percent level; in two others, it is significant at the 5 percent level. However, the overall picture shows little change.

8.2. Oppression

To test the robustness of Oppression, we also use another—broader—definition of what constitutes an oppression statute. Some states have enacted provisions allowing the court to dissolve LLCs if the company's assets are being misapplied, misappropriated, or wasted. The relevant provisions would seem to target mismanagement rather than oppression. However, it is at least conceivable that courts may use such statutes to dissolve LLCs in scenarios in which those in control engage in certain types of oppressive conduct, such as paying overly generous salaries to the director-members at the expense of the minority members. Therefore, Oppression_Alt takes on the value zero if either the state has adopted an oppression statute in the sense of Oppression or if the state's LLC statute allows the LLC to be dissolved if its assets are being misapplied, mis-

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Table 6

Alternative Coding of State Law Variables Care_Two and Care_Three

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**
	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)	(.002)	(.002)
log(Employees)	−.020**	−.019**	−.020**	−.019**	−.020**	−.019**	−.020**	−.019**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
log(TotalStatePopulation)	.007	−.001	−.008	−.010	.002	−.010	−.009	−.011
	(.023)	(.023)	(.026)	(.025)	(.023)	(.025)	(.025)	(.024)
log(Establishments2002)	−.015	−.007	−.001	.002	−.011	.002	−.002	.001
	(.019)	(.019)	(.022)	(.022)	(.019)	(.022)	(.022)	(.022)
log(GDP per Capita)	−.092*	−.096**	−.093**	−.093**	−.099**	−.093**	−.098**	−.097**
	(.039)	(.037)	(.036)	(.034)	(.037)	(.034)	(.034)	(.032)
Oppression	−.016*	−.017*	−.016*	−.018*	−.017*	−.018*	−.016*	−.018*
	(.008)	(.008)	(.007)	(.008)	(.008)	(.008)	(.008)	(.008)
Courts_Quality	−.000	−.000	−.001	−.000	−.000	−.000	−.000	−.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Care_One	−.006		−.011		−.006		−.010	
	(.011)		(.011)		(.010)		(.009)	
Care_Two_Alt	−.017*		−.018*		−.014+		−.015+	
	(.008)		(.008)		(.008)		(.008)	
Formalities	.017+	.014	.022*	.016+	.017+	.016+	.021*	.015+
	(.010)	(.008)	(.011)	(.010)	(.009)	(.010)	(.009)	(.009)
ULLCA	−.042**	−.043**	−.041**	−.042**	−.042**	−.042**	−.041*	−.044**
	(.015)	(.014)	(.015)	(.016)	(.016)	(.016)	(.016)	(.016)
Care_Three_Alt		−.024*		−.026*		−.026*		−.021
		(.011)		(.011)		(.011)		(.013)
Freedom			−.003	−.000		−.000	−.004	−.002
			(.009)	(.011)		(.011)	(.008)	(.011)
Enactment			.002	.002		.002	.002	.001
			(.001)	(.001)		(.001)	(.001)	(.001)
Withdrawal					.015		.011	.013
					(.009)		(.008)	(.010)
Dissolution					−.001		.001	−.002
					(.008)		(.007)	(.007)

Note. Marginal coefficients from a probit model are shown. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 19{,}708$.

+ Significant at the 10% level.

* Significant at the 5% level.

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appropriated, or wasted, with any one of the three being sufficient for the state to be coded as a zero.

The results are displayed in Table 7. By and large, our results remain quite similar. In particular, Oppression_Alt remains statistically significant. The main change concerns Enactment, which is no longer statistically significant.

8.3. Dissolution

We also use an alternative variable to capture differences in the rules on dissolution. As previously mentioned, Dissolution_Alt takes on the value one either if the LLC statute allows the LLC to be dissolved via a less than unanimous vote or if a member has the right to dissociate via unilateral decision and thereby create a situation where the company will be dissolved, despite the fact that at least one member is opposed to the dissolution. The results of using Dissolution_Alt are displayed in Table 8.

However, replacing Dissolution with Dissolution_Alt has little impact. In particular, the relationship between Dissolution_Alt and the decision whether or not to form an LLC locally remains statistically insignificant.

8.4. Court Quality

In our main specification, we found no evidence that the quality of courts, as captured by the U.S. Chamber of Commerce (2007), matters with regard to where LLCs are formed.

We further investigate this finding using alternative measures of court quality. In particular, we use two more variables, which are based on Choi, Gulati, and Posner (2008), Citations and Opinions_Per_Judge, both of which could be considered indicators of the quality of a state's court system. We do not use Choi, Gulati, and Posner's third variable, the independence variable, because of its missing values for five states.

In unreported results, we find that the number of opinions per judge is indeed positively related to the probability that a firm incorporates in its home state. Thus, our robustness checks provide some suggestive evidence that court quality matters for formation decisions. Overall, however, there is no consistent picture regarding the relevance of court quality. In any case, it is important to note that the findings related to other variables are robust—that is, they do not change when we use the alternative court quality measures.

9. Implications

Our results have a number of interesting implications pertaining to regulatory competition, choice of law in veil-piercing cases, the importance of default rules, and the relationship between corporations and LLCs.

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Table 7

Alternative Coding of the State Law Variable Oppression

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**
	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)	(.002)	(.002)
log(Employees)	−.019**	−.019**	−.019**	−.019**	−.019**	−.019**	−.019**	−.019**
	(.003)	(.002)	(.003)	(.002)	(.003)	(.002)	(.003)	(.003)
log(TotalStatePopulation)	−.001	−.009	−.009	−.011	−.006	−.011	−.010	−.011
	(.021)	(.021)	(.024)	(.024)	(.021)	(.024)	(.024)	(.023)
log(Establishments2002)	−.009	−.001	−.001	.001	−.005	.001	−.001	−.001
	(.017)	(.018)	(.020)	(.022)	(.017)	(.022)	(.020)	(.021)
log(GDP per Capita)	−.094*	−.086*	−.097**	−.085**	−.097**	−.085**	−.098**	−.088**
	(.037)	(.033)	(.034)	(.032)	(.035)	(.032)	(.033)	(.030)
Oppression_Alt	−.020**	−.019**	−.017*	−.018*	−.020**	−.018*	−.018*	−.020*
	(.007)	(.007)	(.007)	(.008)	(.007)	(.008)	(.008)	(.008)
Courts_Quality	−.000	−.000	−.000	−.000	−.000	−.000	−.000	−.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Care_One	−.012		−.016		−.011		−.013	
	(.011)		(.011)		(.010)		(.010)	
Care_Two	−.017*		−.020**		−.015*		−.017*	
	(.007)		(.007)		(.007)		(.007)	
Formalities	.015+	.015+	.019+	.015	.015+	.015	.017+	.014
	(.009)	(.008)	(.010)	(.010)	(.008)	(.010)	(.009)	(.009)
ULLCA	−.034*	−.044**	−.029*	−.044**	−.036*	−.044**	−.033*	−.048**
	(.015)	(.014)	(.015)	(.016)	(.015)	(.016)	(.016)	(.017)
Care_Three		−.018+		−.018+		−.018+		−.011
		(.010)		(.011)		(.011)		(.012)
Freedom			.001	−.001		−.001	−.000	−.003
			(.008)	(.011)		(.011)	(.008)	(.011)
Enactment			.001	.000		.000	.001	−.000
			(.001)	(.001)		(.001)	(.001)	(.001)
Withdrawal					.012		.011	.014
					(.008)		(.008)	(.010)
Dissolution					−.003		−.002	−.004
					(.007)		(.007)	(.007)

Note. Marginal coefficients from a probit model are shown. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 19{,}708$.

