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The Effect of Litigation on Venture Capitalist Reputation

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Abstract: Venture capital contracts give VCs enormous power over entrepreneurs and early equity investors of portfolio companies. A large literature examines how these contractual terms protect VCs against misbehavior by entrepreneurs. But what constrains misbehavior by VCs? We provide the first systematic analysis of legal and non-legal mechanisms that penalize VC misbehavior, even when such misbehavior is formally permitted by contract. We hand-collect a sample of 296 lawsuits involving 221 venture capitalists. Our empirical analysis of the lawsuit data proceeds in two steps. We first estimate an empirical model of the propensity of VCs to get involved in litigation as a function of VC characteristics. We find that older VCs and VCs with more deal flow and larger funds under management are more likely to litigate; however, the effect is concave. In addition, early-stage VCs and VCs that are repeat offenders are more likely to participate in litigation. Second, we analyze the relationship between different types of lawsuits, VC fundraising, and deal flow. Although plaintiffs lose most VC-related lawsuits, litigation does not go unnoticed: in subsequent years, the involved VCs raise significantly less capital than their peers (matched on age, size, or performance) and invest in fewer and lower quality deals. The biggest losers are VCs who are defendants in a lawsuit, who eventually lose the lawsuit, and who participate in multiple lawsuits.

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1. Introduction

The view that contracting has its limits and that often reputation serves as a disciplining device is well understood and accepted in finance and economics (see Fama, 1980; Crocker and Reynolds, 1993; and Banerjee and Duflo, 2000). Yet, there is relatively little empirical evidence on whether parties who behave opportunistically in a repeated game setting with incomplete contracts (where reputation matters the most) suffer negative reputational consequences, and how big the negative effects are. Several papers attempt to measure the reputational loss from changes in product or service quality.¹ Other studies document a decline in the market value of publicly traded firms resulting from involvement in litigation (Cutler and Summers, 1988; Karpoff and Lott, 1993; Bhagat, Brickley, and Coles, 1994; and Bizjak and Coles, 1995). In a recent study of Indian business groups, Gopalan, Nanda, and Seru (2007) find that the first bankruptcy in a business group leads to a loss in reputation as evidenced by the drop in the amount of external finance raised, investments and profits, and an increased likelihood of bankruptcy of other healthy members of the group.

Our paper contributes to empirical literature on reputation by investigating whether opportunistic behavior leads to reputational losses in the US venture capital (VC) industry. We choose the VC industry because it represents an excellent example of a setting where repeat players enter into incomplete and systematically one-sided contracts. First, the industry is thoroughly covered with the web of repeated interactions. Among repeat players are not only venture capitalists and entrepreneurs, but also lawyers, accountants, bankers and other investment professionals; individuals and institutions that invest in venture capital funds; angel investors and other non-VC investors in VC-financed companies; professional

¹ See Jarrell and Peltzman (1985), Rubin, Murphy, and Jarrell (1988) Mitchell and Mahoney (1989), Borenstein and Zimmerman (1989), and Peltzman (1981).

managers and other later-stage employees of startups hired by venture capitalists; established companies that often acquire VC-financed startups, and so forth. While not every participant in the system is a repeat player (e.g., individual founders are rarely “serial” entrepreneurs (Bengtson, 2006)), the constant presence of repeat players shapes the flow of information about opportunistic behavior among all parties.

Second, the industry is full of severely incomplete contracts. Venture capitalists invest in startup companies and entrepreneurs with limited track records and lack of proven products or technologies. VC investments are thus plagued by uncertainty and information asymmetries. The pervasive uncertainty and informational asymmetries between the VC and their investors, and between VCs and entrepreneurs, are managed with complex contracts and incentive structures, but contracts set in such an environment are necessarily incomplete (Williamson, 1985). Incomplete contracts could lead to ex post opportunism (Williamson, 1985; Goldberg, 1985; Masten, 1988) and/or ex ante investment distortions (Tirole, 1986; Hart and Moore, 1988).

Third, the contracts between VCs and entrepreneurs are not only incomplete, but notably one-sided. VCs have huge power over portfolio companies. Previous work examines the provisions of these contracts, and rationalizes them as protecting VCs against the risk of misbehavior by entrepreneurs (e.g., Hellmann, 2001; Kaplan and Stromberg, 2003 (“KS” hereafter)). In these studies, the VC is viewed as the principal, the entrepreneur is the agent, and the contract protects the principal.

But what protects the entrepreneur against misbehavior by VCs? VCs are not saints. “[T]hese guys eat their own young” warns one entrepreneur on a popular website, referring to

Sequoia Capital, one of the very top and presumably most reputable VC firms.² Perhaps this is why contracts between VCs and their investors provide significant protections to investors (Litvak, 2007). In contrast, the contracts between VCs and entrepreneurs do little to protect entrepreneurs against VCs; in important ways they might invite VC misbehavior.

The question of what constrains VCs has been all but ignored in the literature. Instead, good behavior is usually assumed. For example, KS explicitly state that VCs “receive few or no private benefits of control,” while Gilson and Black (1998) assume a market for VC reputation, which constrains VCs to honor an unwritten implicit contract to let successful entrepreneurs take their company public and thus retain control. In the presence of such one-sided contracts, reputation is indeed one of the key mechanisms that can mitigate VC opportunism. The information provided by lawsuits offers one avenue for policing VC reputation. However, apart from theoretical discussion and a few anecdotes in a single paper (Cumming and Macintosh, 2004), there has been no examination of lawsuits involving VCs, their frequency, their outcomes, and how they may affect VC reputation.

We begin here to study VC litigation and its effect on the market for VC reputation. We hand-collect a sample of lawsuits involving VCs, many filed by entrepreneurs, many making facially plausible claims of VC expropriation. The mere existence of this number of lawsuits suggests that VC behavior is a potential problem.

We use the hand-collected dataset of lawsuits to achieve two central goals. First, we ask what factors predict a VC’s propensity to be involved in litigation. We document some important effects of VC reputation, deal flow, past performance, and investment stage focus on the probability of a VC to be a party to a lawsuit. More reputable VCs and VCs with

² Rebecca Buckman, "Web Site Puts the 'Vent' Into Venture Capital", Wall Street Journal, Aug. 7, 2007.

larger deal flows are more likely to get involved in a lawsuit, although the likelihood is concave in both reputation and deal flow. Thus, for more reputable firms we document that the probability of a lawsuit increases at a decreasing rate. One possible explanation for this result is that reputational losses are proportionally larger for this type of firms and they try to do everything to avoid litigation. Alternatively, it might be that more reputable VCs are better managers and they manage to resolve problems internally without the need to go to court. Lastly, we find that VCs focusing on early-stage firms are more likely to get sued.

Second, we study the effect of litigation on VCs fund raising and deal flow. Lawsuits are extreme events which result from a fundamental breakdown in communication or contractual arrangements. By looking at such extreme events, even if most lawsuits do not lead to any direct financial penalties for the VCs, limited partners, entrepreneurs, and other VCs may infer that something is wrong at the organizational level of the VC firm and hence they are going to avoid such VCs. We use two principal proxies for reputation. First, VCs raise a series of funds, and thus regularly return to investors to raise new capital. The size of future funds may proxy for the VC's reputation with investors. Second, the number and quality of deals which VCs invest in serve as proxy for the VC's reputation with entrepreneurs.

We document that although VCs win a significant number of cases brought against them, being sued is associated with reputational consequences. VCs who have been involved as defendants in lawsuits raise significantly smaller funds after the lawsuits and invest in a smaller number of deals. The deals in which they do invest after the lawsuits are of lower quality as measured by the proportion of successful exits. The negative effects on VC

fundraising and deal flow are especially strong when VCs: (1) are more reputable, or (2) are defendants and parties to multiple lawsuits, or (3) are defendants and lose in court.

Some caveats and cautions. First, we can assess only association, not causation. One can tell a variety of non-causal stories which are consistent with our results. For example VCs who suffer an exogenous hit to their reputations could both attract lawsuits and raise smaller funds. Second, we do not assess here the merits of the lawsuits. Still, our evidence suggests that VC misbehavior is potentially a serious concern, and that lawsuits may be one means through which reputations are policed.

The remainder of the paper is organized as follows. Section 2 provides some background on VC litigation, investments, and fund raising and develops our hypotheses. Section 3 discusses the lawsuit data. We present the results of our litigation propensity models in Section 4 and our pre-versus-post lawsuit analysis of VC fund raising and deal flow in Section 5. Section 6 concludes. Appendix A provides more details on the data manipulations, while Appendix B describes a few examples of lawsuits involving VCs.

2. Background and Hypotheses

2.1. VCs and litigation

2.1.1. Equity tunneling

One common theme of VC litigation is the claim that VCs used financial transactions to siphon wealth from founders and other common shareholders to themselves. The defining feature of this oppressive technique is that in its extreme form, it affects only the ownership of portfolio companies, but not their other characteristics, such as profitability, size, types of

assets, and so forth.³ Common examples include allegations of dilution and freeze-out, where VCs use their broad contractual powers to oust prior investors and founders and take over the company.

Financial tunneling (or at least allegations thereof) is an unsurprising byproduct of standard venture capital contracts, which give VCs significant formal and informal control over their portfolio firms. First, VCs sit on the board of directors, hold the majority of voting rights, routinely exercise anti-dilution rights, and retain the right of first refusal for subsequent securities offerings. These rights, taken together, give current VCs control over the identity of the firm's future investors, the size of each participant's stake in the company, and the timing and terms of future investments. Second, VCs often get a contractual right to replace founders, and they do so regularly (Hellmann and Puri, 2002). When a founder is replaced, the contract cancels founder's stock options and often gives VCs the right to repurchase founder's vested stock at a low price. These rights, taken together, give VCs control over the sharing of the ownership of a company with its founders. Third, the structure of VC investment, commonly in preferred shares with significant liquidation preferences and redemption rights, puts VCs in a superior position to common stockholders in acquisitions or liquidations. These rights, combined with board and voting control, give VCs control over the terms and timing of exit. No wonder some VCs are accused of acting in their own interest while exercising their legal rights; the question is, what stops them from doing so all the time.

