# Business Legal Status and New Firm Performance: Evidence From Kauffman Firm Survey

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#### Abstract

In this paper, we explore the characteristics of newly established firms with different legal forms of organization. Using the Kauffman Firm Survey (KFS), a panel study of businesses established in 2004, we examine the relationship between firm performance and its organizational form and how this relationship changes as firms transition between legal status. We show that firms that are organized into forms that provide liability protection have more debt, higher credit scores, and are more innovative than firms without liability protection. We also observe a larger share of B2B firms with liability protection. Our analysis also indicates that expanding firms, intending to fund their growth via investors' equity, exhibit a preference for C-corporations over S-corporations or LLCs.

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## 1 Introduction

When establishing a new business, an important choice that an entrepreneur has to make is the choice of organizational form for her business. This choice reflects the need for capital, flexibility, and owners' protection from the liabilities that the business takes on. Further, the legal form of organization determines the state and federal-level tax burden imposed on the business (Carroll and Joulfaian, 1997; Cooper et al., 2016; Dyrda et al., 2018; Gordon and Slemrod, 1998; Slemrod, 1996; Smith et al., 2019, 2022; Yagan, 2015). The main legal forms of organization (LFO) in the United States are sole proprietorship, general partnership, limited partnership, limited liability company, S-corporation (pass-through corporation), and C-corporation. Understanding the differing characteristics of each organizational form is critical, as the choice of that form can influence a firm's capital accessibility, risk management, and long-term viability. In this paper, we examine differences in capital access, innovation, and growth prospects for firms with different organizational forms, laying the groundwork for a more nuanced understanding of why firms choose a particular LFO and how these choices affect their business operations.

We focus our analysis on organizational forms of new and young firms across two main dimensions: (1) between forms that offer liability protection and those that do not, and (2) within the limited liability forms between C-corporations, S-corporations and limited liability companies (LLCs). To do so, we use the Kauffman Firm Survey (KFS), a panel study of new businesses founded in 2004 and tracked over their early years of operation. We start by descriptively demonstrating that firms change their organizational form as they progress through their life cycle, and certain patterns of switching are more prevalent than others.<sup>1</sup> This motivates us to organize our analysis in the following way. First, we study the relationship between firms' characteristics and their chosen legal form of organization for those firms that do not switch legal forms. Second, we rely on the comparison of firm characteristics between firms that switch their legal form and those that do not. We evaluate differences in firm-level observables before and after the LFO switch. Additionally, we investigate how resilient firms in each organizational form were during the global financial crisis (GFC).

 $\rm KFS^2$  is the only publicly available panel data set that provides information on the legal form of organization in the US, allowing us to study the importance of the firm organizational

<sup>&</sup>lt;sup>1</sup>This is consistent with the aggregate statistics provided by County Business Patterns, see https://www.census.gov/programs-surveys/cbp.html

<sup>&</sup>lt;sup>2</sup>The Kauffman Firm Survey is a research dataset accessible to scholars around the globe. The public use microdata file for the Kauffman Firm Survey is available at http://www.kauffman.org/kfs/.

choices for various aspects of new businesses. Specifically, this survey collects data about the nature of new business formation activity; characteristics of the strategy, offerings, and employment patterns; the nature of the financial and organizational arrangements of these businesses; and the characteristics of their founders. The panel started in 2004 and ended in 2011, with annual surveys of the same firms. The only other source of information on legal forms of organization in the US is the Longitudinal Business Database (LBD) which is a confidential database provided by Census.<sup>3</sup>

We have four main sets of findings. First, we show descriptive evidence that compares the characteristics of firms that do not change their LFOs throughout the duration of the KFS survey. We start with the differences between limited and non-limited liability firms. We focus on this distinction because we find that the most common switching patterns are between structures that offer this protection and those that do not. We find that limited liability business forms have higher debt, which can be because liability protection shields the personal assets of the business owner from those of the business itself in the event of bankruptcy or other legal proceedings. Then we show that limited liability firms are more likely to be innovative. To do so, we use the information from KFS on patent ownership, whether a firm has any R&D, and whether a firm belongs to a technology-generating sector. Our findings are consistent with the notion that more innovative firms may have a higher appetite for risky projects and limited liability offers protection against that risk. We also find that limited liability organizational forms have higher credit scores compared to nonlimited liability ones which is in line with them having less opacity and higher debt levels. Consequently, these organizational forms are likely more appealing for firms that mostly engage in transactions with other firms and that value credibility and reputation rather than those that sell output directly to customers.

Confirming this evidence, among the group of firms that change their LFO, we find that before the switch to limited liability organization form, firms with non-limited liability tend to have a higher likelihood of having R&D and belonging to technology-generating sectors and a higher likelihood of being B2B firms compared to firms that do not switch their LFO.

Second, we focus on differences within the limited liability forms of organization and compare the choice of legal form between C-corporations versus S-corporations and LLCs. We show that C-corporations are more likely to offer a more flexible setup for growth. Specifically, we find that firms that are planning on future growth, especially those relying

<sup>&</sup>lt;sup>3</sup>We have a project entitled "Firm dynamics and the legal form of organization" in the Census research data lab in which we ask a set of questions similar to the ones in this paper, but for the full population of firms in the US. See: Longitudinal Business Database.

on investors' equity for expansion, are more likely to be organized in a C-corporation legal form. Further, firms that switch from S-corporations and LLCs to C-corporations have higher employment growth before the switch than those firms that do not change their LFO.

Third, we provide evidence of differences in firm-level outcomes after a change in organizational structure. We find that when a firm switches to an organizational form that offers liability protection it increases its debt and the equity from the top owner. We also show that after that particular type of change in legal status, firms have higher credit scores, have more patents, and are more likely to increase their R&D investment. These findings reflect the protection offered by the limited liability legal forms and, consequently, the ability to take on more risk. When it comes to firms switching from S-corporations or LLCs to C-corporations, we find that this switch is associated with a substantial increase in their non-owner equity, which refers to external equity injected by insiders (spouse or parent) or outsiders (venture capitalists, government, etc.). One potential explanation for that is the fact that the C-corporation form allows its owners to attract deep-pocketed investors such as venture capital investors or angel investors, unlike any other LFO. This results in firm growth, as we see employment, revenue, and expenditure of C-corporations grow after the switch. Further, we also show that firms switching to a C-corporation have lower profitability (proxied by returns on assets, ROA) and are more likely to incur losses. One potential explanation could be a higher tax burden on C-corporations, which may induce firms to engage in practices to maximize their net-of-tax profits.

In the final part of the paper, we analyze the implications of the global financial crisis for firms in our sample. Since the survey ran between 2004 and 2011, we use the information from KFS on the change of status of each firm and document patterns in exit rates using the year that the business closed as the exit year. We find the largest changes in exit rates between 2007 and 2008 for S-corporations and C-corporations and the smallest ones for LLCs. This sheds light on the ability to withstand the consequences of the financial crisis across different organizational forms.

This paper contributes to the literature that analyzes different forms of business organization and their effects on firm operations. The early literature was mainly theoretical and focused on the role of limited liability and taxes in the choice of organizational forms. For example, Easterbrook and Fischel (1985); John et al. (1994); Winton (1993), examine the advantages of limited liability for owners which arise from their protection against claims by third parties for damages caused by the limited liability firm. John et al. (1994) focus on the role of corporate limited liability in inducing overinvestment in risky technologies relative to the social optimum and propose a tax regime to address that. This has also been examined by Becker and Fuest (2007) where the rationale for introducing a new tax is to counterbalance the effects of limited liability in promoting overinvestment when information is incomplete. Winton (1993) show that unincorporated businesses may suffer from difficulties in raising capital. More recent theoretical contributions, such as, Dyrda et al. (2018); Schlagenhauf (2019) focus on the impact of the tax structure on the choice of organizational form, especially the incorporation decision (e.g. Gordon and MacKie-Mason, 1994; Gordon and Slemrod, 1998; Kotlikoff and Miao, 2013; Mackie-Mason et al., 1997), and its consequences for firm-level outcomes. Chen et al. (2018) show that a higher tax burden on C-corporations causes the economy to have a lower employment level, while Bilicka and Raei (2023) find that differential taxation of organizational forms costs the economy approximately 7% of the aggregate output which is primarily due to misallocation of capital. We build on this theoretical literature to form our empirical hypotheses related to the differences in limited liability, availability of external capital, and tax treatment across different LFOs.