+ Significant at the 10% level.

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Table 8

Alternative Coding of the State Law Variable Dissolution

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**
	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)	(.002)	(.002)
log(Employees)	−.020**	−.019**	−.019**	−.019**	−.020**	−.019**	−.019**	−.019**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
log(TotalStatePopulation)	.011	−.001	−.006	−.010	.006	−.010	−.006	−.011
	(.024)	(.023)	(.025)	(.025)	(.023)	(.025)	(.025)	(.024)
log(Establishments2002)	−.019	−.007	−.003	.002	−.015	.002	−.004	.001
	(.020)	(.019)	(.021)	(.022)	(.019)	(.022)	(.021)	(.022)
log(GDP per Capita)	−.099*	−.096**	−.102**	−.093**	−.105**	−.093**	−.105**	−.098**
	(.040)	(.037)	(.035)	(.034)	(.037)	(.034)	(.033)	(.033)
Oppression	−.016*	−.017*	−.016*	−.018*	−.016*	−.018*	−.015*	−.017*
	(.008)	(.008)	(.007)	(.008)	(.008)	(.008)	(.008)	(.008)
Courts_Quality	−.000	−.000	.000	−.000	−.000	−.000	.000	−.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Care_One	−.008		−.016		−.008		−.014	
	(.012)		(.011)		(.010)		(.009)	
Care_Two	−.018*		−.022**		−.016*		−.020**	
	(.008)		(.007)		(.008)		(.008)	
Formalities	.014	.014	.019+	.016+	.014	.016+	.019*	.015+
	(.009)	(.008)	(.010)	(.010)	(.009)	(.010)	(.009)	(.009)
ULLCA	−.033*	−.043**	−.027+	−.042**	−.035*	−.042**	−.028+	−.043**
	(.015)	(.014)	(.014)	(.016)	(.016)	(.016)	(.016)	(.016)
Care_Three		−.024*		−.026*		−.026*		−.021
		(.011)		(.011)		(.011)		(.013)
Freedom			−.000	−.000		−.000	−.000	−.002
			(.008)	(.011)		(.011)	(.008)	(.011)
Enactment			.003*	.002		.002	.002+	.001
			(.001)	(.001)		(.001)	(.001)	(.001)
Withdrawal					.013		.010	.012
					(.009)		(.008)	(.011)
Dissolution_Alt					−.002		.001	−.000
					(.008)		(.007)	(.007)

Note. Marginal coefficients from a probit model are shown. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 19{,}708$.

+ Significant at the 10% level.

* Significant at the 5% level.

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9.1. Regulatory Competition

With a view to the debate on regulatory competition, our most interesting findings may be the ones pertaining to oppression statutes. As reported above, we find statistically significant evidence that LLCs are less likely to be formed in their PPB state if that state has failed to adopt an oppression statute. For adherents of the race-to-the-bottom theory, this finding is difficult to explain. There is no obvious market failure story that would explain why LLCs prefer stricter rules on minority-investor protection or managerial liability. Rather, our findings are easiest to explain by assuming that oppression statutes for LLCs are, in fact, efficient and that states are more successful in getting businesses to form LLCs locally if they offer more efficient law in these areas.

9.2. Veil Piercing and Choice of Law

Hansmann and Kraakman (1991) have famously argued that the application of the state-of-incorporation doctrine in veil-piercing cases is highly problematic because it allows corporations to impose externalities on involuntary creditors such as tort victims. Our finding that LLCs are more likely to be formed in their PPB state if that state makes it difficult to pierce the veil lends additional weight to this concern. Given the highly imperfect incentives that firms face with respect to choosing the law governing veil piercing, it is troublesome that this should indeed be one of the factors that determines their choice where to form an LLC.

This said, it should be stressed that our findings do not allow us to draw definitive conclusions regarding the efficiency of the relevant provisions. Although the preference for statutes making it hard to pierce the veil may be due to the externalities that these statutes impose, it is also conceivable that LLCs like such statutes because the veil-piercing doctrine is simply inefficient (Bainbridge 2001).

9.3. Default Rules

At first glance, it may seem somewhat surprising that LLCs should be more likely to be formed out of state if their state of formation has failed to adopt an oppression statute or has adopted lax norms on managerial liability. After all, in their articles of formation and operating agreements, LLCs are free to impose provisions that are stricter than those that constitute the legal default. For example, in those states that do not provide for dissolution in case of oppression, nothing prevents the LLC from extending the grounds for dissolution beyond those enumerated in the LLC statute.

However, in the legal literature, it has long been argued that there may be advantages to being ruled by legal default rules—advantages that cannot be reaped via contractual arrangements. Given that contractual arrangements differ from one firm to another, such arrangements may not allow firms to partake in the network benefits that adherence to the legal default promises (Klausner 1995). Furthermore, adhering to legal defaults means that the firm's governance

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arrangements will periodically be modernized by the legislature, whereas changes to contractual arrangements are subject to the usual obstacles, such as holdup problems (Hansmann 2006). Our finding that formation choices are partly determined by rules that allow firms to opt out lends additional support to the view that default rules matter.

9.4. Corporations and Limited Liability Companies

In previous research, we found that closely held corporations are more likely to incorporate out of state if their PPB state provides for a high level of minority-investor protection (Dammann and Schündeln 2011). How does this square with our finding in this paper that LLCs are less likely to be formed out of state if their PPB state has adopted an oppression statute?

One conceivable though perhaps not likely explanation is that, overall, corporate law, with its well-established body of precedents, currently offers a substantially higher level of minority-investor protection than does LLC law, with its relatively limited case law. Under the assumption that the ideal level of minority-investor protection lies somewhere in the middle, it would be rational for investors to prefer relatively lax corporation statutes over relatively strict corporation statutes while preferring relatively strict LLC statutes over relatively lax ones.

Another, and perhaps more likely, explanation is that firms tend to select the entity type in part based on their preferences for a higher or lower level of minority-investor protection. Firms that envision a more partnership-like arrangement may opt for the LLC, whereas firms that prefer a lower level of minority-investor protection may gravitate toward the corporate form.

