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Conflicting fiduciary duties and fire sales of VC-backed start-ups

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FOUNDATIONS OF LAW AND FINANCE

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Conflicting Fiduciary Duties and Fire Sales of VC-backed Start-ups

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Conflicting Fiduciary Duties and Fire Sales of VC-backed Start-ups*

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Abstract

This paper studies the interactions between corporate law and VC exits by acquisitions, an increasingly common source of VC-related litigation. We find that transactions by VC funds under liquidity pressure are characterized by (i) a substantially lower sale price; (ii) a greater probability of industry outsiders as acquirers; (iii) a positive abnormal return for acquirers. These features indicate the existence of fire sales, which satisfy VCs' liquidation preferences but hurt common shareholders, leaving board members with conflicting fiduciary duties and litigation risks. Exploiting an important court ruling that establishes the board's fiduciary duties to common shareholders as a priority, we find that after the ruling maturing VCs become less likely to exit by fire sales and they distribute cash to their investors less timely. However, VCs experience more difficult fundraising ex-ante, highlighting the potential cost of a common-favoring regime. Overall the evidence has important implications for optimal fiduciary duty design in VC-backed start-ups.

Keywords: Venture Capital, Fiduciary Duties, Trados, Fire Sales, Acquisitions, Liquidation Preferences, Corporate Governance

JEL Classification: G24, G33, G34, K20, K22, K40, M13

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1 Introduction

As the most common exit mechanism for venture capitalists (VCs), acquisitions are often at the center of VC-related litigation.In many recent cases, VCs holding preferred shares have used their special rights to force an exit through sales of their portfolio companies or redemptions of their shares over the objections from common shareholders.[1] Behind the rise of disputes is the fundamental conflict of interest between the preferred and common shareholders, as well as the dual fiduciary duties certain board members owe to both VCs and the portfolio company. On the one hand, VC-appointed board members have powerful financial incentives as well as the legal obligation at the VC fund level to maximize value for the ultimate investors in the VC fund, which typically invests through convertible preferred shares with liquidation preferences in the portfolio companies. On the other hand, the VC-backed company's board in its entirety is under the legal duty to maximize the value of the corporation for the benefit of its common shareholders.

The conflicting fiduciary duties are particularly evident when *maturing* VC funds intend to exit their investment by acquisitions. Such deals are likely to be rushed and achieve lower sale prices due to VC funds' liquidity pressure. While these sales may satisfy VCs' liquidation preferences, little is left for the common shareholders. Common shareholders can therefore threaten to sue the board for breach of fiduciary duties, holding up the sale. In light of the heated legal disputes, are the sales by maturing VC funds indeed under-priced and therefore costly to common shareholders? If so, given the conflicted position of the dual fiduciaries, does the law support common shareholders when they sue the board on fiduciary grounds? More importantly, can the law shape common shareholders' holdup power against VCs and, in turn, discipline VCs' behavior in exit decisions?

[1]For example, see SV Inv. Partners, LLC v. ThoughtWorks, Inc and Frederick Hsu Living Trust v. ODN Holding Corp.

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This paper addresses the above questions by examining sales of VC-backed start-ups in a changing corporate law environment. We first study fire sales in the VC setting, the existence of which would pinpoint the preferred-common conflict and a looming dual fiduciary issue. Exploiting a critical case ruling of *In re Trados* (hereinafter "*Trados*") by the Delaware Court of Chancery (hereinafter "Delaware Court") in 2013, we then examine the effect of corporate law on VC exit decisions that are costly to common shareholders. Before *Trados*, Delaware law was more friendly to preferred shareholders – allowing a VC-controlled board to make decisions that favored the preferred shareholders at the expense of the common. Post-*Trados*, all else equal, common shareholders are able to credibly threaten directors with fiduciary duty litigation since the *Trados* ruling requires the board to favor the interests of common shareholders. This ruling empowers common shareholders to potentially hold up a sale, thus affecting the probability of VC exits through acquisitions, especially when VCs move closer to maturity and experience greater pressure to liquidate their investments.

We start by identifying potential "forced sales" in the VC industry. VC funds typically have a limited lifespan of up to 12 years, and face mounting pressure to liquidate as the end of this conventional lifespan approaches. Consistent with this, we observe that for a median VC fund, the percentage of cumulative cash distribution is 93% (100%) by age 12 (15). We therefore define forced sales as acquisitions that take place when the fund is close to age 12. We use a window of one to three years around age 12 to capture the urgency of sales.

Using detailed transaction data, including price, acquirer identity, and acquirer returns, we provide strong evidence of fire sales in the VC setting. First, we find that forced sales achieve a lower deal price. In particular, when we focus on sales happening one year before and one year after the fund reaches age 12, i.e., between age 11 and 13, the sale price is almost 31% lower when compared with deals closed

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in other years. To establish the benchmark price, we rely on variables that are known to predict investment outcomes such as the total amount of equity raised, the number of financing rounds, and the VCs' selection skills. Moreover, we also find that the discount in sale price increases with the *urgency* of sale. For example, when we examine deals two years away from age 12, the discount reduces to around 17%. Similarly, we observe a significantly lower deal multiple for forced sales, again suggesting an undervaluation of the target start-ups. Second, these VC-backed start-ups are more likely to be acquired by industry outsiders, including financial firms and most notably private equity investors. According to Shleifer and Vishny (1992), these industry outsiders face significant costs when acquiring and managing target assets, driving their valuation below the value in best use – a potential explanation for the fire sale discount observed above. Third, we detect a higher abnormal return earned by the acquirers when transactions take place under VC funds' liquidity pressure. This abnormal return also increases with the fire sale discount, suggesting that part of the target's loss becomes the acquirer's gain.

One may worry that the discount we document above is driven by an unobserved, fundamental value or quality difference between start-ups that are sold earlier vs. later in a VC fund's life cycle. If VCs sell high-quality companies first and hold onto low-quality ones, they would be left with "bad" companies as they move closer to maturity, resulting in a lower sale price and deal multiple. While it is difficult to completely rule out this "quality discount" story, several pieces of evidence support the proposed "fire sale discount" story. First, we collect information on sales and add it as a proxy of quality in all regressions. The estimated coefficients are highly similar with an expected increase in the explanatory power of the regression model. Second, we consider post-money valuation as an indicator of quality and find that companies sold in forced and non-forced scenarios are not fundamentally different. Third, we find that for exits through IPOs, the valuation of the start-up does not depend on

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VC fund age, suggesting limited variation in the quality of investments offloaded from VCs over time. In the end, the quality discount story can explain neither the greater probability of acquirers being industry outsiders, nor the higher abnormal returns enjoyed by acquirers. The discount we document also changes little after including more stringent fixed effects, such as industry by exit year and company headquarter state by exit year fixed effects, that better ensure comparability across investments. Therefore, our results are unlikely to be fully driven by selection and instead indicate the existence of fire sales.

The forced sales under VC funds' liquidity pressure are on average value-destroying, as evidenced by the high discount associated with these sales. While they satisfy the liquidation preferences of VCs, the discount suggests that these sales tend to be costly for common shareholders. These transactions were largely permitted by the Delaware law before *Trados*. We next study how improved common shareholder power through *Trados* affects the timing of VC exits by acquisitions. More specifically, we employ a difference-in-differences (DiD) estimation method and compare the probability of exits through sales by VCs *nearing maturity* versus VCs *further away from maturity*, *before* versus *after Trados*.

Consistent with the notion that *Trados* gives common shareholders more leverage to challenge the sales of VC-backed companies, we find that VC funds act more cautiously in exit decisions, especially when they are under liquidity pressure. After *Trados*, maturing VC funds are less likely to exit through sales that are value-destroying and costly for common shareholders. In fact, in scenarios where we observe the most intensive liquidity pressure and therefore the most extreme fire sales, *Trados* mitigates most of the positive effect of liquidity pressure on the probability of exits by acquisitions. When the sales are less destructive to common shareholders, we still observe a significant mitigating effect of *Trados*, albeit considerably smaller.

To further support causality, we examine the dynamics of the relationship be-

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tween *Trados* and the timing of VC exits through sales. We detect no pre-trends but a significant and negative post-trend, consistent with *Trados* being a surprising, yet important event to the VC community in the US. Since *Trados* is a Delaware opinion, we also examine whether the treatment effect is indeed driven by start-ups incorporated in Delaware where *Trados* directly applies. We find evidence consistent with this conjecture, mitigating the concern that coinciding events or other shocks in the VC sector may drive our findings.

By endorsing the rule of common shareholder value maximization, *Trados* constrains the control rights of VCs, potentially harming the interest of VC fund investors, i.e., the limited partners (LPs). When the LPs have weak bargaining power against VCs and therefore the VC-controlled board, we expect them to be hurt even more. Consistent with this prediction, we find a stronger treatment effect of *Trados* in VCs invested by fund of funds managers, who are considered as one of the least prestigious types of LPs and therefore have rather weak LP bargaining power.

If VCs are less likely to exit through sales of their portfolio companies when they move closer to liquidation, their proceeds and cash distributions to LPs would be affected accordingly. Using a similar DiD setting, we investigate fund distribution patterns before and after *Trados*. We find that VC funds that face higher liquidity pressure are less likely to distribute cash to their LPs after *Trados* compared with pre-*Trados* years. At the intensive margin, we also observe a lower share of cash distributed back to LPs near the end of the conventional VC lifespan after *Trados*.

As a final step, we examine the effect of *Trados* on ex-ante VC fundraising. A key concern of moving from a preferred-favoring and VC investor-friendly regime to a common-favoring regime is that LP investors might be discouraged and reduce their allocation to venture capital funds. We find that this is especially true for foreign LPs because one primary motivation to invest in a foreign market like the US is to exploit its investor-friendly legal environment regarding VC investing. Accordingly,

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we document a decrease in US VC fund size compared with non-US funds, suggesting a reduced supply of venture capital to start-ups in the US.

Taken together, while *Trados* reduces the likelihood of VC exits through fire sales, such benefits for VC-backed companies and common shareholders seem to come at the cost of LPs and reduced supply of venture capital ex-ante. These results highlight some of the important trade-offs in contemporary corporate law-making and offer valuable guidance to lawmakers and practitioners in the VC and start-up community.

Related Literature. This paper connects several strands of literature. The large and still-growing law and finance literature is a natural starting point (La Porta, Lopez-de Silanes, Shleifer, and Vishny, 1997, 1998). More specifically, this paper is closely related to the work that establishes the link between the legal environment and various aspects of VC investment process, including contract complexity (Lerner and Schoar, 2005), deal screening (Bottazzi, Da Rin, and Hellmann, 2009), effort provision (Cumming, Schmidt, and Walz, 2010) and success of investments (Nahata, Hazarika, and Tandon, 2014).[2] These papers rely on cross-country comparisons to uncover the role of law, so whereas extremely informative, they sometimes are subject to identification concerns such as omitted-variable bias. A key novelty of our paper is to exploit an unexpected, yet influential case ruling. This unique setting allows us to identify the plausibly causal effect of shifts in the legal environment on VC exit decisions and their ex-ante fundraising. To the best of our knowledge, this is also the first empirical investigation on the consequences of the *Trados* ruling, providing a timely reference for practitioners in the VC industry.[3] In addition, we deviate from the previous law and finance literature by focusing on the role of fiduciary duties, an important but understudied component of corporate law.[4] While a handful of

[2]See Lerner and Tåg (2013) for a summary of the work on institutions and venture capital.

[3]There is limited theoretical work related to *Trados*, see Sanga and Talley (2021).

[4]Other papers so far have studied a variety of legal variables ranging from other aspects of corporate law, tax and bankruptcy regimes, contract law, enforcement accuracy, and "legal origins" in general. See La Porta, Lopez-de Silanes, and Shleifer (2013) for a review of the work on law and finance and the reference therein.

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papers on fiduciary duties are centered around established, public firms (Becker and Strömberg, 2012; Grinstein and Rossi, 2016; Eldar, 2018; Fich, Harford, and Tran, 2021), our setting features VC-backed start-ups.[5]

This paper also contributes to the literature on VC exits. Although there has been extensive work on the role of VCs in IPOs, little is known about alternative VC exit mechanisms – most notably acquisitions given that IPOs have played a less important role in the past two decades.[6] By focusing on acquisitions, this paper is the first to explicitly discuss the fire sale discount in the VC setting.[7] In a related paper, Masulis and Nahata (2011) exclusively examine announcement returns for acquirers of VC-backed companies as opposed to acquirers of non-VC-backed companies. Our paper differs in two important ways. First, we examine acquisitions of VC-backed companies only and present a more comprehensive set of analyses to support the fire sale hypothesis – we study not only acquirer announcement returns but also transaction price and acquirer identities. Second, we zoom in on the preferred-common conflicts arising from liquidity pressure and identify legal institutions as a key factor in shaping the timing and methods of exits. To this end, our study is also complementary to other papers on conflicts of interests between VCs and entrepreneurs in VC exits (Hellmann, 2006; Cumming, 2008; Broughman and Fried, 2010; Bayar and Chemmanur, 2011; Ewens and Farre-Mensa, 2020).

By providing evidence on fire sales in the VC context, this paper also adds to the fire sale literature. Existing work on fire sales has almost exclusively examined financial factors as sources of fire sales such as leverage (Shleifer and Vishny, 1992;

[5]Broughman and Fried (2010) is indirectly relevant, mentioning fiduciary duties in their discussion of renegotiation of cash flow rights in the sale of VC-backed companies. In the burgeoning literature on common ownership, the discussion of (conflicting) fiduciary duties is also relevant since directors may owe duties to different companies, see Eldar, Grennan, and Waldock (2020).

[6]For the work on IPOs, see Megginson and Weiss (1991), Lerner (1994), Gompers (1996); Brav and Gompers (1997), and Iliev and Lowry (2020) for example.

[7]Besides VCs' exit decisions, a limited investor horizon and therefore the liquidity pressure can also affect VCs' investment choices in innovative firms (Barrot, 2017) and secondary buyouts among PE funds (Arcot, Fluck, Gaspar, and Hege, 2015).

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Pulvino, 1998), capital flows (Shleifer and Vishny, 1997; Coval and Stafford, 2007), collateral (Gromb and Vayanos, 2002; Benmelech and Bergman, 2008) and foreclosure (Campbell, Giglio, and Pathak, 2011; Gupta, 2019). In contrast, this paper highlights that fire sales can be affected by contractual features and the corporate legal environment that dictates the relations between different types of shareholders.

2 Institutional Background

In a typical VC-backed company, the entrepreneur receives common shares, while VCs receive predominantly convertible preferred shares, which are convertible at a predetermined ratio into common shares. As long as they stay unconverted, convertible preferred shares give VCs special rights,[8] such as liquidation preferences, which specify the seniority of different classes of convertible preferred shares to common shares and the minimum amount of price plus cumulative unpaid dividends that VC investors will receive in a liquidation event such as acquisition. VCs also receive control rights that are often largely disproportionate to their cash flow rights, including board control or at least the ability to secure it if the firm does not reach certain milestones. Board control enables VCs to, among other things, initiate fundamental transactions such as IPOs or acquisitions.

2.1 Dual Fiduciary Duties in Forced Sales of Start-ups

Due to their board rights, VCs usually sit on the board of directors, which are appointed by and thus accountable for both the common and preferred shareholders (See Figure 1). However, these VC-affiliated board members are also under the legal obligation to maximize the return of the VC funds and the ultimate LP investors, who are the preferred shareholders in VC-backed companies. Although aligned on most occasions, such dual fiduciary duties owed by VC-affiliated board members can sometimes conflict with each other. In this paper, we examine VC exits through

[8] See Kaplan and Strömberg (2003), Cumming (2008) and Chernenko, Lerner, and Zeng (2021) for more details on these contractual rights.

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acquisitions as a key scenario where potential conflicts arise.

In particular, VC funds face liquidity pressure caused by their limited lifespan. While many entrepreneurs have chosen to let their startups stay private for longer, VC investors' investment horizon is shorter - VC funds are usually organized as close-end vehicles with a pre-determined finite life of about 8-12 years, often with an option to extend for 1-3 years (Gompers and Lerner, 1996; Metrick and Yasuda, 2010; Gompers, Gornall, Kaplan, and Strebulaev, 2020).[9] This contractual structure, as stipulated in the Limited Partnership Agreements (LPAs), aims to satisfy the need for LPs to avoid being held up by VCs once LPs have committed their capital to invest. Therefore, VC must return capital back to LPs within the pre-determined time frame to maintain existing relationships with LPs and build reputation for future fundraising.

The liquidity pressure forces VC funds to exit through a variety of exit mechanisms near the end of fund lifespan, with M&A transactions as the most popular divestment route.[10] Anecdotally, to facilitate the sale process such forced sales are executed at a low price, resulting in potential value destruction. As preferred and common shareholders hold different securities, their payoffs can diverge in forced sales. More specifically, the liquidation preferences in the preferred shares offer VCs downside protection due to the debt-like payoff structure. However, value-destroying sales can disproportionally hurt the interest of common shareholders who are often left with little exit value. Therefore, these sales entail severe conflicting fiduciary duties faced by the VC-affiliated board of directors who initiate M&A transactions under the Delaware corporate law. Such conflicts are unique to acquisitions because preferred shares are usually converted to common shares in IPOs under the automatic

[9]While VC funds often specialize in different industries where start-ups have varying growth rates, there is little variation in VC fund lifespan partly due to LPs' resistance to further extend them (Lerner and Nanda, 2020).

[10]Ewens and Farre-Mensa (2020) document that around 26% of US companies that received their first VC financing round in 1992 went public in seven years and that the ratio has steadily declined to 2% since the early 2000s. Around 25% of VC-backed companies are acquired and there is little time-series variation. Using European VC deals between 1998 and 2001, Bottazzi, Da Rin, and Hellmann (2016) find that around 8.5% (29.3%) of exit took place via IPO (acquisitions) by 2011.