We directly contribute to the empirical literature evaluating the characteristics of different LFOs. Most importantly, by being able to identify different legal forms of organization in the KFS and by focusing on new and young firms, we are the first to consider the importance of limited liability, tax burdens, and a need for capital to fund growth in the choice of organizational forms for smaller enterprises. Broadly, the empirical literature looks at two distinct differences in legal forms of organization: (1) incorporated vs unincorporated forms, and (2) C-corporations vs S-corporations. In the first strand of this literature, using a sample of West German firms, Harhoff et al. (1998) find that incorporated firms grow faster than unincorporated firms. They also show that firms with liability protection have higher insolvency rates than comparable firms under full liability. Demirguc-Kunt et al. (2006) find that in countries with more developed institutions such as the U.S., incorporated businesses report lower obstacles to operations and growth than unincorporated ones. De Mooij and Nicodème (2008) use European data on LFO to show that income shifting via incorporation is large.<sup>4</sup>

In the second strand of this literature, Barro and Wheaton (2020) find that for 1958–2013,

<sup>&</sup>lt;sup>4</sup>Goolsbee (1998); MacKie-Mason and Gordon (1991); Mackie-Mason and Gordon (1997) estimate the cost of the excess tax burden paid by incorporated small businesses in the U.S, Mackie-Mason and Gordon (1997) argue that profitable firms should shift out of the corporate sector when the tax distortion is large, and conversely for firms with losses. They find that the average incorporated business must obtain an additional benefit equal to approximately 7% of its earnings each year from the incorporated state to compensate it for the excess tax burden.

the declining tax wedge and the gap between productivity of C-corporations and other organizational forms contributed 0.37% to a total TFP growth rate of 1.09% per year. Smith et al. (2022) show that the rise of pass-through entities in the US is associated with a decline in the labor share of the corporate sector. Giroud and Rauh (2019) find that increased business taxation might not have a large effect on the level of hiring and investment if businesses can change their activities to use more tax-favored organizational forms, such as switching from C-corporations to pass-through entities. We add to this literature by focusing on differences between LFOs alongside the limited liability dimension, which has only been examined theoretically. Given an already existing large body of empirical literature that analyzes differences between incorporated and unincorporated businesses, this different focus allows us to offer a new perspective on firm characteristics that are associated with liability protection.

While historically the use of the corporate form is associated with economic development, the advantages of one organizational form, e.g. C-corporations in the US over other forms, such as partnerships or sole proprietorships likely depend on institutional factors such as tax structure. Consequently, a big part of the empirical literature on the choice of the legal form of organization, specifically the choice between incorporated and unincorporated businesses, looks at differences in tax burdens (Elschner, 2013; Tazhitdinova, 2020; Yagan, 2015). For example, Carroll and Joulfaian (1997) show that higher corporate–noncorporate tax rate differential increase the likelihood that a firm will convert from C- to S-corporation status, where the tax savings are largest for profitable firms (see also Goolsbee (1998); Prisinzano and Pearce (2018)). In our paper, we instead focus our analysis on the future growth prospects and the availability of external capital that are far less explored in this literature. However, we also show evidence consistent with the literature that suggests that tax burdens play a role in choosing the LFO.

### 2 Conceptual Framework

In this section we provide an overview of the various legal forms of organization that are available to U.S. businesses, highlighting their distinctive characteristics. Then, we develop a set of hypotheses to guide our empirical investigation. During our observation period from 2004 to 2011, there were no reforms or legal changes impacting the legal forms of organization, ensuring a consistent legal background for the organizational forms that we study here.

#### 2.1 Legal Forms of Organization of U.S. Businesses

The primary legal forms of organization in the United States include sole proprietorship; general partnership (GP); limited partnership (LP); limited liability company (LLC); Scorporation; and C-corporation. Table 1 provides an overview of their key characteristics.

**Sole proprietorship** is the most basic legal form of organization, which does not have a distinct legal existence apart from its owner. This form of organization is not subject to any legal regulations. However, it does not offer liability protection for the owner, meaning that the owner assumes personal responsibility for all legal obligations of the business. Additionally, the lifespan of a proprietorship is limited by that of the proprietor. The profits and losses of the business flow through to the owner and are taxed at the owner's income level according to the individual tax code.

**General partnership** is very similar to sole proprietorship but allows more than one owner.

**Limited liability partnership** allows limited liability partners to not be personally liable for the debts of the partnership or the other partners. Further, the partners are not liable for the malpractice committed by the other partners. However, there must be at least one general partner who bears an unlimited legal liability for the business's legal obligations. The profits and losses of the business pass through to the partners at a pro-rata share.

**Limited liability company** (LLC) is a hybrid between a partnership and an S-corporation. Owners of an LLC enjoy liability protection, ease of transfer of ownership shares, passthrough of income to the owners, and less administrative burden than that faced by the owners of a corporation. It can be single-owned.

**Corporations** are legal entities separate from their owners. All owners of a corporation enjoy liability protection. In contrast to a proprietorship and a partnership, a corporation enjoys an unlimited life as well as free transferability of interest and centralized management. Unlimited life ensures that the firm does not automatically dissolve upon the death, bankruptcy, or withdrawal of the owner. Free transferability of interest implies that each owner may sell his or her interest without the permission of the other owners. Centralized management means that the decision-making belongs to the board of directors and not

	Number of Owners	Taxing Structure	Liability Protection
Sole Proprietorship	1	Pass-through	No
Partnership:			
General Partnership	1 or more	Pass-through	No
Limited Liability Partnership	1 or more	Pass-through	Yes (except for the general partner)
Limited Liability Company	1 or more	Pass-through	Yes
Corporation:			
S-corporation	between 1 and $100$	Pass-through	Yes
C-corporation	1 or more	Corporate tax and Dividend/capital gain tax	Yes

#### Table 1: Main Features of Legal Forms of Organization

Note: This table compares legal forms of organization available to U.S. businesses along three dimensions: number of owners allowed; whether they provide liability protection or not; tax treatment.

directly to the general owners.

There are two main types of corporations in the U.S.: C-corporations and S-corporations. **C-corporation** are subject to corporate income tax at both federal and state levels and any earnings distributed to shareholders as dividends or capital gains are subject to a second level of taxation at personal income tax rates. In contrast, **S-corporation** income passes through to its shareholders so that it is subject to a single level of taxation, at the personal level.<sup>5</sup> The S-corporation was created in 1958 to provide tax relief primarily to small privately held firms. However, S-corporations are subject to many restrictions, including a limit to one class of stock and a limit on the number of shareholders.<sup>6</sup> Also, shareholders of S-corporations must be U.S. citizens or residents, and must be physical entities (persons), so corporate shareholders and partnerships are excluded.

### 2.2 Hypothesis development

The distinctions among organizational forms can be divided into two groups: the degree of liability protection offered by the firm to its owners and the taxes imposed on the firm. LLCs, S-corporations, and C-corporations offer liability protection to their owners, while the other organization forms do not.<sup>7</sup> C-corporation is the only legal form of organization that

<sup>&</sup>lt;sup>5</sup>Some states, most notably California and New York, recognize the pass-through nature of S-corporations but still impose a tax at the entity level.

<sup>&</sup>lt;sup>6</sup>The shareholder limit was initially set at 10. It was later increased to 15 in 1976, 25 in 1981, 35 in 1982, 75 in 1996, and finally to 100 in 2004. Thus, throughout our observation period from 2004 to 2011, the limit has consistently remained at 100.

<sup>&</sup>lt;sup>7</sup>Limited liability partners structure provide liability protection for all partners except the general one.

is subject to corporate income tax. S-corporations together with all other non-incorporated legal forms pass all profits through to their owners, who pay individual income tax on them, hence, they are called pass-through entities.<sup>8</sup> Also, among the organizational forms that offer liability protection, the C-corporation stands out for its greater versatility in raising capital and suitability for expanding the size of the company.