³ For a taxonomy of tunneling, see Atanasov, Black, and Ciccotello (2007).

2.1.2. Asset tunneling

Another possibility involves expropriation of firm assets. VCs often hold stakes in a number of firms in the same or related industries. In addition, VCs tend to encourage their portfolio firms to enter into strategic relationships with one another, the so-called “Keiretsu network” (see Lindsey, 2003). Thus, they could engage in transfer pricing, by arranging for one portfolio firm to purchase intellectual property, services, or other assets from another portfolio company at an inadequate or excessive price. We call this "asset tunneling" (Ueda, 2004; Dushnitsky and Shaver, 2007). If the VC holds different ownership stakes in different portfolio firms, it has an incentive to transfer assets from the firms with low ownership to the firms with high ownership. These incentives are very similar to those of the controlling shareholder of a business group (pyramid).

Asset tunneling might be profitable even when the VC has the same ownership in all firms. First, the VC’s payoff from an investment in a company could be convex in firm value because of the option features of the securities they hold (e.g. convertible preferred shares). The convexity of payoffs makes the VC better off having one super-performing firm and one poor-performing firm than two mediocre firms. Second, combining assets from several portfolio firms might produce difficult-to-value synergy. Unless VCs are meticulous in compensating founders of each contributing firm for such asset transfers (which VCs have little financial incentive to do), these transfers are likely to benefit one firm, at the (relative) expense of the others.

2.1.3. Bankruptcy Proceedings

VCs may also become involved in litigation when a portfolio firm goes bankrupt. A significant portion of VC-backed startups get liquidated. Creditor lawsuits against

shareholders are common when a firm goes into bankruptcy, and VCs are a tempting deep-pocketed target.⁴

2.1.4. Securities Law Violations

In addition, VCs can be defendants in class-action lawsuits initiated by shareholders in VC-backed IPO firms. Typically, these class-action suits are directed towards underwriters and company directors and officers. However, sometimes VCs are also named as defendants.

2.1.5. Disputes with Other Large Repeat Players

VCs might initiate litigation if they feel they were victims of misbehavior of other VCs, large equity investors of their portfolio firms, or banks. VCs may also sue their limited partners for unfulfilled capital call obligations, as many partnership agreements give VCs the right to use courts to collect defaulted contributions. Finally, VCs can get involved as plaintiffs or defendant in intellectual property lawsuits.

2.2. Prior Literature

The academic literature on litigation involving VCs is sparse. There are several theoretical papers that deal with the possibility of VC opportunistic behavior. Ueda (2004) models potential expropriation on the part of the VCs and suggests that banks could mitigate this conflict. Landier (2001) models a situation where both the VC and entrepreneur hold each other up. Yosha (1995) and Bhattacharya and Chiesa (1995) develop models where a financier has the incentive to support the spillover of interim knowledge across firms in her portfolio since that increases the likelihood of breaking even on each individual investment.

⁴ See Pontiff (2007) for an analysis of the effect of “deep pockets” on probability of litigation of publicly traded corporations in the US.

Cumming and MacIntosh (2004) offer a descriptive treatment of VC litigation and a few anecdotes. There are also a smattering of practitioner articles, offering advice to VCs and their lawyers (see Bartlett and Garlitz, 1995; Christopher, 2001; Etzel, 2002; Fellers, 2002; LeClaire, Kendall, and Taft, 2005; and Padilla, 2001). The common thread in these articles is litigation arising from "down rounds" – financing rounds where the price per share is lower than in previous rounds. Down rounds, especially insider down rounds (where the only investors are VCs who have invested in previous rounds), usually create significant dilution of founders and other common shareholders. Other early-round investors can also be diluted, especially if there is a pay-to-play provision involved.⁵ However, other transactions, including freeze-outs and asset transfers can also lead to lawsuits.

2.3. The role of reputation

VCS *could* behave opportunistically toward founders. Their formal contracts with entrepreneurs provide the ability to do so, and background legal rules add little to protect founders beyond whatever the contracts provide. Yet if opportunistic behavior were too widespread, venture capital could not flourish as it has, nor could formal contracts be written, in equilibrium, in the strongly pro-VC manner that one observes. So there must be some informal constraints on VC behavior.

One central mechanism that limits opportunistic behavior by VCs is reputation -- with investors, other VCs, acquirers of VC-backed firms, investors in VC-backed IPOs, current and potential entrepreneurs, and current and potential employees of VC-backed firms.

⁵ A pay-to-play provision states that investors who do not participate in a given financing round lose their liquidation preferences or anti-dilution protections, and sometimes also forces non-participants to convert their preferred stock into common stock.

2.3.1. Reputation with Investors in VC Funds

Because venture funds are organized as limited-term partnerships, VCs have to go back to investors to raise capital for new funds every few years. More reputable VCs are able to raise more capital, raise it faster, and negotiate better terms with their limited partners (for example, they might be able to charge higher management fees and/or take a bigger share of the profits of the fund).

However, the need to preserve reputation with investors will not directly constrain VC opportunism directed at angel investors and founders. After all, what is good for the VC is generally good for investors in the VC fund as well. Investors should care about VC mistreatment of entrepreneurs only if the VC's actions adversely affect profitability of future funds (e.g., by reducing future deal flow), or if the VC's actions reveal something unattractive about the VC that was not known before.

2.3.2. Reputation with Other VCs

VCs often syndicate investments with other VCs. A VC with a better reputation among other VCs will presumably find it easier to syndicate its own investments, and will receive better syndication offers from other "lead" VCs. For example, Lerner (1994) finds that reputable VCs tend to syndicate with other reputable VCs.

The need to preserve reputation with other VCs will constrain some VC activities that might harm entrepreneurs. Consider equity dilution. If all VCs from Round 1 participate pro rata in Round 2, all can happily set a low Round 2 price that dilutes common shareholders. However, if some Round 1 VCs do not participate in Round 2, or participate less than pro rata (call these "nonparticipating VCs"), they will be diluted too, and will be acutely aware of the fairness of the Round 2 price. The need to satisfy nonparticipating VCs on fairness will

help to ensure fairness vis-à-vis common shareholders as well. The same is true for asset tunneling if, as will often be the case, different VCs have different stakes in the asset seller and the asset buyer.

However, the need to preserve reputation with other VCs will not always constrain VC opportunism directed at angel investors and founders. What is good for one VC is often good for other VCs who invest in the same company. In this situation, other VCs will object to mistreatment of entrepreneurs by a lead VC only if they will suffer a reputation loss with entrepreneurs or other VCs whose expected cost outweighs their gain in the current deal. An indirect channel is also possible -- if a VC deals opportunistically with an entrepreneur this time, other VCs may worry that they will suffer similar treatment the next time.

Finally, the tightness of VC community may play against a complaining founder, instead of against the misbehaving VC, if the merits of complaints are hard to estimate and if VCs tend to support their own and distrust “trouble-makers.” The “no lunch in this town” gossip that one can often hear in founder circles indicates that the fear (warranted or not) of VCs’ implicit collusion not to fund complaining founders may restrict the flow of information about VC misbehavior and thus induce more misbehavior.⁶

2.3.3. Reputation with Acquirers and IPO Investors

VCs exit from investments by selling them to acquiring companies or to public markets through an IPO. For both markets, a chief worry of buyers is the seller's superior information about the portfolio company's true value. A reputation for sharp dealing with entrepreneurs could spill over and affect a VC's ability to sell portfolio companies.

⁶ The recently launched website, thefunded.com, gives some illustrations of founder gossip. Notably, founders are willing to share information only anonymously and in the way that makes it difficult to link a discussed VC to a particular online commentator.

There is ample empirical evidence on the importance of reputation during VC exits through IPO. Brav and Gompers (1997) show that VC-backed IPOs do not suffer the long-run underperformance that is found in other IPOs. Ivanov, Krishnan, Masulis, and Singh (2008) find that IPOs backed by more reputable VCs enjoy better post-IPO long-run performance. Lin and Smith (1998), find that more reputable VCs are less likely to sell overpriced shares in an IPO. Baker and Gompers (2003) find that IPOs backed by reputable VCs have more independent boards and less powerful CEOs than non-VC-backed IPOs and IPOs backed by less reputable VCs. Wongsunwai (2007) finds that startups backed by high-quality VCs have more independent boards and after they go public they have lower abnormal accruals and are less likely to experience a financial restatement.

2.3.4. Reputation with Entrepreneurs

A reputation for dealing fairly with entrepreneurs can generate future high-quality deal flow or better financing terms. For example, Black and Gilson (1998) argue that a central part of VC contracting with entrepreneurs is an implicit contract to return control to a successful entrepreneur by exiting through IPO, rather than through selling the company, if both options are available. Hsu (2004) shows that entrepreneurs are willing to accept lower valuations in order to secure financing from reputable VCs.

Another effect of VC reputation is proposed by Bachmann and Schindele (2006). In their model, entrepreneurs will be willing to expend more effort on developing their ideas if VC investors have a reputation for not stealing entrepreneurs' intellectual property. The extra entrepreneurial effort results in better startup performance. In addition, trustworthy VCs may be better able to resolve contentious issues that arise between entrepreneur and investors.

They will be like good managers who are able to resolve issues without the need to resort to litigation, which could be very costly for both the startup and the VCs.⁷

2.4. Interactions between VC Reputation and Litigation

The market for VC reputation cannot work well unless there are mechanisms transmitting the information about VC behavior to future entrepreneurs and other contractual partners. Litigation by founders of VC-backed firms can be one such mechanism – we make no claim that it is the only one. Standard signaling theory posits that for a signal to be credible, it must be costly (Spence, 1973). Litigation against VCs is very costly for founders, who must incur legal expenses, emotional stress, the near-certainty that they will never again obtain VC funding for a future venture, and, for compact communities like the Silicon Valley or Rout 128, possible difficulty in obtaining any employment in related field. Founders may wrongly feel aggrieved, simply because their business idea failed, without any fault on the VC's part. But there is a very good chance that they feel seriously aggrieved, or they wouldn't sue, and a respectable chance that there is substance to their grievance. Thus, litigation has the potential to convey a signal to others -- entrepreneurs, employees, other VCs, and so on -- to be careful when dealing with the defendant VC.⁸

The signal is surely noisy. The plaintiff's version of the facts is available in the court complaint, and will sometimes be persuasive by itself. In the internet era, realistic public

⁷ We thank Scott Stern for suggesting this possibility.