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conversion provision and as a result lose liquidation preferences (Hellmann, 2006).

Are there ways to avoid potentially value-destroying fire sales? While an escape from fire sales is in theory available, in practice the solutions feature functional limitations that render them rather unviable, at least by the current stage. We next discuss each of these solutions and their limitations.

Secondary sales. A VC under liquidity pressure could opt for secondary sales of portfolio company shares or fund interest. Secondary sales allow VCs to cash out their positions without forcing the entire portfolio company to be sold. However, secondary sales materialize in a highly illiquidity market, implying a significant discount on the sale price (Nadauld, Sensoy, Vorkink, and Weisbach, 2019). As such, from the standpoint of a VC who enjoys preferential treatment in start-up value distribution because of liquidation preferences, secondary sales may not emerge as a superior option relative to a sale of the entire portfolio company.

Continuation funds. Continuation funds can be used to take on the investments of funds close to liquidation and offer existing LPs the option to cash out or stay invested in the new continuation fund. But the use of continuation funds is complicated because of the bespoke nature and the fact that they introduce conflicts of interests between the new and old LP investors. They are a relatively recent innovation and they have proven to be rare thus far.

Extension of fund lifespan. Extension on the fund life typically needs to be approved by LPs on a yearly basis for up to three years (Gompers and Lerner, 1996; Metrick and Yasuda, 2010; Gompers, Gornall, Kaplan, and Strebulaev, 2020). Further renegotiation is not common for several reasons. First, LPs have limited oversight and involvement in the day-to-day fund operation. As a result, LPs' valuation of the remaining portfolio companies may differ from the GPs' due to information asymmetry. Second, LPs need to commit to a limited fund lifespan to reduce the holdup power of GPs after giving up control of their capital. Third, renegotiation often in-

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volves high coordination costs among the LPs that have heterogeneous liquidity needs and investment horizons and thus be differently responsive to this extension option.

Management/Entrepreneur buyout. While it is possible to buy out the VC-backed company to avoid fire sale, the entrepreneur is usually financial constrained and does not have enough funds to purchase all the shares from maturing VC funds.

2.2 The Legal Environment around Dual Fiduciary Duties

2.2.1 Before the *Trados* Case

A natural question next is whether the interest of common or preferred shareholders prevails when they are misaligned. Recognizing this tension, in a case ruling in 1997, the Delaware Court of Chancery believed that:

> "*[a] board may certainly deploy corporate power against its own shareholders in some circumstances – the greater good justifying the action – but when it does, it should be required to demonstrate that it acted both in good faith and reasonably.*"[11]

Building on this decision, subsequent scholarship has elaborated the "contingent approach theory", suggesting that a VC-controlled board can make decisions that favor preferred shareholders at the expense of the common shareholders, as long as the board can plausibly defend these decisions as being in the best interests of the corporation (Fried and Ganor, 2006). As a practical matter, board control seems to imply a modest discretion in pursuing strategies that may favor preferred shareholders in VC-backed startups, most of which are incorporated in Delaware (Broughman, Fried, and Ibrahim, 2014).

[11] Orban v. Field, No. 12820, 1997 Del. Ch. LEXIS 48 (Apr. 1, 1997). The decision in Orban concerned the decision-making process of a preferred shareholder-controlled board to dilute common shareholders' voting power below the 90% threshold required to approve the transaction at the general shareholder meeting level. However, the rule referred to in the text can nonetheless be seen as indicative of how courts would address the preferred-common conflict before Trados.

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2.2.2 The *Trados* Case and Delaware Court Ruling

An important decision by the Delaware Court in 2013 has established a new legal precedent that changed the fiduciary priority of VC boards.[12] The case concerned the sale of Trados, a VC-backed start-up in which VCs had invested through convertible preferred shares, controlled a majority of voting rights in the shareholder meeting, and had designated a majority of the directors on the board. As Trados struggled to achieve its business milestones, the board replaced the CEO and engaged a financial advisor to advise the company about its strategic alternatives. Despite the availability of several alternatives that would allow the firm to remain stand-alone and solvent, none really offered an opportunity to achieve meaningful returns for the VCs or common shareholders. As the VCs declined to inject additional capital into Trados, the board put the company on sale. After rejecting a $40 million offer from SDL, the board later consented to the transaction for $60 million. The management received the first $7.8 million under a management incentive plan. The VCs captured the remaining $52.2 million through their liquidation preference, which amounted to $57.9 million. The common shareholders received nothing and one of them sued the directors on the board of Trados for having breached their fiduciary duties in approving the transaction.

The court concluded that Trados's board was conflicted. In fact, albeit for different reasons, the court stated that six out of seven directors had failed at complying with the fiduciary duty to "maximize the value of the corporation over the long-term for the benefit of the providers of equity capital, as warranted for an entity with perpetual life in which the residual claimants have locked in their investment".[13] Trados'

[12] *In Re Trados* Incorporated Shareholder Litigation, 2013 Del. Ch.

[13] The three VC-appointed directors represented preferred shareholders, who, as a result of the liquidation preference, "sometimes gain less from increases in firm value than they lose from decreases in firm value," so that their incentives deviate from those of common shareholders. As such, these directors face conflicting dual fiduciaries – owing a duty to the VC fund (to maximize return on investment) and to the portfolio company (to maximize the value of the corporation for the benefit of the common stockholders). The two directors representing the common, the CEO and the president, also had an interest in the transaction because they received personal benefits as a result of the

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directors did eventually escape liability because the Court found $0 was a fair price for the then out-of-the-money common shares, but the Court's decision has established itself as sanctioning a new "common shareholder value maximization rule".[14]

2.2.3 Responses from Legal Community and VC Industry Interest Group

The general perception from the legal scholarship is that *Trados* shall govern all transactions in which the common shareholders get little or no consideration, implying litigation risk for the sale of virtually every VC-backed company. *Trados* has accordingly led major US law firms to issue memos and briefings addressing the issues associated with the risk of *Trados*-like claims. Most of these memos and briefings emphasize the dramatic problems associated with the "dual-fiduciary role" that VC-appointed board members play in the context of VC-backed companies, urging their clients to manage the sale process with caution. Broadly speaking, after *Trados* boards shall engage in a more meaningful exploration of alternative transactions and a more granular assessment of prospects for continuing the VC-backed company's operations.

In the meantime, *Trados* alerted the VC industry, prompting reactions aimed at elaborating possible solutions out of the issues that the decision had created. The goal was to eventually reclaim the discretionary space in selling the start-ups that the Delaware judiciary had taken away from VCs. In particular, in 2018 the National Venture Capital Association ("NVCA"), in an attempt to address growing concerns about *Trados*-like claims, published the first major release of its model contract forms since March 2014. Amendments to the NVCA model contract forms elaborate contractual solutions that may help contract around *Trados* through drag-along and redemption rights. However, drag-along rights do not enable VCs to sidestep *Trados*-like claims,

management incentive plan (MIP) that were not equally shared by the common stockholders. A sixth board member designated by one of the funds as "independent" was not really independent, for his previous history of business relationships with one of the VC funds suggested that he had "a sense of owingness" to that fund.

[14]See Bratton and Wachter (2013), Korsmo (2013), Sepe (2013), Strine (2013), Bartlett III (2015), Pollman (2019) and Cable (2020).

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because their exercise postulates *board approval* anyway. Moreover, the redemption rights have seemingly not been widely adopted.[15] Since the *Trados* ruling builds on a simple rule of common value maximization that lends itself to mechanic application, the preconditions exist for its strong enforcement. Also, the direct and indirect reach of the *Trados Doctrine* speaks in favor of its wide applicability.

In a nutshell, *Trados* can be viewed as a common-favoring ruling, which offers improved legal protection to common shareholders through fiduciary duties. Because the applicable corporate law – including the law regarding fiduciary duties – depends on the incorporation state, and because most start-ups are incorporated in Delaware, the *Trados* ruling influences venture capital activities across the US, regardless of the location of VC funds and VC investors. Several prominent legal scholars took note of the *Trados* case, pointing out that the decision may improve the management of the sale process (Cable, 2020) or have a "chilling effect" on the VC capital raising (Bratton and Wachter, 2013). But so far, to the best of our knowledge, no rigorous empirical analysis has been conducted to test these predictions.

3 Data and Empirical Strategy

3.1 Data Sources

Preqin. Our main sample consists of the VC-backed companies that completed their first VC financing round between 1995 and 2012 and are acquired as of December 31, 2020. We exclude companies that received the first round of VC financing after 2012 to allow sufficient time for VC exits. From Preqin, we obtain data on VC-backed US companies and their deal-level information, including the names of VC funds in each

[15] Figure 11 in Ewens and Farre-Mensa (2020) shows a decline in the use of redemption rights over time. This new solution seems to work poorly for several reasons. First, VC-backed companies often lack the cash to redeem VCs' shareholdings. Besides, Delaware corporate law has not always allowed for a plain exercise of the redemption right provided by the new provisions and lawyers have voiced concern regarding this matter. Finally, it would be rare to see an acquirer stepping into a sale process initiated over substantial shareholder objection and without the leadership of the board.

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deal.[16] We extract information on VC funds such as their vintage year, LP investors and fund cash flows from Preqin as well.

SDC Platinum. To identify acquisition-related information of VC-backed companies, we begin with all US acquisitions completed between 1995 and 2020 in the SDC Mergers & Acquisitions database and apply the following data filtering criteria. We first require that the form of the deal is coded as acquisition of majority interests, acquisition of assets, acquisition or merger. Second, the acquirer must own less than 50% of the target prior to the transaction. Third, the acquirer must acquire more than 50% of the target firm ownership. In the end, the acquirer owns more than 90% of the target firm after the transaction. Importantly, we use fuzzy name matching combined with manual checks to merge the Preqin and SDC sample after standardizing spellings and removing legal suffixes.

CRSP. To analyze acquirer announcement returns, we obtain daily stock returns of public acquirers from the Center for Research in Security Prices (CRSP).

COMPUSTAT. To control for the characteristics of publicly-listed acquirers in our analysis of acquisition announcement returns, we collect the financial statement data from the COMPUSTAT.

Hoberg-Phillips Data Library. To measure the closeness between the VC-backed target's and its acquirer's industries, we use the text-based industry classifications developed by Hoberg and Phillips (2010, 2016).

VentureXpert. In the online appendix, we supplement our analyses with data collected from VentureXpert. These data include post-money valuation in each financing round and the organization structure of VC firms.

[16]The unit of observation in our sample is a fund-company pair and Preqin is one of the few databases that provide reliable VC fund names in each VC deal (Kaplan and Lerner, 2016).

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3.2 Identifying Forced Sales

Due to their limited lifespan, VC funds face more pressure to divest in order to distribute cash back to LPs when they move closer to liquidation. This is evident in Figure 2, which plots the 25th/75th percentile, median, and mean of cumulative cash distributions of VC funds by fund age. The gap between the 75th and 25th percentile starts to narrow quickly from age 10. By age 12 (15), a median fund will have distributed 93% (100%) of their cash back to LPs. Very few cash distributions occur beyond age 15. In fact, a 25th percentile fund will have 98% of its cash distributed before it reaches age 15.[17]

Our empirical approach to identify forced sales is motivated by the cash flow patterns in Figure 2. Similar to Campbell, Giglio, and Pathak (2011), we define forced sales as acquisitions that take place close in time to the forcing event – when the VC fund becomes 12-year old. Specifically, our variable of interest *Forced [-t, +t]* is an indicator variable that is defined at the fund-company pair level and equals one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. The window length t captures the urgency of the deal since acquisitions that happen long after or long before the forcing event are arguably less urgent. While the specific limit of the fund lifespan is unobservable and can be different across funds, using a uniform 12-year threshold likely leads to attenuation bias, making it more difficult for us to find any evidence of fire sales.

Figure 3 shows the age distribution of VC funds when they first invest in their portfolio companies, and when they exit by acquisitions. Consistent with anecdotal evidence on the investment patterns of VC funds over their lifecycle, a typical VC fund makes more than 90% of its initial investments in the first five years since its vintage year. When the VC exits through acquisitions, the median (mean) age is 6

[17]Figure B.1 shows the 5th and 95th percentiles of cumulative cash distributions. We see a sharp increase in cash distributions when a slow-distributing fund (bottom 5%) is between 9 and 15 years old, consistent with the liquidity pressure that forces it to distribute cash back to LPs.

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(6.5) years and more than 93% (98%) of VC funds are younger than 12(15)-year old.

3.3 Empirical Strategy

3.3.1 Fire Sale Discount, Acquirer Industries & Announcement Returns

We first establish a set of facts on forced sales of VC-backed companies using cross-sectional regressions with fund-company paired data:

$$y_{ij} = \boldsymbol{\phi_{state}} + \boldsymbol{\rho_{industry}} + \boldsymbol{\lambda_t} + \boldsymbol{\delta_{k(i)}} + \beta \times Forced_{ij} + \boldsymbol{\theta' X} + \epsilon_{ij} \tag{1}$$

in which the subscript i and j denote VC fund and VC-backed companies respectively.[18] The outcome variable y can be *Ln(Deal Vale)*, the natural logarithm of the acquisition deal value in USD MIL, or *Financial Acquirer*, an indicator variable equal to one if the acquirer is a financial firm. $\boldsymbol{\phi_{state}}, \boldsymbol{\rho_{industry}}, \boldsymbol{\lambda_t}$ and $\boldsymbol{\delta_{k(i)}}$ denote company headquarter state, company industry, exit year and VC firm fixed effects, in which $k(i)$ is an index function representing the VC firm that manages the fund j. The inclusion of VC firm fixed effects controls for the selection skills of VCs. $\boldsymbol{X}$ is a vector of VC- and company-level controls such as the IPO ratio of the VC firm, the total amount of equity raised by the company and the number of investors.[19] We cluster standard errors by the VC fund and company headquarter state.[20]

3.3.2 Effects of the *Trados* Court Ruling

We consider the *Trados* court ruling as a shock to the legal institutions that shape the power of common shareholders against the preferred. While in principle all VC funds are treated by this landmark legal precedent, *Trados* should have a greater effect on maturing funds since they are ex-ante more likely to force the company into

[18] VC-company paired specifications are usually used to exploit variations across different VC investors within the same portfolio company (Ewens and Rhodes-Kropf, 2015; Bernstein, Giroud, and Townsend, 2016; Ewens, Rhodes-Kropf, and Strebulaev, 2016; Ewens, Nanda, and Rhodes-Kropf, 2018).

[19] While the inclusion of VC firm fixed effects accounts for all time-invariant VC firm characteristics, it does not absorb controls such as *VC Firm IPO Ratio* because it can change as more portfolio companies go public over time or *First Fund* because a VC firm manages multiple VC funds.

[20] In the appendix, we also use cluster-bootstrapped standard errors as an additional robustness check. Results are highly similar as reported in Table B.13.

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value-destroying acquisitions. To this end, we use a difference-in-differences design to study the effects of *Trados* on VC-backed companies' propensity of being acquired near the end of conventional fund lifespan:

$$\begin{aligned} Acquired_{ijt} =& \boldsymbol{\phi_{state}} + \boldsymbol{\rho_{industry}} + \boldsymbol{\gamma_t} + \boldsymbol{\delta_{k(i)}} + \\ & \beta \times Forced_{ijt} + \gamma \times Forced_{ijt} \times Trados_t + \boldsymbol{\theta' X} + \epsilon_{ijt} \end{aligned} \tag{2}$$

in which the subscript i, j and t denote VC fund, VC-backed companies and calendar year respectively. *Acquired* is an indicator variable that equals one if the VC-backed company is acquired in the corresponding calendar year, and zero otherwise. We include the following fixed effects: $\boldsymbol{\phi_{state}}, \boldsymbol{\rho_{industry}}, \boldsymbol{\gamma_t}$ and $\boldsymbol{\delta_{k(i)}}$ denote company headquarter state, company industry, calendar year, and VC firm fixed effects, respectively. *Trados* is an indicator variable that equals one from the year 2013 onward – 2013 being the year in which the Delaware Court made the final decision on the *Trados* case – and zero otherwise. The key variable of interest is $Forced_{ijt} \times Trados_t$, and its coefficient ($\gamma$) captures the pre-post change in the gap between the acquisition probability in "forced" years (years close to the end of VC funds' conventional lifespan) versus "non-forced" years (years further away from conventional lifespan) around *Trados*. We cluster standard errors at the same level as in Equation (1).

In the end, we also analyze the effects of *Trados* on VC fund cash distributions with a similar DiD setting as Equation (2):

$$Distribution_{it} = \boldsymbol{\xi_i} + \boldsymbol{\gamma_t} + \boldsymbol{\rho_{vintage}} + \beta \times Forced_{it} + \gamma \times Forced_{it} \times Trados_t + \epsilon_{it} \tag{3}$$

in which the subscript i and t denote VC fund and year respectively. *Distribution* is either *Cash Distribution*, an indicator variable equal to one if the VC fund makes cash distributions in a given year and zero otherwise, or *Cash Distribution Amt (%)*, the cash distribution amount returned to LPs as the percent of fund size in a given year. We include VC fund, year and fund vintage fixed effects, denoted by $\boldsymbol{\xi_i}$, $\boldsymbol{\gamma_t}$ and $\boldsymbol{\rho_{vintage}}$, respectively. Our coefficient of interest, γ, captures the effect of *Trados* on

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VC fund cash distributions over its lifespan. Standard errors in this regression are clustered at the VC fund level.

3.4 Summary Statistics

Our first sample consists of VC-backed companies that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. The unit of observation is a fund-company pair. There are 3,836 unique VC-backed companies and 2,492 unique VC funds managed by 1,288 unique VC firms in the sample. Table 1 Panel A reports the summary statistics for the variables used in the cross-sectional regressions. On average, the acquisition deal value is $ 219.83 million and the deal value to the total amount of equity raised by the VC-backed company is 7.02. Approximately 9% of the companies are sold to financial firms such as private equity firms. Based on the [-1, +1] interval definition, around 9% of the VC-company pairs are under fund liquidity pressure.