#### 2.2.1 Limited Liability and Non-Limited Liability Legal Forms

The literature that examines the impact of liability protection on firms' decision-making consistently posits that companies with a higher desire for risk-taking are more likely to choose organizational forms that offer liability protection. John et al. (1994) consider the role of corporate limited liability in encouraging over-investment in risky technologies, relative to the social optimum. Becker and Fuest (2007) demonstrate that in the context of incomplete information, limited liability can result in overinvestment. For this reason, imposing an additional tax under such circumstances would enhance welfare. This idea has also been emphasized by Easterbrook and Fischel (1985); John et al. (1994); Winton (1993), who highlight the advantages of limited liability. The protection owners enjoy from third-party claims due to damages from the firm's operations emboldens them to embrace higher risks.

More generally, Fan and Wong (2002) examine the relationship between liability protection and the risk-taking behavior of firms. They find that firms with limited liability protection are more likely to take on riskier investments and projects, as they are shielded from personal liability in the event of failure. This suggests that liability protection can provide a level of confidence and security for borrowers, allowing them to pursue more ambitious and potentially lucrative ventures. Using a cross-country panel and a U.S.-only sample, John et al. (2008) find that corporate risk-taking and firm growth rates are positively related to the quality of investor protection. Also, Sinn (2001) shows that limited liability and asymmetric information between an investment bank and its lenders provide an incentive for a bank to undercapitalize and finance overly risky business projects. Further, Gollier et al. (1997) consider the problem of a risk-averse firm with limited liability. They show that the optimal exposure of the limited liability firm to risk is always larger than under full liability. Specifically, they argue that when real-time monitoring is impossible, a moral hazard problem appears. The most striking example is that of a financial intermediary (bank, savings

<sup>&</sup>lt;sup>8</sup>As we explained in the previous section, C-corporations face double taxation of their profit; first, they pay corporate income tax on their profit at the entity level and further, whenever the after-tax profits are distributed to the shareholders as dividends, or shareholders realize capital gains by selling the corporate shares, they need to pay personal income tax on them.

and loan, security broker, insurer) who must select risky investments that are financed in large proportion by outsiders' funds. If these outsiders cannot monitor the firm's investments in real-time, the limited liability clause gives the decision maker the equivalent of a free put option (Stiglitz and Weiss, 1981).

The relationship between limited liability and risk-taking has two sets of implications for our empirical analysis. First, liability protection offers businesses a unique advantage by safeguarding the personal assets of their owners from the firm's financial obligations. This means that in the event of bankruptcy or other legal proceedings, the personal assets of the owners are protected and cannot be seized to satisfy business debts or liabilities. This distinctive structural feature is instrumental for companies that lean heavily on borrowing as a primary means of financing their operations. This is particularly relevant for the new businesses examined in this paper, given that the literature underscores an increased level of business risk during the early stages of a firm's lifecycle.<sup>9</sup>

Further, several studies have noted that larger firms often carry higher levels of debt (e.g. Hooks, 2003; Petersen and Rajan, 1994), potentially reflecting the influence of a firm's reputation or credit history in securing credit lines, or their capacity to offer collateral for the debt. This might suggest that debt financing may be less accessible for new businesses. However, the importance of tangible asset collateral is less well-understood amongst new businesses. In fact, research such as (Cumming, 2005; Robb and Robinson, 2014) finds that startups rely heavily on debt financing irrespective of their size, indicating that debt is, in fact, a crucial financial instrument for new enterprises, especially those short on personal resources. These factors, combined with the benefits of liability protection conferred by limited liability structures, lead us to formulate our first hypothesis.

**Hypothesis 1** Limited liability firms have higher levels of debt, conditional on firm size.

The second implication of the relationship between limited liability and risk-taking has consequences for innovation. Innovative activities, especially R&D investment, are associated with a degree of uncertainty when it comes to innovation outcomes and output (Hall and Lerner, 2010). As this uncertainty tends to be the largest at the beginning of the project, the risk associated with innovation may be particularly high for newly formed businesses. As such, innovative firms generally tend to face higher risks (da Silva et al., 2018; Duppati

<sup>&</sup>lt;sup>9</sup>The relationship between firm age and survival has been investigated by a growing number of scholars (Bartelsman et al., 2005; Berger and Udell, 1998; Marcus, 2006; Mata and Portugal, 2004). See Rossi et al. (2016) for a comprehensive literature review.

et al., 2023; Mazzucato and Tancioni, 2008). Specifically, Chan et al. (2001) show that R&D intensity is positively associated with return volatility. Miller and Friesen (1982) provides evidence for a positive correlation between risk and innovation in a survey of Canadian firms. Fernandes and Paunov (2015) use plant-product data from Chile to show that single-product innovators have a higher risk of firm exit, suggesting that innovation is risky.

In addition, the empirical literature documents that the amount of financing available to innovative start-ups is volatile (Gompers et al., 2008; Gompers and Lerner, 2004; Kaplan and Schoar, 2005). This suggests that in addition to risk-taking behavior, financing risk is also associated with the innovation of firms. Combined with the previous evidence that limited liability firms are more likely to be risk-taking, we conjecture that limited liability firms are more likely to be innovative.<sup>10</sup> These arguments allow us to form our second hypothesis.

**Hypothesis 2** Firms with liability protection are more likely to invest in innovation.

Limited liability protects firms from the effects that taking on risky projects can have on their owner's personal finances which may encourage overinvestment (Becker and Fuest, 2007; John et al., 1994). Although this may suggest that taking on risky projects could result in lower credit scores for limited liability firms, a large body of evidence suggests that limited liability provisions have positive effects on firm stock prices and credit ratings (Bradley and Chen, 2011; Brook and Rao, 1994; Heron and Lewellen, 1998). As these papers argue, this positive relationship is consistent with a mechanism in which limited liability encourages managers and directors, who would otherwise take overly conservative actions for fear of legal consequences, to engage in more risk-taking behaviors.

In our context, since we look at small private firms, we do not have information on stock prices or credit ratings. However, the equivalent of the credit rating for an individual or a small firm is the credit score of the owner. Hence, we conjecture that for these small firms, limited liability may mean that their owners can engage in more risky projects, but that does not come at the detriment to their credit scores. Note that since Albuquerque and Hopenhayn (2004) find higher credit ratings are correlated with larger firm size and leverage, controlling for size is key to uncovering the relationship between credit scores and limited liability, similar to the relationship between debt and limited liability.

Another set of evidence that supports the view that limited liability firms should enjoy

<sup>&</sup>lt;sup>10</sup>This conjecture is empirically supported by evidence from small to mid-sized enterprises in the Czech Republic that shows that limited liability firms play a more active role in localized innovation than firms under different legal frameworks (Ključnikov et al., 2021).

higher credit scores comes from the literature on the life-cycle theory of small firm finance. Berger and Udell (1998) argue that financial needs and options change as the business grows, gains further experience, and becomes less informationally opaque. In general, informationally opaque firms rely more on informal capital and less on formal credit channels, because their greater degree of information asymmetry screens them out of credit markets. Since we argue in hypothesis 1 that limited liability firms are more reliant on debt as a source of financing, this further implies that we can expect a higher clarity for them which can be one of the factors that predicts their higher credit scores. This is also in line with evidence from Robb and Robinson (2014) who argue that firms with less informational opaqueness (higher credit score) should have greater reliance on outside financing as the main source of capital. This leads us to form our third hypothesis:

**Hypothesis 3** Limited liability business startups have higher credit scores.

#### 2.2.2 Organizational choice within the limited liability legal forms

Among organizational forms that provide liability protection, the C-corporation structure offers a more flexible setup for growth. Unlike S-corporations that have restrictions on their ownership structure which prevent them from attracting deep-pocketed investors such as venture capitalists or angel investors, C-corporations have no limitations. However, S-corporations and Limited Liability Companies (LLCs) offer certain advantages over C-corporations, such as lower tax burdens and the avoidance of double taxation of capital income.

The theoretical literature shows that the benefits of S-corporation and LLC organizational forms may encourage firms to choose those forms over C-corporations and that comes at the cost of having smaller firms and lower levels of employment and output, impacting the broader economy. Specifically, Dyrda et al. (2018) and Schlagenhauf (2019) focus on the role of tax structures in influencing the choice of organizational form. Other studies examine the consequences of these choices at the firm level (Gordon and MacKie-Mason, 1994; Gordon and Slemrod, 1998; Kotlikoff and Miao, 2013; Mackie-Mason et al., 1997). Chen et al. (2018) find that a higher tax burden on C-corporations is associated with lower levels of employment in the economy due to firms not choosing to organize as C-corporations and staying smaller than their potential size. Bilicka and Raei (2023) demonstrate that different tax treatments of organizational forms can lead to a misallocation of capital, costing the economy approximately 7% of aggregate output. This is specifically due to firms not being able to absorb capital and grow because of the constraints that the organizational form imposes on them.