9.5. Uniform Law

We also find some evidence that LLCs are less likely to be formed in their LLC state if that state has adopted the ULLCA. Given that the presence of network benefits should work in favor rather than against states that have adopted the ULLCA, our finding suggests that firms may find the substance of the ULLCA unattractive. This is entirely consistent with claims in the legal literature that suggest that ULLCA is not a particularly well-designed statute (Ribstein and Kobayashi 1995). Of course, even if firms do not like the ULLCA, this does not necessarily imply that the ULLCA is inefficient.

10. Conclusion

One of the most prominent debates in corporate law concerns the desirability of allowing corporations to choose the applicable corporate law. Moreover, a growing number of empirical studies cast light on the factors that guide public corporations' choice of where to incorporate. By contrast, little is known about

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the incorporation choices of closely held firms. In the present paper, we therefore analyze the formation choices of LLCs.

We observe that the tendency to form LLCs outside of the PPB state increases with company size, as measured by the number of employees. Most of the LLCs in our sample (92.6 percent) are formed in their PPB state. However, although more than 95 percent of firms with fewer than 100 employees are formed locally, the same is true for less than 38 percent of LLCs with 5,000 or more employees.

Another similarity to the market for corporate charters concerns the destination of those firms that are not formed locally. Delaware emerges as the destination of choice for LLCs that are formed outside of their PPB state. That is particularly true for larger LLCs. Among firms with more than 5,000 employees that are not formed locally, more than 95 percent are formed in Delaware.

What are the factors that guide the decision where to form LLCs? Substantive law seems to matter. Limited liability companies are more likely to be formed locally if their PPB state makes it difficult to pierce the veil. Moreover, LLCs are more likely to be formed locally if their PPB state has enacted an oppression statute. By contrast, LLCs are less likely to be formed locally if their PPB state has adopted the ULLCA. We also find that the LLCs in our sample are more likely to be formed in their PPB state if that state has adopted relatively strict rules pertaining to the liability of managers for duty-of-care violation; however, because of a limitation of our data set, this particular finding cannot necessarily be generalized beyond the firms in our sample.

The role played by oppression statutes is particularly interesting in that there is no obvious market failure story that would explain why firms might have a preference for an inefficiently high level of minority-investor protection. Accordingly, while one should be cautious not to read too much into one such finding, our results for oppression statutes are easiest to explain if one assumes that, at least in these areas, LLCs tend to prefer efficient over inefficient law.

We also analyze the role played by the rules on dissolution, withdrawal rights, and explicit statutory commitments to the freedom of contract. In addition, we examine the role played by state courts. However, we find little or no statistically significant evidence that these features determine the formation choices of LLCs.

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Appendix A

Additional Tables

Table A1
Types of Domestic Entities Formed in 2008

State	Business and Professional Corporations	LLCs	LPs	LLPs	LLLPs
Alabama	N.A.	N.A.	N.A.	N.A.	N.A.
Alaska	N.A.	N.A.	N.A.	N.A.	X
Arizona	N.A.	N.A.	N.A.	N.A.	N.A.
Arkansas	4,103	7,814	104	24	4
California	N.A.	N.A.	N.A.	N.A.	X
Colorado	13,031	49,298	344	575	391
Connecticut	N.A.	N.A.	N.A.	N.A.	N.A.
Delaware	27,906	82,680	7,705	73	84
District of Columbia	N.A.	N.A.	N.A.	N.A.	N.A.
Florida	111,449	118,011	1,074[b]	257	
Georgia	N.A.	N.A.	N.A.	N.A.	N.A.
Hawaii	2,442	7,532	91	92	18
Idaho	2,385	9,053	111	125	29
Illinois	N.A.	N.A.	N.A.	N.A.	N.A.
Indiana	8,377	20,665	205	219	N.A.
Iowa	N.A.	N.A.	N.A.	N.A.	N.A.
Kansas	3,180	8,746	113	74	N.A.
Kentucky	N.A.	N.A.	N.A.	N.A.	N.A.
Louisiana	14,538	27,057	172	99	N.A.
Maine	1,451	3,176	22	14	X
Maryland	N.A.	N.A.	N.A.	N.A.	N.A.
Massachusetts	8,427	13,040	242	43	X
Michigan	14,314	45,698[a]	122	220[b]	
Minnesota	8,826	21,472	313	521	N.A.
Mississippi	N.A.	N.A.	N.A.	N.A.	N.A.
Missouri	N.A.	N.A.	N.A.	N.A.	N.A.
Montana	5,813	9,656	387	609	X
Nebraska	2,369	5,135	53	20	X
Nevada	N.A.	N.A.	N.A.	N.A.	N.A.
New Hampshire	1,205	6,532	20	36	0
New Jersey	14,215	53,408	229	389	N.A.
New Mexico	N.A.	N.A.	N.A.	N.A.	N.A.
New York	N.A.	N.A.	N.A.	N.A.	N.A.
North Carolina	15,755	30,163	195	136	30
North Dakota	N.A.	N.A.	N.A.	N.A.	N.A.
Ohio	N.A.	N.A.	N.A.	N.A.	X
Oklahoma	N.A.	N.A.	N.A.	N.A.	N.A.
Oregon	6,375	22,865	87	45	N.A.
Pennsylvania	12,897	30,828	2,298	301	93
Rhode Island	1,291	3,359	38	38	N.A.
South Carolina	N.A.	N.A.	N.A.	N.A.	N.A.
South Dakota	1,064	2,557	12	71	26
Tennessee	N.A.	N.A.	N.A.	N.A.	N.A.

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Table A1 (*Continued*)

State	Business and Professional Corporations	LLCs	LPs	LLPs	LLLPs
Texas	30,369	68,036	7,912	5,701	N.A.
Utah	N.A.	N.A.	N.A.	N.A.	N.A.
Vermont	697	3,401	N.A.	N.A.	N.A.
Virginia	15,545	33,900	250	150[b]	
Washington	12,404	28,761	183	177	X
West Virginia	917	4,237	40	N.A.	27
Wisconsin	N.A.	N.A.	N.A.	N.A.	N.A.
Wyoming	3,205	7,522	90	25	N.A.

Source. Data are from International Association of Commercial Administrators, 2009 Annual Report (available from IACA, One Ashburton Place, Room 1612, Boston, Mass., 02108).
Note. LLC = limited liability company; LP = limited partnership; LLP = limited liability partnership; LLLP = limited liability limited partnership; X = state law did not allow the formation of certain types of domestic entities. N.A. = not available.
[a] Includes professional LLCs.
[b] Includes LLLPs.