⁸ Entrepreneurs will also likely informally share information about VC misbehavior, independent of litigation. VCs will similarly chat about behavior by other VCs. One can imagine an extreme case in which entrepreneurs and other VCs pay no attention to litigation in forming opinions about a VC's reputation. Litigation would then be a byproduct of VC misbehavior -- some founders will sue, others will only complain to their buddies. Litigation would then not directly send a signal of misbehavior -- that information would be communicated in other ways -- but would still be associated with misbehavior. More plausibly, both channels will operate. Entrepreneurs and VCs will communicate informally, but litigation will be a subject of conversation, and will strengthen the credibility of informal complaints. Our empirical predictions are the same whether litigation directly conveys information about misbehavior, or is only associated with misbehavior that is communicated in other ways.

access to complaints -- rather than theoretical access, if you knew the case number and wanted to take a trip to the courthouse, obtain the file, and manually copy the complaint -- is gradually becoming more common -- indeed, that access made this research project possible. But the other side of the story will often be harder to obtain from the public record. Sometimes entrepreneurs might file frivolous lawsuits. Also, plaintiff litigation success is surely a marker for VC misbehavior, but a plaintiff loss conveys much less. A complaint may be factually accurate, depict highly opportunistic behavior, and yet the plaintiff will still lose the case, perhaps at an early stage. Repeat litigation against the same VC will thus provide a stronger signal than a single suit.

Litigation by other parties does not send as clear a signal. When a firm fails and creditors sue, they often sue all of the shareholders, not only the VCs, and their complaints often do not involve the type of behavior that would compromise a VC's reputation with entrepreneurs or other VCs. Class action shareholder lawsuits after a company goes public typically claim faulty disclosure by the company, not tunneling by the VC.

We therefore formulate the following three hypotheses about VC reputation and litigation by entrepreneurs:

Hypothesis 1: More reputable VCs are less likely to face lawsuits, especially lawsuits by founders claiming equity or asset tunneling.

Hypothesis 2: Lawsuits filed against VCs will be followed by a drop in VC reputation, which will be reflected in reduced fundraising and lower quantity and quality of deal flow.

Hypothesis 3: The reputational losses will be greater after lawsuits where VCs were named as defendants, where VCs lost, where the complaint alleged tunneling, and where VCs were involved in multiple lawsuits.

These hypotheses are tested against the null that litigation has no effect on VC reputation. There are many reasons to expect no relationship between litigation and VC reputation. First, many lawsuits may be frivolous, filed by disgruntled entrepreneurs or other investors in search for deep pockets. Since most entrepreneurs are not repeat players,⁹ reputational concerns may not prevent them from launching frivolous law suits. Second, even an appropriately behaving VC may be sued if founders seek to retain private benefits of control while a VC seeks to maximize the value of the company. Third, even meritorious law suits may not sufficiently damage VC reputation to have a measurable impact. For example, although Kleiner Perkins Caufield and Byers is a defendant in two lawsuits in our sample, this might not matter much given the track record (an average IRR of approximately 70% per year and IPOs such as Google, Netscape, Sun Microsystems, Genentech, Compaq, and numerous others) that it has created.¹⁰

3. Data and Summary Statistics of Lawsuits

To test for the effect of tunneling on VC reputation, we use a sample of lawsuits involving VCs over the period 1976-2007. We collect lawsuits from Westlaw's databases that include both judicially-resolved cases (in databases containing judgments) and unresolved cases (in databases of complaints and other docket materials). We search by terms "venture" and "venture capital," alone and together with terms such as "dilution," "freeze out," "founder," and so forth. We also search by the names of venture capital firms identified by the National Venture Capital Association and cross-checked with VentureXpert. Our searches identify 364 lawsuits which have all available facts and the plaintiff's complaint and

⁹ Bengtsson (2006), for example, finds that 92% of the entrepreneurs involved in early-stage firms that received first round VC financing in the period 1991-2003 are one-time entrepreneurs.

¹⁰ Return data based on Metrick (2006).

258 lawsuits that have only partial information available such as case number, type of court (state or federal), names of defendants and plaintiffs, and the year of the lawsuit.

Using Westlaw's lawsuit database avoids the usual problem of collecting cases from PACER or Lexis.¹¹ The standard procedure of collecting cases from Lexis produces only judicially-resolved cases. Such searches do not include ongoing litigation, as well as cases that were voluntarily dismissed, settled, removed to a different court, and so forth. In contrast, we look at both resolved and unresolved cases, including very recent ones. Our searches are also superior to searches in PACER because PACER contains only federal cases.

3.1. Lawsuits with full information

We read each case and exclude those that do not involve litigation by or against a venture capital firm. The defendant's name is not dispositive, because some non-VC firms include the term "venture," "venture partners," or even "venture capital." We verify that each firm is indeed a venture capital firm. Consequently, we drop nine lawsuits which involve companies which are clearly not VCs.¹² We then match the firms involved in the remaining 355 lawsuits against the VentureXpert database (by hand, since many names are similar but not identical). Sometimes, this process leads to alternate VC firm names which let us match the firm with VentureXpert. We drop all lawsuits involving VC firms that are not covered by VentureXpert and are left with 248 lawsuits and 215 VC firms. We drop two lawsuits which include one particular company, 3i Group PLC, since it is publicly traded. In addition, we

¹¹ Information on the exact searches we ran is available from the authors on request. We ran some early searches on Lexis as well, but it turned out that once we had searched Westlaw, there was little need to also search Lexis as well. We also searched court records in jurisdictions likely to have significant numbers of VCs and thus VC lawsuits, but this proved to be an extremely inefficient way to gather information.

¹² For example, "Mia Venture Capital" turns out to be a small "boiler room" brokerage' "Midwest Venture Partners" invests in real estate, and so on.

drop 7 more VC firms which have missing data on their fund size before the litigation. The final sample has 239 lawsuits involving 207 VC firms and resulting in 280 unique VC firm-lawsuit combinations.

From VentureXpert, we collect data on VC age, investment and industry focus, number of funds, fund size, portfolio firms, and syndication partners (see Appendix A for more details). To account for time-series variations in the VC industry, which are well documented in the literature (Gompers and Lerner, 2000), we scale the size of VC funds by the total amount of committed VC capital in the year in which a particular fund is raised. For each firm in our sample we compute firm size as the sum of the scaled fund sizes in the pre-litigation.

Even some very reputable firms, such as Kleiner Perkins, Charles River Ventures, Sevin Rosen Associates, and New Enterprise Ventures are involved in different litigation cases with some of their portfolio firms. Also, there are different types of VCs in our sample: traditional VCs (like Kleiner Perkins and Charles River Ventures), corporate VCs (E*Trade and Heizer Corporation), and venture arms of financial companies (Prudential Ventures and Citigroup). The cases involve startups from various industries and geographical locations. Most of our cases are concentrated in the late 1990s and particularly the early 2000s.

Table 1A reports the main characteristics of the lawsuits with full information in our sample. We outline some interesting patterns in the analysis below and provide more details about a few typical lawsuits in Appendix B.

Parties. When VCs are involved in litigation, they are usually defendants (77%, or 185 cases). Among parties who bring suits against VCs are: other equity investors of VC-backed startups (19 cases, or 10% of all suits where VCs are defendants); startups themselves

(39 cases, or 21%) (these in effect consist of a blend of founders and other equity investors); non-founder employees of startups (16 cases, or 9%); founders alone (15 cases, or 8%); other VCs (19 cases, 10%); banks (7 cases, or 4%) (creditors of VC-backed startups), and limited partners of venture funds run by VCs (8 cases, or 4%).

When founders are involved in litigation, they are almost always plaintiffs. Only one case in our sample involves a defendant founder; that founder was closely affiliated with VCs and was sued together with VCs by another founder.

Tunneling Allegations. About a third (31%) of all VC-related lawsuits involve allegations of tunneling (see Appendix B for more detailed descriptions of typical tunneling lawsuits). Curiously, both VC and non-VC plaintiffs are likely to allege tunneling: VCs do it in 76% cases they bring; non-VCs do it in 77% of cases.

Among non-VC plaintiffs, the largest category claiming tunneling is the startup itself (21%) (this category represents mostly founders, other employees, and earlier equity investors); equity investors directly (11%); founders (10%), and other VCs (10%). Within the universe of tunneling cases brought against VCs, most popular allegations are expropriation of profitable opportunities (20%); wrongful transfers of assets, conducted in a variety of creative ways (17%); sales of companies on terms unfavorable to founders and other equity investors (13%); dilution (2%), and freezeouts (2%). Nearly half (46%) involve hard-to-classify, creative tunneling schemes.

When VCs themselves claim being victims of tunneling, the most common alleged perpetrators are usually the startup itself (46%) (usually representing some combination of founders or current managers and other equity investors); other VCs (12%); and non-founder employees of startups (10%). Popular methods include wrongful transfers of assets,

conducted in a variety of creative ways (19%), sales of companies on unfavorable terms (12% of all tunneling cases brought by VCs), expropriation of profitable opportunities (10%), freezeouts (2%), and other creative tunneling methods (57%).

Outcomes. Our sample contains 120 (50%) cases that reached judicial resolution and 121 cases (50%) that are either still ongoing or have been dropped or settled without ever reaching a judicial decision. In most cases, plaintiffs lose. If we remove cases that have not yet reached resolution, VCs win or partially win 44% of cases, while losing 21%. VCs are more successful in defending cases brought against them than in securing a victory for their own suits (winning or partially winning 20% of the resolved cases).

