

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 over 180 lawsuits involving 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 poorly performing and early-stage VCs are more likely to participate in litigation. Although we find that older VCs and VCs with more deal flow and larger funds under management are more likely to be litigated, the effect is concave. Second, we analyze the relation between different types of lawsuits and 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 and who are alleged to have expropriated founders.

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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 which 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. There are several studies that 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 in our opinion it represents an excellent example of a setting with repeated interaction and incomplete contracts. The repeat players are the VCs and the pool of entrepreneurs.² Venture capitalists invest in startup companies and

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

² Although any individual entrepreneur is rarely a “serial” entrepreneur (Bengtson, 2006), at any point in time there are multiple entrepreneurs competing for VC financing. Thus information about opportunistic behavior of a VC with respect to one entrepreneur could be available to future entrepreneurs.

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).

Moreover, the contracts between VCs and entrepreneurs are 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 angels. "[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.³ 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

³ Rebecca Buckman, "Web Site Puts the 'Vent' Into Venture Capital", Wall Street Journal, Aug. 7, 2007.

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 on the probability of a VC to be a party to a lawsuit. Better performing VCs are significantly less likely to be embroiled in litigation. On the other hand, we find that more reputable VCs and VCs with larger deal flows tend to be 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 partnership 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 the vast majority 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 that they do invest in following 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 for more reputable VCs and when VCs are involved in shareholder oppression (tunneling) lawsuits, eventually lose, either at the motion to dismiss or trial stage, or are parties to multiple lawsuits in our sample.

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

How could VCs end up embroiled in litigation? This could happen for several reasons. One of them is opportunistic behavior on the part of VCs. Venture capitalists usually enjoy significant power and control within their portfolio firms. They sit on the board of directors, hold the majority of voting rights, have substantial liquidation rights, and frequently use anti-dilution clauses and vesting provisions when contracting with entrepreneurs. Informal control rights involve rights attached to VCs' participation in future financing rounds. One example is the right of first refusal, which effectively gives current VCs control over the identity of the firm's future investors, the size of their stake in the company, and the timing and terms of future investments. In KS's study of VC contracts with entrepreneurs, when the startup does well, control is shared (not equally, but significantly)

among VCs, founders, and other parties. When the startup's performance deteriorates, control shifts to VCs.⁴

Furthermore, VCs have the power to hire and fire CEOs and replace founders. Hellmann and Puri (2002) find that VC-backed firms are more likely and faster to replace the founder with an outside CEO than similar non-VC-backed firms. Kaplan and Stromberg (2004) find that VCs are more likely to intervene (for example, recruit new management or take some other action which the entrepreneur is likely to view as a conflict) as VC control increases. In many cases, founder compensation contracts provide that when a founder is fired, her stock options evaporate and even her vested stock can be repurchased by the VCs at cost (or even at zero). Most employment contracts provide no protection against termination. Finally, the structure of VC investment, commonly in preferred shares with significant liquidation preferences and redemption rights, puts them in a superior position to common stockholders in acquisitions or liquidations.

These contractual and non-contractual features allow VCs to mitigate the uncertainty, moral hazard, and informational asymmetries associated with investing in startup firms. These same features, however, may also lead to opportunistic behavior on the part of VCs. The preferred equity holdings and other contract features generate conflicts of interests between the VC and founders (Fried and Ganor, 2005), while the control rights attached to preferred equity give VCs an opportunity to advance their interests at the founders' expense. Contractual rights could also allow VCs to directly expropriate common shareholders

⁴ Lerner (1995) also finds that VCs add more members to the board when the performance of the startup deteriorates.

(founders and other early investors, such as "angels"), using financial transactions such as dilution and freeze-outs. We call these oppressive transactions "equity tunneling."⁵

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 arrange for one portfolio firm to purchase intellectual property, services, or other assets from another portfolio company at a price that advantages the buyer. 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. 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.

VCs could 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.⁶ 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

⁵ For a taxonomy of tunneling, see Atanasov, Black, and Ciccotello (2007).

⁶ See Pontiff (2007) for an analysis of the effect of "deep pockets" on probability of litigation of publicly traded corporations in the US.

underwriters and company directors and officers. However, sometimes VCs are also named as defendants.

VCs might also 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; many partnership agreements give VCs the right to use courts to collect defaulted contributions. Last, 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.

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" – that is, 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.⁷ 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 few contractual constraints exist. As we will see, background legal rules also provide few constraints -- VCs are often sued, but rarely lose. 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.

2.3.1. Reputation with Investors in VC Funds

Because venture funds are organized as limited partnerships, VCs have to go back to investors to raise capital for new funds (they usually raise a new fund every 2-3 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 cut 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

⁷ A pay-to-play provision provides 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.

mistreatment of entrepreneurs only if the VCs actions adversely affect future deal flow, by more than the gain in the current deal.

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.⁸

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.

There is 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.

⁸ 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.