Table A2
Nonstatutory State-Level Variables Used in the Regression Analyses

State	Total State Population (1,000s)	2006 GDP per Capita	Court Quality Score
Alabama	4,447.1	36,106	50.7
Alaska	626.9	65,565	56.0
Arizona	5,130.6	45,309	66.3
Arkansas	2,673.4	34,352	56.5
California	33,871.7	50,997	53.5
Colorado	4,301.3	53,584	65.1
Connecticut	3,405.6	59,941	66.3
Delaware	783.6	77,030	75.6
Florida	15,982.4	44,643	58.2
Georgia	8,186.5	46,363	61.2
Hawaii	1,211.5	48,127	56.3
Idaho	1,294.0	38,569	61.3
Illinois	12,419.3	47,474	50.8
Indiana	6,080.5	40,937	68.2
Iowa	2,926.3	42,364	68.9
Kansas	2,688.4	41,548	66.7
Kentucky	4,041.8	36,113	60.8
Louisiana	4,469.0	43,218	47.3
Maine	1,274.9	36,844	68.9
Maryland	5,296.5	48,677	61.7
Massachusetts	6,349.1	53,168	65.7
Michigan	9,938.4	38,336	64.2
Minnesota	4,919.5	49,710	70.6
Mississippi	2,844.7	29,608	46.1
Missouri	5,595.2	40,370	60.0
Montana	902.2	35,826	57.2
Nebraska	1,711.3	44,236	70.0

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Table A2 (*Continued*)

State	Total State Population (1,000s)	2006 GDP per Capita	Court Quality Score
Nevada	1,998.3	59,251	62.0
New Hampshire	1,235.8	45,539	68.2
New Jersey	8,414.4	53,858	63.4
New Mexico	1,819.0	41,731	57.5
New York	18,976.5	53,853	65.6
North Carolina	8,049.3	46,529	65.9
North Dakota	642.2	41,085	65.4
Ohio	11,353.1	40,632	63.9
Oklahoma	3,450.7	39,022	57.7
Oregon	3,421.4	44,222	65.7
Pennsylvania	12,281.1	41,551	60.8
Rhode Island	1,048.3	43,555	58.5
South Carolina	4,012.0	37,192	58.1
South Dakota	754.8	42,830	67.0
Tennessee	5,689.3	41,838	68.2
Texas	20,851.8	51,117	54.3
Utah	2,233.2	43,771	67.7
Vermont	608.8	39,770	62.5
Virginia	7,078.5	52,166	66.9
Washington	5,894.1	49,801	63.7
West Virginia	1,808.3	30,778	38.0
Wisconsin	5,363.7	43,365	67.5
Wyoming	493.8	59,867	64.7

Sources. For gross domestic product data, Bureau of Economic Analysis, Regional Economic Accounts, Gross Domestic Product (GDP) by State, 2006 (http://bea.gov/newsreleases/regional/gdp_state/2007/gsp0607.htm). For total state population data, U.S. Census Bureau, Vintage 2007: National Tables (http://www.census.gov/popest/data/historical/2000s/vintage_2007/index.html). For court quality score, U.S. Chamber of Commerce (2007).

Table A3

Statutory State-Level Variables

State	Oppression_One	Oppression_Alt	Withdrawal
Alabama	1	1	1
Alaska	1	1	1
Arizona	1	0	1
Arkansas	1	1	1
California	0	0	1
Colorado	1	1	1
Connecticut	1	1	1
Delaware	1	1	1
Florida	1	0	1
Georgia	1	1	1
Hawaii	0	0	0
Idaho	0	0	1
Illinois	0	0	1
Indiana	1	1	1
Iowa	1	1	0
Kansas	1	1	1

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Table A3 (*Continued*)

State	Oppression_One	Oppression_Alt	Withdrawal
Kentucky	1	1	1
Louisiana	1	1	0
Maine	1	0	1
Maryland	1	1	1
Massachusetts	1	1	0
Michigan	0	0	1
Minnesota	0	0	1
Mississippi	0	0	1
Missouri	1	1	0
Montana	0	0	0
Nebraska	1	1	1
Nevada	1	1	1
New Hampshire	1	1	1
New Jersey	1	1	0
New Mexico	1	1	0
New York	1	1	1
North Carolina	0	0	1
North Dakota	0	0	1
Ohio	1	1	1
Oklahoma	1	1	1
Oregon	1	1	1
Pennsylvania	1	1	0
Rhode Island	1	1	1
South Carolina	0	0	0
South Dakota	0	0	1
Tennessee	0	0	0
Texas	0	0	1
Utah	0	0	1
Vermont	0	0	0
Virginia	1	1	1
Washington	0	0	1
West Virginia	0	0	0
Wisconsin	0	0	0
Wyoming	1	1	1

Source. Data are from the authors' research performed using LexisNexis.

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Table A4
Statutory State-Level Variables Associated with Dissolution

State	Dissolution_One	Dissolution_Alt	ULLCA
Alabama	0	0	1
Alaska	0	0	0
Arizona	1	1	0
Arkansas	0	0	0
California	1	1	0
Colorado	0	0	0
Connecticut	1	1	0
Delaware	1	0	0
Florida	0	0	0
Georgia	0	0	0
Hawaii	0	0	1
Idaho	0	1	0
Illinois	0	0	1
Indiana	1	1	0
Iowa	0	0	0
Kansas	1	1	0
Kentucky	1	1	0
Louisiana	1	1	0
Maine	0	0	0
Maryland	0	0	0
Massachusetts	0	0	0
Michigan	0	0	0
Minnesota	1	1	0
Mississippi	0	0	0
Missouri	0	1	0
Montana	0	0	1
Nebraska	0	0	0
Nevada	0	0	0
New Hampshire	1	1	0
New Jersey	0	0	0
New Mexico	1	1	0
New York	1	1	0
North Carolina	0	0	0
North Dakota	1	1	0
Ohio	0	0	0
Oklahoma	0	0	0
Oregon	0	0	0
Pennsylvania	0	1	0
Rhode Island	1	1	0
South Carolina	0	0	1
South Dakota	0	0	1
Tennessee	1	1	0
Texas	1	1	0
Utah	0	0	0
Vermont	0	1	1
Virginia	0	0	0
Washington	0	0	0
West Virginia	0	1	1
Wisconsin	0	0	0
Wyoming	0	0	0

Source. Data are from the authors' research performed using LexisNexis.