Building on this theoretical literature, we hypothesize that firms that are planning on growing in the future or seeking capital for their projects, specifically those planning on leveraging equity financing, should be more inclined to choose C-corporations over the other two organizational forms. This is in line with findings by Kim and Jang (2012) who examine the characteristics of C-corporations versus non-corporate firms in the hotel industry and conclude that owners who plan on having high levels of growth in the future are more likely to choose C-corporations over other legal forms. Hence, we form our fourth hypothesis in the following way:

**Hypothesis 4** Firms that expect to grow in the future and plan to finance that growth through equity are more likely to choose C-corporation over S-corporation or LLC legal form.

### 3 Data and empirical approach

In this section, we describe the data used in this study, define the main variables of interest, and present descriptive evidence on legal forms of organization in the US.

### 3.1 Kauffman firm survey data

As part of an effort to gather more data on new businesses in the United States, the Ewing Marion Kauffman Foundation sponsored the Kauffman Firm Survey (KFS), a panel study of new businesses founded in 2004 and tracked over their first eight years of operation, until 2011. A random sample of firms that started their business in 2004 was selected from the Dun & Bradstreet database. To be included in the random panel, at least one of the following activities had to be performed in 2004 and none in a prior year: 1) payment of state unemployment (UI) taxes; 2) payment of Federal Insurance Contributions Act (FICA) taxes; 3) presence of legal status for the business; 4) use of an employer identification number (EIN); and 5) use of Schedule C to report business income on a personal tax return. The sample of firms included in the survey in 2004 was 3,140. Across the years, this generates 25,120 firm-year observations, of which 17,854 are firms observed in the years in which they

were active.<sup>11</sup>

The Kauffman Foundation contracted with Mathematica Policy Research, Inc. to collect data about the nature of new business formation activity; characteristics of the strategy, offerings, and employment patterns of new businesses; the nature of the financial and organizational arrangements of these businesses; and the characteristics of their founders. The ability to track businesses over time allows us to observe business evolution patterns which is not possible using cross-sectional snapshots.

The KFS is of particular interest to us due to its two distinct features. First, the KFS is the only publicly available *panel dataset* in the US that provides information on the legal form of organization adopted by firms.<sup>12</sup> This feature enables us to examine the importance of organizational choices made by young firms in the United States. As such, the KFS dataset represents a valuable resource for advancing our understanding of the multiple factors that shape the development and success of young firms in the United States. Second, the KFS panel was established prior to the onset of the global financial crisis, enabling us to investigate the impact of organizational forms of young businesses on their resilience to this major economic event.

### 3.2 Variable definitions

Given our discussion in section 2.2, in our empirical analysis we focus on a subset of firm-level characteristics from the Kauffman Survey to study the relationship between firm organizational forms and their performance.<sup>13</sup> We describe these variables of interest here.

We measure debt and equity using 6 different proxies. For debt, we use total debt, personal debt of the owner (owner's debt), and business debt. For equity, we use total equity, equity from non-owners – spouses, parents, venture capitalists or government, and equity from the top owner.<sup>14</sup> Each of those variables is expressed in natural logarithms.

<sup>&</sup>lt;sup>11</sup>While the Kauffman Firm Survey data is not a perfect representation of the U.S. firm population, its characteristics make it highly suitable for our study. The KFS stands out for its longitudinal scope, comprehensive coverage of financial details, records on legal forms of organization, and in-depth information about both firms and their owners. Appendix C in Robb et al. (2009) provides a comparison between the KFS and other U.S. new business data sources.

<sup>&</sup>lt;sup>12</sup>As we mentioned in the introduction, the only other panel database of U.S. firms, that contains information on legal forms of organization, is the Longitudinal Business Database (LBD) which is a confidential database provided by Census.

<sup>&</sup>lt;sup>13</sup>For a detailed list of all variables and the data format, please refer to the codebook provided by the Kauffman Foundation at Kauffman Firm Survey Methodology Report

<sup>&</sup>lt;sup>14</sup>One of the most comprehensive parts of the Kauffman survey is the business finances section. At the owner level, this section provides information about the sources and amount of financing. For example, the owner personal debt sources include personal credit cards, personal loans from a bank, business credit cards,

Hence, we focus on the intensive, rather than the extensive margin here.

We measure innovation using the number of patents, whether the firm does any R&D, and whether it is a technology generator. R&D dummy takes the value 1 when a firm has any R&D. Technology generators are firms in industries that are "defined by NSF Survey of Industrial Research and Development, as industries that exceed the U.S. average for both research and development expenditures for employee (\$11,972) and the proportion of fulltime-equivalent R&D scientists and engineers in the industry workforce (5.9%)." (Farhat and Robb, 2014) Technology generator dummy takes the value 1 if a firm is in one of the technology-generating industries.

Firms in our sample are assigned 5 different credit risk scores. The higher the value of the score, the lower the commercial credit score of the firm, i.e. the more risky the firm is. We use these scores directly in estimations. We also use the "percentage of sales to other businesses" variable from the survey, directly as an outcome variable and to create a dummy equal to 1 when this percentage is larger than 75 percent to call a given firm a business-to-business (B2B) one.

We measure profitability using 4 different indicators. First, we take profits minus losses to construct profit and loss before tax variable and take a logarithm of that variable. We also consider the ratio of this new variable to total assets (return on assets - ROA). We then look at the levels of profits and losses separately. We calculate the number of years that a firm survived using the year in which it stopped operations, either through closure or merger. We measure future potential growth by the average annual growth in the number of employees across all years that a firm is active.<sup>15</sup>

### **3.3 Descriptive Statistics**

In this section, we provide descriptive statistics summarizing basic patterns of firm survival, size and industry distribution, and common switching patterns across the legal forms of organization for new businesses in the US. Figure 1 shows the number of businesses that started in 2004 and chose one of the six types of organizational forms we introduced earlier. We then demonstrate how the number of firms for each legal form has changed in each of the follow-up surveys over the next seven years. In Table 2, we show both 1-year survival rates that demonstrate the fraction of firms that survive only for 1 year and 7-year survival

personal loans from any family or friends, etc. Non-owner equity refers to the equity provided by either parents, spouses, non-family individual investors, venture capitalist, companies, or governments.

<sup>&</sup>lt;sup>15</sup>We do not use growth in total assets or revenues, as these variables are categorical in the Kauffman survey and take only 10 values.

rates that demonstrate the fraction of firms that make it to the end of the survey period in 2011. Figure 1 and Panel B of Table 2 allow us to understand firm survival rates across legal forms.

Sole proprietorships and LLCs are by far the most popular choices among entrepreneurs. While sole proprietorships have one of the lowest 7-year survival rates, 44%, LLCs are a lot more likely to survive, with a 7-year survival rate of 57%. S-corporations follow as the next most popular choice with the highest survival rate. Finally, general partnerships (GPs) and limited partnerships (LPs) are the least popular legal forms of organization among firms in our sample, with the lowest survival rates. These are 27% and 43% in 2011.



Figure 1: Number of Firms by LFO.

Note: This figure plots the number of firms in Kauffman survey according to their legal form of organization. It tracks each firm initially surveyed in 2004 and examines its continued presence in the dataset in the years that follow. Source: Kauffman survey.