The sample to evaluate the effect of the *Trados* court ruling consists of the same group of companies, but the unit of observation is a fund-company year. Each fund-company pair appears in the sample from the first investment of the VC fund in the company and disappears after the acquisition. The average probability of VC exits through acquisitions is 17% in a given year.

For the analyses of VC fund cash distributions, the sample consists of VC funds raised during the period 1995-2012. The unit of observation is a fund year as of 2019 and we allow each fund to have 20 years of observations since its vintage.[21] There are 681 unique VC funds managed by 315 VC firms in the sample. The average probability of cash distributions is 52% in a given year and the mean cash distribution amount in any year is 7% of the total cash distributions returned to LPs.

[21] In our sample, we observe cash distributions made after age 20. Figure B.1 reports the 5-th and 95-th percentiles of cumulative cash distributions. The p5-th percentile reaches 100% at age 20. We assume that in theory VC funds can extend their life to 20 years after vintage by renegotiating with LPs.

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4 Fire Sales in the VC Setting

This section establishes a set of facts that indicate the existence of fire sales in the VC setting. We focus on three key acquisition characteristics: (i) price of sale; (ii) acquirer industries; (iii) acquirer announcement returns.

4.1 Fire Sale Discount

In the language of Shleifer and Vishny (2011), fire sales are *forced sales* of assets at *dislocated prices*. In the VC context, sales of portfolio companies near the end of fund lifespan are forced because VCs are under pressure to pay the LPs back within a limited time frame. The sale price is likely to be dislocated due to the illiquidity of the market for private assets and the urgency of the sale. In the spirit of Pulvino (1998), we compare the price of assets in forced transactions and non-forced transactions to provide evidence for fire sales.

Table 2 presents the price discount in forced sales of VC-backed companies, estimated with Equation (1). Columns 1-3 compare the deal values of forced and non-forced sales conditional on variables known to predict the portfolio outcomes such as the total amount of equity raised, the number of financing rounds, and VC selection skills. We observe a significant value discount in forced sales. Overall, the discount ranges from 10% to 31% and is larger when the sale takes place closer in time to the end of conventional fund lifespan.[22] This difference represents a $27 million to $85 million fall in the average deal value. Columns 4-6 report the analyses with the deal value scaled by the total amount of equity raised by the VC-backed company. On average, the deal multiples of forced sales are 0.69 to 1.61 lower, which account for 12% to 27% of the unconditional mean.

How does the fire sale discount we identify in the VC setting compare with the discount observed in other settings? Using commercial aircraft transactions, Pulvino

[22]Since we use ln(deal value) as the outcome variable, we convert the estimated coefficient on forced dummies (β) into fire sale discounts by calculating $exp(\beta) - 1$.

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(1998) documents a discount of 10% to 20% when aircraft are sold by financially constrained airlines. Campbell, Giglio, and Pathak (2011) detect large foreclosure discounts, on average about 27% of the value of a house. Turning from real assets to financial assets, Acharya, Bharath, and Srinivasan (2007) find that the debt instruments of firms in distressed industries recover about 10-15 cents less on a dollar compared to firms in healthy industries. While the discount we identify is broadly in a similar range (19% on average, across three specifications), we do observe a significantly higher discount when sales are more urgent (31%). This can be driven by the illiquidity of the market for the acquisition of start-ups in the short run.

4.2 Acquirer Industries

Having shown the value discount in forced sales, we continue to shed light on the economics behind the dislocated price. One hypothesis is that the discounts exist because the VC-backed companies are sold to industry outsiders. These acquirers have a lower valuation of the assets and tend to pay lower prices, due to the highly specialized nature of the assets owned by start-ups (Shleifer and Vishny, 1992). Because of the illiquidity of the market for private assets, VCs then face a trade-off between a higher sale price and a shorter time to locate a buyer and complete the transaction. When the pressure to sell is high, VCs might settle with an industry outsider and a lower price.

To test the above hypothesis, we link the urgency of a sale to the industry of the acquirer. Hoberg and Phillips (2010) documents that merger pairs are far more similar in the product market space than SIC- or NAICS-based measures suggest. As a result, acquirers can still have a high valuation of the target's assets even when they are assigned different SIC codes. In light of this, we construct a measure based on the similarities between public firm pairs to indicate the product market closeness between the acquirer and the VC-backed target.[23] Specifically, we collapse the raw

[23]We do not directly construct the similarity score between the the acquirer and the VC-backed

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firm-pair-year level panel data in the Hoberg-Phillips Data Library into 3-digit SIC industry pairs for each year and count the number of firm pairs in each group. For each SIC, we then keep the top 10 related SIC industries in each year based on this count. The idea is that closely related industries should have more firm pairs that reside in close proximity in the product space based on their product descriptions. It follows that acquirers in these top 10 related industries of the target likely have a higher valuation of the target's assets. More specifically, we define *Remote Industry* as an indicator variable that equals one if the acquirer is not from the top-10 related 3-digit SIC industries of the VC-backed target, and zero otherwise.

Table 3 reports the results from a linear probability model in which the dependent variable is either *Remote Industry* or *Financial Acquirer*, which equals one if the acquirer is a financial firm and zero otherwise. As reported in Columns 1-3 from Table 3, VC-backed companies have a 4.1 to 5 percentage points (19-24% of the unconditional mean) higher probability of being sold to acquirers from a different industry that is remote in the product market space if the sale is forced. The coefficient estimates in Columns 4-6 suggest that companies in forced sales have approximately a 3.5 percentage higher probability of being acquired by financial firms such as private equity firms. The economic magnitude is large and represents over 40% of the unconditional mean. Our finding is robust to using the SIC industry classification to define whether the acquirer and target are from different industries (see Table B.1).

4.3 Acquirer Announcement Returns

While the fundamental value of acquired assets is not observable, buyers may capture part of the surplus if the assets are sold at a low, dislocated price. The stock market has been considered as a useful setting to evaluate the gain that accrues to the buyers (Meier and Servaes, 2019). Therefore, we next examine whether public acquirers

target for two reasons. First, we lack information on business descriptions of private acquirers. Second, the business descriptions of start-ups are rather short and typically do not disclose detailed information on products in VC-related datasets.

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experience positive abnormal stock returns soon after acquisition announcements for sales that take place under VC funds' liquidity pressure. We control for a wide variety of acquirer- and deal-level characteristics that are known to predict acquirers' gains.[24]

Table 4 shows the abnormal stock returns of public acquirers in forced sales of VC-backed companies around deal announcements. The first three columns present the cumulative abnormal returns (CAR) over a short window around the acquisition announcement using the CAPM model. Across all three specifications, we observe significantly higher abnormal returns earned by acquirers when transactions occur under VCs' liquidity pressure. In addition, consistent with the pattern of fire sale discount reported in Table 2, *CAR [-5, +5]* increases from 0.93% to 2.2% when the forced sale is closer to the end of conventional fund lifespan, which suggests that the surplus captured by the acquirer increases with the discount we observe in forced sales of VC-backed companies. The remaining columns report the results using Fama French 3 factor model as the benchmark model to calculate abnormal returns. While the cumulative abnormal return becomes smaller in magnitude, the results are qualitatively similar.

4.4 Selection Concerns

One concern is that the discount we document above is driven by selection rather than fire sales. There might be an unobserved, fundamental value or quality difference between start-ups that are sold earlier vs. later in a VC fund's lifespan. For example, VCs might sell high-value companies first and hold onto low-value ones that are difficult to sell, resulting in a lower sale price and deal multiple for companies that are sold closer to maturity. While it is difficult to completely rule out the possibility of a selection bias (the "quality discount" story), several pieces of evidence support the existence of fire sales (the "fire sale discount" story).

[24]See, for example, Moeller, Schlingemann, and Stulz (2004, 2005). Appendix A provides detailed variable definitions.

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Controlling for start-up fundamentals. To start with, we directly control for start-up quality by adding sales as an additional explanatory variable in each regression. To obtain information on the fundamentals of private companies, we match our start-up sample to Your-economy Time Series (YTS) based on company names and locations.[25] Panel A of Table 5 reports the coefficient estimates of *Forced [-1, +1]*, which are quantitatively and qualitatively similar to our baseline results, after controlling for the sales in the last available year before deal completion.[26] Importantly, we also see an increase in the adjusted R^2 across all columns, suggesting that controlling for sales indeed reduces the unexplained variation in the outcome variables. One concern is that past volume of sales does not capture the growth opportunities of the target start-ups. To address this, we also add future sales as a forward-looking control for start-up quality in Panel B of Table 5. Results remain similar, though some coefficient estimates become insignificant due to lack of statistical power as some start-ups no longer report stand-alone sales after the acquisition.[27]

Post-money valuation. Second, we track the evolution of post-money valuation before companies are eventually sold in forced and non-forced scenarios in Figure B.2. The median post-money valuation of the two groups of companies is very similar from the year when they receive their first financing round to the next 10 years, alleviating the concern that companies sold under liquidity pressure are fundamentally different from those sold earlier. Table B.2 provide additional multivariate analysis, in which the dependent variable is the natural logarithm of the most recent post-money valuation of the companies before they are acquired. The difference in post-money valuation between the two groups of companies is economically small and statistically

[25] YTS contains annual establishment-level sales and employment numbers, dating back to 1997. We do not add sales or employment as control variables in the baseline specification since only around 40% of the start-up sample can be matched.

[26] In additional analyses and all robustness checks, we focus on specifications with $Forced[-1, +1]$ as the key independent variable for brevity.

[27] In untabulated results, we find that controlling for start-up employment also yields similar estimations.

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insignificant.[28] According to the point estimates, the quality discount is at worst 9% (Column 4) for the most urgent sales, which is still substantially smaller than the fire sale discount in Column 1 of Table 2.

Exits through IPOs. We study exits through IPOs. Given the automatic conversion of preferred shares in IPOs and how liquid the IPO market is, fire sales induced by the conflict of interest between common and preferred shareholders is unlikely in exits through IPOs. Therefore we should expect to observe a discount in IPO valuation near the end of VC fund lifespan if and only if there is any selection on quality or other unobservables. We find no evidence of such selection. In Table B.3, the coefficients on the forced dummies are small and mostly insignificant, suggesting that start-ups' IPO valuation is rather independent of VC fund age at IPO. In other words, there seems to be little variation in the quality of investments offloaded from VCs over time.

Economics behind quality discount. Moreover, the "quality discount" story can explain neither the greater probability of acquirers being industry outsiders, nor the higher abnormal returns enjoyed by acquirers. Importantly, these patterns are consistent with predictions from the theoretical work on fire sales (Shleifer and Vishny, 1992) and are rather unique markers of fire sales. To further ensure comparability across investments, we include an extensive set of fund- and company-level control variables, as well as more stringent fixed effects, such as industry by year and company headquarter state by year fixed effects. The discount in the sale price is always economically large and statistically significant.

In the end, it is worth mentioning that the economics behind the selection bias in the real asset market does not apply here. For financially constrained sellers, economists argue that because of under-maintenance, the assets being sold are of

[28] We do not directly include post-money valuation as a control in the regression that studies fire sale discount because data on post-money valuation is available only for a rather limited subset of companies.

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lower quality. So the fire sale discount is partially reflecting the lower quality of the underlying assets rather than illiquidity. In the VC setting, the under maintenance argument does not hold. If anything, companies are expected to receive more monitoring when they stay longer with the VCs, and when the VCs become more experienced and have fewer companies to manage as they move closer to maturity.

To sum up, given that each start-up is unique, it is admittedly very difficult to find out its fair value in acquisitions and infer the true fire sale discount. Our estimations, while abstracting away from some potential heterogeneities across investments, still provide a good idea of the average fire sale discount in the VC industry. While we cannot fully rule out the quality discount explanation, the combination of the above evidence leads us to conclude that our results are consistent with fire sales and are unlikely to be fully driven by selection.

4.5 Additional Results

4.5.1 Fire Sales and Market Conditions

Existing work suggests more severe fire sales during industry downturns due to the lack of demand from high-valuation buyers in the same industry (Shleifer and Vishny, 1992; Pulvino, 1998). In Table 6, we provide evidence consistent with this prediction. *Cold Market* is an indicator that equals one if the M&A transaction volume is in the lowest quartile during the sample period for each industry, and zero otherwise. The coefficient on *Forced [-1, +1]* $\times$ *Cold Market* therefore captures the difference in deal characteristics of forced versus non-forced sales in freezing versus active M&A markets. We find that forced sales during a cold M&A market on average have a lower deal multiple, a higher probability of being sold to acquirers in remote industries and a greater acquirer abnormal return. These findings imply that fire sales are mostly concentrated in scenarios when the industry-specific market is illiquid.

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4.5.2 Intra-VC Conflicts and Discussions on Regression Specifications

Our main specification features observations at the fund-company pair level, such that multiple VC funds may exist for each start-up transaction. However, the incentives of VC funds may diverge because they have different investment horizons and hold different classes of convertible preferred shares (Nanda and Rhodes-Kropf, 2019; Chernenko, Lerner, and Zeng, 2021). Moreover, the importance of each VC fund and their influence in exit decisions likely also differ. In the regressions, ideally one would like one observation for each deal where the independent variable of interest aggregates the liquidity pressure faced by all VCs that invest in the target start-up. However, such aggregation is challenging and depends crucially on knowing the complete set of VC investors, especially their incentives and power on the board by the time of the acquisition. Such information is difficult to gather, and worse still, the aggregated measure accumulates all the noise or measurement errors at the fund-level, leading to potentially severe attenuation biases. Therefore, in the main specification, we follow the literature and conduct the analyses at fund-company pair level (Ewens and Rhodes-Kropf, 2015; Bernstein, Giroud, and Townsend, 2016). This allows us to add fund-level controls and/or fixed effects, hence making more effective use of the data.

Nevertheless we take steps to further justify our empirical specification and dig into potential conflicts of interest among VCs. We first narrow our attention to VCs who have higher abilities and stronger incentives to push for timely exits. The importance of each VC fund and its power on the board depends on the stage of their initial investments and their total amount of investment in the start-up. Therefore, VCs that invest earlier or make larger investments arguably have more influence in exit decisions. In Table B.4, we focus on VC funds that participate in the first observed financing around. On average, each target start-up has around 1.7 first-

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around investors.[29] These early investors are also more likely to be subject to liquidity pressure at the time of the sale, inducing them to seek a quick transaction. In Table B.5, we drop less important VCs that hold less than 10% of equity investments in the company. Comparing Panel A of both tables with the baseline estimations, one can conclude that the result stays largely unchanged.

Second, the fund-company pair specification means that start-ups with more investors may receive a higher weight in the regression, complicating the interpretation of the estimated coefficients. The similar results yielded by the specification with first-round investors only, where the variation in the number of VC investors in each company is limited, partially mitigate the concern already. To further address the issue, we provide OLS estimates weighted by the inverse of number of VC funds within each company so that each target start-up will have the same unit weight in the regression. All findings remain quantitatively and qualitatively similar to the baseline results, as shown in Table B.6.

In the presence of intra-VC conflicts, younger VC funds are likely to disagree with fireselling portfolio companies even if older VC funds are under substantial liquidity pressure. When the age dispersion among VC funds that invest in the same start-up increases, one prediction is that fire sales become less likely and less severe due to heightened intra-VC conflicts. We find evidence consistent with this prediction in Table B.7. The coefficient estimates of *Forced [-1, +1]* × *Fund Age Dispersion* have opposite signs from those of *Forced [-1, +1]*, suggesting less severe fire sales when the dispersion in VC fund age goes up.

4.5.3 Other Robustness Checks

Reporting bias. Around 65% of transactions during our sample period have missing transaction value. For some transactions, we cannot match them to the M&A database in SDC Platinum. Even if they are matched, the information on deal value

[29] The regression using this subsample is therefore close to the specification with one observation per deal and an aggregated liquidity pressure measure.

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is sometimes missing. Therefore, our sample for the fire sale discount regression does not include the universe of private sales, but only the ones with non-missing deal values. One may worry that the sales with non-missing information are not representative. More specifically, if some sales by maturing VC funds are of extremely low value and hence more likely to be missing from the M&A database, our estimations of fire sale discount could be biased downward.[30] To evaluate the merit of this argument, we examine if the transactions near the end of VCs' conventional lifespan are indeed more likely to have deal values missing. We regress an indicator for missing deal value on the forced sale indicators and the results are reported in Table B.8. The coefficients are all close to zero and insignificant, alleviating the concern of reporting bias.

Alternative controls and fixed effects. While our baseline empirical specifications include a list of VC- and company-level controls that are frequently used by the existing literature, excluding these controls yields qualitatively similar results. We also use an alternative set of fixed effects in the regressions. More specifically, to account for time-varying state-level economic fundamentals, we add company headquarter state by exit year fixed effects. To account for time-varying trends in the acquisition market for different industries, we also include industry by exit year fixed effects. The results with these additional fixed effects are collected in Table B.9 Panel A. The coefficients are largely similar to those in the main specification.

Alternative sample selection criteria. Some peculiarities in the VC data are worth noting. In terms of fund age, we sometimes observe extreme values. This is already evident in Figure 2 and Figure 3: some funds live many years beyond the conventional VC lifespan. One may argue that the acquisition deals VCs complete

[30]The coverage of deal value is biased towards larger transactions. In our sample, total equity raised by the company, which can be considered as a proxy for size, also negatively predict the probability of missing deal value. Netter, Stegemoller, and Wintoki (2011) study the sample representativeness of earlier M&A studies with common data restrictions such as excluding acquisitions without a deal value. The authors find that many existing findings on M&As are attenuated after using a more representative sample.

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beyond a certain age might be special and are no longer related to liquidity pressure. We thus drop deals that take place when the VC fund age is beyond the conventional VC lifespan. These deals are quite rare in our sample and dropping them does not affect the estimated coefficients in different regressions (see Table B.10 Panel A).