3.2. Lawsuits with partial information

Of the 258 lawsuits with partial information, we are able to match the names of VCs participating in 61 of them with VentureXpert. This results in 29 VC firms and 61 unique VC firm-lawsuit matches. For four of those cases we do not have information on funds raised by the VC from VentureXpert, so we drop them from the sample. This leaves us with 28 VC firms, 57 lawsuits, and 57 unique VC firm-lawsuit matches. Table 1B presents the main characteristics of this sub-sample. The VCs are the defendants in 77% of the cases (44 lawsuits). Most of the cases (27) are filed in federal courts, and the majority of them are in states like New York (15), California (8) and Texas (4).

Table 2 presents summary statistics for the 221 (with full and partial information) VCs involved in litigation. The average VC is 16.5 years old and has raised 6.3 funds with a total of \$2,446.8 million dollars before the litigation. Consistent with findings in previous studies (for example, see Fenn, Liang, and Prowse (1998)), the majority of VC firms in our sample focus on in late-stage firms.

4. Probabilistic Models of VC litigation

4.1. Probability of VC involvement in a lawsuit

In this sub-section we examine the likelihood that a VC will end up involved in litigation. We are interested in the characteristics of VCs that get sued, and more importantly whether reputation reduces the likelihood of a lawsuit, as Hypothesis 1 implies. To test Hypothesis 1, we employ a random effects probit model where the dependent variable, x_{it} , is the continuous latent lawsuit vulnerability of firm i in year t :

$$X_{it} = \alpha_i + \beta_1 w_1 + \beta_2 w_2 + \varepsilon_{it}$$

where α_i is a coefficient for the random effect for VC firm i , w_1 is the set of time-invariant covariates and w_2 is the set of time-variant covariates. The model assumes that ε_{it} is distributed $N(0, \sigma^2)$. To relate this continuous variable X_{it} to the observed binary response on lawsuits in our sample we utilize the "threshold concept" (see Gibbons and Bock, 1987). This approach assumes that a threshold value exists on the continuum of variable X_{it} and we observe a lawsuit when latent lawsuit vulnerability exceeds this threshold. When the latent lawsuit vulnerability exceeds the threshold, a positive response is given; otherwise a negative response is given. We use a threshold value of 1, that is, the observed binary variable y_{it} is equal to one if at least one lawsuit occurred for VC firm i in year t .

This type of model, which has been extensively used in the literature on medical malpractice (see Gibbons, Hedeker, Charles, Frish (1994)), allows us to utilize the time and cross-sectional dimensions of the data. To estimate the model we use the universe of U.S.-based VC firms as well as foreign VC firms that invest in the U.S. Our sample covers the period 1970-2007 and consists of 5,276 VC firms of which 208 have one or more lawsuits during that period of time. To make sure that only active VC firms are included, we keep a

firm in the database for five years after the last fund is raised.¹³ Our panel has 51,931 firm-year observations.

In the random effects probit models we use two sets of control variables that may explain the likelihood of litigation – time-variant and time-invariant variables. Time-variant variables include the age of the VC firm (*VC age*), cumulative funds under management (*Funds under mgmt*), and deal flow (*Deal flow*) as proxies for VC reputation or size (“deep pockets”) which may affect the probability of the VC being sued (Pontiff, 2007). We also add the fraction of portfolio firms that go public for the most recent fund raised (*Past performance*) as a performance measure. Hypothesis 1 posits that older VC firms and firms with more funds under management (in other words, more reputable firms) would be less likely to get involved in litigation. There is a concern that larger deal flow and years of existence may mechanically increase the probability of a VC being sued. Still, if reputational concerns matter we expect this positive relation to decrease with age, or in other words the relation between VC age or deal flow and probability of litigation to be concave. To control for this possibility, in some specifications we add the squared terms of the deal flow and funds under management variables. We also include a variable, *Prior lawsuits*, indicating in how many lawsuits the VC firm participated in previous years.¹⁴ The presence of multiple lawsuits against a given VC might reveal a particular type of behavior on the part of that VC towards entrepreneurs and other investors in its portfolio firms. Alternatively, it might be a sign that something is wrong at the organizational level of the VC firm. Thus, we expect firms that have participated in multiple lawsuits in the past to be more likely to get involved in a lawsuit in the future.

¹³ We repeat the analysis using a 10-year cut-off and the results remain qualitatively the same.

¹⁴ In our sample, the venture arm of Citigroup has the largest number of lawsuits – nine.

Lastly, the time-invariable variables we use are dummy variables for the stage and industry focus of our sample firms. *Stage* is a dummy equal to one if the VC firm specializes in early-stage firms, and zero otherwise. We expect that VCs focusing on early-stage firms will be more likely to get involved in litigation since uncertainty in those firms is higher, contracts are more incomplete, and the success rates are relatively low compared to more mature firms. In such an environment, the likelihood of VC opportunism (or the disagreement on whether VC's behavior constitutes opportunism) might be very high. In addition, Fluck, Garrison, and Myers (2005) model the entrepreneur-VC relationship and one of the predictions from their model is that later stage syndication resolves the VC hold-up problem by assuring the entrepreneur more favorable terms in later rounds. Since there are fewer investors financing early-stage companies (and especially fewer other VC investors whose presence may deter potential misbehavior more strongly), VCs might be tempted to behave opportunistically. *Hi-tech* is a dummy variable equal to one if the VC firm focuses on hi-tech industries such as information technology, biotechnology, and medical/health/life sciences, and zero otherwise. Information on VC industry and stage preferences comes from VentureXpert.

Table 3 presents the coefficient estimates of the random effects probit model of VC litigation. The results in Model 1 suggest that VC firms with better past performance are less likely to get embroiled in a lawsuit, which provides some support for Hypothesis 1. Oddly, controlling for past performance, indirect measures of reputation (such as VC size and age) are positive predictors of litigation. The coefficients on *Funds under mgmt* and *VC age* are positive and significant at the 1% level. We also obtain similar results when we use *Deal flow* instead of *Funds under mgmt* (Model 3). These results may suggest that either past

performance and VC size/age measure different features of VC quality, and some of those features predict litigation positively while others negatively; or the positive relationship between size/age and litigation may be due to a possible mechanical relation between number of deals and probability of litigation.

To address the second possibility, in Models 2 and 3 we include the quadratic terms of *Funds under mgmt* and *Deal flow*. The coefficients on the quadratic term is negative and significant, suggesting that, although more exposure to potential conflict (i.e., dealing with more founders, firms, outside investors, and so forth) predicts more litigation, the marginal increase in exposure to conflict is associated with a decline in propensity to litigate. One possible explanation for the concave effect is that more experienced or reputable VCs are better managers – either less likely to end up in a conflict in the first place or more able to resolve contentious issues without litigation. Another explanation for concavity is that the reputational loss is more damaging for older and larger firms, and thus more reputable VCs work harder to avoid litigation. These findings are also consistent with the “no lunch in this town” explanation: as the VC grows older and larger, their adversaries may be more reluctant to start a legal war for the fear of repercussions from other industry participants.

We are also interested in whether and how participation in multiple lawsuits affects the likelihood of future litigation. In Models 4 and 5 we include the *Prior lawsuits* variable. Its coefficient estimate is 0.323 (Model 4) and is significant at the 1% level. This implies that VC firms that are involved in more lawsuits in the past are significantly more likely to get embroiled in a lawsuit in the future. In this model, the coefficients on *Funds under mgmt* and *VC age* remain positive and significant. However, once the prior lawsuit variable is included in the model, the coefficient on *Past performance* becomes insignificant. Lastly, in Model 5

we include the quadratic term of *Funds under mgmt* and the coefficient on *Prior lawsuits* remains positive and significant.

We also find that VC firms focusing on early-stage startups are more likely to get sued. This likely reflects the fact that uncertainty and information asymmetry are much higher for early-stage firms and hence there might be more opportunities for opportunistic behavior. In addition, early-stage firms have fewer repeat-player investors whose presence may constrain VC misbehavior. However, as mentioned before, the increased rate of litigation does not necessarily have to signal bad behavior. The uncertainty of early-stage investing may prompt litigation by increasing the chance that an entirely appropriate decision by the VC may appear bad-faith and expropriatory to the other party. Likewise, higher uncertainty may impede early pre-litigation settlements by increasing the divergence of outcomes that parties expect at trial.

4.2. Probability of VC participation in equity and asset tunneling lawsuits

To shed more light on the likelihood of VC litigation and to investigate whether more reputable VCs are less likely to engage in equity or asset tunneling lawsuits, we use an ordered probit model. Since tunneling is a very effective method of wealth expropriation, one would expect a well-functioning reputation market to reflect tunneling behavior most strongly. For example, a highly reputable VC firm may not be able to avoid being named among a dozen defendants in a securities class action, but it may be less likely to engage in behavior giving rise to allegations of asset stripping and founder freeze-out, as Hypothesis 1 asserts. In the ordered probit model we use both sample VC firms and their corresponding matching firms (selected using the matching procedure described in Section 5). The dependent variable takes the value of (a) zero, if a VC firm does not participate in litigation,

(b) one, if the VC is a plaintiff, (c) two, if the VC is defendant but does not participate in equity or asset tunneling, and (d) three, if the VC is defendant and is involved in equity or asset tunneling. Because we need information on the types of lawsuits, here we use only the sub-sample of lawsuits with full information. We use the same set of control variables as in the random effects probit model.

The results from the ordered probit estimation are presented in Table 4. The evidence from Model 1 suggest that larger firms, contrary to Hypothesis 1, are more likely to get involved into tunneling transactions (the coefficient on *Funds under mgmt* is positive and significant). However, the effect of *Funds under mgmt* is significantly dampened when we include the *Prior lawsuits* variable in the model specification (Model 2). Similarly to the results in the previous sub-section, we find that VCs involved in a number of lawsuits in the past are more likely to engage in tunneling-type transactions. In addition, in both models the coefficient on *Past performance* is negative, but insignificant. In Model 3 we include the quadratic term of *Funds under mgmt* but it is not statistically significant. We obtain similar results when we use *Deal flow* as a reputation proxy. Finally, in Model 4 we include two interaction terms – *Prior lawsuits* x *Log(VC age)* and *Prior lawsuits* x *Funds under mgmt*. By doing this we want to examine whether more reputable firms, even when they are involved in multiple lawsuits, are less likely to engage in equity or asset tunneling. Unfortunately, the results are inconclusive. While larger VCs with multiple lawsuits are less likely to get involved into tunneling transactions (the coefficient on *Prior lawsuits* x *Funds under mgmt* is negative and significant), older firms with multiple lawsuits are more likely to get involved into this type of transactions (the coefficient on *Prior lawsuits* x *Log(VC age)* is positive and significant).