We then summarize the reasons why firms in our sample are no longer part of the survey: they either permanently or temporarily stop operations or they merged or were sold. In Panel A of Table 2, we show the distribution of these reasons across the organizational forms. For each legal form, we show the number and the share of firms that dropped out of the survey for each of those 3 reasons. The most common reason for dropping out is a permanent business closure across all legal forms. Notably, amongst the most popular legal forms of organization, LLCs and S-corporations have a relatively higher chance of being merged or

Panel A: reasons for dropping out								
reason for dropout		Sole prop	LLC	S-corp	C-corp	GP	LP	
permanently stopped operations	count %	463 71.12	373 71.73	271 74.45	120 72.29	49 80.33	19 79.17	
merged or sold	$\operatorname{count}_{\%}$	43 6.61	7614.62	$53 \\ 14.56$	20 12.05	$3 \\ 4.92$	5 20.83	
temporarily stopped operations	count %	145 22.27	71 13.65	40 10.99	26 15.66	9 14.75	0 0	
·	Panel I	5: survival	rates					
1-year survival rate 7-year survival rate		$\begin{array}{c} 0.84\\ 0.44\end{array}$	$\begin{array}{c} 0.91 \\ 0.57 \end{array}$	$0.94 \\ 0.63$	$\begin{array}{c} 0.88\\ 0.45\end{array}$	$0.76 \\ 0.27$	$0.83 \\ 0.43$	

Table 2: Most Common Reasons for Firm Closure.

Note: Panel A of this table summarizes most common reasons for firm closure across different LFOs. For each LFO, the column percentages sum up to 1, such that 71.1% of sole props closes down permanently, 22.3% closes down temporarily, and 6.6% merged or were sold. Panel B of this table summarizes survival rates. 1-year survival rate is the % of firms by each LFO that remain open in 2005. 7-year survival rate is the % of firms by each LFO that remain open in 2011 (the last year of the survey). Sole prop is sole proprietorship, LLCs is limited liability company, S-corp is S-corporation, C-corp is C-corporation, GP is general partnership, and LP is limited partnership. Source: Kauffman survey.

sold than sole proprietorships or C-corporations.

When examining organizational forms, it is important to explore the relationship between firms' size and their legal structure. That is because the legal structure of a business is closely tied to its scale of operations. Hence, understanding the distribution of firm size by organizational form clarifies which legal structure is most appropriate for a specific business size and anticipated growth. In Figure 2, we show a distribution of firm sizes for the four most popular organizational forms in our sample, excluding general partnerships and limited partnerships. Sole proprietorships and LLCs tend to be smaller businesses with a large fraction of firms having none or 1 employee. Specifically, 61% of sole proprietorships have no employees and a further 20% have 1, while 51% of LLCs have no employees and a further 13% have 1. In turn, S-corporations and C-corporations are larger, with a higher proportion of businesses that have over 5 employees. In particular, 20% of newly formed S-corporations and 25% of C-corporations have over 5 employees, while only 2% of sole proprietorships do.



Figure 2: Distribution of Employment by LFO.

Note: This figure plots the distribution of employment for the 4 most common LFOs. Source: Kauffman survey.

In Figure 3, we show the distribution of legal forms of organization across industries. The KFS provides industry information by two-digit North American Industry Classification System (NAICS) level<sup>16</sup>. No specific industry has a dominant organizational structure. Sole proprietorships and LLCs are popular among small businesses in the professional, scientific and technical, construction, service, and retail industries. S-corporations are also a popular choice in the service sector as well as wholesale trade and manufacturing, whereas C-corporations are more commonly used in the manufacturing industry.

Finally, Table 3 provides an overview of the top 10 most common LFO switching patterns. We show that the two most common switching patterns, forming 30% of all switches, are from

<sup>&</sup>lt;sup>16</sup>The most common industry sectors in KFS data are professional, management, and educational services; retail trade; administrative, support, waste management, and remediation services; and construction.



Figure 3: Distribution of LFOs by Industry.

Note: This figure plots the distribution of LFOs across industries in 2004. Source: Kauffman survey.

	switching pattern	frequency	percentage
1	sole prop to LLC	69	18.55
2	sole prop to S-corp	47	12.63
3	LLC to S-corp	39	10.48
4	C-corp to S-corp	32	8.6
5	LLC to sole prop	24	6.45
6	S-corp to C-corp	22	5.91
7	sole prop to C-corp	20	5.38
8	S-corp to LLC	16	4.3
9	GP to sole prop	14	3.76
10	LLC to C-corp	13	3.49

Table 3: Most Common LFO Switching Patterns.

Note: This table summarizes the 10 most common LFO switching patterns. Sole prop is sole proprietorship, LLCs is limited liability company, S-corp is S-corporation, C-corp is C-corporation, GP is general partnership, LP is limited partnership. Source: Kauffman survey.

non-limited liability forms, sole proprietorships, to either LLCs or S-corporations, which both offer liability protection. The next most popular switch is between LLCs and S-corporations. Together, these top 3 switching patterns constitute over 40% of all switches. The remainder of organizational-type switches are much less frequent in our sample.

## 4 Empirical results

In this section, we present our results. We start with descriptive statistics on the sample of firms that keep their legal form of organization the same throughout all rounds of the survey and using that we evaluate the hypothesis that we put forward in section 2.2. Then, to provide further evidence for our conceptual framework, we examine the differences in firm characteristics for firms that switch their legal form of organization and those that do not. We separately look at those characteristics before and after the switch. We complement our analysis by assessing the resilience of different organizational forms to the global financial crisis.

### 4.1 Differences between legal forms of organization

We start by comparing average firms' characteristics for limited liability and non-limited liability firms in Panel A in Table 4. We show that firms with liability protection tend to be larger than those without liability protection, both in terms of total assets and employment. This suggests controlling for size in empirical estimations that we will present later in this section will be important.

Panel A: limited	Panel A: limited liability vs non-limited liability							
	(1)	(1)	(3)	(4)				
	limited liab	non-limited liab	diff	t-test				
total assets	11.123	9.670	-1.453***	-39.329				
nb of employees	3.343	1.021	-2.322***	-31.566				
$\log(\text{total debt})$	10.216	8.975	$-1.241^{***}$	-25.318				
log(owner's personal debt)	9.574	8.654	-0.920***	-18.753				
log(business debt)	10.108	8.725	-1.383***	-18.700				
$\log(\text{equity})$	9.812	8.278	$-1.534^{***}$	-33.610				
$\log(\text{non-owner equity})$	10.623	9.549	$-1.074^{***}$	-4.534				
number of patents	0.169	0.071	-0.099***	-3.232				
% of firms with R&D	0.204	0.125	-0.079***	-13.264				
% of tech generators	0.137	0.054	-0.083***	-18.150				
credit risk score	2.924	3.173	$0.249^{***}$	15.813				
% sales to business	3.845	3.482	-0.364***	-13.609				
% of firms that are mainly B2B	0.402	0.216	-0.186***	-25.301				
Observations	9857	5689	15546					

Table 4: Average Differences between LFOs.

	(1)	(1)	(3)	(4)
	C-corp	S-corp & LLCs	diff	t-test
total assets	11.433	11.089	-0.344***	-4.474
nb of employees	4.728	3.188	$-1.540^{***}$	-7.014
$\log(\text{total debt})$	10.241	10.213	-0.028	-0.282
log(owner's personal debt)	9.550	9.577	0.027	0.261
log(business debt)	10.215	10.094	-0.121	-0.935
log(equity)	10.481	9.714	-0.767***	-7.423
log(non-owner equity)	11.545	10.306	-1.239***	-6.224
employment growth	0.243	0.025	-0.217***	-3.276
ROA: profitability	-0.147	0.457	$0.604^{***}$	5.908
log(profits)	10.249	10.239	-0.010	-0.096
$\log(\text{losses})$	10.350	9.238	-1.112***	-10.153
log(expenditures)	11.620	11.222	-0.399***	-5.289
Observations	988	8869	9857	

#### Panel B: C-corps vs S-corps and LLCs

Note: Differences in average outcomes between LFO types. This table only includes firms that never switch their legal form of organization. \*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% levels, respectively.

We also demonstrate that limited liability firms have a higher level of debt relative to

non-limited liability ones and that pattern persists as we look at owner's personal debt and business debt. These observations provide initial evidence in favor of our first hypothesis, in which we postulated that limited liability organizational form is associated with higher debt. Note that limited liability firms also have higher levels of equity predominantly coming from the firm owners.

To evaluate our second hypothesis, in which we propose that limited liability firms have more innovation, we focus on three variables that proxy innovative behavior. These are the number of patents, R&D expenditure, and being a technology generator. Across those three proxies, limited liability firms tend to have more innovation relative to those without liability protection. As such, this evidence is consistent with our second hypothesis.