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Table A5
Statutory State-Level Variables Associated with Formalities and Care

State	Formalities	Care_One	Care_Two	Care_Two_Alt
Alabama	0	1	1	1
Alaska	0	0	0	0
Arizona	0	0	0	0
Arkansas	0	1	1	1
California	1	1	0	1
Colorado	1	1	1	1
Connecticut	0	0	1	1
Delaware	0	0	1	1
Florida	0	1	1	1
Georgia	1	0	1	1
Hawaii	1	1	1	1
Idaho	0	1	1	1
Illinois	1	1	1	1
Indiana	0	1	1	1
Iowa	1	0	1	1
Kansas	0	0	1	1
Kentucky	0	1	1	1
Louisiana	0	1	1	1
Maine	0	0	0	0
Maryland	0	0	0	0
Massachusetts	0	0	1	1
Michigan	0	0	1	1
Minnesota	0	0	1	1
Mississippi	0	0	1	1
Missouri	0	0	1	1
Montana	1	1	1	1
Nebraska	0	0	0	0
Nevada	0	0	0	0
New Hampshire	0	1	0	0
New Jersey	0	1	1	1
New Mexico	0	1	0	1
New York	0	0	1	1
North Carolina	0	0	1	1
North Dakota	0	0	1	1
Ohio	0	1	0	0
Oklahoma	0	0	1	1
Oregon	1	1	1	1
Pennsylvania	0	0	1	1
Rhode Island	0	0	1	1
South Carolina	1	1	1	1
South Dakota	1	1	1	1
Tennessee	1	1	1	1
Texas	0	0	1	1
Utah	1	1	0	0
Vermont	0	0	1	1
Virginia	0	0	1	1
Washington	1	1	1	1
West Virginia	1	1	1	1
Wisconsin	0	1	0	0
Wyoming	0	0	0	0

Source. Data are from the authors' research performed using LexisNexis.

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Table A6

Statutory State-Level Variables Associated with Date of Enactment and Freedom

State	Date of Enactment	Freedom
Alabama	October 1, 1993	0
Alaska	July 1, 1995	0
Arizona	September 30, 1992	0
Arkansas	April 12, 1993	1
California	September 30, 1994	0
Colorado	April 18, 1990	1
Connecticut	June 1, 1993	1
Delaware	October 1, 1992	1
Florida	April 21, 1982	0
Georgia	March 1, 1994	1
Hawaii	April 1, 1997	0
Idaho	July 1, 1993	1
Illinois	January 1, 1994	0
Indiana	July 1, 1993	0
Iowa	September 1, 1992	0
Kansas	July 1, 1990	1
Kentucky	July 15, 1994	1
Louisiana	July 7, 1992	1
Maine	January 1, 1995	1
Maryland	October 1, 1992	0
Massachusetts	January 1, 1996	0
Michigan	June 1, 1993	0
Minnesota	January 1, 1993	0
Mississippi	July 1, 1994	1
Missouri	December 1, 1993	1
Montana	October 1, 1993	0
Nebraska	September 9, 1993	0
Nevada	October 1, 1991	0
New Hampshire	July 1, 1993	1
New Jersey	January 26, 1994	1
New Mexico	July 1, 1993	1
New York	October 24, 1994	0
North Carolina	October 1, 1993	0
North Dakota	August 1, 1993	0
Ohio	July 1, 1993	0
Oklahoma	September 1, 1992	1
Oregon	January 1, 1994	0
Pennsylvania	February 5, 1995	0
Rhode Island	September 19, 1992	0
South Carolina	June 16, 1994	0
South Dakota	July 1, 1993	0
Tennessee	June 21, 1994	0
Texas	August 26, 1991	0
Utah	July 1, 1991	1
Vermont	July 1, 1996	0
Virginia	July 1, 1992	1
Washington	October 1, 1994	1
West Virginia	March 6, 1992	0
Wisconsin	January 1, 1994	1
Wyoming	March 4, 1977	0

Sources. For Freedom, authors' research performed using LexisNexis. For date of enactment, Cushman and Sperling Taub (1997); Rutledge and Booth (2002) (Florida, South Dakota, and Wyoming) and LexisNexis (Hawaii).

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Table A7

Baseline Results without Minnesota and North Dakota

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**
	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)	(.002)	(.002)
log(Employees)	−.019**	−.019**	−.019**	−.019**	−.020**	−.019**	−.019**	−.019**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
log(TotalStatePopulation)	.011	−.001	−.007	−.011	.006	−.011	−.008	−.011
	(.025)	(.023)	(.026)	(.025)	(.024)	(.025)	(.026)	(.025)
log(Establishments2002)	−.020	−.007	−.003	.003	−.015	.003	−.002	.001
	(.021)	(.020)	(.022)	(.022)	(.020)	(.022)	(.022)	(.022)
log(GDP per Capita)	−.099*	−.095*	−.101**	−.092**	−.102**	−.092**	−.104**	−.096**
	(.040)	(.037)	(.035)	(.034)	(.037)	(.034)	(.033)	(.032)
Oppression	−.015*	−.017*	−.016*	−.018*	−.017*	−.018*	−.016*	−.018*
	(.008)	(.008)	(.007)	(.008)	(.008)	(.008)	(.008)	(.008)
Courts_Quality (score)	−.000	−.000	.000	−.000	−.000	−.000	.000	−.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Care_One	−.008		−.016		−.008		−.014	
	(.012)		(.011)		(.011)		(.010)	
Care_Two	−.018*		−.022**		−.016*		−.020**	
	(.008)		(.007)		(.008)		(.007)	
Formalities	.014	.014	.019+	.016	.013	.016	.018*	.015+
	(.009)	(.009)	(.010)	(.010)	(.008)	(.010)	(.009)	(.009)
ULLCA	−.033*	−.043**	−.027+	−.041*	−.035*	−.041*	−.029+	−.044**
	(.015)	(.014)	(.014)	(.016)	(.016)	(.016)	(.016)	(.016)
Care_Three		−.024*		−.026*		−.026*		−.020
		(.011)		(.011)		(.011)		(.013)
Freedom			−.000	−.000		−.000	−.001	−.002
			(.008)	(.011)		(.011)	(.008)	(.011)
Enactment			.003*	.002		.002	.002+	.001
			(.001)	(.001)		(.001)	(.001)	(.001)
Withdrawal					.014		.010	.013
					(.009)		(.008)	(.010)
Dissolution					−.003		.000	−.002
					(.008)		(.007)	(.007)

Note. Marginal coefficients are from a probit model. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 19{,}364$.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

Appendix B

The Coding of Our State Law Variables

Because of the complexity of LLC law and the often idiosyncratic design of individual LLC statutes, it seems justified to provide more detailed information on the coding of some of our state law variables.

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B1. Withdrawal

First, it is noteworthy that LLC statutes use different terms to refer to the right of a member to cease her membership via unilateral declaration. In particular, some member states use the term "withdrawal," while others employ the terms "resignation" or "dissociation." These differences in terminology are irrelevant to our coding.

Second, it should be stressed that Withdrawal does not take on the value zero if the right to be paid the value of the membership interest depends on the dissolution of the company and if the dissolution can be prevented by a decision of the remaining members without the consent of the member who seeks to cease her membership. This follows directly from our basic definition of Withdrawal, which states that Withdrawal takes on the value zero only if the remaining members cannot prevent the withdrawing member from obtaining the value of her membership. Defining Withdrawal in this way is appropriate because the ability of a member to liquidate her membership interest presumably loses a good deal of its protective value if that right can effectively be blocked by the other members.