Thus, we find only partial support for Hypothesis 1 in this sub-section. The main finding is that multiple offenders are significantly more likely to engage in tunneling transactions. In addition, for all of the specifications we find that VCs that focus on early-stage firms are more likely to engage in tunneling transactions. One plausible explanation of this finding is that because syndication is not very common in the early stages of financing, VCs investing in early-stage firms can more easily hold the entrepreneurs up (an argument consistent with the model in Fluck, Garrison, and Myers (2005)).

5. Effect of litigation on VC fundraising and deal flow

We next examine the impact of litigation on the reputation and performance of the VCs involved in the lawsuits. Our Hypothesis 2 predicts that VCs involved in litigation would suffer reputational consequences and Hypothesis 3 asserts that those would be more severe the more egregious the alleged actions of VCs are. We use three measures for VC reputation in our analysis – the size of funds raised, the number of companies in which each VC invests (quantity of deal flow) and the fraction of portfolio firms that go public (quality of deal flow). The fraction of portfolio firms going public measure can be also interpreted as a proxy for VC performance following the litigation.

We conduct a before-and-after analysis of these measures using a sample of matching VC firms. Our matching procedure is as follows: 1) match each of our litigated VCs to a set of VC firms with the same age and funds under management (funds under management of the matching firms are within 50%-150% of the funds under management for the litigated VC firm); and 2) from this set, select a peer firm with as close as possible past performance as measured by the proportion of portfolio firms going public of the last fund raised before the year of litigation. Appendix A describes the matching procedure in more detail.

We use a difference-in-differences type specification where we compare the difference in sample firm measures post vs. pre litigation with the difference of peer firm measures post vs. pre. The mean and median tests are based on a comparison of the post-pre difference for the litigated VCs sample and the post-pre difference for the peer firms. In an alternative test, we adjust each reputation and performance variable by the value of the corresponding reputational or performance measure of the peer firm and test for significant differences between the post and pre litigation values of the adjusted measures. This approach yields qualitatively similar results and for the sake of brevity is not reported here.

For the tests in this section we use the sub-sample of lawsuits which commenced in or before year 2003. The reason is that we want to allow VCs time to raise new funds after the lawsuit. Since VCs raise new funds every 2-3 years (see Fenn, Liang, and Prowse (1997)), we decided to stop at the end of year 2003. This yields a sample of 218 unique lawsuit-VC observations.

5.1. Post-litigation funds raised

One important issue is that some litigated and control VCs do not raise any new funds after the year of litigation. One possible reason for that is the impact of the lawsuit, but there could be others. This presents us with the dilemma of whether we should keep these observations in the sample. We deal with this issue in two ways. First, if a litigated VC or a matching firm does not have any funds after the litigation year, we assign a value of zero to the “funds raised” variable. In our sample, the fraction of firms that do not have funds after litigation is higher for the matching firms. By setting these fund sizes to zero, we introduce a bias that we believe works against finding any support for Hypothesis 2.¹⁵ Second, we repeat

¹⁵ More of the control firm-adjusted post-litigation fund measures for our sample firms will be positive, thus making it less likely to observe significant changes from the pre-litigation levels.

our analysis using only those litigated and control firms that raised at least some funds after litigation. For robustness, we present results for both matching based on VC firm age and funds under managements and matching based on VC firm age and percent investments going IPO.

The results of the test for changes in funds raised by each of the VCs in our sample following the litigation are presented in Table 5A. First, looking at the means for the full sample and both types of matching, we find that on average VCs involved in litigation experience a significant decrease in the size of funds raised after the year of the lawsuit. All of the results are significant at the 1% level. For example, after the lawsuit the average difference in funds under management (when matching on size and age) for the VCs in our sample is -0.1167, while that for the matching firms is half that amount: -0.0051 (p-value of t-test for equality of means is 0.01). We obtain the similar results when performing the mean tests on the sub-sample of litigated VCs and matching firms that have both pre and post litigation funds. The tests of medians yield similar results.

Next, we focus on the sub-sample of lawsuits in which VCs are defendants, which has 170 unique lawsuit-VC observations. We expect the impact of litigation to be stronger for those VCs. We find that the average difference in funds raised is larger (-0.1301) for the VCs that are defendants than that for the whole sample (-0.1167), and so is the median difference (-0.0056 versus -0.0050), although the latter is not significant. When we consider cases where the VC is defendant and the suit alleges tunneling, we find similar results – the means and the medians of the changes in funds raised for the litigated VCs are significantly smaller than those for the control firms.

Lastly, we separately investigate the cases where the VC is a defendant participates in multiple lawsuits. The results from Section 4 suggest that multiple litigation in the past has a particularly strong positive effect on the likelihood of a new lawsuit. Our goal here is to examine whether VCs that are defendants in multiple lawsuits suffer significant reputational losses. For this sub-sample, we find that there is a significant difference in both the means and medians of the Post-Pre changes in fund size. The same holds true for the subsample of VC defendants with multiple lawsuits and engaging in tunneling transactions. However, caution is needed when interpreting the last result given that the sample size is only 24. Overall, the evidence in Table 5A suggests that VCs involved in litigation suffer reputational consequences – they tend to raise smaller funds than their corresponding matching firms after the litigation. This supports Hypothesis 2.

5.2. Post-litigation deal flow quantity

Next, we turn our attention to the effect of litigation on the deal flow of VCs in our sample. Hypothesis 2 asserts that the negative publicity associated with lawsuits will reduce the willingness of founders and syndicating VCs to accept financing from the VC involved in litigation. Thus, VCs might lose valuable deal flow. To measure changes in pre- and post-litigation deal flow, we compare the difference Post-Pre in the number of companies that receive financing from each litigated VC in our sample to the same difference for the control firms. Again, we scale these measures by the total number of companies financed by the whole universe of VCs during each year in which a particular VC in our sample raises a fund. As in the previous sub-section, we have some sample firms without any deals after the lawsuit year. We treat those in the same way – set the number of deals to zero or exclude the firms without post-litigation deals from the analysis.

The results of the number of deals analysis are presented in Table 5B. Similar to Table 5A, the evidence suggests that VCs involved in litigation suffer significant decreases in deal flow. For example, the average change in the deal flow of litigated VCs for the full sample is -0.0785 compared to -0.0032 for the control firms (p-value is 0.01). Here both the mean and median tests give the same results. When we focus only on VCs that are defendants, we also find that these VCs experience a significant decline in deal flow. We find a similar effect on deal flow for VCs which engage in various expropriation activities and multiple lawsuits. Overall, the results in Table 5B suggest that VCs involved in lawsuits seem to lose deal flow following the litigation. This provides further support for Hypothesis 2.

5.3. Post-litigation deal flow quality

Besides quantity of deal flow, we also test for possible changes in the quality of VC deal flow after the year of litigation. Hypothesis 2 predicts that lawsuits will have a negative effect on the quality of deals, not only their quantity. We measure deal flow quality by the control firm-adjusted fraction of portfolio firms that go public.¹⁶ Again, we compare the difference Post-Pre for the litigated VC firms to that of the control group and test for significant differences. Because we need to have investments in order to be able to calculate these ratios, here we use only those treatment and control VC firms that have pre- and post-litigation investments.

The results of the quality of deal flow analysis are presented in Table 6. Like the results in previous sub-sections, we find that all of the Post-Pre differences for the litigated VCs are significantly smaller than the corresponding Post-Pre differences for the control

¹⁶ We obtain qualitatively similar results when we use the fraction of portfolio firms that go public or get acquired as a measure of success.

firms. For example, the average Post-Pre difference in the fraction of IPOs for VC defendants is -0.1194 when matching on size and age, compared to -0.0201 for the matching firms. The same holds true when we consider medians – the Post-Pre medians are significantly more negative for the litigated VCs than for the matching firms. We obtain significant results (both for means and medians) for the full sample as well as the cases where the VC is defendant and engages in tunneling and multiple lawsuits. Overall, these findings are consistent with the results from the previous two sub-sections and lend support for Hypothesis 2.

5.4. Multivariate Analysis

Lastly, we try to determine the changes in fund size and quantity and quality of deal flow using a regression framework. In Table 7, we first regress the changes in our control firm-adjusted measures of reputation and performance on a set of control variables. We include a measure of firm reputation (*VC Age*), a dummy variable for cases where the VC is defendant (*VC defendant*), an interaction term for VC defendant and the number of lawsuits a VC has been engaged in (*VC defendant + Prior lawsuits*), an interaction term for VC defendant and tunneling (*VC defendant + Tunneling*), an interaction term for the outcome of the lawsuit (*VC defendant + lost*), the average fraction of IPOs the VC firm has generated prior to the litigation (*Past performance*), preferred investment stage (*Stage*), a dummy variable equal to one if the VC firm focuses on hi-tech industries (*Hi-tech*) and year fixed effects.

Models 1 through 4 in Table 7 present the results for funds under management. The coefficient on firm reputation (as measured by firm age) has a negative sign, suggesting that more reputable firms experience larger declines in funds under management after litigation. Model 1 also presents evidence that VCs that are defendants suffer declines in funds under

management following the litigation. However, this result is particularly strong when the VC is a defendant in multiple lawsuits. When we include the interaction term between *VC defendant* and *Prior lawsuits*, its coefficient is negative (-0.136) and statistically significant (t-stat=-6.93), while the coefficient on *VC defendant* becomes insignificant. In Model 3 we include several interaction terms indicating whether the VC engages in tunneling and lost the case. We find that VC firms that are defendants and lose the law suits are viewed more negatively by VC investors – the coefficient on *VC defendant + lost* is negative (-0.147) and statistically significant (t-stat=-1.88). These results indicate that market reacts not only to the fact of the lawsuit, but to the content of the law suit – VCs who lose are punished more severely than the ones who win, and repeat litigators are viewed with more suspicion. Lastly, in Model 4 we include a measure of the performance of the VCs and the results suggest that firms that perform better suffer bigger losses when engaged in litigation.