For our third hypothesis, in which we suggest that limited liability firms have higher credit scores than their non-limited liability counterparts, we focus on the credit risk score variable. As we explained in section 3.2, a lower score for credit risk means a higher business credit for the firm. Evidence from Panel A suggests that limited liability firms have, on average, a lower credit risk score relative to non-limited liability ones. This is in line with our third hypothesis.

Beyond providing the first set of evidence supporting our hypotheses from section 2.2, we further show that limited liability firms have a larger fraction of their sales directed to other businesses, compared to non-limited liability forms. This translates into a higher percentage of limited liability firms being organized into business-to-business (B2B) rather than business-to-consumer (B2C) forms. One potential explanation for this finding is that operating as a limited liability firm can lend credibility to a business. This suggests that firms that rely a lot on reputation and credibility could be more likely to seek the protection offered by limited liability.<sup>17</sup> One example of such type of firm is a B2B company that sells directly to other businesses rather than to consumers. In the B2B sector, trust and reliability are essential in building and maintaining successful business relationships. Operating as a limited liability firm can help provide a level of assurance to potential business partners, as it demonstrates a commitment to adhering to strict legal and financial standards. This can be particularly important for firms that are new to the market or seeking to expand their customer base, as it can help establish credibility and build trust with potential clients. Further, B2B firms often engage in larger and more complex transactions, which can involve significant financial risk. Limited liability legal form can provide a measure of protection to business owners by limiting their personal liability in the event of legal or financial difficulties.

 $<sup>^{17}\</sup>mathrm{See}$  Ribstein (1991) for more discussion.

In panel B in Table 4, we compare the characteristics of firms within the structures that offer liability protection, i.e., between C-corporation, S-corporation, and LLC. Our focus here is on the distinction between C-corporations and the other two organizational forms. We start by demonstrating that C-corporations tend to be larger than S-corporations and LLCs both in terms of total assets and employment.

We do not observe significant differences in debt between C-corporations and the other two legal forms. This finding is different than in the case of comparison between limited liability and non-limited liability firms. One potential explanation is that it is the limited liability protection that matters for the security of borrowing and all three legal forms we consider here offer limited liability protection.

We then show that C-corporations tend to have, on average, higher growth in employment relative to S-corporations and LLCs. Together with the observation that C-corporations have higher levels of equity relative to S-corporations and LLCs, this evidence supports our fourth hypothesis. In that hypothesis, we posit that firms that expect to grow in the future and plan to finance that growth through equity are more likely to choose C-corporation over S-corporation or LLC legal form.

A further observation we make is that C-corporations tend to have lower ROA, higher losses, and higher expenditure, relative to S-corporations or LLCs. One potential explanation for this finding could be the different tax treatment between C-corporations and the other two limited liability forms. As we explained earlier, within the U.S. tax structure, corporate tax is imposed on the earnings of C-corporations at the entity level, with the resulting proceeds distributed to owners also subject to taxation at the individual level. As such, C-corporations are the sole legal form subject to corporate tax and the effective tax burden for C-corporations could surpass that of other legal business forms, especially in the period that we analyze in this paper.<sup>18</sup> This implies that C-corporations may have incentives to maximize their net-of-tax profits, potentially through increased expenditures.

 $<sup>^{18}</sup>$ Before the Tax Cuts and Jobs Act of 2017 (TCJA 2017), the corporate tax rate in the United States was 35%, while the top individual tax rate was 39.6%. The tax rates for dividends and capital gains varied between 15% and 20%. This resulted in a higher tax burden on C-corporations, which were subject to both corporate tax and individual tax, compared to S-corporations which were only subject to individual income tax. However, with the introduction of TCJA 2017, the corporate tax rate was reduced to 21%, and there was also a minor reduction in individual income tax rates. See Tax Policy Center Briefing for detailed discussion.

# 4.2 Firm characteristics before a change in the legal form of organization

In this section, we focus on firms that switch their legal forms while we observe them in the Kauffman Survey. To characterize the average outcomes of firms that change their legal status relative to those that do not before the switch occurs, we run a set of simple OLS regressions comparing firm observable characteristics alongside the two categories of organizational forms described in section 2.2. As such, first, we distinguish between forms that offer liability protection (LLCs, S-corporations, and C-corporations) vs those that offer no liability protection (sole proprietorships, partnerships). Second, we compare C-corporations with S-corporations and LLCs. In that, we compare legal forms that face corporate tax rates and can access external capital easily to those that are pass-through entities. Given the small sample of firms for which the Kauffman Survey was collected, we consider each characteristic separately in regressions that take the following form:

$$Limited liab_i = \alpha + \beta \times Char_i + \chi \times X_i + \epsilon_i \tag{1}$$

$$Ccorp_i = \alpha + \gamma \times Char_i + \chi \times X_i + \epsilon_i \tag{2}$$

where *i* is a firm,  $Limitedliab_i$  is a dummy equal to 1 for legal forms that are limited liability and 0 for those that do not;  $Ccorp_i$  is a dummy equal to 1 for C-corporations and 0 for S-corporations and LLCs.  $Char_i$  is each firm-level characteristic,  $X_i$  are control variables, and  $\epsilon_i$  is an error term. In each specification, we control for the number of owners who actively help to run the business, firm size using asset size bins, and include industry fixed effects.

The parameters of interest are  $\beta$  and  $\gamma$ , which capture the average difference in each observable. Using the first equation, we compare the average outcomes of non-limited liability firms *before* they become a limited liability with the average outcomes of those firms that always maintain the non-limited liability form. Using the second equation, we compare the average outcomes of S-corporations and LLCs before they switch status to C-corporations with the average outcomes of firms that are always S-corporations or LLCs. In Figure 4, we summarize these differences, focusing on limited liability switchers in panel A and Ccorporation switchers in panel B.

While many results are similar to those we discuss in section 4.1, in what follows we highlight and explain the differences. First, in Panel A in Figure 4 we see that differences

in debt between limited and non-limited liability firms are much smaller for overall debt, and not significant for owner's and business debt. This stands in stark contrast to what we demonstrated in Panel A in Table 4, where the differences in debt were quite pronounced between the two organizational forms. One potential explanation is that the main benefit of limited liability is that it can shield firm owners from personal responsibility in the event of bankruptcy. This benefit is not realized until the firm assumes a limited liability legal form. As such, we would not expect firms to borrow more before they are in the limited liability form, but after.

Second, we find that before firms switch to limited liability forms they are more likely to have some R&D and be in technology-generating sectors. This is similar to our finding from Table 4 and provides evidence to support our second hypothesis. In contrast to our findings from Table 4, we do not find any evidence that before firms switch to limited liability forms they have more patents. This could be explained by the lack of liability protection before the legal form switch, which likely makes those firms hesitant to invest in patenting. While having R&D and being in technology-generating sectors is likely correlated with the ability to patent, our evidence suggests that firms that are involved in producing innovation wait to patent until they have the limited liability protection. In the next subsection, we examine the differences in firm characteristics after the legal form switch to verify that hypothesis.

Further, we also show that the credit risk scores of firms before they switch to limited liability forms are not different than those that remain in non-limited liability forms. While evidence from Table 4 suggests that credit scores of limited liability firms are higher than those of non-limited liability firms, our discussion in section 2.2 suggests that one of the reasons for this difference is the ability of managers to engage in more risk-taking behaviors that may generate positive outcomes for firms without the fear of legal consequences. As these behaviors require protection offered by limited liability, we would not expect firms to enjoy higher credit scores before they switch to the new legal form.

In panel B of Figure 4, we compare the characteristics of S-corporations and LLCs that switch to C-corporations with the S-corporations and LLCs that keep their legal form throughout our sample. While these firms do not differ in the majority of their observable characteristics before the legal form switch, we find that switchers have higher average future employment growth relative to those firms that do not switch. Since these regressions are cross-sectional in that they consider average firm outcomes before the switch, we measure the *future* employment growth as employment growth in all years *following* the switch. This is in line with our finding in section 4.1 on employment growth of C-corporations relative to





a Non-limited liability to limited liability.