Corporate venture capital (CVC) funds are structured as the subsidiaries of corporations. They have longer investment horizons, share the strategic objectives of the parent corporations, and have fewer high-powered performance-based compensation contracts in start-up investments (Chemmanur, Loutskina, and Tian, 2014; Strebulaev and Wang, 2021). Considering these differences from traditional VCs, we exclude CVC-related deals and our sample drops by around 4%.[31]. As shown in Table B.11 Panel A, our results are robust to this exclusion.

Our sample overlaps with the Internet Bubble period (1995-2001) in the US. One concern is that VC-backed companies during the Internet Bubble period are different from the rest of our sample in terms of unobservable characteristics such as contractual terms and quality. Moreover, Preqin has relatively poor coverage of VC deals in the 90s, giving rise to potential selection issues. As a robustness check, we drop companies that received their first financing round during the period of 1995 to 2001 and re-estimate our baseline regressions. The coefficient estimates are reported in Table B.12 Panel A and are similar to the baseline estimates.

5 Effects of the *Trados* Court Ruling

Independent of the Trados ruling, the previous section shows that sales of start-ups under liquidity pressure of the VC funds are characterized by key features of fire sales. These deals satisfy the liquidation preferences of VCs but may come at the expense of common shareholders, which were largely permitted by the Delaware law before *Trados*. In this section, we delve into the role of *Trados*. We first study how

[31] We use fuzzy name matching to identify CVCs in Preqin based on the list of CVCs provided by VentureXpert.

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improved common shareholder power through *Trados* affects the timing of VCs' exits by acquisitions. We then examine the effect of *Trados* on VC fund cash distributions. In the end, we turn to the ex-ante effects on VC fundraising.

5.1 Probability of VC Exits by Acquisitions

Table 7 presents the DiD estimates from Equation (2). The results in Column 1 support the notion that VCs are more likely to exit the portfolio companies through acquisitions that are likely value-destroying when the fund is under liquidity pressure. The coefficient of *Forced [-1, +1]* is positive and highly significant, suggesting that the relative probability that the VC will exit through acquisition increases by 4.8 percentage points (28% of the unconditional mean) when the fund age is between 11 and 13 years. The coefficient estimate of the interaction term *Forced [-1, +1]* × *Trados* is negative and significant at 1% level, suggesting that the *Trados* court ruling has reduced VCs' propensity to initiate fire sales by 3.5 percentage points (20% of the unconditional mean) when their funds are under liquidity pressure. In Columns 2-6, we find consistent results using specifications with alternative indicators of forced sales and adding the control variables used in the previous tables.

The identification assumption requires that VCs' probability of exiting through acquisitions would have evolved similarly across different fund ages absent the *Trados* court ruling. Figure 4 shows evidence that there is no significant pre-trend in the years leading up to the court ruling, after including VC firm, company headquarter state by year, and company industry by year fixed effects. Moreover, there is an immediate and persistent dip in the event-study coefficient estimates in the post-*Trados* period, providing additional support for the causal interpretation.

One might worry that our findings are driven by confounding factors, in particular the surge in venture capital fundraising since mid-2010s. A more competitive supply of capital from LPs may suggest that LPs are more willing to extend the lifespan of VC funds, lifting the liquidity pressure faced by VCs. The influx of funding

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may also create a more entrepreneur-friendly environment and strengthen common shareholders' bargaining position against VCs. These alternative channels may also lead to reduced fire sales. To rule out these explanations, we manually check whether start-ups are incorporated in Delaware by searching the website of Delaware Department of State Division of Corporations.[32] Since *Trados* is a Delaware opinion and if our results are indeed driven by *Trados*, we should expect the court ruling to generate a stronger effect on start-ups incorporated in Delaware than those incorporated elsewhere in the US. However, if our results are caused by a general rise in venture funding all across the US, the change in the probability of forced sales after *Trados* should not depend on start-ups' incorporation states.

Table 8 reports the triple-diff estimates that are consistent with *Trados* being the driving force behind reduced forced sales. *DE* is an indicator variable equal to one if the company is incorporated in Delaware, and zero otherwise.[33] The coefficient of interests is *Forced [-t, +t]* $\times$ *Trados* $\times$ *DE*, which measures the difference in *Trados*' impact on the probability of forced sales of companies incorporated in Delaware versus elsewhere. The estimated coefficients on the triple interaction term are all negative and mostly statistically significant, indicating a substantially stronger treatment effect when the company is incorporated in Delaware. This finding provides additional support for causality - alternative stories must explain (1) why VCs under liquidity pressure change their exit decisions right after the year of the *Trados* ruling, and (2) why this effect is mostly concentrated among Delaware-incorporated companies.

We then investigate whether the treatment effect of *Trados* depends on the bargaining between VCs and their investors, the LPs. By endorsing the rule of common

[32]See https://icis.corp.delaware.gov/ecorp/entitysearch/namesearch.aspx. Due to website traffic controls and budget constraints, we randomly select half of our sample companies and check manually. Around 75% of the VC-backed companies are incorporated in Delaware.

[33]Figure B.3 provides support for this triple-diff strategy by comparing the geographic distribution of VC-backed start-ups' headquarters based on their incorporation state (DE vs. non-DE). The distributional patterns are highly similar between Panel a (DE) and Panel b (non-DE), suggesting little selective sorting into Delaware on the basis of headquarter states.

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shareholder value maximization, *Trados* constrains the control rights of the preferred shareholders, potentially harming the interests of VC fund investors, the LPs. VC-appointed board members face a higher litigation risk after *Trados*, and they might be unwilling to initiate controversial sales, especially when their LPs are less powerful and demanding. We therefore expect a stronger treatment effect in VC funds with weaker LP bargaining power. Fund of funds (FOF) managers are often considered as one of the least prestigious types of LPs with limited bargaining power vis-à-vis VCs. We thus use fund-level LP data in Preqin to construct the variable *FOF*, which is an indicator that equals one if the ratio of LPs being FOF managers is greater than the sample median (approximately 0.15), and zero otherwise. Table 9 reports the triple-diff coefficient estimates. The coefficient on *Forced [-t, +t]* × *Trados* × *FOF* is negative and significant, suggesting that the mitigating effect of *Trados* on VCs' propensity to exit through fire sales is indeed stronger for funds with high exposure to FOF LPs.

Figure 6a shows the shift in the distribution of VC fund age at acquisitions for the pre- and post-*Trados* sample. The fund age is equally weighted for each VC fund. The average time to acquisition increases from 5.4 to 7.7 years after the *Trados* court ruling. Moreover, there are more VCs exiting their portfolio companies through acquisitions after the fund is 12-year old, implying less pressure from fund liquidation.

Our findings remain economically large and statistically significant after including company headquarter state by year and industry by year fixed effects, which alleviates the concern of confounding factors such as time-varying local economic shocks and industry shocks in driving our findings. These results are reported in Table B.9 Panel B. In Table B.4 and Table B.5 Panel B, we find that our treatment effects are robust to the exclusion of VCs that are unlikely to drive the exit decisions due to their weak controls within the VC syndicate. The results are also robust to dropping VC funds that are outliers in terms of fund age, as reported in Panel B of

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Table B.10. Panel B of Table B.11 presents qualitatively and quantitatively similar findings when CVCs are excluded from our sample. As reported in Table B.12 Panel B, our results are unlikely to be driven by potential selection problems in the early sample period that overlaps with the Internet Bubble years in the US.

In addition, we estimate the same DiD specification with the sample of companies that raised their first VC financing round between 1995 and 2012 and have gone public as of December 31, 2020. As shown in Table B.14, we do not find any effect of the *Trados* court ruling on the probability of VC exits through IPOs near the 12-year fund age cutoff. This is expected as VC exits through IPOs near the end of fund lives do not lead to any significant value discount as shown in Table B.3.

5.2 VC Fund Cash Distributions

The second part of our analyses concerns the impact of *Trados* on the timing and amount of cash distributions by VC funds. By changing VCs' trade-off between maximizing common shareholder value and distributing returns back to LPs in time, *Trados* disincentivizes VCs from exiting their portfolio companies in a timely way through potential fire sales of these companies. As a result, we expect to see less clustering of cash distributions near the end of conventional fund lifespan in the post-*Trados* period.

Table 10 shows the DiD estimates from Equation (3), in which the dependent variable is either *Cash Distribution*, an indicator variable that equals one if the VC fund makes cash distributions in a given year and zero otherwise, or *Cash Distribution Amt (%)*, the cash distribution amount returned to LPs as the percent of the fund size in a given year. While the cash distributions also include proceeds from IPO exits, our findings are consistent with the pattern observed in VC exits by acquisitions in the previous tables. Overall, while VC funds are more likely to distribute cash near the 12-year age cutoff, such tendency becomes substantially weaker in the post-*Trados* period. For example, Column 1 suggests that VC funds on average have a 15.6

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percentage points (30% of the unconditional mean) higher probability to distribute cash to LPs when the fund age is in the [-1, +1] interval. However, *Trados* cuts such probability almost by half, or 7.2 percentage points, as indicated by the coefficient on the interaction term. Columns 4-6 report the intensive margin results. In Column 4, one can see that the cash distribution amount is on average 2.1 percentage points (31% of the unconditional mean) larger during the [-1, +1] interval and reduces by 2 percentage points after *Trados*. Figure 5 shows the dynamic effect on cash distribution. We find no significant pre-trend but a clear negative post-trend.

Similar to Table 9, Table 11 presents the results of triple-diff analysis. As shown in Columns 1-3, funds with higher exposure to FOF LP investors seem to be more affected on the extensive margin, though the coefficient estimates are not significant. On the intensive margin, the heterogeneous treatment effects are economically large and statistically significant (Columns 5 and 6). This is consistent with the notion that VCs are better able to avoid fund liquidation and value-destroying exit sales when the LP investors have weaker bargaining power.

Figure 6b provides suggestive evidence that it takes a longer time for LP investors to receive their capital back from VCs after the *Trados* court ruling. The fund age is weighted by the amount of cash distributions. Similar to the pattern observed in Figure 6a, a larger fraction of capital is distributed after a fund is 12-year old in the post-*Trados* period, implying less timely cash distributions to LPs and the potential renegotiation of fund lifespan between VCs and LPs.

5.3 Ex-ante Effects on VC Fundraising

We further examine the ex-ante effects of *Trados* on VC fundraising. Since the change in the legal environment brought by *Trados* is applicable to to all VCs active in the US, a key challenge is to find variations in VCs or their investors' exposure to the legal change that help us identify its effect on fundraising. To address this challenge, we study LPs' decision to allocate funds into US versus non-US VC funds. Investors

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often have a preference for local funds and local projects, largely driven by their institutional constraints, behavioral bias, information advantage, and political pressure (French and Poterba, 1991; Coval and Moskowitz, 1999; Baik, Kang, and Kim, 2010; Hochberg and Rauh, 2013). LPs still make global investments to exploit better investment opportunities or investor protection in foreign countries. However, when such benefits become smaller, for example, due to a weakening of investor protection in the destination market, LPs are less likely to make global fund investments.

Conceptually, the *Trados* court ruling can be construed as a move from a preferred-favoring and LP-friendly regime to a common-favoring and entrepreneur-friendly regime in the US. As a result, US venture capital market may become less attractive, especially for foreign LP investors that have incentives to invest in their home market as an outside option. In other words, US VC funds, when compared with VC funds from other countries that are not subject to the *Trados* treatment, will attract less investments from foreign LPs and face more difficulties in fundraising after *Trados*. To test this prediction, we use a sample of global VC funds raised between 1995 and 2019 in Preqin and employ a DiD design. More specifically, we interact an indicator for US VC funds with the indicator for post-*Trados* years. The coefficient on this interaction term is the DiD estimator and captures the impact of *Trados* on fundraising, with US funds as the treated group and non-US funds as the control group. The outcome variables are the share of foreign LPs' investments in a fund and fund size.[34]

Table 12 reports the estimated results. As mentioned above, our key variable of interest is $US \times Trados$, in which US is an indicator variable equal to one if the VC fund is located in the US and zero otherwise. We further add VC firm and fund vintage fixed effects. Therefore, the standalone US indicator is absorbed by the

[34]One advantage of examining the share of foreign LPs' investments, rather than total funding raised from all LPs, is that we can hold constant the investment opportunities and the demand for capital of each VC fund. The total capital raised from all LPs, the denominator in the share variable, reflects a VC fund's demand for capital and arguably varies with its investment opportunities. Examining the share of foreign LPs' investment therefore allows us to isolate effects driven by the suppliers of capital, who might be affected by *Trados* differently.

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VC firm fixed effects. The *Trados* indicator is also absorbed when we include fund vintage year fixed effects. The coefficient in Column 1 shows that US funds experience a 4.4 percentage points decrease in the share of foreign LPs after *Trados*. Column 3 suggests that, compared to international funds, the fraction of capital commitments provided by foreign LPs also drops by 4.5 percentage points for US funds. The fund size on average reduces by over 10%, as shown in column 5. These results indicate that compared with international VC funds, US funds face a harder time raising their capital, especially from foreign LPs that value investor protection in the US. To improve comparability, in even Columns, we include only the subsample of funds located in countries with more than 10 VC funds. These countries are relatively active in VC investing, and hence more comparable to the US. Both the direction and size of the effect remain similar.[35]

Taken together, the analyses in this section suggest that while the *Trados* court ruling reduces the likelihood of VC exits through fire sales, such benefits to VC-backed companies and common shareholders come at the cost of LPs. Foreign LP investors reduce their allocation to US VC funds and US funds experience a decrease in their fund size. In the long run, this may reduce the supply of venture capital to VC-backed companies in the US and generate negative real effects on the growth of high-potential entrepreneurial businesses.

5.4 Discussion of Additional Effects

As an important ruling, *Trados* has challenged the status-quo of VC investing in many aspects. Although not the focus of this paper, other potential effects are briefly discussed as follows.

Independent directors. To better manage the sale process, VC-backed companies may have incentives to form independent committees of directors or seek disinter-

[35]Figure B.4 shows the time-series of aggregate venture capital fundraising for VC firms located in United States and their international peers covered in the Preqin database. In terms of the raw fundraising amount, we observe a slower growth in the US after *Trados*.

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ested shareholder approval of exit transactions. By doing so, they seek to sanitize conflicts of interests and thereby ensure that courts do not second-guess the board's decision to enter into a given transaction. Yet, under the *Trados Doctrine*, it may prove practically hard to recruit fully independent directors. On the one hand, the *Trados* ruling held that VC-backed companies' directors who receive bonus payments in connection with a sale under management incentive plans or other compensation arrangements with the acquirers could not be regarded as truly independent. These payments, however, are largely customary in VC-backed companies, because they play a crucial role in propitiating a quick sale of the company. On the other hand, the *Trados* court decision affirmed that seemingly-independent directors have a conflict of interests even if "informal relationships" with venture capital funds exist.

Allocations to common shareholders. There is consensus that the *Trados* ruling "makes it harder for a venture capitalist in control to realize on its investment whatever the particular case's value posture, thus creating holdup value for the common" (Bratton and Wachter, 2013). Given the litigation risk created by the *Trados* Doctrine, boards may favor allocations to common holders beyond their baseline entitlements. Perceiving that common shares have some meaningful potential value or that litigation risk is concrete, a board might condition a M&A deal on VCs being willing to sacrifice some liquidation preference value to grant a modest payment to common shareholders. Although allocations to common shareholders have long been observed in Silicon Valley (Broughman and Fried, 2010), it is possible that *Trados* may expand the room for renegotiation so that common shareholders claim a side-payment in exchange for relinquishing the option to sue.

6 Conclusion

This paper makes one of the first attempts to empirically study corporate law's implications for the board's decision-making in the sale of VC-backed companies. As VC

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funds move closer to the end of their conventional lifespan, they experience mounting liquidity pressure. The board, typically controlled by the VC funds, not only has a fiduciary duty to the VC-backed start-up, but is also subject to analogous fiduciary duties to VCs. When interests diverge among shareholders of the VC-backed start-up, the board faces conflicting fiduciary duties. Such conflicts are especially evident in VC exits by acquisitions. We find that maturing VC funds tend to carry out fire sales that satisfy VCs' liquidation preferences but sacrifice common shareholders' interests. These sales come with (i) a substantially lower sale price; (ii) a greater probability of being acquired by industry outsiders; (iii) a positive abnormal return for acquirers. Such sales leave the VC-affiliated board with conflicting fiduciary duties.

Leveraging the Delaware Court of Chancery's ruling of *In re Trados* in 2013, which established the landmark legal precedent of prioritizing the board's fiduciary duties to common shareholders, we find that maturing VC funds are less likely to exit through forced sales and distribute cash to their investors less timely due to increased litigation risks. However, VCs experience more difficult fundraising at the same time, highlighting the potential costs of moving from a preferred-favoring regime to a common-favoring one. Overall, the evidence points to the difficult trade-offs in contemporary corporate law-making and has important implications for optimal fiduciary duty design in the presence of inter-shareholder conflicts that prevail in VC-backed start-ups due to complicated financial structures and contractual terms. These companies are fundamentally different from public or closely-held private corporations, which have a homogeneous shareholder base and fit in well with existing corporate law, which offers relatively little flexibility. Therefore, our paper informs the existing debate between the costs and benefits of more flexible corporate law that allows for tailored corporate governance solutions.