Third, some states give the withdrawing member the right to be paid, but only at the moment when she would have been paid if she had not withdrawn. For these states, Withdrawal takes on the value one for the obvious reason that this type of rule does not allow a member to liquidate her membership. By contrast, Withdrawal takes on the value zero if the member can demand to be paid within a reasonable time or within a fixed time—for example, within 30 days—after ceasing to be a member.

Fourth, some states impose certain fixed notice periods before the member can withdraw. For example, Alabama's LLC statute requires 30 days' written notice to withdraw (Ala. Code sec. 10-12-36[d]). Given that such fixed waiting periods do not eliminate the ability of the member to liquidate her membership interest, we ignore them for coding purposes.

Fifth, it is noteworthy that even those states that grant a withdrawal right in principle typically eliminate that right in those cases where the LLC was formed for a particular term or undertaking (for example, Ala. Code sec. 10-12-36[d]). We ignore this limitation for coding purposes, focusing only on LLCs that were not formed for a particular term or undertaking. Similarly, we ignore provisions that exclude the right to withdraw in those situations where the membership interest was acquired for no or nominal consideration.

Sixth, some LLC codes distinguish between the right to withdraw and the power to withdraw, although the distinction is often ambiguous. For example, under the District of Columbia statute, a member "may resign . . . only at the time or upon the happening of such events as are specified in the articles of organization or the operating agreement" (D.C. Code sec. 29-1034). At the same time, the District of Columbia statute's provision on distributions provides that if a member resigns in violation of the operating agreement, she is still entitled

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to receive the fair value of her membership interest, although the LLC may recover damages from her and may offset these damages against the amount otherwise distributable (D.C. Code sec. 29-1027[b]). This implies that, under the District of Columbia's LLC statute, a member has the power to resign and liquidate her membership interest even in those cases in which she lacks the right to resign. It is therefore important to note that, for coding purposes, we do not consider the power to resign in violation of the articles of organization or the operating agreement to be a withdrawal right. There are two reasons for this. One simply has to do with the transparency of our coding. Many states have eliminated the right to withdraw, but their LLC statutes are often highly ambiguous as to whether the power to withdraw shall also be eliminated, making the right to withdraw easier to code in a transparent manner than the power to withdraw. The second and more important reason is substantive in nature. With Withdrawal, we seek to capture whether the member has an easy way of liquidating her membership and thereby escape oppressive controllers. However, in those cases in which the member has only the power but not the right to withdraw, she faces potential damages, which means that the mere power to withdraw will often not constitute an easy way out.

Seventh, one state, Illinois, has different withdrawal rules for member-managed and manager-managed LLCs. In line with our general policy, we focus on manager-managed LLCs. As a result, Illinois, whose LLC statute does not grant members in manager-managed LLC statutes the right to withdraw (805 Ill. Comp. Stat. 180/35-50[a]), is given the value one with respect to Withdrawal.

Eighth, a very particular approach is pursued by the LLC statute in Wyoming. Under that statute, a member may "rightfully demand the return of his or its contribution" after giving the other members "prior notice" (Wyo. Stat. Ann. sec. 17-15-120[b]). It should be noted, however, that this right does not fit the definition of a withdrawal right in the sense of this article. This is because the relevant provision, instead of giving the member the right to be paid the value of her membership interest, "permits the return of only the initial or stated capital contribution of a member" (*Lieberman v. Wyoming.com LLC,* 11 P.3d 353, 359 [Wyo. 2000]).

Ninth, it is not always easy to determine whether a given LLC statute grants a member the right to cease her membership via unilateral declaration. To ensure consistency, we apply the following principles. Some LLC statutes regulate the consequences of withdrawal but fail to address the question of whether such a right to withdraw has to be included in the articles of formation or the operating agreement or whether it exists as a legal default. For example, the LLC statute of Wyoming provides that an LLC is dissolved upon the withdrawal of a member but does not specify whether, as a legal default, members have the right to withdraw (Wyo. Stat. Ann. sec. 17-15-123).[8] Similarly, Nebraska regulates the

[8] In Wyoming's case, Wyo. Stat. Ann. sec. 17-15-120(d) suggests that, as a default, members do not have the general right to withdraw and thereby dissolve the company. This is because Wyo. Stat.

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status of a withdrawn member without providing guidance as to whether, as a legal default, members have the right to withdraw (Neb. Rev. Stat. sec. 21-2619). Because our coding emphasizes the clarity with which the law grants rights to minority investors, we code the relevant states as not granting withdrawal rights. On the other hand, we assume that an LLC statute does grant a right to withdraw where it contains language to the effect that the operating agreement may provide that a member may not withdraw (for example, 15 Pa. Cons. Stat. sec. 8948). After all, if the operating agreement may provide that the member may not withdraw, then the obvious implication is that a member may withdraw if the operating agreement is silent. Furthermore, we assume that an LLC statute provides a right to withdraw where, as in the case of North Dakota or Minnesota, the statute makes it clear that the member always has the power to withdraw and that the withdrawal is wrongful only where the member withdraws in contravention of the articles of organization or the operating agreement (N.D. Cent. Code sec. 10-32-30; Minn. Stat. sec. 322B.306). Of course, even where the member has a right to withdraw, Withdrawal still takes on the value one where, as in the case of Minnesota or North Dakota, withdrawal does not result in a right to be paid the value of the membership interest (Minn. Stat. secs. 322B.51, 322B.306; N.D. Cent. Code secs. 10-32-30, 10-32-61).

B2. Dissolution

First, various states have special rules governing the dissolution of an LLC that apply as long as the LLC has not accepted contributions (see, for example, Minn. Stat. sec. 322B.803[2][a]; N.D. Cent. Code sec. 10-32-110; Tenn. Code Ann. sec. 48-249-602) or has not commenced business (Nev. Rev. Stat. Ann. sec. 86.490). Because we are interested in opportunistic midstream dissolutions, we ignore rules of this type and focus instead on the rules that govern dissolution once the LLC has accepted contributions and has commenced business.

Second, with regard to the withdrawal of members as a ground for dissolution, some states impose different rules depending on whether the company is managed by its members, as well as whether the withdrawing member is also a manager (for example, W. Va. Code sec. 31B-8-801; Vt. Stat. Ann. tit. 11, sec. 3101). Because we are interested in the possibility that controllers opportunistically force the dissolution of the company, we focus on the rules governing the dissolution of manager-managed firms, and we further assume that the withdrawing member is also a manager.