Note: This figure plots the differences between firms that switch their legal status and those that do not. In Panel a, the outcome variable is a dummy equal to 1 when a firm switches from non-limited liability organizational form (sole prop, partnerships) to limited liability one (S-corp, C-corp or LLC), zero if no switch occurs. In Panel b, the outcome variable is a dummy equal to 1 when a firm switches from LLC or S-corporation to being a C-corporation, zero if no switch occurs. We look at observable characteristics in all the years prior to the switch only. The variables are all defined in section 3.2. In each specification, we control for firm size using bins of total assets, number of owner operators and include industry fixed effects. Standard errors are clustered at the industry level. Source: Kauffman survey. Corresponding coefficients are reported in Table A1 in the Appendix.

S-corporations and LLCs.<sup>19</sup>

Another point that we highlighted in section 4.1 was that C-corporations have lower ROA, higher losses, and higher expenditures relative to S-corporations or LLCs. However, as we see in Panel B, S-corporations and LLCs that later switch to C-corporations do not necessarily exhibit the same patterns. One explanation is that before the switch they are not subject to corporate taxes, so they may not have an incentive to to maximize their net-of-tax profits. To verify this conjecture we test whether these differences in profitability appear after the firm switches its legal status in the next section.

# 4.3 Firm characteristics after a change in the legal form of organization

In this section, we analyze what happens to firm-level outcomes after a firm decides to change its legal form of organization. To understand the differences in the average outcomes of firms after they switch their legal forms, we use a difference-in-differences approach, in which we compare firms that switched their organizational forms to firms that did not change their legal forms between groups that offer liability protection and those that are subject to corporate taxation. In all cases, we insist that the firm survives throughout the survey and does not close down or merge in the year following the switch. This is to ensure that we have a sufficient number of years of data to observe changes in firm outcomes following the switch. Since in section 4.2 we show that the decision to change LFO is not an exogenous choice, we cannot treat these estimates as causal. However, they are still useful in evaluating our hypotheses on firms' organizational forms and their observable characteristics. We estimate the following baseline regressions:

$$Charact_{i,t} = \alpha + \beta \times post_t \times liab_i + \chi \times X_{it} + \psi_i + \mu_t + \epsilon_{i,t}$$
(3)

$$Charact_{i,t} = \alpha + \gamma \times post_t \times Ccorp_i + \chi \times X_{it} + \psi_i + \mu_t + \epsilon_{i,t}$$

$$\tag{4}$$

where *i* is a firm, *t* is a year,  $Charact_{i,t}$  are firm-level outcomes that include: profitability, revenues, expenditures, debt, equity, credit risk score, number of patents, whether a firm has any R&D, or whether it is in a technology-generating industry.  $post_t$  is a dummy variable that is equal to 1 in all years after the firm switches the legal status and zero in the years

<sup>&</sup>lt;sup>19</sup>We also find that C-corporations are more likely to have higher future employment growth relative to S-corporation only. This suggests that incorporation costs are not the driving factor behind that observation.

before the switch and for all firms that do not change their legal forms.  $liab_i$  is 1 for all organizational forms that offer liability protection, while 0 for those that do not.  $Ccorp_i$  is 1 for C-corporations and 0 for LLCs and S-corporations.  $\psi_i$  is a firm-fixed effect,  $\mu_t$  is a year fixed effect, and  $\epsilon_{i,t}$  is an error term. In each specification, we control for time-variant firm characteristics,  $X_{it}$  by including asset size bins and the number of firm owner-operators. The coefficients of interest,  $\beta$  and  $\gamma$ , show us the difference in outcomes for firms that switched their legal form from non-limited liability to limited liability and from S-corporations and LLCs to C-corporations, respectively.

Following our approach from the previous section, we first consider differences in firmlevel outcomes after the legal form switches from forms that do not offer liability protection to the ones that do (Table 5). Then, we focus on the differences following a switch from an S-corporation or LLC to a C-corporation (Table 6). Results from Table 5 indicate that switching to a limited liability form is associated with an increase in borrowing, both in terms of personal debt and business debt. Becoming a limited liability firm also increases equity. These two findings are consistent with the fact that limited liability protects the owners from bankruptcy and facilitates both debt and individual equity financing. These findings further substantiate our first hypothesis.

In Panel B, we show that following a switch in the organizational form, firms have lower credit risk scores, i.e. their business credit scores increase. Further, they are also more likely to have R&D investment, be technology generators, and have more patents. These results suggest that the switch towards the limited liability corporation allows firms to take on more risk in terms of their investment and increase their innovative output. The increase in credit scores is in line with out discussion from section 2.2 and these higher credit scores also appear to have a positive impact on these firms' ability to borrow. Together with the fact that businesses that switch towards limited liability form are also more likely to become B2B type, this means that liability protection is beneficial in forming contracts with other businesses where high credit and reputation matter.

In Panel C, we focus on the employment growth and profitability of firms after the change in their organizational forms. We show that after switching to a limited liability form, firms experience an increase in the size of their labor force, revenue, profits and losses, and expenditures, which are all proxies for growth. This evidence suggests that liability protection facilitates firm growth.

In Table 6, we compare outcomes for firms that switched their organizational form from Scorporations or LLCs to C-corporations and compare them to firms that continue as either

Panel A: debt and equity								
	(1)	(2)	(3)	(4)	(5)	(6)		
	log debt	log pers debt	log buss debt	log equity	log non-owner	log top		
					equity	owner equity		
$limliab_i$	0.404**	$0.403^{*}$	$0.486^{**}$	0.800***	-0.570	$0.752^{**}$		
$\times \text{ post}_t = 1$	(0.168)	(0.229)	(0.219)	(0.247)	(0.529)	(0.294)		
		Derest D	•					
		Panel B:	innovation a	nd risk				
	credit risk score	R&D	tech gen	% buss sales	B2B	log patents		
$limliab_i$	-0.116**	$0.062^{***}$	$0.070^{***}$	0.058	0.118***	$0.016^{*}$		
$\times post_t = 1$	(0.046)	(0.018)	(0.012)	(0.070)	(0.021)	(0.009)		
Panel C: growth prospects								
	log emp	log profits	log losses	log revenue	log expend	roa		
$limliab_i$	0.177**	0.435***	0.892***	1.171***	1.368***	0.071		
$\times post_t = 1$	(0.081)	(0.150)	(0.205)	(0.132)	(0.170)	(0.175)		
						,		
Year FE	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Firm FEs	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Observations	2699	3726	2402	4958	6139	6010		

Table 5: Switching Legal Form of Organization and Firm Outcomes: Non-limited Liability to Limited Liability

Note: This table shows results from estimating the effects of a switch in legal form of organization from non-limited liability to limited liability.  $liab_i$  is a dummy equal to 1 for all legal forms that offer liability protection, 0 for those that do not.  $post_t$  is a dummy equal to 1 in all years after the firm switches its legal status and zero in years before the switch. In Panel A, we look at debt and equity related variables, in Panel B we look at innovation and risk related variables and in Panel C, we look at growth prospects. All variables are defined in section 3.2. emp refers to number of employees, expend is expenditures and ROA is returns an assets, which is the ratio of profit and loss before tax to total assets. In each specification, we include year and firms fixed effects and control for firm size using bins of total assets, and number of owner operators. Standard errors are clustered at the firm level. Source: Kauffman survey. S-corporations or LLCs. In Panel A, we show an insignificant, but positive, effect of the switch on C-corporations' borrowing after the switch. This suggests that borrowing capacity is less important for decisions not associated with limited liability legal form choices. Further, we also find a large increase in equity after firms become C-corporations, driven primarily by non-owner equity. This suggests that being a C-corporation allows their owners to access venture capital investors that will generate much larger external equity compared to what S-corporations or LLCs can attract.