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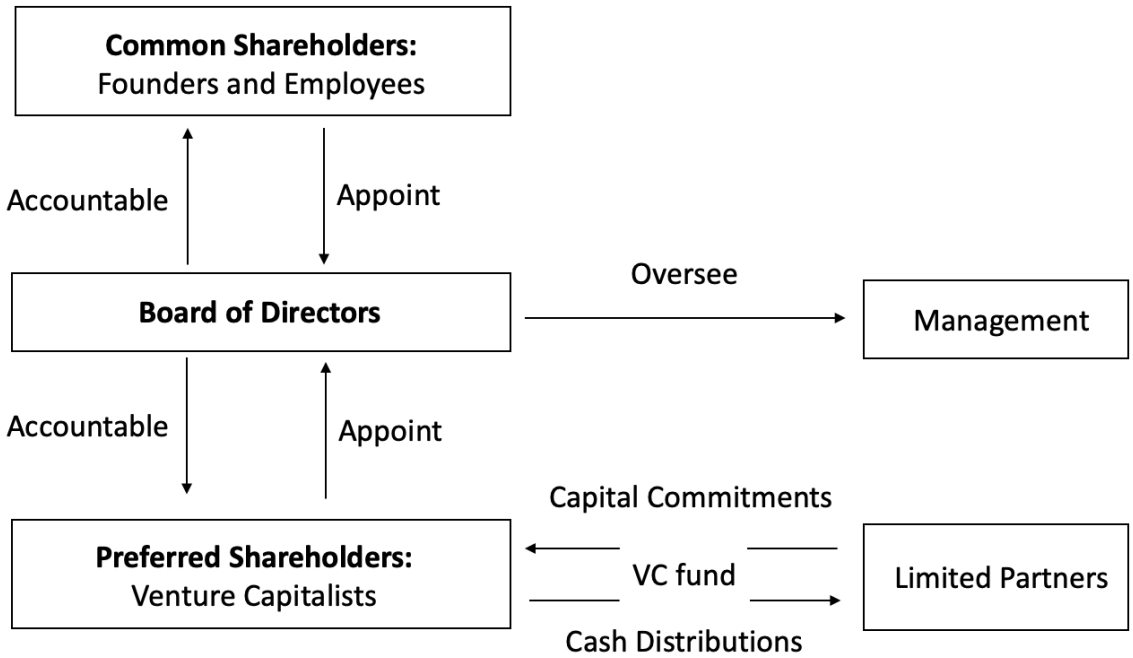

Figure 1: Dual Roles of VC-appointed Board Members

This figure shows the dual role of VCs and the board members they appoint. On the one hand, these board members have powerful financial incentives as well as the legal obligation at the VC fund level to maximize value for the ultimate investors in the VC fund, which typically invests through convertible preferred shares with liquidation preferences in the portfolio companies. On the other hand, the VC-backed company's board in its entirety is under the legal duty to maximize the value of the corporation for the benefit of its common shareholders.

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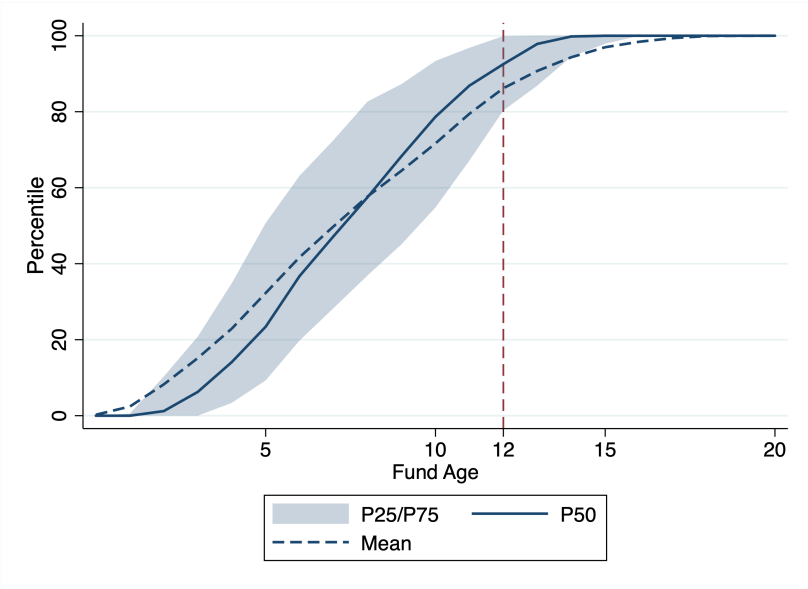

Figure 2: Cumulative Cash Distributions by VC Fund Age

This figure presents the quartiles and mean of cumulative cash distributions in percentage of total cash distributions as of December 31, 2019 by VC fund age. The sample consists of VC funds raised between 1995 and 2005 so that each fund has at least 15 years to return cash back to its LPs. The shaded area shows the range between the 25-th and 75-th percentile. The red vertical dashed line indicates the year when the VC fund becomes 12-year old.

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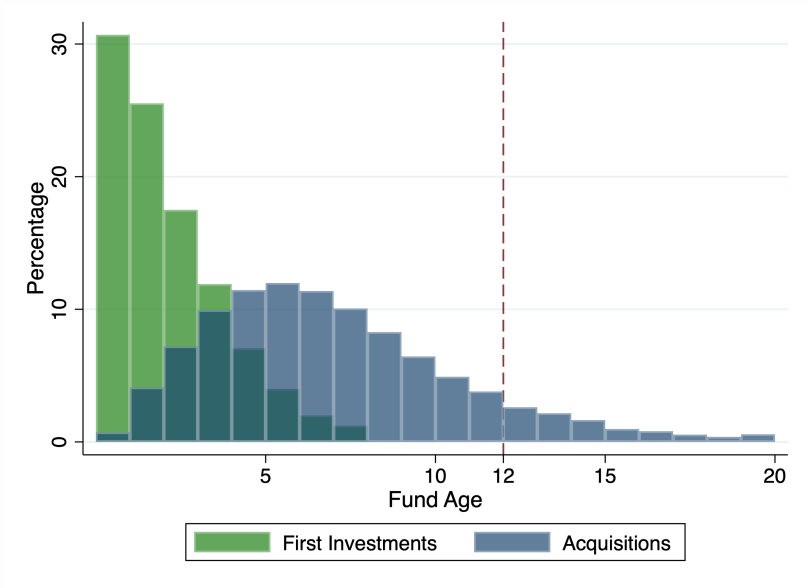

Figure 3: Distribution of VC Fund Age at First Investments and Acquisitions

This figure displays the distribution of fund age in years when the VC fund invests in each portfolio company for the first time and when the VC fund exits through acquisitions. The sample consists of VC funds investing in companies that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. The red vertical dashed line indicates the year when the VC fund becomes 12-year old.

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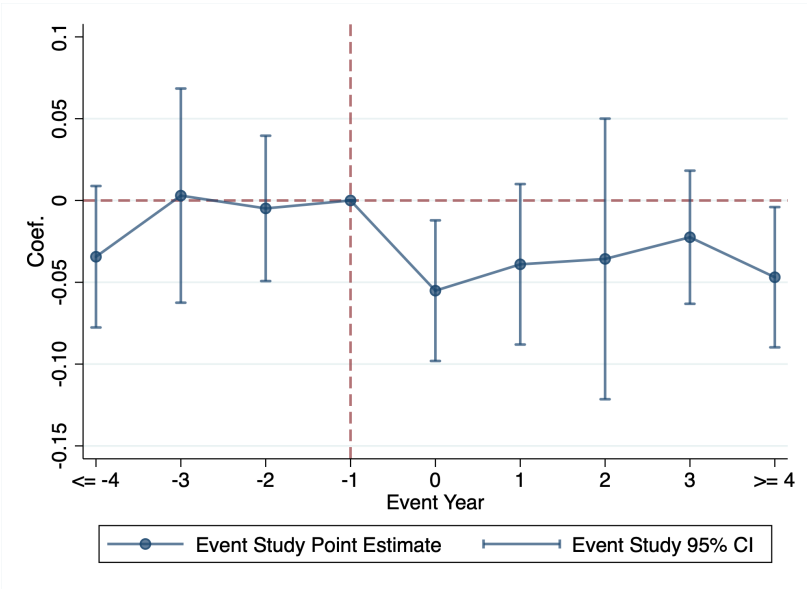

Figure 4: Event-Study Coefficient Estimates on Acquisition

For *Acquisition*, this figure displays the annual event-study coefficient estimates based on *Forced[-1, +1]* and associated two-tailed 95% confidence intervals of the difference between the treatment and control group during 1995 and 2020. The coefficient in 2012 (t = -1) is normalized to zero and the red vertical dashed line indicates the base year of 2012, the year before the Delaware Court's final decision of the *Trados* case. The sample consists of VC-backed companies that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. *Acquisition* is an indicator variable equal to one if the VC-backed company is acquired and zero otherwise. The regression model is estimated with VC firm, company headquarter state by year and company industry by year fixed effects. Standard errors are two-way clustered at the VC fund and company headquarter state level.

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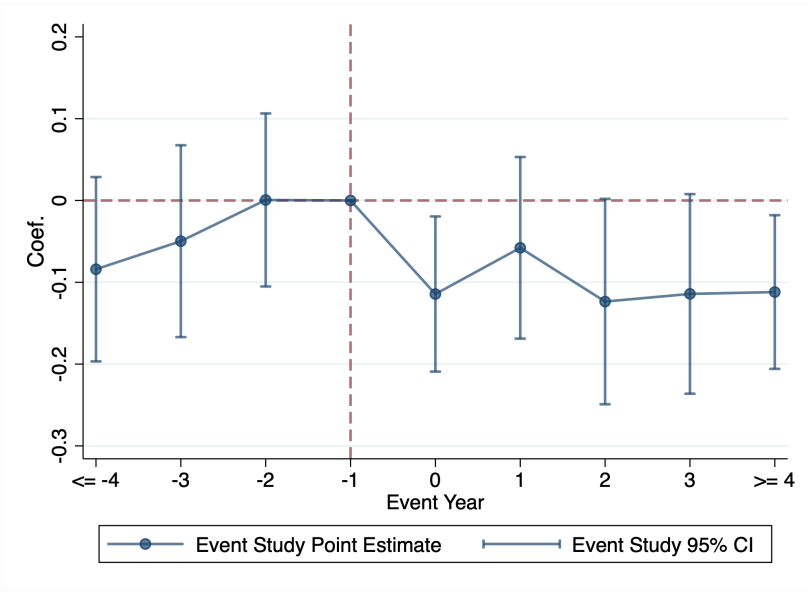

Figure 5: Event-Study Coefficient Estimates on Cash Distribution

For *Cash Distribution*, this figure displays the annual event-study coefficient estimates based on *Forced[-1, +1]* and associated two-tailed 95% confidence intervals of the difference between the treatment and control group during 1995 and 2019. The coefficient in 2012 (t = -1) is normalized to zero and the red vertical dashed line indicates the base year of 2012, the year before the Delaware Court's final decision of the *Trados* case. The sample consists of US VC funds raised during the period 1995-2012. *Cash Distribution* is an indicator variable equal to one if the VC fund makes cash distributions to LPs in a given year, and zero otherwise. The regression model is estimated with VC fund, year and vintage year fixed effects. Standard errors are clustered at the VC fund level.

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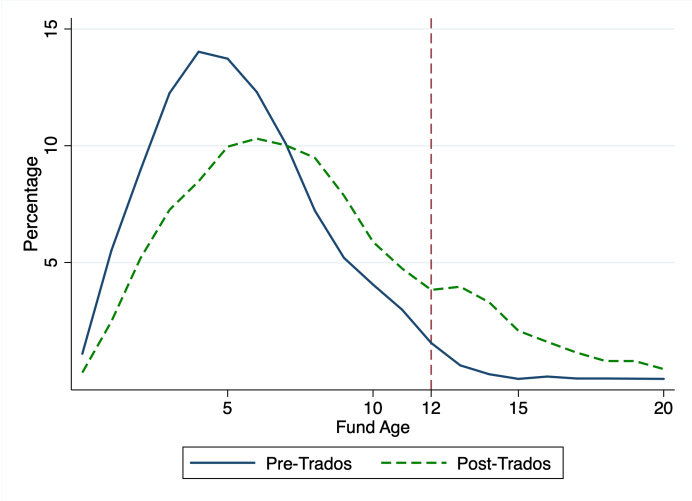
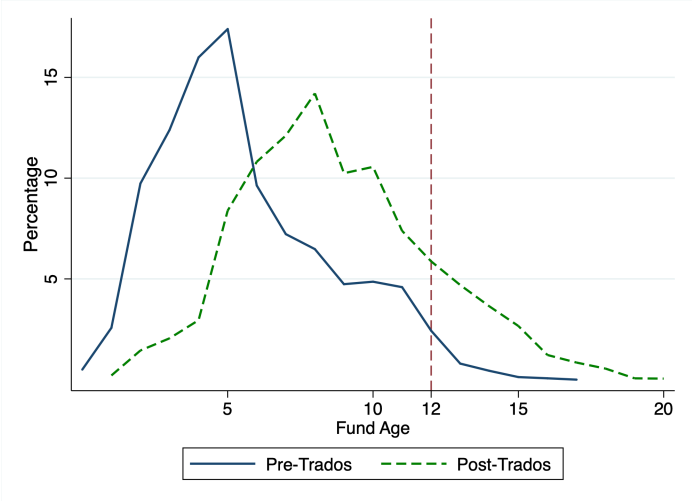


(a) Acquisitions



(b) Cash Distributions

Figure 6: Distribution of VC Fund Age at Acquisitions and Cash Distributions

This figure shows the distribution of VC fund age at acquisitions and cash distributions for the pre- and post-*Trados* sample. The sample in Panel (a) consists of VC funds investing in companies that raised their first financing round during the period 1995-2012 and are acquired as of December 31, 2020. The fund age is equally weighted for each VC fund. The sample in Panel (b) consists of US VC funds raised between the period 1995-2012. The fund age is weighted by the amount of cash distributions. The red vertical dashed line indicates the year when the VC fund becomes 12-year old.

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Table 1: Summary Statistics

This table reports the summary statistics of the major variables in our analyses. For Panel A, the sample consists of VC-backed companies that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. For Panel B and C, the sample consists of VC funds that invest in the sample of VC-backed companies. For Panel D, the sample consists of US VC funds raised during the period 1995-2012. Detailed variable definitions are provided in Appendix A.

	Mean	Std.	p10	p25	p50	p75	p90	N
Panel A: Deal Level								
Value of Transaction ($ MIL)	219.83	369.68	10.00	31.00	99.66	262.50	500.00	1325
Deal Multiple	7.02	10.78	0.40	1.30	3.80	8.20	15.70	1325
Remote Industry	0.23	0.42	0.00	0.00	0.00	0.00	1.00	3836
Financial Acquirer	0.09	0.28	0.00	0.00	0.00	0.00	0.00	3836
Sales (Trailing)($ MIL)	8.49	15.32	0.47	0.98	2.34	8.70	22.50	1674
Sales (Forward-Looking)($ MIL)	9.19	20.79	0.45	0.93	2.06	7.82	21.28	1085
Total Equity Raised ($ MIL)	34.52	40.49	3.80	9.00	20.88	44.30	80.75	3836
Number of Financing Rounds	3.24	2.00	1.00	2.00	3.00	4.00	6.00	3836
Number of Investors	5.15	3.34	2.00	3.00	4.00	7.00	10.00	3836
CAR[-5, +5] (CAPM)	-0.29	8.09	-9.04	-4.09	-0.24	3.71	8.45	1406
CAR[-5, +5] (FF3)	-0.23	8.00	-9.25	-3.89	-0.24	3.65	8.54	1406
Total Assets	23.54	42.12	0.18	0.67	3.35	26.81	84.35	1406
Market Value	40.95	71.26	0.36	1.36	6.77	39.55	146.79	1406
Tobin's Q	2.91	2.20	1.25	1.62	2.24	3.38	5.17	1406
Leverage Ratio	0.14	0.14	0.00	0.00	0.11	0.22	0.34	1406
OCF/Total Assets	0.11	0.09	0.01	0.07	0.12	0.17	0.21	1406
ROA	0.04	0.13	-0.09	0.01	0.06	0.11	0.15	1406
All Cash	0.31	0.46	0.00	0.00	0.00	1.00	1.00	1406
Panel B: Company-VC Pair Level								
Forced [-1, +1]	0.09	0.28	0.00	0.00	0.00	0.00	0.00	10414
Forced [-2, +2]	0.15	0.36	0.00	0.00	0.00	0.00	1.00	10414
Forced [-3, +3]	0.22	0.42	0.00	0.00	0.00	0.00	1.00	10414
First Fund	0.04	0.20	0.00	0.00	0.00	0.00	0.00	10414
VC Firm IPO Ratio	0.07	0.08	0.00	0.00	0.05	0.11	0.18	10414
Total Equity Invested ($ MIL)	7.01	7.20	1.00	2.33	4.83	9.08	15.60	10414
Panel C: Company-VC-Year Level								
Acquisition	0.17	0.38	0.00	0.00	0.00	0.00	1.00	65716
Trados	0.30	0.46	0.00	0.00	0.00	1.00	1.00	65716
DE Incorporated	0.76	0.43	0.00	1.00	1.00	1.00	1.00	33464
Fund of Funds	0.48	0.50	0.00	0.00	0.00	1.00	1.00	54461
Panel D: VC-Year Level								
Forced [-1, +1]	0.14	0.35	0.00	0.00	0.00	0.00	1.00	10745
Forced [-2, +2]	0.23	0.42	0.00	0.00	0.00	0.00	1.00	10745
Forced [-3, +3]	0.32	0.47	0.00	0.00	0.00	1.00	1.00	10745
Cash Distribution	0.52	0.50	0.00	0.00	1.00	1.00	1.00	10745
Cash Distribution Amount (%)	0.07	0.13	0.00	0.00	0.00	0.08	0.21	10745
Trados	0.42	0.49	0.00	0.00	0.00	1.00	1.00	10745
FOF	0.49	0.50	0.00	0.00	0.00	1.00	1.00	10745