Third, it is noteworthy that some states do not specify the percentage of members that have to approve of the company's dissolution. In other words, these LLC statutes abstain from providing a default rule and instead leave the

Ann. sec. 17-15-120(d) gives individual members a right to have the company dissolved if the member rightfully but unsuccessfully has demanded the return of his or its contribution. The latter condition for the right to have the company dissolved would be rendered meaningless if one were to assume that members have a general right to withdraw, given that, under the law of Wyoming, the withdrawal of a member automatically leads to the dissolution of the company.

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task of specifying the necessary percentage to the certificate of formation or the operating agreement. Regarding Dissolution and Dissolution_Alt, we classify these statutes as not allowing dissolution via a less than unanimous vote. The intuition behind this approach is that statutes of this type protect the minority members by requiring the members to agree on a rule and thus protect minority investors by forcing the issue into the open.

Fourth, state laws differ somewhat as to how they define the requirement of a unanimous decision. Most states require the consent of all members, regardless of whether the members generally are allowed to vote (for example, Fla. Stat. sec. 608.441). However, one can also find the rule that a unanimous decision only requires the consent of those members that have voting rights (D.C. Code sec. 29-1047). Because this distinction seems to have little importance in practice, we disregard it and code both types of states as requiring a unanimous decision for the purpose of our analysis.

Fifth, as concerns Dissolution_Alt, it should be recalled that not all states grant the member of an LLC the right to dissociate. Under the definition that we employ, the mere fact that the withdrawal or resignation of a member leads the company to be dissolved or prepares the way for a dissolution via a less than unanimous decision of the remaining members is not sufficient for Dissolution_Alt to take on the value one unless the relevant LLC statute also expressly grants members a right to withdraw (resign). The LLC statute in Mississippi may serve to illustrate this point. Under Mississippi law, the dissolution of an LLC formed on or after July 1, 1998, requires the consent of all members (Miss. Code Ann. sec. 79-29-801[c]). In case a member dissociates, the LLC can be dissolved via a mere majority of the remaining members (Miss. Code Ann. sec. 79-29-801[d]). However, under Mississippi law, members do not have the right to dissociate (Miss. Code Ann. sec. 79-29-307[3]). Accordingly, both Dissolution and Dissolution_Alt take on the value zero.

B3. Care_One

First, in keeping with the prevailing legal terminology, we assume that "recklessness," "intentional misconduct," "knowing violation of the law," "conscious disregard of the best interest of the limited liability company," "with malicious purpose," "wanton misconduct," and "wanton and willful disregard of human rights, safety, or property" all constitute even higher thresholds than the gross-negligence standard. For example, to the extent that a state does not impose liability for duty-of-care violations unless the manager engages in "grossly negligent or reckless conduct, intentional misconduct or a knowing violation of law" (W. Va. Code sec. 31B-4-409), Care_One takes on the value one.

Second, we do not assume a gross-negligence standard simply because the statute refers to the business judgment rule or the business judgment of managers. For example, Virginia law requires managers to discharge their duties in accordance with their "good faith business judgment of the best interests of the limited liability company" (Va. Code Ann. sec. 13.1-1024.1[a]). This does not, in our

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view, make it sufficiently clear that managers shall not be liable for simple negligence, since it is entirely conceivable to grant business judgment rule protection with a duty of care—that is, a duty to be reasonably informed—that can be violated by mere simple negligence.

Third, as previously indicated, North Dakota and Minnesota present a special challenge, since they do not offer the manager-managed LLC as either an opt-in or a default regime. Instead, they offer the choice between a member-managed and a board-managed LLC. For these states, therefore, we focus on the board-managed LLC. Accordingly, in coding the duty-of-care variables, we focus on the rules governing board members.

Fourth, a special case is represented by the Virginia LLC statute. This statute does not generally limit the liability of managers for duty-of-care violations to cases of gross negligence. However, it imposes a monetary cap on the liability of managers for duty-of-care violations. In any proceeding, the damages assessed against a manager arising out of a single transaction, occurrence, or course of conduct shall not exceed "the greater of . . . $ 100,000 or . . . the amount of cash compensation received by the manager or member from the limited liability company during the twelve months immediately preceding the act or omission for which liability was imposed" (Va. Code Ann. sec. 13.1-1025). In keeping with our general definition of Care_One, we have ignored this monetary limitation since it does not change the fact that managers remain, in principle, liable for simple negligence.

Fifth, another unusual case is presented by Ohio. Ohio requires managers to act "with the care that an ordinarily prudent person in a similar position would use under similar circumstances" (Ohio Rev. Code Ann. sec. 1705.29[B]). However, the statute also makes it clear that the manager cannot be held personally liable unless she has acted recklessly or even with "deliberate intent to cause injury to the company." Accordingly, in the case of Ohio, Care_One takes on the value one.

B4. Care_Two

A few states have rules on liability waivers that warrant explanation simply because the relevant rules are somewhat complex. The LLC statute in Wisconsin falls into this category. It provides that "[u]nless otherwise provided in an operating agreement . . . [n]o member or manager shall act or fail to act in a manner that constitutes" willful misconduct (Wis. Stat. sec. 183.0402). At first glance, this might be read to imply that the operating agreement can provide for an even laxer standard. However, paragraph 3 of the same provision makes it clear that the only modifications allowed are those that introduce a stricter standard by providing that the operating agreement "may impose duties on its . . . managers that are *in addition* to those provided under sub. (1)" (emphasis added). Accordingly, Care_Two takes on the value zero for Wisconsin.

Similarly, New Hampshire has adopted a statute that allows liability waivers for certain fiduciary duties (N.H. Rev. Stat. Ann. sec. 304-C:31[VI]). However,

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the fiduciary duties referred to in this section are duty-of-loyalty violations (compare N.H. Rev. Stat. Ann. sec. 304-C:31[VI]). By contrast, no liability waivers are allowed for the duty of care: with respect to the duty of care, the default is that managers are liable only if their actions amount to gross negligence or willful misconduct (N.H. Rev. Stat. Ann. sec. 304-C:31). Also, N.H. Rev. Stat. Ann. sec. 304-C:31(VI) makes it clear that liability waivers cannot go below this standard by stating that provisions waiving or limiting the liability of managers remain "[s]ubject to the liability of a member or manager for acts of gross negligence or willful misconduct." Accordingly, Care_Two has to take on the value zero.

A few other states are more difficult to code. Two states, California and New Mexico, explicitly allow modifications of the duty of care, but they do not make it clear whether these modifications may lead to a reduction in the duty of care.[9] Because our coding emphasizes the clarity with which a state allows modifications of the duty of care, we do not classify these states as states that explicitly allow a reduction in the duty of care or the liability flowing from duty-of-care violations. In other words, Care_Two takes on the value zero for the relevant states. However, as explained in the text, we create an alternative variable, Care_Two_Alt, for robustness checks, and Care_Two_Alt takes on the value one for both California and New Mexico.