	Panel A: debt and equity								
	(1)	(2)	(3)	(4)	(5)	(6)			
	log debt	log pers debt	log buss debt	log equity	log non-owner equity	log top owner equity			
ccorpi	0.052	0.300	0.135	1.045***	1.164**	$0.338^{*}$			
$\times \text{ post}_t = 1$	(0.279)	(0.292)	(0.615)	(0.346)	(0.552)	(0.183)			
Panel B: growth prospects									
	$\log emp$	log profits	log losses	log revenue	log expend	roa			
ccorpi	0.244**	-0.384	0.906***	$0.369^{*}$	0.389*	-0.641**			
$\times \text{ post}_t = 1$	(0.110)	(0.303)	(0.286)	(0.201)	(0.224)	(0.298)			
Year FE	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			
Firm FEs	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			
Observations	4997	5015	3479	7346	8659	8530			

Table 6: The Effects of Switching Legal Form of Organization on Firm Outcomes: S-corporations and LLCs to C-corporations

Note: This table shows results from estimating the effects of a switch in legal form of organization from S-corporation and LLC to C-corporation.  $ccorp_i$  is a dummy equal to 1 for Ccorporations, 0 for S-corporations and LLCs.  $post_t$  is a dummy equal to 1 in all years after the firm switches its legal status and zero in years before the switch. In Panel A, we look at debt and equity related variables, in Panel B, we look at growth prospects. All variables are defined in section 3.2 emp refers to number of employees, expend is expenditures and ROA is returns an assets, which is the ratio of profit and loss before tax to total assets. In each specification, we include year and firms fixed effects and control for firm size using bins of total assets, and number of owner operators. Standard errors are clustered at the firm level. Source: Kauffman survey.

Finally, one of the factors that make C-corporations more appealing to a business is their flexibility when it comes to future growth. Consistent with that hypothesis, in Panel B, we find that after S-corporations and LLCs switch to C-corporations, they experience an increase in their employment, revenues, and expenditures relative to those firms that did not switch. Further, given that following the switch to C-corporations, our analyzed firms also have significantly lower overall profitability (and lower profits), our findings suggest they may be maximizing their net-of-tax profits. Another potential explanation for this reduction in profitability could be agency conflicts, which literature suggests are more prevalent in larger entities. As ownership in private firms tends to be more concentrated this mitigates owner-manager agency issues compared to public companies (Ang et al., 2000). Since our firms are private and relatively small and we control for firm size in our specifications, this decline in profitability of firms switching to C-corporations cannot be solely attributed to agency problems.

### 4.4 Implications of the Global Financial Crisis

In this section, we explore the performance of different legal forms of organization around the global financial crisis. In Panel A of Figure 5, we plot the number of firms that exited the survey each year according to their organizational forms. Given that our sample has substantially more sole proprietorships and LLCs, than C-corporations and S-corporations, in Panel B, we also plot the exit rates in each year by organizational form. We define the exit rate as a ratio of the number of firms that exit the survey and the total number of active firms for each legal form. We group all non-limited liability legal forms into one category for clarity of exposition. We find that non-limited liability firms have the highest exit numbers and exit rates across the sample period. Around the financial crisis, the exit rate of non-limited liability firms is one of the highest ones too, but the actual change in the exit rate for these firms between 2007 and 2008 is only 21%. In contrast, C-corporations have the highest exit rate in 2008 and the change in their exit rate since 2007 is 38%. For S-corporations we observe the largest change in exit rate since 2007; it has grown by 56%. This big change – specifically compared to C-corporations – can be attributed to the higher level of flexibility that C-corporations provide for their capital structure. As acquiring debt becomes more challenging during financial downturns, the ability to tap into equity becomes a critical buffer against the impacts of the crisis. S-corporations face limitations on the number of shareholders, thereby impeding their capacity to accumulate equity capital. This is not a constraint for C-corporations or LLCs.

To support this descriptive discussion, we run a regression comparing the exit rates of S-corporations, C-corporations, and LLCs in 2008 to those of non-limited liability firms and relative to all periods before 2008.<sup>20</sup> The exit rates of those firms in 2008 are significantly

<sup>&</sup>lt;sup>20</sup>The specification we estimate is as follows:  $exitrate_{it} = \alpha + \beta_1 LFO_i + \beta_2 post_t + \beta_3 post_t \times LFO_i + \epsilon_{i,t}$ , where  $post_t = 1$  if years after 2007,  $LFO_i$  is a categorical variable for each of C-corporations, S-corporations

different than those before 2008 and relative to non-limited liability firms. Specifically, LLCs have exit rates that are 5.2% (p-value of 0.013) higher than before the reform, S-corps 6.8% (p-value 0.003) higher, and C-corps 8.1% higher (p-value 0.022), all relative to non-limited liability firms.<sup>21</sup>





Note: In Panel A, we plot the number of firms that exit the sample in each year by their legal form of organization. In Panel B, we plot the exit rate by the legal form of organization. We define exit rate as the number of firms that exit the sample, scaled by the total number of active firms within each LFO. Non-limited liability includes sole proprietorship, general partnerships and limited partnerships. LLCs is limited liability company, S-corp is S-corporation, C-corp is C-corporation. Source: Kauffman survey.

### 5 Conclusion

In this paper, using data from the Kauffman Firm Survey, we investigate characteristics that are prevalent among various organizational forms for newly established businesses. Our results demonstrate that, conditional on size, limited liability firms have, on average, more debt. Further, limited liability is a favorable attribute of an organizational form for more innovative firms which also have higher credit scores compared to non-limited liability forms. We also find that C-corporations are more likely to offer a more flexible setup for growth and are more appealing for firms planning on future growth, especially those relying on

and LLCs such that the effects are estimated relative to non-limited liability firms.

<sup>&</sup>lt;sup>21</sup>Note that these numbers are different from the changes reported in the paragraphs above because here we use the entire period 2004 - 2007 as a benchmark.

investors' equity for expansion. As such, our paper provides us with a better understanding of the characteristics of different organizational forms, especially before and after changes in those organizational forms.

We believe the primary value of our study lies in its implications for policymakers. When policymakers design reforms or enact changes in regulations, these can have asymmetric effects on the various organizational forms. By uncovering which business characteristics align more closely with which type of legal form of organization, we provide evidence that can help policymakers gain deeper insights into the potentially differential consequences of their proposals. As such, our results allow them to craft more targeted and effective policies. Our results can further help in evaluating the impact of various policy proposals that advocate for changes to the structure of legal forms of organization.

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# Appendices

	Par	iel A: Li	mited v	s non-lim	ited liabil	ity			
dep. var. $Limitedliab_i$	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$\log(\text{debt})$	$0.006^{*}$ (0.003)								
log(owner's debt)	(0.000)	0.005 (0.003)							
$\log(buss debt)$		(0.000)	0.001						
$\log(\text{patents})$			(0.000)	-0.023					
% of firms with R&D				(0.021)	$0.056^{***}$ (0.010)				
% of tech generators					(0.010)	$0.125^{***}$ (0.014)			
credit risk score						()	-0.001 $(0.004)$		
$\log(\%$ sales to buss)							()	$0.015^{***}$ (0.004)	
% of firms that are mainly B2B								(0.00-)	$0.036^{***}$ (0.008)
Industry FE	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2703	2460	1125	6012	6064	6081	5135	3391	6081
	Pa	anel B: C	C-corps	vs S-corps	s and LLC	Cs.			
dep. var. $Ccorp_i$	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$\log(\text{debt})$	-0.001 (0.001)								
log(owner's debt)		-0.000 (0.001)							
$\log(buss debt)$			-0.001 (0.001)						
firm growth				$0.010^{***}$ (0.002)					
$\log(\text{plbt})$				· /	0.001 (0.001)				
ROA					( )	-0.000 (0.000)			
$\log(\text{profits})$						( )	0.001 (0.001)		
$\log(loss)$							` '	0.001 (0.001)	
$\log(expenditures)$								()	0.000 (0.001)
Industry FE Firm controls Observations	$\checkmark$ Yes 4669	✓ Yes 3709	✓ Yes 2629	✓ Yes 7268	$\checkmark$ Yes 4955	✓ Yes 8406	✓ Yes 4955	✓ Yes 3416	$\checkmark$ Yes 8534

#### Table A1: Differences between Switchers and Non-switchers.

Note: This table shows the differences in means before a switch in legal form of organization for firms that switch their legal status and those that do not. In Panel a, the outcome variable is a dummy equal to 1 when a firm switches from non-limited liability organizational form (sole prop, partner-ships) to limited liability protected one (S-corp, C-corp or LLC), zero if no switch occurs. In Panel b, the outcome variable is a dummy equal to 1 when a firm switches from LLC or S-corporation to being a C-corporation, zero if no switch occurs. We look at observable characteristics in all the years prior to the switch only. The variables are all defined in section 3.2. In each specification, we control for firm size using bins of total assets, number of owner operators and include industry fixed effects. Standard errors are clustered at the industry level. Source: Kauffman survey.