Model 5 of Table 7 presents a regression of the control firm-adjusted change in deal flow on the same set of control variables. The results from the regression estimation suggest that prior firm reputation has also a negative impact on changes in deal flow. The coefficient on *VC Age* is negative and significant at the 1% level. Like the fund size regression specifications, being engaged in repeated lawsuits has a significant negative impact on deal flow. In addition, the evidence suggests that VC defendants who lose the cases are being punished by the market. The coefficient on *VC defendant + lost* is negative and statistically significant. Lastly, in Models 6 we examine the change in the quality of deal flow. Here the only significant variable is *Past performance*.

Overall, Table 7 presents several interesting and important results. First, we document that more reputable firms tend to experience larger reputational losses following a lawsuit

than less reputable firms. This finding provides indirect support for Hypothesis 2. In addition, we uncover evidence supporting Hypothesis 3 – we find that venture firms that are defendants, lose the lawsuit, and especially those that participate in multiple lawsuits tend to suffer significant reputational losses. Generally, the evidence in this sub-section is consistent with and supports our findings in the previous sub-sections, and implies that VCs who are involved in lawsuits experience reputational loss.

6. Conclusion

This paper makes several contributions to the literature. First, it presents the first systematic study of VC-related litigation, based on a hand-collected set of lawsuits. Contrary to the popular image of the VC industry as a self-governing community that uses informal means of dispute resolution and avoids litigation as means of redressing wrongs, we document that VCs are involved in litigation quite often.

Second, this is the first study that seeks to document the downside of the current pattern of VC contracting, where VCs receive very large amount of discretion in exchange for a mere promise not to misbehave. We cannot measure the extent of VC misbehavior itself, but we can study the tip of the iceberg – litigation – showing allegations of widespread VC opportunism.

Finally, we are first to investigate the channels through which legal and non-legal environments interact in reducing incentives for VC misbehavior. We show that while founders rarely succeed when suing VCs in court, their lawsuits have consequences far beyond the formal damages award. When VCs are sued, other industry participants react – defendant VCs experience difficulties in raising capital and finding sufficient number of

high-quality new deals. The reputational loss is larger for more reputable VCs and VCs participating in more lawsuits.

Overall, we present evidence that a VC industry uses a complex web of legal and non-legal mechanisms to ameliorate the possible abuse of contractual discretion by VCs. Neither law alone nor reputation alone is enough; it's the combination of the two that seems to give strength to the system. We cannot tell how well the system deters misbehavior, but we can tell that at least some misbehavior is punished.

Appendix A. Data Manipulations – full information sample

We start with the lawsuit data from Westlaw and manually match the names in the list of plaintiffs and defendants to the list of all VC firms in the VentureXpert database. Out of 339 identifiable VC parties in the 355 lawsuit sample, we match 215 VC firm names with the VentureXpert universe. This results in 248 lawsuits and 442 unique VC firm-lawsuit combinations.

Our analysis requires information on the year when a complaint is filed. Westlaw provides information on the filing year for 125 cases. The remaining 123 cases have data on disposition dates only. For these cases we assume that the filing date is two years before the disposition date. The reason we choose two years is because for the 125 cases where we have information on both filing and disposition year the average difference is 1.3 years and it is reasonable to expect that these cases are on average resolved quicker than the rest of the sample.

One deficiency of the VentureXpert dataset is that there are no numeric variables which uniquely identify a VC firm; only string variables containing the name of a VC firm or fund are available. The VC firm names are not consistent across time. For example Hambrecht and Quist (H&Q) is acquired by JP Morgan. Following the acquisition some H&Q funds are mapped to JP Morgan, some are still kept as funds of H&Q. To solve this problem for the VC firms in our lawsuit sample, we create our own meta-firm names which map different versions of a firm name to a single string. We then extract the funds which correspond to each version of a firm name with the meta-firm name and aggregate them. As we will see later, this process makes the firms in our sample on average bigger than the firms

in the VentureXpert universe, because VentureXpert may record funds belonging to the same VC company as belonging to different VC firms.

After dealing with VC firm names, we then download date for the founding date of each VC firm company in the VentureXpert universe. We replace founding date with the date when first investment is made when founding dates is missing or the founding date is later than first investment date. We follow the same procedure for fund founding dates. Due to dubious data quality we drop all funds which are reported as founded earlier than 1960.

For the 215 VC firms appearing in our lawsuit sample which are also covered in VentureXpert, seven firms do not have any funds listed before the filing date of the lawsuit and we drop them from the pre-post lawsuit analysis. We also drop 3i Group PLC since it is a publicly-traded firm. We match each of the remaining 207 firms which appear in 239 lawsuits and result in 280 unique lawsuit-VC firm combinations to all remaining firms in the VentureXpert universe in order to find a suitable peer company. Following Kaplan and Schoar (2005) we find the best matching firm based on the age of the VC company (defined as year of filing of lawsuit minus year of founding), size (the cumulative size of funds under management from the year of founding of the firm to the year of filing of the lawsuit), and performance (the fraction of portfolio companies going public from the last fund before the year of litigation). The exact matching procedure is as follows:

1. Download all funds in VentureXpert database. For each year in the period from 1960 to 2007, calculate total fund size in a year as the sum of the assets of all funds which are founding in this year. This variable substitutes a variable in VentureXpert which measures the total dollar commitments to VC funds in a year. This variable is of poor quality in the earlier years and there are funds

which have assets more than ten times larger than the total funds committed to the industry in a year as measured by this variable. By calculating our own total fund size variable we ensure that no fund will have rescaled fund size larger than 1, where rescaled fund size equals fund dollar assets divided by the sum of the assets of all funds founded in the same year.

2. Take each firm-lawsuit observation of our 207 firm/280 firm-lawsuit sample. Compute firm age as filing year – founding year.
3. Pull all funds which correspond to the same firm name in VentureXpert and calculate the cumulative assets under management of the firm pre-lawsuit as the sum of scaled fund sizes for all funds which were founded from the founding of the firm till the year of filing the lawsuit. We lose seven firms from our sample, because all of their funds pre-lawsuit have missing data on fund size and we cannot compute firm scaled size.
4. After calculating firm age and firm pre-lawsuit scaled size, we find all firms in the VentureXpert universe which are founded within five years of the sample firm, where we replace the founding year of all firms founded before 1960 to equal 1960.
5. Within this narrowed-down peer universe, we look at how many firms have the same founding year. If there are more than 20 such firms, we select the firms that are closest in scaled size (50%-150% of the scaled size of the litigated firm). If there are at least 20 such firms, we choose the best matching company to be the one closest in terms of performance. If there are fewer than 20 firms founded in the same year or within the 50%-150% size interval, we look at firms founded

within one year. If there are more than 20 of them, we select the firms that are closest in scaled size. If there are at least 20 such firms, we choose the best matching firm as the firm closest in terms of performance. We repeat the procedure until we are able to select matches within five years of the sample firm. Last, if there are less than 20 companies founded within five years of the sample firm or within the 50%-150% size interval, we just take the closest firms in terms of age and scaled size and performance.

After finishing the matching procedure, we have 207 companies and 280 unique firm-lawsuit combinations. The matching procedure matched firm age and performance very well (the median difference between the age and the performance of the sample firms and the best matches is 0) and fairly well on size (the median matching firm is 8% smaller than the median sample firm).

The procedure for matching on age, size, and pre-litigation fund performance is the same for the sub-sample of VC lawsuits with partial information.

Appendix B. Examples of Lawsuits

Examples of alleged VC misbehavior with regard to founders. The facts are as alleged in complaints, not as proven in court. Many cases include a combination of claims.

Founder Dilution

Goldman v Pogo.com, Inc., 2002 WL 1358760 (Del.Ch., 2002)

Founder was a president and CEO of e-gaming company; owned 29% of voting shares. VCs pushed founder to resign as a president and CEO. Firm needed money; VCs on the board chose funky securities, converted, did a reverse stock split; all of this reduced the founder's stake from 13% to 0.1%. VCs then refused to redeem founder's stock in violation of prior agreement.

Keith v. Black Diamond Advisors, 48 F. Supp. 2d 326 (S.D. NY, 1999)

Founders operated a company doing sub-prime mortgage lending. VCs promised money and expertise. Founders and VCs formed a new company; half interest went to VCs, half to founders. VCs planned dilution, enlarged board, took away control; persuaded one founder to give up his option to buy another founder's interest, so the remaining founder lost even more control.

Marmon v. Arbinet-Thexchange, 2004 Del. Ch. LEXIS 44

Plaintiff was a consultant for the startup and received stock as compensation. Then, he became a president and board member. While another man was a chairman, the startup received five rounds of financing. Founder/consultant wanted to see financial info because he was told of mismanagement, unauthorized loans to executives, and dilutive financing. CEO who suggested dilutive financing was an interested party: he was also CEO of firm that owns 5% of proposed VC. Severe dilution followed, without the knowledge of common, along with additional series of dilutions.

Asset Stripping and Dilution

Albers v. Edelson Technology Partners L.P. , 201 Ariz 47 (2001).

The startup is 42% owned by founders and rest by two venture capitalists. The startup has exclusive license on use of a patent owned by its parent corporation (where VCs are not invested). VCs have their representatives on the startup's board of directors. VCs failed to develop and use a patent; promised to invest more money and didn't; waited until late and forced cheap purchase of stock, diluting voting and econ power of founders.

Cooper v. Parsky, 140 F.3d 433 (2d Cir., 1998)

A founder of a large oil refinery company put his stock in voting trust, to be voted by company's board; he also had 5-year employment agreement (terminable for cause). The founder was fired without cause in violation of his employment contract, sued and won. While the founder was illegally fired, his stock was voted in a way that left company with no assets; all assets were channeled to another entity controlled by VCs. After series of asset-stripping transactions with related entities, VCs left the founder with nothing.