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Table 2: Fire Sale Discount

This table shows the value discount in forced sales. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company pair. *Ln(Deal Value)* is the natural logarithm of the acquisition deal value in USD MIL. *Deal Multiple* is the acquisition deal value to the total equity raised by the VC-backed company. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Ln(Deal Value)			Deal Multiple		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.371***			-1.611***		
	[0.087]			[0.409]		
Forced [-2, +2]		-0.185**			-0.916**	
		[0.071]			[0.362]	
Forced [-3, +3]			-0.105			-0.689**
			[0.070]			[0.326]
First Fund	0.006	-0.016	-0.017	0.871	0.766	0.739
	[0.396]	[0.385]	[0.385]	[1.847]	[1.836]	[1.841]
VC Firm IPO Ratio	-0.342	-0.343	-0.334	-2.603	-2.610	-2.559
	[0.735]	[0.726]	[0.725]	[2.910]	[2.857]	[2.857]
Ln(Total Equity Invested)	0.016	0.017	0.019	0.374**	0.377**	0.385**
	[0.041]	[0.042]	[0.043]	[0.168]	[0.173]	[0.174]
Ln(Total Equity Raised)	0.754***	0.752***	0.749***	-1.510***	-1.514***	-1.530***
	[0.066]	[0.066]	[0.066]	[0.186]	[0.186]	[0.184]
Ln(Number of Financing Rounds)	-0.163	-0.159	-0.155	-1.329***	-1.312***	-1.294***
	[0.115]	[0.115]	[0.115]	[0.398]	[0.404]	[0.406]
Ln(Number of Investors)	-0.259**	-0.260**	-0.260**	-0.570	-0.570	-0.565
	[0.098]	[0.099]	[0.101]	[0.471]	[0.475]	[0.479]
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3576	3576	3576	3576	3576	3576
Adjusted R^2	0.301	0.299	0.299	0.280	0.279	0.279

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Table 3: Acquirer Industries

This table reports results from OLS regressions on acquirer industry indicators. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company pair. *Remote Industry* is an indicator variable equal to one if the acquirer is not in the top 10 related 3-digit SIC industries of the VC-backed target based on the text-based industry classification by Hoberg and Phillips (2010, 2016), and zero otherwise. *Financial Acquirer* is an indicator variable equal to one if the acquirer is a financial firm, and zero otherwise. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Remote Industry			Financial Acquirer		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	0.050***			0.035***		
	[0.018]			[0.011]		
Forced [-2, +2]		0.046***			0.032***	
		[0.012]			[0.008]	
Forced [-3, +3]			0.041***			0.033***
			[0.013]			[0.009]
First Fund	-0.025	-0.023	-0.021	0.014	0.015	0.017
	[0.046]	[0.046]	[0.047]	[0.041]	[0.041]	[0.043]
VC Firm IPO Ratio	-0.093	-0.096	-0.098	-0.021	-0.023	-0.026
	[0.081]	[0.078]	[0.077]	[0.046]	[0.046]	[0.046]
Ln(Total Equity Invested)	-0.003	-0.003	-0.003	0.007**	0.007**	0.007**
	[0.004]	[0.004]	[0.004]	[0.003]	[0.003]	[0.003]
Ln(Total Equity Raised)	0.014*	0.014*	0.013*	0.009*	0.009*	0.009
	[0.008]	[0.008]	[0.008]	[0.005]	[0.005]	[0.005]
Ln(Number of Financing Rounds)	-0.035*	-0.035*	-0.035*	-0.020**	-0.020**	-0.020**
	[0.019]	[0.019]	[0.019]	[0.008]	[0.008]	[0.008]
Ln(Number of Investors)	-0.009	-0.009	-0.009	0.007	0.007	0.007
	[0.009]	[0.009]	[0.009]	[0.005]	[0.006]	[0.005]
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	9971	9971	9971	9971	9971	9971
Adjusted R^2	0.168	0.169	0.169	0.164	0.164	0.164

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Table 4: Acquirer Announcement Returns

This table shows the announcement abnormal stock returns of public acquirers in forced sales of VC-backed companies. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired by public firms as of December 31, 2020. A unit of observation is a fund-company pair. *CAR [-5, +5] (CAPM/FF3)* is the acquirers' cumulative abnormal returns over a balanced window of 10 days around the acquisition announcement using the CAPM/Fama-French 3 factor model. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	CAR [-5, +5] (CAPM)			CAR [-5, +5] (FF3)		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	2.222***			1.912***		
	[0.701]			[0.574]		
Forced [-2, +2]		1.199***			0.816**	
		[0.321]			[0.386]	
Forced [-3, +3]			0.926**			0.645
			[0.398]			[0.438]
First Fund	0.608	0.626	0.670	0.624	0.624	0.656
	[1.764]	[1.734]	[1.764]	[1.582]	[1.559]	[1.571]
VC Firm IPO Ratio	6.591***	6.687***	6.594***	6.910***	7.069***	6.997***
	[1.739]	[1.710]	[1.719]	[2.096]	[2.169]	[2.199]
Ln(Total Equity Invested)	0.433*	0.434*	0.436*	0.456*	0.451*	0.453*
	[0.243]	[0.244]	[0.237]	[0.253]	[0.254]	[0.247]
Ln(Total Equity Raised)	-0.984**	-0.972**	-0.974**	-0.962**	-0.946**	-0.948**
	[0.385]	[0.392]	[0.392]	[0.405]	[0.414]	[0.414]
Ln(Number of Financing Rounds)	-0.607	-0.609	-0.627	-0.755	-0.759	-0.771
	[0.502]	[0.499]	[0.495]	[0.482]	[0.482]	[0.484]
Ln(Number of Investors)	0.067	0.059	0.070	0.195	0.191	0.199
	[0.272]	[0.263]	[0.269]	[0.273]	[0.267]	[0.271]
Acquirer Controls	✓	✓	✓	✓	✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3644	3644	3644	3644	3644	3644
Adjusted R^2	0.063	0.061	0.061	0.072	0.070	0.070

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Table 5: Fire Sales - Controlling for Sales

This table shows robustness checks of the baseline results by controlling for sales collected from the Your-economy Time Series (YTS). The matched sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and have been acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

(a) Panel A: Controlling for Trailing Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.382***	-1.666**	0.059	0.036**	1.988***	1.299*
	[0.123]	[0.599]	[0.038]	[0.015]	[0.573]	[0.712]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	1467	1467	4373	4373	1460	1460
Adjusted R^2	0.354	0.348	0.198	0.152	0.145	0.149

(b) Panel B: Controlling for Forward-Looking Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.414**	-2.067*	0.054	0.088*	2.194	2.441
	[0.153]	[1.153]	[0.039]	[0.043]	[2.123]	[2.567]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	864	864	2546	2546	800	800
Adjusted R^2	0.343	0.283	0.200	0.192	0.117	0.121

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Table 6: Fire Sales and Industry Conditions

This table shows the interaction between fire sales and industry conditions. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company pair. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. *Cold Market* is an indicator that equals one if the M&A transaction volume is in the lowest quartile during the sample period for each industry, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.282***	-1.456***	0.046**	0.029***	2.142***	1.838***
	[0.068]	[0.431]	[0.017]	[0.011]	[0.634]	[0.523]
Forced [-1, +1] x Cold Market	-1.305***	-2.733	0.099	0.139*	4.714***	4.512***
	[0.306]	[2.207]	[0.094]	[0.074]	[1.587]	[1.328]
Cold Market	0.125	1.331	-0.037	0.029*	2.574***	2.727***
	[0.150]	[1.795]	[0.043]	[0.017]	[0.797]	[0.821]
First Fund	0.013	0.998	-0.026	0.014	0.720	0.743
	[0.383]	[1.989]	[0.047]	[0.041]	[1.695]	[1.512]
VC Firm IPO Ratio	-0.315	-2.510	-0.094	-0.018	6.649***	6.973***
	[0.740]	[2.982]	[0.083]	[0.046]	[1.777]	[2.123]
Ln(Total Equity Invested)	0.021	0.390**	-0.003	0.007**	0.434*	0.458*
	[0.044]	[0.168]	[0.004]	[0.003]	[0.242]	[0.255]
Ln(Total Equity Raised)	0.750***	-1.524***	0.014*	0.010*	-0.967**	-0.946**
	[0.067]	[0.190]	[0.008]	[0.005]	[0.389]	[0.409]
Ln(Number of Financing Rounds)	-0.172	-1.370***	-0.035*	-0.020**	-0.639	-0.789
	[0.119]	[0.419]	[0.019]	[0.008]	[0.485]	[0.477]
Ln(Number of Investors)	-0.246**	-0.505	-0.010	0.007	0.136	0.270
	[0.106]	[0.493]	[0.009]	[0.005]	[0.276]	[0.272]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3576	3576	9971	9971	3644	3644
Adjusted R^2	0.303	0.281	0.168	0.165	0.067	0.077

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Table 7: *Trados* and Probability of Exits through Acquisitions

This table reports the results from OLS regressions on the effect of the *Trados* court ruling on probability of VC exits through acquisitions. The panel sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company year. *Acquisition* is an indicator variable equal to one if the VC-backed company is acquired in a given year, and zero otherwise. *Trados* is an indicator variable equal to one if the year is equal to or greater than 2013, the year in which the Delaware Court made the final decision on the *Trados* case, and zero otherwise. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Acquisition					
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	0.048***	0.043***				
	[0.010]	[0.010]				
Forced [-1, +1] x Trados	-0.035***	-0.032***				
	[0.013]	[0.012]				
Forced [-2, +2]			0.057***	0.051***		
			[0.007]	[0.007]		
Forced [-2, +2] x Trados			-0.028**	-0.029**		
			[0.011]	[0.012]		
Forced [-3, +3]					0.067***	0.063***
					[0.007]	[0.007]
Forced [-3, +3] x Trados					-0.023*	-0.022
					[0.013]	[0.014]
Company & VC Controls		✓		✓		✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	65659	61682	65659	61682	65659	61682
Adjusted R^2	0.083	0.087	0.083	0.088	0.084	0.089

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Table 8: *Trados* and Probability of Exits through Acquisitions - DE vs. non-DE

This table shows the heterogeneous treatment effect of the *Trados* court ruling on probability of VC exits through acquisitions based on companies' incorporation states. The panel sample consists of 50% of VC-backed companies randomly selected from those that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company year. *Acquisition* is an indicator variable equal to one if the VC-backed company is acquired in a given year, and zero otherwise. *Trados* is an indicator variable equal to one if the year is equal to or greater than 2013, the year in which the Delaware Court made the final decision on the *Trados* case, and zero otherwise. *DE* is an indicator variable equal to one if the VC-backed company is incorporated in Delaware, and zero otherwise. The incorporation state is manually collected from the Delaware Department of State Division of Corporations. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Acquisition					
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.036	-0.054				
	[0.032]	[0.033]				
Forced [-1, +1] x Trados	0.054	0.070*				
	[0.037]	[0.036]				
Forced [-1, +1] x Trados x DE	-0.143**	-0.166***				
	[0.054]	[0.053]				
Forced [-2, +2]			0.011	-0.015		
			[0.033]	[0.038]		
Forced [-2, +2] x Trados			0.014	0.034		
			[0.038]	[0.040]		
Forced [-2, +2] x Trados x DE			-0.074*	-0.100**		
			[0.043]	[0.044]		
Forced [-3, +3]					0.038	0.022
					[0.031]	[0.036]
Forced [-3, +3] x Trados					-0.020	-0.010
					[0.031]	[0.033]
Forced [-3, +3] x Trados x DE					-0.004	-0.016
					[0.034]	[0.032]
Company & VC Controls		✓		✓		✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	33434	31361	33434	31361	33434	31361
Adjusted R^2	0.082	0.086	0.082	0.086	0.083	0.087

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Table 9: *Trados* and Probability of Exits through Acquisitions - Heterogeneity

This table shows the heterogeneous treatment effect of the *Trados* court ruling on probability of VC exits through acquisitions. The panel sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company year. *Acquisition* is an indicator variable equal to one if the VC-backed company is acquired in a given year, and zero otherwise. *Trados* is an indicator variable equal to one if the year is equal to or greater than 2013, the year in which the Delaware Court made the final decision on the *Trados* case, and zero otherwise. *FOF* is an indicator variable equal to one if the fraction of LPs that are fund of funds (FOF) managers is greater than the sample median, and zero otherwise. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Acquisition					
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	0.055***	0.048***				
	[0.014]	[0.014]				
Forced [-1, +1] x Trados	-0.001	0.006				
	[0.024]	[0.026]				
Forced [-1, +1] x Trados x FOF	-0.072**	-0.085**				
	[0.030]	[0.032]				
Forced [-2, +2]			0.065***	0.056***		
			[0.010]	[0.010]		
Forced [-2, +2] x Trados			-0.001	0.004		
			[0.015]	[0.021]		
Forced [-2, +2] x Trados x FOF			-0.047**	-0.058***		
			[0.018]	[0.021]		
Forced [-3, +3]					0.064***	0.056***
					[0.009]	[0.011]
Forced [-3, +3] x Trados					0.012	0.020
					[0.019]	[0.023]
Forced [-3, +3] x Trados x FOF					-0.071***	-0.080***
					[0.018]	[0.019]
Company & VC Controls		✓		✓		✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	54408	51305	54408	51305	54408	51305
Adjusted R^2	0.076	0.080	0.076	0.080	0.078	0.081

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Table 10: *Trados* and VC Fund Cash Distributions

This table shows the effect of the *Trados* court ruling on VC fund cash distributions. The panel sample consists of US VC funds raised during the period 1995-2012. A unit of observation is a fund year. *Cash Distribution* is an indicator variable equal to one if the VC fund makes cash distributions to LPs in a given year, and zero otherwise. *Cash Distribution Amt (%)* is the cash distribution amount returned to LPs as the percent of fund size in a given year. *Trados* is an indicator variable equal to one if the year is equal to or greater than 2013, the year in which the Delaware Court made the final decision on the *Trados* case, and zero otherwise. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are clustered at the VC fund level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Cash Distribution			Cash Distribution Amt (%)		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	0.156***			0.021***		
	[0.022]			[0.005]		
Forced [-1, +1] x Trados	-0.072**			-0.020**		
	[0.029]			[0.008]		
Forced [-2, +2]		0.160***			0.030***	
		[0.022]			[0.005]	
Forced [-2, +2] x Trados		-0.067**			-0.031***	
		[0.028]			[0.008]	
Forced [-3, +3]			0.195***			0.038***
			[0.021]			[0.005]
Forced [-3, +3] x Trados			-0.102***			-0.042***
			[0.027]			[0.008]
VC Fund FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Vintage FE	✓	✓	✓	✓	✓	✓
Observations	10745	10745	10745	10745	10745	10745
Adjusted R^2	0.201	0.204	0.209	0.121	0.122	0.124

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Table 11: *Trados* and VC Fund Cash Distributions and Trados - Heterogeneity

This table shows the heterogeneous treatment effect of the *Trados* court ruling on time to acquisitions. The panel sample consists of US VC funds raised during the period 1995-2012. A unit of observation is a fund year. *Cash Distribution* is an indicator variable equal to one if the VC fund makes cash distributions to LPs in a given year, and zero otherwise. *Cash Distribution Amt (%)* is the cash distribution amount returned to LPs as the percent of fund size in a given year. *Trados* is an indicator variable equal to one if the year is equal to or greater than 2013, the year in which the Delaware Court made the final decision on the *Trados* case, and zero otherwise. *FOF* is an indicator variable equal to one if the fraction of LPs that are fund of funds (FOF) managers is greater than the sample median, and zero otherwise. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are clustered at the VC fund level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Cash Distribution			Cash Distribution Amt (%)		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	0.144***			0.010		
	[0.030]			[0.007]		
Forced [-1, +1] x Trados	-0.049			-0.009		
	[0.041]			[0.012]		
Forced [-1, +1] x Trados x FOF	-0.048			-0.025		
	[0.058]			[0.017]		
Forced [-2, +2]		0.146***			0.018**	
		[0.027]			[0.008]	
Forced [-2, +2] x Trados		-0.059			-0.015	
		[0.038]			[0.011]	
Forced [-2, +2] x Trados x FOF		-0.024			-0.034**	
		[0.053]			[0.016]	
Forced [-3, +3]			0.173***			0.024***
			[0.027]			[0.008]
Forced [-3, +3] x Trados			-0.095**			-0.024**
			[0.038]			[0.012]
Forced [-3, +3] x Trados x FOF			-0.022			-0.037**
			[0.051]			[0.016]
VC Fund FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Vintage FE	✓	✓	✓	✓	✓	✓
Observations	10745	10745	10745	10745	10745	10745
Adjusted R^2	0.202	0.205	0.209	0.121	0.123	0.126

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Table 12: Ex-Ante Effects on VC Fundraising

This table shows the ex-ante effects of the *Trados* court ruling on VC fundraising. The sample consists of global VC funds raised between 1995 and 2019. A unit of observation is a VC fund. Columns 1, 3 and 5 use the entire sample of global VC funds. Columns 2, 4 and 6 use the subsample of funds located in countries with more than 10 VC funds. *Foreign LPs* is the percent of LPs that are foreign investors in the VC fund. *Foreign LP Commitments* is the percent of capital commitments that are provided by foreign LPs. *Ln(Fund Size)* is the natural logarithm of the VC fund size in USD MIL. *Trados* is an indicator variable equal to one if the year is equal to or greater than 2013, the year in which the Delaware Court made the final decision on the *Trados* case, and zero otherwise. *US* is an indicator variable equal to one if the VC fund is raised by a US VC firm, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are clustered at the VC firm country level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Foreign LPs		Foreign LP Commitments		Ln(Fund Size)	
	All	Major	All	Major	All	Major
	(1)	(2)	(3)	(4)	(5)	(6)
US x Trados	-0.044***	-0.053***	-0.045**	-0.052**	-0.113**	-0.095**
	[0.016]	[0.017]	[0.021]	[0.023]	[0.047]	[0.045]
VC Firm FE	✓	✓	✓	✓	✓	✓
Vintage FE	✓	✓	✓	✓	✓	✓
Observations	3933	3814	3756	3643	3597	3488
Adjusted R^2	0.770	0.761	0.727	0.717	0.742	0.739