A less clear case is represented by Illinois law. The Illinois LLC statute provides that the operating agreement may not "eliminate or reduce a member's fiduciary duties, but may identify specific types or categories of activities that do not violate these duties, if not manifestly unreasonable" (805 Ill. Comp. Stat. 180/15-5[6][A]). Because this provision, despite its purported ban on reductions in the duty of care, effectively does create room for reducing the duty of care within the realm of the reasonable, Care_Two takes on the value one.

Finally, Vermont notes that the operating agreement may not "eliminate from the duty of care the obligations set forth under subsection (c) of section 3059 and subdivision (b)(3) of section 3083 of this title" (Vt. Stat. Ann. tit. 11, sec. 3003[b][3]). We read this provision as allowing mere reductions in the duty of care because, in a different subparagraph, the same provision explicitly distinguishes between reduction and elimination.

B5. Formalities

First, it should be noted that the wording of those provisions that declare the failure to observe formalities to be irrelevant differs slightly across states. Most of the relevant provisions declare that the failure to follow formalities shall not

[9] Of note, Missouri does not fall into this category. To be sure, subsection 1 of the relevant provision of the Missouri LLC statute (Mo. Rev. Stat. sec. 347.088) contains a fairly unspecific wording ("Except as otherwise provided in the operating agreement"). However, subsection 2 of the same provision makes it very clear that reductions in the liability for duty-of-care violations are possible by stating that a manager's "duties and liabilities may be . . . restricted by provision in the operating agreement."

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be a ground for holding the members of an LLC personally liable (for example, Ga. Code Ann. sec. 14-11-314). By contrast, two states, California and Washington, have adopted provisions according to which the failure to observe certain formalities shall not be considered a factor in piercing the veil (for example, see Cal. Corp. Code sec. 17101). For the purpose of our analysis, we ignore such differences. As long as the failure to observe certain formalities is to some extent declared to be irrelevant to the veil-piercing analysis, Formalities takes on the value one.

Second, states differ with respect to which formalities are declared to be irrelevant for the purpose of piercing the veil. Some states declare only some formalities to be irrelevant. For example, under the California LLC statute, it is only "the failure to hold meetings . . . or the failure to observe formalities pertaining to the calling or conduct of meetings" that shall not be considered a factor in the veil-piercing analysis, and, moreover, the relevant provision explicitly makes an exception for those cases in which the articles of organization or operating agreement "expressly require the holding of meetings" (Cal. Corp. Code sec. 17101[b]). A similar rule governs in Washington (Wash. Rev. Code Ann. sec. 25.15.060). Other LLC statutes take a much more general approach to the problem at hand in that they do not distinguish between different types of formalities. For example, under the LLC statute of Utah, the failure to follow "any formalities or requirements imposed by this chapter or by the articles of organization or the operating agreement" is not a ground for piercing the corporate veil (Utah Code Ann. sec. 48-2c-605). Our coding does not distinguish between these different types of statutes. Rather, Formalities takes on the value one as long as the failure to follow at least some formalities is declared to be irrelevant to the veil-piercing analysis.

Third, a particularly curious provision can be found in Maine's LLC statute. This statute provides that the common-law exceptions to the limited liability of shareholders in a corporation are also applicable to LLCs (31 M.R.S. sec. 645[2]). The statute also declares that the failure to follow corporate formalities is not a ground for imposing personal liability but, in the same breath, exempts the common-law exceptions—that is, the veil-piercing doctrine—from that principle. In other words, the statutorily declared irrelevance of the failure to follow formalities does not, ironically, extend to the common-law veil-piercing doctrine. For that reason, Formalities takes on the value zero for Maine.

Appendix C

Multicollinearity

There is a fairly high correlation between log(TotalStateEstablishments) and log(TotalStatePopulation), while other correlations are modest. To investigate whether this correlation causes any problems in our empirical work, we also conduct a robustness check in which we omit the log(TotalStateEstablishments)

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variable and find no major qualitative differences. The results are displayed in Table F1. The overall picture shows little change vis-à-vis our baseline results. For comparability with the seminal paper by Bebchuk and Cohen (2003), we leave log(TotalStateEstablishments) in the baseline specification.

Table C1

Robustness Check: log(Establishments2002) Excluded

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Revenue)	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**	−.017**
	(.002)	(.002)	(.002)	(.003)	(.002)	(.003)	(.002)	(.002)
log(Employees)	−.019**	−.019**	−.019**	−.019**	−.020**	−.019**	−.019**	−.019**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
log(TotalStatePopulation)	−.009	−.007	−.009	−.008	−.010^{+}	−.008	−.010^{+}	−.010
	(.006)	(.006)	(.006)	(.007)	(.006)	(.007)	(.006)	(.007)
log(GDP per Capita)	−.096**	−.095**	−.102**	−.094**	−.101**	−.094**	−.105**	−.097**
	(.037)	(.035)	(.034)	(.033)	(.036)	(.033)	(.033)	(.031)
Oppression	−.013^{+}	−.016*	−.015*	−.018*	−.015^{+}	−.018*	−.015*	−.018*
	(.007)	(.008)	(.007)	(.008)	(.008)	(.008)	(.007)	(.008)
Courts_Quality	−.000	−.000	−.000	−.000	−.000	−.000	−.000	−.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Care_One	−.010		−.016		−.009		−.015	
	(.012)		(.010)		(.011)		(.009)	
Care_Two	−.018*		−.022**		−.016*		−.020**	
	(.008)		(.007)		(.008)		(.007)	
Formalities	.013	.014	.019*	.016^{+}	.013	.016^{+}	.019*	.015^{+}
	(.009)	(.008)	(.010)	(.010)	(.009)	(.010)	(.009)	(.009)
ULLCA	−.034*	−.043**	−.027^{+}	−.042**	−.036*	−.042**	−.030^{+}	−.044**
	(.014)	(.014)	(.014)	(.016)	(.016)	(.016)	(.015)	(.016)
Care_Three		−.026*		−.025*		−.025*		−.020^{+}
		(.011)		(.011)		(.011)		(.012)
Freedom			−.000	−.001		−.001	−.001	−.002
			(.008)	(.010)		(.010)	(.008)	(.010)
Enactment			.003*	.002^{+}		.002^{+}	.002*	.001
			(.001)	(.001)		(.001)	(.001)	(.001)
Withdrawal					.015^{+}		.010	.013
					(.009)		(.008)	(.010)
Dissolution					−.004		−.000	−.002
					(.008)		(.007)	(.007)

Note. Marginal coefficients are from a probit model. Robust standard errors, corrected for clustering at the state level, are in parentheses. The dependent variable is equal to one if the firm is formed in the state of its principal place of business, and zero otherwise. All specifications include industry fixed effects at the two-digit level. $N = 19{,}708$.

$^{+}$ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

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