Bowers v. Allied Capital Corp. 1991 WL 335252 D.Me., 1991

Founders owned a car-recycling operation. VCs conspired to mislead creditors and suppliers that company is a bad financial state, to put company in bankruptcy, while withholding funding. The purpose was to avoid paying founders under an "earn-out formula."

Sale of Company on Terms Unfavorable to Founders

Kennedy v. Venrock Associates, 348 F.3d 584 (7th Cir. 2003)

The startup was based in IL, but incorporated in Maryland. VCs received preferred stock; founders received common. The startup had a 5-member board: 1 VC, the rest were not affiliated (founders claim that one more director was "aligned with VC"). The board turned down an acquisition offer; proposed (and shareholders approved) to reincorporate in DE. DE law gives shareholders less protection than Maryland law, which governed the startup before. After reincorporation in DE, VCs gained control over the majority of the board. The board approved bridge loans that gave VCs preference in liquidation; didn't seek other financing. The board approved the sale of the startup for stock; turned down alternatives. In DE, a simple majority of shareholder vote is required to approved sale; in Maryland, that would be two-thirds. The buyer of the startup is now in bankruptcy. Holders of common stock gets nothing; not enough for creditors and preferred.

Firing of Founder in Violation of Employment Agreement

Olsen v. Seifert, 1998 Mass. Super. LEXIS 592

One of the three founders of the startup alleges that another founder (who holds more senior position in firm) lured him into relinquishing his board seat, then fired him, took away unvested stock. When the company received VC funding (preferred), the plaintiff founder signed a stock purchase agreement, where his stock (purchased at symbolic price) would vest over several years. The agreement provided that in the event of a merger/acquisition, more of the plaintiff founder's stock would vest. Defendant founder agreed to sell company to Lucent; in two days, fired plaintiff founder and repurchased unvested stock. If plaintiff founder were fired after the merger, his stock would have vested.

Talton v. Unisource Network Serv., 2001 U.S. Dist. LEXIS 14049

The company had multiple rounds of VC financing; VCs and the plaintiff founder sit on the board. The company has various problems with funding and attempts to sell; the founder alleges plot to terminate her employment. The founder is induced to invest personal money to keep the company afloat; after that, VCs offered to put in more in exchange for subordination of the founder's securities. The founder agreed, and then got fired. The founder sues for fraud and other similar offenses.

Kroutik v. Momentix, 2003 Mass. Super. LEXIS 112

Founder formed a startup; obtained several rounds of financing from three different VCs. After two rounds, the founder was moved from being a president and CEO to being a "chairman and founder". Eventually, VCs fired the founder; he sued for breach of contract and wrongful termination; the startup counterclaimed breach of fiduciary duty. Settled: the startup is to pay the founder; the founder is to return a key laptop with all contents. The founder returned a laptop, but erased data; the startup did not pay. The startup is now defunct; everyone lost money.

Asset Stripping, Dilution, Sale on Terms Unfavorable to Founders.

Erickson v. Horing, 2001 WL 1640142 (D. Minn., 2001)

VC wanted to invest in the startup; misrepresented that they had experience in relevant field, and promised an IPO. VCs persuaded founders to sell their interests in the startup for interests in another company and promised exactly the same rights. However, during the merger, all prior rights disappeared. Founders got diluted and lost control, partly because VCs falsely claimed that two of 7 board members resigned, which allowed VCs gain control. Then, VCs stripped assets, sold the startup at very bad price to interested 3d party, and abandoned IPO promises. Result: VCs took out everything from firm, transferred to themselves, and common is left with nothing.

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Table 1
Characteristics of lawsuits involving VCs

Panel A. Lawsuits with full information

We collect lawsuits by searches in West Law, business media, and PACER. The total number of lawsuits in this sub-sample is 239 in the period 1976-2007.

Characteristic	Number of lawsuits
<i>Defendant/Plaintiffs Composition:</i>	
VCs Among Defendants	185
Founders Among Defendants	2
VCs Among Plaintiffs	54
Founders Among Plaintiffs	54
<i>Alleged Tunneling Method:</i>	
Freezout	5
Dilution	4
Acquisition on Unfavorable Terms	24
Misappropriation of Business Opportunity	8
Asset Transfer	33
<i>Where Case Brought: (State Name/No. of Federal Suits):</i>	
CA	39
DE	34
NY	32
MA	17
FL	14
TX	13
IL	9
PA	7
All federal (no bankruptcy)	142
All state	89
Bankruptcy	10
<i>Class Actions</i>	16
<i>Lawsuit Outcome:</i>	
VC Won at Trial or Pre-Trial Motion (Partly Won)	24 (29)
VC Lost at Trial or Pre-Trial Motion	25
Case Dismissed on Procedural Grounds	11
Case Dismissed on Substantive Grounds	31
Case settled	4
Case Ongoing	106

Panel B. Lawsuits with partial information

We collect lawsuits by searches in West Law, business media, and PACER. The total number of lawsuits in this sub-sample is 57 in the period 1986-2006.

Characteristic		Number of lawsuits
<i>Defendant/Plaintiffs Composition:</i>	VCs Among Defendants	44
	VCs Among Plaintiffs	13
<i>Where Case Brought: (State Name/No. of Federal Suits):</i>	NY	15
	CA	8
	TX	4
	IL	3
	MI	3
	OR	3
	All federal (no bankruptcy)	27
	All state	26
	Bankruptcy	5

Table 2
Summary statistics for sample VCs

The table presents summary statistics for the 221 VCs involved in 296 lawsuits, resulting in 337 unique VC firm-lawsuit combinations over the period 1976-2007. All the variables are measured at the time of the lawsuit. Information on stage preference and diversified industry preference is taken from VentureXpert. All dollar values are in converted into year 2000 dollars.

Variables	Sample 1976-2007				
	Mean	Median	Std	Min	Max
Age (years)	16.5	13	15.5	1	94
Num. of funds pre-litigation	6.3	4	7.5	1	52
Avg. fund size pre-litigation (mill.)	384.7	79.4	1,155.4	0.01	12,229.1
Aggregate fund size pre-litigation (mill.)	2,446.8	272.8	5,420.7	0.16	31,872.4
Stage preference (1 if early; 0 if late)	0.2	0	0.4	0	1
Hi-tech (1 if hi-tech; 0 otherwise)	0.2	0	0.4	0	1
Number of VC firm-lawsuit observations	337				

Table 3
Probit model of VC litigation

The table presents the results of a random effects probit model of VC litigation. The sample includes a sample of 5,279 US and non-US VC firms, of which 221 are involved in lawsuits. The sample starts in 1970 and ends in 2007. The dependent variable is equal to one if VC firm i is involved in a lawsuit in year t , and zero otherwise. VC age is the age of the VC firm. Past performance is fraction of portfolio companies that go public for the most recent fund the firm has raised. Funds under mgmt is the dollar amount of all the funds raised in the past, scaled by the total amount of VC commitments in the year of each fund. Deal flow is the number of companies the VC firm's funds have invested in the past, scaled by the total number of VC backed companies in the year each fund was established. Prior lawsuits is equal to the number of lawsuits each firm had in the past. Stage is a dummy equal to one if the VC firm focuses on early-stage firms, and zero otherwise. Hi-tech is a dummy variable equal to one if the VC firm's industry focus is on hi-tech industries such as information technology, biotechnology, and medical/health/life sciences, and zero otherwise. Industry classification from VentureXpert is used. The models are estimated with robust standard errors. Robust t -statistics is in the parenthesis.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Log(VC age)	0.248 *** (6.21)	0.221 *** (5.45)	0.136 *** (3.22)	0.212 *** (5.86)	0.188 *** (5.15)
Past performance	-0.300 * (-1.81)	-0.297 * (-1.79)	-0.299 * (-1.78)	-0.176 (-1.18)	-0.178 (-1.19)
Funds under mgmt	2.062 *** (4.96)	4.653 *** (4.66)		1.707 *** (4.72)	3.968 *** (4.62)
Stage	0.212 ** (2.46)	0.200 ** (2.35)	0.142 * (1.70)	0.227 *** (3.04)	0.220 *** (2.96)
Hi-tech	0.047 (0.48)	0.043 (0.44)	0.035 (0.37)	0.063 (0.74)	0.054 (0.63)
Time trend	0.040 *** (7.78)	0.040 *** (7.84)	0.042 *** (8.12)	0.032 *** (6.88)	0.032 *** (6.97)
Funds under mgmt ²		-3.425 ** (-2.56)			-3.077 *** (-2.59)
Deal flow			11.789 *** (6.36)		
Deal flow ²			-20.312 *** (-3.47)		
Prior lawsuits				0.323 *** (10.67)	0.320 *** (10.70)
Num. obs.	51,931	51,931	51,931	51,931	51,931
p-value of χ^2	0.000	0.000	0.000	0.000	0.000

Table 4
Ordered probit model of VC litigation

The table presents the results of an ordered probit model of VC litigation. The sample includes 207 VC that are involved in lawsuits with full information over the period 1976-2007 and their matching firms, which are selected on the basis of age and funds under management. VC age is the age of the VC firm. Past performance is fraction of portfolio companies that go public for the most recent fund the firm has raised. Funds under mgmt is the dollar amount of all the funds raised in the past, scaled by the total amount of VC commitments in the year of each fund. Prior lawsuits is equal to the number of lawsuits each firm had in the past. Stage is a dummy equal to one if the VC firm focuses on early-stage firms, and zero otherwise. Hi-tech is a dummy variable equal to one if the VC firm's industry focus is on hi-tech industries such as information technology, biotechnology, and medical/health/life sciences, and zero otherwise. Industry classification from VentureXpert is used. The models are estimated with robust standard errors. Z-statistics is in the parenthesis.