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Internet Appendix to "Conflicting Fiduciary Duties and Fire Sales of VC-backed Start-ups"

A Appendix: Variable Definitions

Variable Name	Definition
Forced [-t, +t]	An indicator variable that equals one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise
Ln(Deal Value)	Natural logarithm of the acquisition deal value in USD MIL
Deal Multiple	Acquisition deal value to the total equity raised by the VC-backed company
Remote Industry	An indicator variable that equals one if the acquirer is not in the top 10 connected industries based on the text-based network industries in Hoberg and Phillips (2010, 2016), and zero otherwise
Financial Acquirer	An indicator variable that equals one if the acquirer is a financial firm (two digit SIC code: 60-64 or 67)
CAR [-5, +5] (CAPM/FF3)	The cumulative abnormal stock return of the acquirer five days before and after the acquisition announcement, in which the CAPM/Fama-French 3 factor model is used as the benchmark model
Ln(Total Assets)	Natural logarithm of the acquirer's total assets in USD MIL
Ln(Market Value)	Natural logarithm of the acquirer's market value of equity in USD MIL
Tobin's Q	Acquirer's Tobin's Q defined as market value of common stock + book value of total assets − book value of common equity, all divided by the book value total assets.
Leverage Ratio	Acquirer's leverage ratio defined as total debt to total assets
OCF/Total Assets	Acquirer's operating cash flow to total assets
ROA	Acquirer's return on assets
All Cash	An indicator variable equal to one if the transaction is paid in all cash, and zero otherwise
Cold Market	An indicator variable equal to one if the M&A transaction volume is in the lowest quartile of the 4-digit target SIC industry during the period 1995-2020, and zero otherwise.
Acquisition	An indicator variable that equals one if the VC-backed company is acquired in a given year, and zero otherwise
Cash Distribution	An indicator variable that equals one if the VC fund makes cash distributions to LPs in a given year, and zero otherwise.
Cash Distribution Amt (%)	The cash distribution amount returned to LPs as the percent of fund size in a given year
Trados	An indicator variable that equals one after 2013 (including 2013), the year when the Delaware Court made the final decision on the *Trados* case, and zero otherwise
DE	An indicator variable equal to one if the VC-backed company is incorporated in Delaware, and zero otherwise
FOF	An indicator variable that equals one if the fraction of LPs that are fund of funds (FOF) managers is greater than the sample median, and zero otherwise
First Fund	An indicator variable that equals one if the VC fund is a first fund raised by the VC firm
VC Firm IPO Ratio	The ratio of VC-backed companies that have gone public in a VC firm's portfolio
Ln(Total Equity Invested)	Natural logarithm of total equity in USD MIL invested by the VC fund
Ln(Total Equity Raised)	Natural logarithm of total equity in USD MIL raised by the VC-backed company
Ln(Number of Financing Rounds)	Natural logarithm of total number of financing rounds the VC-backed company has received
Ln(Number of Investors)	Natural logarithm of total number of investors of the VC-bacekd company
Foreign LP	The percent of LPs that are foreign investors in the VC fund
Foreign LP Commitments	The percent of capital commitments that are provided by foreign LPs in the VC fund
Ln(Fund Size)	Natural logarithm of the VC fund size in USD MIL
US	An indicator variable that equals one if the VC fund is raised by a US VC firm, and zero otherwise
Different Industry	An indicator variable that equals one if the acquirer is in a different four-digit SIC industry from acquired VC-backed company, and zero otherwise
Ln(Post-Money Valuation)	Natural logarithm of the post-money valuation in USD MIL in each financing round
Ln(Post-IPO Value)	Natural logarithm of the post-IPO value in USD MIL on the issuance day
IPO Multiple	Post-IPO value to the total equity raised by the VC-backed company
Missing Deal Value	An indicator variable that equals one if the acquisition deal value is missing in the SDC, and zero otherwise
Fund Age Dispersion	The standard deviation of VC fund age within the same syndicate
IPO	An indicator variable that equals one if the VC-backed company goes public in a given year, and zero otherwise

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B Appendix: Additional Figures and Tables

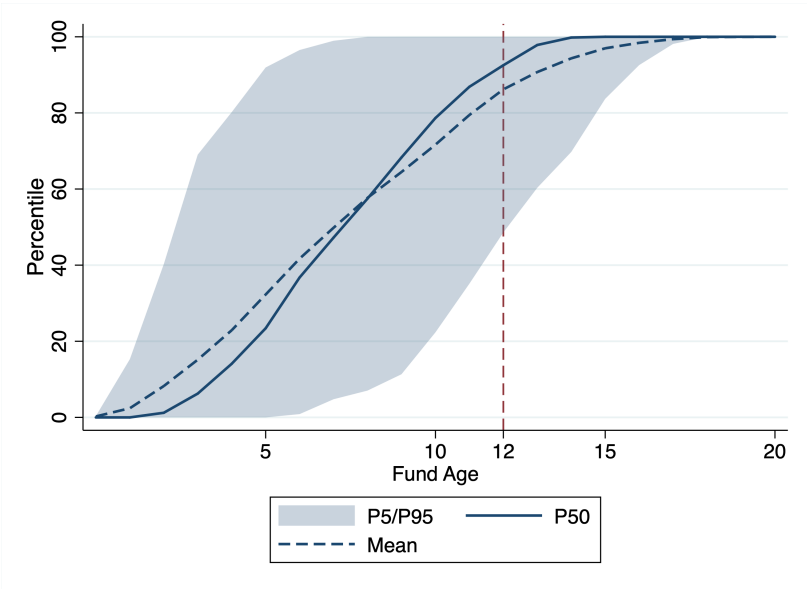

Figure B.1: Cumulative Cash Distributions by VC Fund Age - Tails

This figure presents the 5-th, 50-th and 95-th percentiles and mean of cumulative cash distributions in percentage of total cash distributions as of December 31, 2019 by VC fund age. The sample consists of VC funds raised between 1995 and 2005 so that each fund has at least 15 years to return cash back to its LPs. The shaded area shows the range between the 5-th and 95-th percentile. The red vertical dashed line indicates the year when the VC fund becomes 12-year old.

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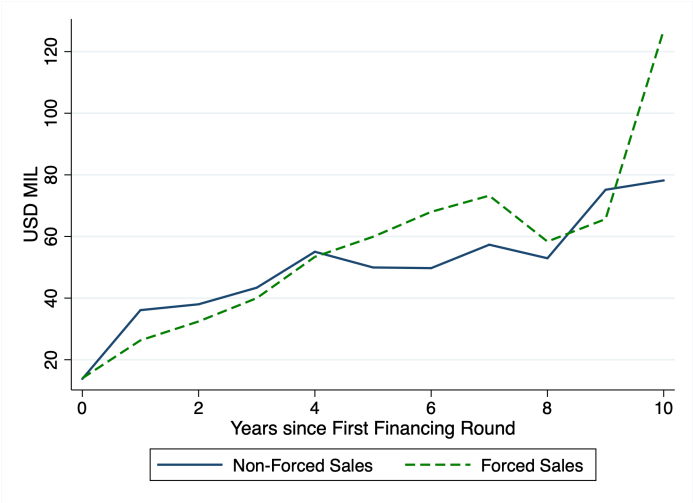
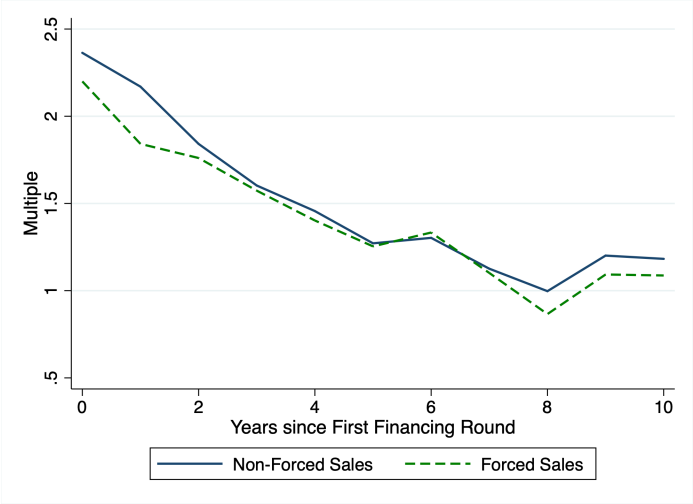


(a) Post-Money Valuation



(b) Post-Money Valuation/Total Equity Raised

Figure B.2: Evolution of Post-Money Valuation

This figure displays the evolution of median post-money valuation of VC-backed companies since their first VC financing round. The sample consists of financing rounds of VC-backed companies that raised their first financing rounds during the period 1995-2012 and are acquired as of December 31, 2020. Forced sales consist of companies invested by VC funds that are 11 - 13 year-old at the acquisition. Non-forced sales consist of companies invested by VC funds that are all younger than 11 year-old at the acquisition.

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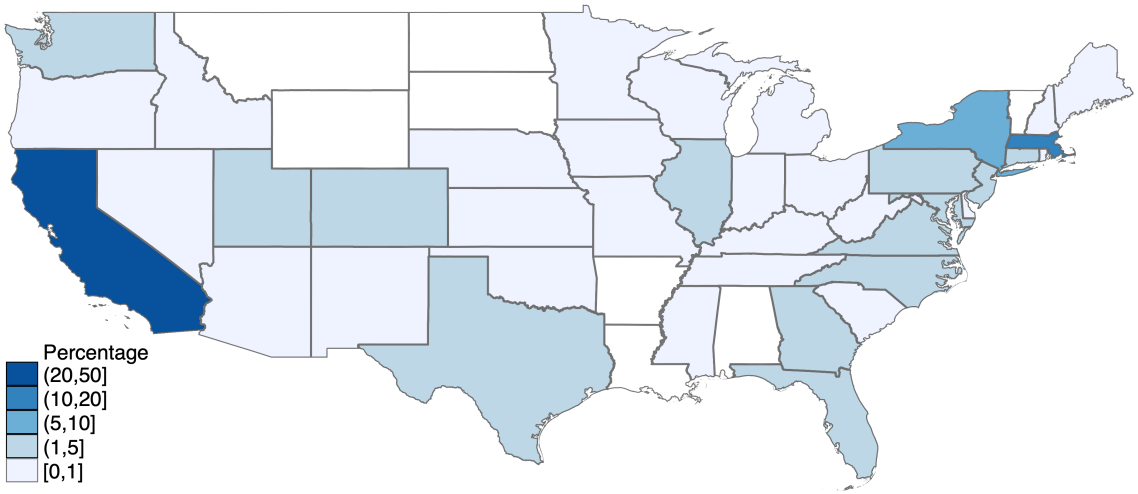
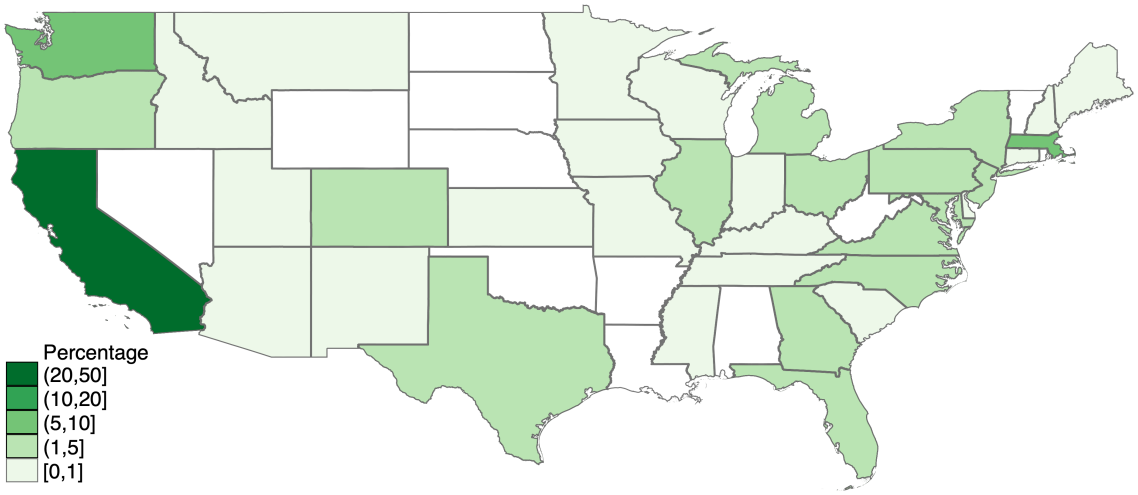


(a) VC-backed Startups Incorporated in Delaware



(b) VC-backed Startups Incorporated outside of Delaware

Figure B.3: Distribution of Companies's Headquarter State

This figure shows the distribution of the headquarter states of Delaware-incorporated (in blue) start-ups and Non-Delaware-incorporated (in green) ones. The sample includes a randomly selected 50% of the start-ups that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. The top 5 headquarter states for Delaware-incorporated companies are CA (46.0%), MA (12.1%), NY (8.1%), TX (4.4%) and WA (3.2%), representing 73.7% of the entire Delaware sample. The top 5 headquarter states for non-Delaware-incorporated companies are CA (47.9%), MA(8.1%), WA (5.0%), NY (4.6%) and TX (4.6%), representing 70.2% of the non-Delaware sample. The incorporation state is manually collected from the Delaware Department of State Division of Corporations.

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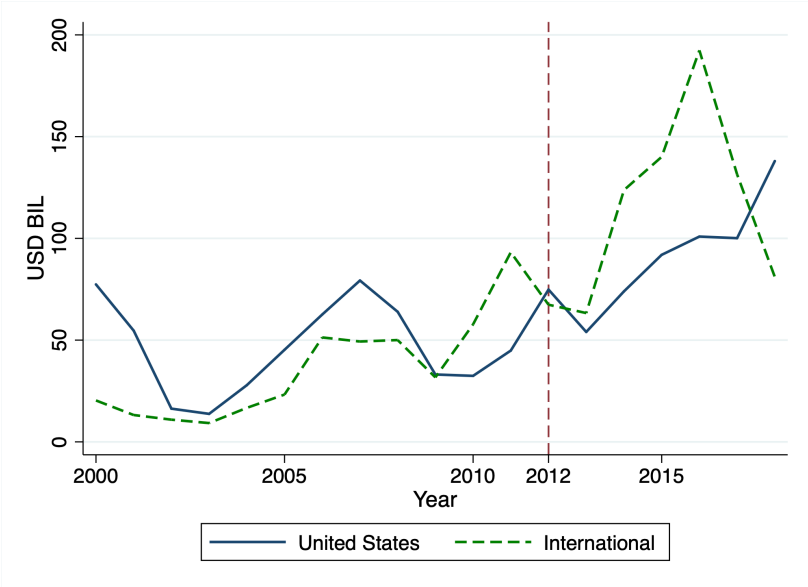

Figure B.4: VC Fundraising Amount

This figure shows the aggregate venture capital fundraising amount in USD BIL for VC firms located in United States and their international peers covered in the Preqin universe. The red vertical dashed line indicates the base year of 2012, the year before the Delaware Court's final decision of the *Trados* case.

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Table B.1: Acquirer Industries - SIC Industry Classification

This table reports results from OLS regressions on acquirer industry indicators. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company pair. *Different Industry* is an indicator variable equal to one if the acquirer is in a different four-digit SIC industry from the VC-backed target, and zero otherwise. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Different Industry		
	(1)	(2)	(3)
Forced [-1, +1]	0.037**		
	[0.015]		
Forced [-2, +2]		0.030**	
		[0.012]	
Forced [-3, +3]			0.022*
			[0.012]
First Fund	-0.036	-0.034	-0.034
	[0.030]	[0.030]	[0.030]
VC Firm IPO Ratio	-0.103	-0.105	-0.104
	[0.152]	[0.150]	[0.149]
Ln(Total Equity Invested)	0.015***	0.015***	0.015***
	[0.005]	[0.005]	[0.005]
Ln(Total Equity Raised)	0.023**	0.022**	0.023**
	[0.010]	[0.010]	[0.010]
Ln(Number of Financing Rounds)	-0.028*	-0.028*	-0.028*
	[0.016]	[0.015]	[0.015]
Ln(Number of Investors)	0.021	0.021	0.021
	[0.028]	[0.028]	[0.028]
VC Firm FE	✓	✓	✓
Company Headquarter State FE	✓	✓	✓
Company Industry FE	✓	✓	✓
Exit Year FE	✓	✓	✓
Observations	9971	9971	9971
Adjusted R^2	0.099	0.099	0.099

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Table B.2: Post-Money Valuation

This table shows the post-money valuation matched from VentureXpert. The matched sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and have been acquired as of December 31, 2020. A unit of observation is a fund-company pair. Column 1-3 restrict the sample to companies that have no-missing acquisition deal value. Column 4-6 restrict the sample to companies with post-money valuation in the past three years before the acquisition. *Ln(Post-Money Valuation)* is the natural logarithm of the post-money valuation in USD MIL in each financing round. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Ln(Post-Money Valuation)					
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.043			-0.093		
	[0.100]			[0.132]		
Forced [-2, +2]		-0.014			-0.044	
		[0.064]			[0.080]	
Forced [-3, +3]			-0.017			-0.007
			[0.046]			[0.076]
First Fund	0.437***	0.440***	0.439***	0.322**	0.322**	0.322**
	[0.076]	[0.081]	[0.083]	[0.142]	[0.143]	[0.150]
VC Firm IPO Ratio	-0.308	-0.305	-0.305	-0.141	-0.134	-0.148
	[0.269]	[0.273]	[0.273]	[0.229]	[0.227]	[0.226]
Ln(Total Equity Invested)	-0.034	-0.034	-0.034	0.007	0.008	0.008
	[0.050]	[0.050]	[0.051]	[0.036]	[0.035]	[0.034]
Ln(Total Equity Raised)	0.844***	0.844***	0.844***	0.872***	0.871***	0.870***
	[0.080]	[0.081]	[0.081]	[0.038]	[0.038]	[0.037]
Ln(Number of Financing Rounds)	-0.475***	-0.474***	-0.474***	-0.393***	-0.393***	-0.394***
	[0.062]	[0.063]	[0.062]	[0.069]	[0.070]	[0.070]
Ln(Number of Investors)	0.041	0.041	0.041	0.146**	0.146**	0.146**
	[0.063]	[0.063]	[0.062]	[0.067]	[0.067]	[0.067]
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	1874	1874	1874	1450	1450	1450
Adjusted R^2	0.435	0.435	0.435	0.603	0.603	0.603