Variables	Dependent variable: 0 if no lawsuit, 1 if plaintiff, 2 if defendant and no tunneling, 3 if defendant and tunneling			
	(1)	(2)	(3)	(4)
Log(VC age)	-0.002 [-0.73]	-0.001 [-0.59]	-0.002 [-0.84]	-0.007** [-2.17]
Funds under mgmt	0.626** [2.25]	0.100 [0.51]	0.784 [0.89]	0.404 [1.14]
Past performance	-0.419 [-1.51]	-0.378 [-1.36]	-0.374 [-1.35]	-0.268 [-0.99]
Prior lawsuits		0.354*** [3.65]	0.350*** [3.63]	0.437*** [2.92]
Funds under mgmt ²			-0.896 [-1.00]	
Prior lawsuits x Log(VC age)				0.008** [2.08]
Prior lawsuits x Funds under mgmt				-0.417** [-2.12]
Stage	0.504*** [3.96]	0.504*** [3.89]	0.502*** [3.87]	0.480*** [3.62]
Hi-tech	0.060 [0.48]	0.091 [0.73]	0.096 [0.77]	0.101 [0.80]
Year fixed effects	Included	Included	Included	Included
Num. obs.	562	562	562	562
Prob > chi2	0.01	0.01	0.01	0.01
Pseudo R ² /Log-likelihood	0.03	0.05	0.05	0.06
Ordered probit cut-offs:				
Cut-off group 1	-0.259	-0.276	-0.256	-0.297
Cut-off group 2	0.051	0.048	0.064	0.032
Cut-off group 3	0.582	0.588	0.605	0.581

Table 5
Changes in fundraising and quantity of deal flow following litigation

The table presents results of univariate tests for changes in pre- and post-litigation funds raised and changes in the quantity of deal flow. The sample includes only lawsuits that commence by the end of year 2003. For each sample VC, the aggregate funds raised before and after the year of litigation are calculated. The dollar amount of each fund raised (pre- or post-litigation) is scaled by the total amount of VC commitments in the year of the fund. (Post – Pre) is the difference between the post-litigation and pre-litigation funds under management for the sample VC firms and the corresponding matching firms. Mean and Median is the mean and median of this difference. Matching firms in are the closest firms without a lawsuit to each sample firm by age, funds under management and performance (measured as percent of investments going IPO of the last fund prior to litigation). *t*-test for equality of means and Wilcoxon signed rank test for equality of medians are used. *p*-values are reported in parenthesis.

Panel A. Funds under Management

	Full Sample			Only firms where litigation and control VCs have nonzero fundraising before and after litigation		
	# Obs.	Mean	Median	# Obs.	Mean	Median
All VCs	218			61		
(Post – Pre) litigation firms		-0.1167	-0.0050		-0.1943	-0.0087
(Post – Pre) matching firms		-0.0051	-0.0007		-0.0090	-0.0001
p-value of test litigation firms=matching firms		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant	170			55		
(Post – Pre) litigation firms		-0.1303	-0.0056		-0.2129	-0.0113
(Post – Pre) matching firms		-0.0056	-0.0006		-0.0095	-0.0001
p-value of test litigation firms=matching firms		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and tunneling	95			30		
(Post – Pre) litigation firms		-0.1141	-0.0092		-0.1503	-0.0158
(Post – Pre) matching firms		-0.0092	-0.0009		-0.0180	-0.0018
p-value of test litigation firms=matching firms		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and multiple lawsuit	60			20		
(Post – Pre) litigation firms		-0.2385	-0.0098		-0.4011	-0.2824
(Post – Pre) matching firms		-0.0019	-0.0003		-0.0044	0.0014
p-value of test litigation firms=matching firms		(0.01)	(0.01)		(0.01)	(0.02)
VC defendant and multiple lawsuit and tunneling	24					
(Post – Pre) litigation firms		-0.2270	-0.0192			
(Post – Pre) matching firms		-0.0123	-0.0010			
p-value of test litigation firms=matching firms		(0.01)	(0.02)			

Panel B. Quantity of deal flow

	Full Sample			Only firms where litigation and control VCs have nonzero fundraising before and after litigation		
	# Obs.	Mean	Median	# Obs.	Mean	Median
All VCs	218			61		
(Post – Pre) litigation firms		-0.0785	-0.0032		-0.1208	-0.0195
(Post – Pre) matching firms		-0.0032	-0.0016		-0.0002	-0.0016
p-value of test litigation firms=matching firms		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant	170			55		
(Post – Pre) litigation firms		-0.0829	-0.0029		-0.1287	-0.0268
(Post – Pre) matching firms		-0.0029	-0.0015		0.0007	-0.0018
p-value of test litigation firms=matching firms		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and tunneling	95			30		
(Post – Pre) litigation firms		-0.0759	-0.0046		-0.1197	-0.0301
(Post – Pre) matching firms		-0.0046	-0.0016		-0.0896	-0.0022
p-value of test litigation firms=matching firms		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and multiple lawsuit	60			20		
(Post – Pre) litigation firms		-0.1385	-0.0342		-0.2065	-0.2464
(Post – Pre) matching firms		-0.0029	-0.0010		0.0131	0.0011
p-value of test litigation firms=matching firms		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and multiple lawsuit and tunneling	24					
(Post – Pre) litigation firms		-0.1429	-0.0406			
(Post – Pre) matching firms		-0.0006	-0.0017			
p-value of test litigation firms=matching firms		(0.01)	(0.01)			

Table 6
Changes in quality of deal flow – fraction of successful exits

The table presents results of univariate tests for changes in pre- and post-litigation performance. Performance is measured as the average (across funds) fraction of portfolio firms taken public (IPOs). The sample includes only lawsuits that commence by the end of year 2003 and only sample VCs and corresponding matching firms that raise funds before and after the litigation. For each sample VC, the fraction of portfolio firms going public or being acquired are calculated for funds raised before and after the year of litigation. (Post – Pre) is the difference between the post-litigation and pre-litigation performance for the sample VC firms and the corresponding matching firms. Mean and Median is the mean and median of this difference. Matching firms are the closest firms without a lawsuit to each sample firm by age, funds under management and performance (measured as percent of investments going IPO of the last fund prior to litigation). *t*-test for equality of means and Wilcoxon signed rank test for equality of medians are used. *p*-values are reported in parenthesis.

Sample	Matching by Age and Funds under Management		
	# Obs.	Mean	Median
All VCs	61		
(Post – Pre) litigation firms		-0.1194	-0.1259
(Post – Pre) matching firms		-0.0201	-0.0556
p-value of test litigation firms=matching firms		(0.01)	(0.01)
VC defendant	55		
(Post – Pre) litigation firms		-0.1236	-0.1389
(Post – Pre) matching firms		-0.0282	-0.0633
p-value of test litigation firms=matching firms		(0.01)	(0.01)
VC defendant and tunneling	30		
(Post – Pre) litigation firms		-0.1105	-0.1185
(Post – Pre) matching firms		-0.0229	-0.0120
p-value of test litigation firms=matching firms		(0.01)	(0.03)
VC defendant and multiple lawsuit	20		
(Post – Pre) litigation firms		-0.1722	-0.1989
(Post – Pre) matching firms		-0.0340	-0.0660
p-value of test litigation firms=matching firms		(0.01)	(0.01)

Table 7
Determinants of changes in fund size and quantity and quality of deal flow

The table presents an OLS regression of control firm-adjusted post-litigation fund size, deal flow and average (across funds) fraction of portfolio firms going public. The sample includes 170 VC firms that participate in lawsuits during 1976-2003. Control firms are selected based on age and size (funds under management) prior to litigation and performance of the last fund prior to litigation. Performance is measured as the percent of investments going public. VC Age is the log of the age of the VC firm as of the year of litigation. Prior lawsuits is a variable measuring the number of previous lawsuits the VC firm has participated in. VC defendant is a dummy equal to one if the VC firm is defendant in the lawsuit. Tunneling is a dummy variable equal to one if the lawsuit alleges that the defendant VC firm engages in expropriation-type activities. VC lost is a dummy equal to one if the VC is defendant and lost the case. Past performance is measured as the average (across funds) percent of investments going public prior to litigation. Stage is a dummy equal to one if the VC firm focuses on early-stage firms, and zero otherwise. Hi-tech is a dummy variable equal to one if the VC firm's industry focus is on hi-tech industries such as information technology, biotechnology, and medical/health/life sciences, and zero otherwise. Industry classification from VentureXpert is used. All models include year fixed effects. The models are estimated with robust standard errors. Robust *t*-statistics is in the parenthesis.

Variables	<u>Dep. var.: Control firm-adjusted changes in fund size</u>				<u>Dep. Var.: Changes in quantity of deal flow</u>	<u>Dep. Var.: Changes in quality of deal flow</u>
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(VC age)	-0.092 *** [-6.40]	-0.091 *** [-4.13]	-0.090 *** [-3.99]	-0.084 *** [-3.79]	-0.073 *** [-4.85]	0.026 [0.32]
VC defendant	-0.049 * [-1.80]	-0.10 [-0.20]	0.29 [0.48]	0.034 [0.56]	-0.015 [-0.51]	0.061 [0.66]
VC defendant + Prior lawsuits		-0.136 *** [-6.93]	-0.136 *** [-7.56]	-0.132 *** [-7.52]	-0.050 *** [-5.18]	0.053 [0.55]
VC defendant + Tunneling			-0.029 [-0.63]	-0.036 [-0.78]	-0.003 [-0.13]	-0.136 [-1.64]
VC defendant + lost			-0.147 * [-1.88]	-0.149 * [-1.89]	-0.045 [-1.19]	-0.065 [-0.77]
Past performance				-0.179 * [-1.97]	-0.095 [-1.52]	-1.348 *** [-3.01]
Stage	0.028 [1.43]	0.045 [1.54]	0.057 * [1.87]	0.050 [1.64]	0.20 [1.03]	-0.010 [-0.09]

Hi-tech	0.001 [0.03]	-0.030 [-0.81]	-0.045 [-1.20]	-0.032 [-0.84]	-0.001 [-0.04]	0.141 [1.34]
Time fixed effects	Included	Included	Included	Included	Included	Included
Constant	0.236 *** [5.33]	0.183 *** [2.84]	0.319 *** [3.12]	0.375 *** [3.65]	0.243 *** [4.16]	0.226 [0.97]
Num. obs.	168	168	168	168	168	51
Adjusted R ²	0.38	0.47	0.49	0.50	0.46	0.50