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Table B.3: IPO Valuation

This table shows the post-IPO valuation in IPO deals. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and have gone public as of December 31, 2020. A unit of observation is a fund-company pair. *Ln(IPO Valuation)* is the natural logarithm of the post-IPO valuation in USD MIL on the issuance day. *IPO Multiple* is the post-IPO value to the total equity raised by the VC-backed company. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Ln(Post-IPO Value)			IPO Multiple		
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.007			2.388		
	[0.080]			[1.801]		
Forced [-2, +2]		-0.055			1.568	
		[0.053]			[1.219]	
Forced [-3, +3]			-0.072			1.744*
			[0.044]			[1.007]
First Fund	-0.166**	-0.172**	-0.182**	-1.099	-1.017	-0.787
	[0.060]	[0.063]	[0.067]	[1.369]	[1.402]	[1.431]
VC Firm IPO Ratio	-0.647***	-0.646***	-0.636***	-4.650	-4.591	-4.833
	[0.213]	[0.218]	[0.221]	[3.890]	[3.842]	[3.899]
Ln(Total Equity Invested)	0.030	0.026	0.025	0.138	0.125	0.140
	[0.027]	[0.026]	[0.026]	[0.276]	[0.268]	[0.283]
Ln(Total Equity Raised)	0.546***	0.546***	0.545***	-5.548***	-5.545***	-5.525***
	[0.044]	[0.044]	[0.044]	[0.555]	[0.563]	[0.558]
Ln(Number of Financing Rounds)	-0.178***	-0.175***	-0.173***	-0.163	-0.174	-0.216
	[0.052]	[0.052]	[0.053]	[1.699]	[1.698]	[1.655]
Ln(Number of Investors)	0.080	0.079	0.079	-0.883*	-0.897*	-0.902**
	[0.056]	[0.057]	[0.056]	[0.493]	[0.460]	[0.437]
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	2386	2386	2386	2386	2386	2386
Adjusted R^2	0.717	0.717	0.717	0.350	0.350	0.351

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Table B.4: Restricting to VC Funds in the First Financing Round

This table shows robustness checks of the baseline results by restricting the sample to first-round VC funds of each VC-backed company that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

Panel A: Fire Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.336***	-1.417*	0.058**	0.057***	2.419**	2.157
	[0.092]	[0.731]	[0.023]	[0.014]	[1.168]	[1.324]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	1413	1413	4147	4147	1469	1469
Adjusted R^2	0.312	0.332	0.162	0.175	0.077	0.089

Panel B: *Trados* and Probability of Exits through Acquisitions

	Acquisition			
	(1)	(2)	(3)	(4)
Forced [-1, +1]	0.049***	0.045***	-0.014	-0.034
	[0.011]	[0.012]	[0.032]	[0.032]
Forced [-1, +1] x Trados	-0.063***	-0.063***	-0.016	0.018
	[0.015]	[0.015]	[0.054]	[0.055]
Forced [-1, +1] x Trados x DE			-0.051	-0.102
			[0.069]	[0.073]
Company & VC Controls		✓		✓
VC Firm FE	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	30666	28041	15715	14275
Adjusted R^2	0.062	0.064	0.055	0.058

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Table B.5: Excluding VC Funds with Small Investments

This table shows robustness checks of the baseline results by excluding VC funds with lower than 10% of equity investments in the company. The sample consists of VC-backed companies that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

Panel A: Fire Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.391***	-2.333***	0.077***	0.044***	4.044***	3.765***
	[0.070]	[0.609]	[0.018]	[0.014]	[1.051]	[0.956]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	2481	2481	7265	7265	2652	2652
Adjusted R^2	0.298	0.295	0.156	0.153	0.071	0.083

Panel B: *Trados* and Probability of Exits through Acquisitions

	Acquisition			
	(1)	(2)	(3)	(4)
Forced [-1, +1]	0.066***	0.058***	-0.021	-0.043
	[0.012]	[0.012]	[0.047]	[0.043]
Forced [-1, +1] x Trados	-0.067***	-0.064***	-0.020	0.012
	[0.017]	[0.016]	[0.046]	[0.046]
Forced [-1, +1] x Trados x DE			-0.088	-0.130*
			[0.076]	[0.071]
Company & VC Controls		✓		✓
VC Firm FE	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	46981	44702	23802	22595
Adjusted R^2	0.070	0.074	0.067	0.072

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Table B.6: Weighted Regressions

This table shows robustness checks of the baseline results by estimating the regressions weighted by the inverse of number of VC funds in each company in the full sample so that each company will have a unit weight. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 2002-2012 and are acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

Panel A: Fire Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.430***	-2.134***	0.058**	0.031*	2.202*	1.928*
	[0.094]	[0.672]	[0.022]	[0.016]	[1.166]	[1.007]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3576	3576	9971	9971	3644	3644
Adjusted R^2	0.329	0.298	0.198	0.191	0.077	0.080

Panel B: *Trados* and Probability of Exits through Acquisitions

	Acquisition			
	(1)	(2)	(3)	(4)
Forced [-1, +1]	0.055***	0.047***	-0.015	-0.043
	[0.011]	[0.010]	[0.035]	[0.033]
Forced [-1, +1] x Trados	-0.050***	-0.049***	0.022	0.063
	[0.016]	[0.016]	[0.043]	[0.038]
Forced [-1, +1] x Trados x DE			-0.113*	-0.169***
			[0.062]	[0.056]
Company & VC Controls		✓		✓
VC Firm FE	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	65659	61682	33434	31361
Adjusted R^2	0.083	0.086	0.084	0.087

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Table B.7: Fire Sales and Intra-VC Conflicts of Interest

This table shows the interaction between fire sales and intra-VC conflicts of interest measured by *Fund Age Dispersion*, the standard deviation of VC fund age in the same syndicate. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company pair. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.633***	-4.342***	0.096**	0.054*	5.073***	4.877***
	[0.146]	[1.165]	[0.038]	[0.027]	[1.724]	[1.573]
Forced [-1, +1] x Fund Age Dispersion	0.113**	1.144**	-0.021*	-0.008	-1.243**	-1.289**
	[0.054]	[0.450]	[0.012]	[0.009]	[0.517]	[0.521]
Fund Age Dispersion	-0.051	-0.191	0.002	-0.005	0.258	0.198
	[0.033]	[0.289]	[0.005]	[0.004]	[0.191]	[0.199]
First Fund	-0.001	0.958	-0.024	0.012	0.790	0.800
	[0.383]	[1.832]	[0.046]	[0.041]	[1.889]	[1.651]
VC Firm IPO Ratio	-0.336	-2.673	-0.094	-0.021	6.030***	6.371**
	[0.731]	[2.889]	[0.082]	[0.046]	[1.834]	[2.502]
Ln(Total Equity Invested)	0.015	0.375**	-0.003	0.007**	0.454*	0.472**
	[0.041]	[0.169]	[0.004]	[0.003]	[0.227]	[0.230]
Ln(Total Equity Raised)	0.752***	-1.506***	0.014*	0.010*	-0.993**	-0.972**
	[0.066]	[0.187]	[0.008]	[0.005]	[0.383]	[0.394]
Ln(Number of Financing Rounds)	-0.151	-1.352***	-0.034*	-0.018**	-0.697	-0.794*
	[0.111]	[0.341]	[0.019]	[0.008]	[0.465]	[0.464]
Ln(Number of Investors)	-0.233**	-0.486	-0.009	0.009	0.004	0.143
	[0.111]	[0.574]	[0.010]	[0.006]	[0.318]	[0.295]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3576	3576	9971	9971	3644	3644
Adjusted R^2	0.302	0.282	0.168	0.164	0.067	0.074

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Table B.8: Missing Deal Value

This table reports results from OLS regressions on the missing deal value indicator. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. A unit of observation is a fund-company pair. *Missing Deal Value* is an indicator variable equal to one if the acquisition deal value is missing in the SDC, and zero otherwise. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	Missing Deal Value		
	(1)	(2)	(3)
Forced [-1, +1]	0.011		
	[0.013]		
Forced [-2, +2]		0.013	
		[0.013]	
Forced [-3, +3]			0.011
			[0.014]
First Fund	0.098*	0.099*	0.100*
	[0.056]	[0.056]	[0.055]
VC Firm IPO Ratio	-0.305***	-0.307***	-0.307***
	[0.087]	[0.088]	[0.090]
Ln(Total Equity Invested)	0.007	0.007	0.007
	[0.007]	[0.008]	[0.008]
Ln(Total Equity Raised)	-0.099***	-0.100***	-0.100***
	[0.012]	[0.012]	[0.012]
Ln(Number of Financing Rounds)	0.005	0.005	0.005
	[0.011]	[0.010]	[0.011]
Ln(Number of Investors)	0.021	0.021	0.021
	[0.018]	[0.018]	[0.018]
VC Firm FE	✓	✓	✓
Company Headquarter State FE	✓	✓	✓
Company Industry FE	✓	✓	✓
Exit Year FE	✓	✓	✓
Observations	9971	9971	9971
Adjusted R^2	0.199	0.199	0.199

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Table B.9: Alternative Fixed Effects

This table shows robustness checks of the baseline results with alternative fixed effects. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

Panel A: Fire Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.236**	-1.382***	0.043***	0.020*	1.878*	1.743**
	[0.095]	[0.298]	[0.011]	[0.012]	[0.941]	[0.671]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State × Exit Year FE	✓	✓	✓	✓	✓	✓
Company Industry × Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3478	3478	9794	9794	3570	3570
Adjusted R^2	0.528	0.448	0.294	0.321	0.310	0.321

Panel B: *Trados* and Probability of Exits through Acquisitions

	Acquisition			
	(1)	(2)	(3)	(4)
Forced [-1, +1]	0.049***	0.044***	-0.039	-0.054
	[0.009]	[0.009]	[0.035]	[0.041]
Forced [-1, +1] x Trados	-0.037***	-0.033**	0.052	0.074
	[0.013]	[0.013]	[0.044]	[0.045]
Forced [-1, +1] x Trados x DE			-0.143**	-0.176***
			[0.063]	[0.062]
Company & VC Controls		✓		✓
VC Firm FE	✓	✓	✓	✓
Company Headquarter State × Year FE	✓	✓	✓	✓
Company Industry × Year FE	✓	✓	✓	✓
Observations	65102	61165	33039	31035
Adjusted R^2	0.143	0.149	0.175	0.182

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Table B.10: Excluding Old VC Funds

This table shows robustness checks of the baseline results by excluding observations in which the VC fund age is greater than 13 years. The sample consists of VC-backed companies that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

Panel A: Fire Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.402***	-1.675***	0.059***	0.041***	2.091**	1.756**
	[0.090]	[0.395]	[0.020]	[0.012]	[0.780]	[0.639]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3393	3393	9453	9453	3478	3478
Adjusted R^2	0.309	0.271	0.170	0.166	0.060	0.069

Panel B: *Trados* and Probability of Exits through Acquisitions

	Acquisition			
	(1)	(2)	(3)	(4)
Forced [-1, +1]	0.055***	0.048***	-0.031	-0.055
	[0.010]	[0.011]	[0.032]	[0.034]
Forced [-1, +1] x Trados	-0.038***	-0.036***	0.052	0.068
	[0.012]	[0.012]	[0.040]	[0.040]
Forced [-1, +1] x Trados x DE			-0.143**	-0.166***
			[0.059]	[0.057]
Company & VC Controls		✓		✓
VC Firm FE	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	64033	60141	32532	30519
Adjusted R^2	0.076	0.079	0.076	0.080

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Table B.11: Excluding Corporate Venture Capital

This table shows robustness checks of the baseline results by excluding observations in which corporate venture capital funds are involved. The sample consists of VC-backed companies that raised their first VC financing round during the period 1995-2012 and are acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

Panel A: Fire Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.341***	-1.578***	0.055***	0.036***	2.201***	1.881***
	[0.084]	[0.409]	[0.019]	[0.011]	[0.733]	[0.602]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3439	3439	9576	9576	3495	3495
Adjusted R^2	0.304	0.275	0.165	0.161	0.065	0.073

Panel B: *Trados* and Probability of Exits through Acquisitions

	Acquisition			
	(1)	(2)	(3)	(4)
Forced [-1, +1]	0.049***	0.044***	-0.037	-0.056
	[0.010]	[0.010]	[0.034]	[0.035]
Forced [-1, +1] x Trados	-0.039***	-0.037***	0.053	0.071*
	[0.014]	[0.013]	[0.038]	[0.038]
Forced [-1, +1] x Trados x DE			-0.149**	-0.173***
			[0.057]	[0.056]
Company & VC Controls		✓		✓
VC Firm FE	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	63248	59433	32259	30290
Adjusted R^2	0.082	0.086	0.081	0.086

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Table B.12: Excluding the Internet Bubble Period (1995-2001)

This table shows robustness checks of the baseline results by excluding companies that raised their first financing round during the Internet Bubble period (1995-2001). The sample consists of VC-backed companies that raised their first VC financing round during the period 2002-2012 and are acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

Panel A: Fire Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.497***	-1.754***	0.054	0.028	1.958***	1.594**
	[0.113]	[0.557]	[0.041]	[0.023]	[0.702]	[0.623]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	2233	2233	7412	7412	2482	2482
Adjusted R^2	0.387	0.228	0.177	0.181	0.116	0.123

Panel B: *Trados* and Probability of Exits through Acquisitions

	Acquisition			
	(1)	(2)	(3)	(4)
Forced [-1, +1]	0.065***	0.069***	-0.051	-0.063
	[0.012]	[0.015]	[0.043]	[0.044]
Forced [-1, +1] x Trados	-0.050***	-0.060***	0.050	0.055
	[0.015]	[0.017]	[0.050]	[0.049]
Forced [-1, +1] x Trados x DE			-0.146**	-0.167**
			[0.071]	[0.064]
Company & VC Controls		✓		✓
VC Firm FE	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	47793	44872	24627	23101
Adjusted R^2	0.102	0.108	0.101	0.107

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Table B.13: Cluster-bootstrapped Standard Errors

This table shows robustness checks of the baseline results by reporting bootstrapped standard errors clustered by the company and VC fund with 100 repetitions. The sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 2002-2012 and are acquired as of December 31, 2020. For Panel A and B, a unit of observation is a fund-company pair and fund-company year respectively. *Forced [-1, +1]* is an indicator variable equal to one if the VC fund age is between 11 and 13 years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are calculated based on cluster-bootsrapping and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

Panel A: Fire Sales

	Ln(Deal Value)	Deal Multiple	Remote Industry	Financial Acquirer	CAR $[-5,+5]$ (CAPM)	CAR $[-5,+5]$ (FF3)
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1]	-0.371***	-1.611***	0.050***	0.035**	2.222***	1.912***
	[0.104]	[0.539]	[0.017]	[0.016]	[0.657]	[0.679]
Company & VC Controls	✓	✓	✓	✓	✓	✓
Acquirer Controls					✓	✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Exit Year FE	✓	✓	✓	✓	✓	✓
Observations	3576	3576	9971	9971	3644	3644
Adjusted R^2	0.302	0.281	0.168	0.164	0.064	0.073

Panel B: *Trados* and Probability of Exits through Acquisitions

	Acquisition			
	(1)	(2)	(3)	(4)
Forced [-1, +1]	0.048***	0.043***	-0.036	-0.054*
	[0.010]	[0.014]	[0.024]	[0.032]
Forced [-1, +1] x Trados	-0.035**	-0.032**	0.054	0.071
	[0.015]	[0.016]	[0.039]	[0.046]
Forced [-1, +1] x Trados x DE			-0.143***	-0.166***
			[0.041]	[0.053]
Company & VC Controls		✓		✓
VC Firm FE	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	65659	61682	33434	31361
Adjusted R^2	0.083	0.087	0.082	0.087

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Table B.14: *Trados* and Probability of Exits through IPOs

This table reports the results from OLS regressions on the effect of the *Trados* court ruling on probability of VC exits through IPOs. The panel sample consists of VC funds and their portfolio companies that raised the first VC financing round during the period 1995-2012 and have gone public as of December 31, 2020. A unit of observation is a fund-company year. *IPO* is an indicator variable equal to one if the VC-backed company goes public in a given year, and zero otherwise. *Trados* is an indicator variable equal to one if the year is equal to or greater than 2013, the year in which the Delaware Court made the final decision on the *Trados* case, and zero otherwise. *Forced [-t, +t]* is an indicator variable equal to one if the VC fund age is between 12 - t and 12 + t years, and zero otherwise. Detailed variable definitions are provided in Appendix A. Standard errors are two-way clustered at the VC fund and company headquarter state level and reported in brackets. ***, ** and * indicate 1%, 5% and 10% significance level.

	IPO					
	(1)	(2)	(3)	(4)	(5)	(6)
Forced [-1, +1] x Trados	-0.032	0.003				
	[0.067]	[0.067]				
Forced [-2, +2] x Trados			-0.022	0.024		
			[0.042]	[0.044]		
Forced [-3, +3] x Trados					0.007	0.042
					[0.034]	[0.035]
Company & VC Controls		✓		✓		✓
VC Firm FE	✓	✓	✓	✓	✓	✓
Company Headquarter State FE	✓	✓	✓	✓	✓	✓
Company Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	14595	13911	14595	13911	14595	13911
Adjusted R^2	0.155	0.227	0.158	0.228	0.162	0.230

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