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, more reputable 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.⁹

2.4. Interactions between VC Reputation and Litigation

In the prior sub-section, we discussed a number of channels through which a market for reputation could constrain VCs' incentives to behave opportunistically. But reputation markets can work only if the markets include repeat players, or if information about reputation can be credibly transferred to new entrants. Other VCs are repeat players. So, perhaps, are acquirers of VC-backed firms. Buyers of shares in VC-backed IPOs can observe the performance of past IPOs with the same VC sponsors. Investors in VC funds are repeat

⁹ We thank Scott Stern for suggesting this possibility.

players, but they will be concerned about reputation only indirectly, and may have little direct access to information about VC misbehavior.

In contrast, entrepreneurs, and employees in VC-backed firms, are often one-timers. Some entrepreneurs will use experienced VC lawyers, who are repeat players, and may know VC reputations, but not always. Moreover, the top VC law firms often represent VCs, and will be reluctant to tell stories on clients or potential clients.

For the market for VC reputation to work reasonably well, one therefore needs to identify an information transmission mechanism or mechanisms, which will credibly signal VC misbehavior and warn off future entrepreneurs and employees. Litigation by founders of a VC-backed firm against VCs 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 is highly costly for founders who sue VCs, who must incur legal expenses, emotional stress, and the near-certainty that they will never again obtain VC funding for a future venture. 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.¹⁰

¹⁰ 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

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 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 lawsuit.

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 two 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.

directly conveys information about misbehavior, or is only associated with misbehavior that is communicated in other ways.

Hypothesis 2: Lawsuits filed against VCs will be associated with a drop in VC reputation, which will be reflected in reduced fundraising and lower quantity and quality of deal flow. The reputational losses will be greater after lawsuits alleging tunneling.

These two hypotheses are tested against the null that litigation has no effect on VC reputation. Maybe most of the lawsuits are frivolous, filed by disgruntled entrepreneurs or other investors. Since most of the entrepreneurs tend not to be repeat players, they might be trying to extract whatever money they can from the VCs with the lawsuits.¹¹ In addition, sometime VCs might be simply trying to shut down an underperforming investment, as mandated by the finite life of their funds, and then get sued by entrepreneurs who have private benefits from keeping their companies alive. Also, even if a lawsuit has some merit, its importance for the VC's reputation might be dampened significantly by the success of VC's other investments and its rapport with investors and other VCs. 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.¹²

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. Our principal search strategy is to collect lawsuits from Westlaw's "Federal & State Cases, Combined" database by searching for complaints and judicial opinions which use search terms such as "venture capital" together with terms

¹¹ 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.

¹² Return data based on Metrick (2006).

such as "dilution," "freeze out," "founder" etc." Our searches identify 289 lawsuits which have all available facts and the plaintiff's complaint.

Using Westlaw's lawsuit database avoids the usual problem of collecting cases from PACER or Lexis.¹³ 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.

This search does have several weaknesses. For example, because we are searching by the names of VC firms, not names of individual venture capitalists, we may not capture shareholder suits where a venture capitalist serves as a director, but the VC firm is not sued. The VC firm will indemnify the director, so VC directors are tempting targets.

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 search Google for each firm name and verify whether the firm is indeed a venture capital firm.

Consequently, we drop nine lawsuits which involve companies which are clearly not VCs.¹⁴ We then match the firms involved in the remaining 280 lawsuits against the VentureXpert database (by hand, since many names are similar but not identical). Sometimes, this process

¹³ 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.

¹⁴ For example, "Mia Venture Capital" turns out to be a small "boiler room" brokerage' "Midwest Venture Partners" invests in real estate, and so on.

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 184 lawsuits and 162 VC firms. 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 (for example, see 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 period.

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 1 reports the main characteristics of the particular lawsuits 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 (76%, or 140 cases). Among parties who bring suits against VCs are: other equity investors of VC-backed startups (19 cases, or 14% of all suits where VCs are defendants); startups themselves

(20 cases, or 14%) (these in effect consist of a blend of founders and other equity investors); founders (16 cases, or 11%); non-founder employees of startups (12 cases, or 9%); other VCs (11 cases, 8%); banks (7 cases, or 5%) (a creditor of a VC-backed startup), and limited partners of venture funds run by VCs (5 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 (33%) of all VC-related law suits 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 32% cases they bring; non-VCs do it in 52% of cases.

Among non-VC plaintiffs, the largest category claiming tunneling is the startup itself (26%) (mostly founders, other employees, and earlier equity investors); equity investors directly (22%); founders (14%), and employees (9%). Within the universe of tunneling cases brought against VCs, most popular allegations are wrongful transfers of assets, conducted in a variety of creative ways (16%); sales of companies on terms unfavorable to founders and other equity investors (19%); expropriation of profitable opportunities (12%); dilution (7%), and freezeouts (6%). Nearly half (40%) 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 (34%) (usually some combination of founders or current managers and other equity investors); other VCs (25%); and other equity investors (6%). Popular methods include sales of companies on unfavorable terms (20% of all

tunneling cases brought by VCs), expropriation of profitable opportunities (20%), dilution (20%), and other creative tunneling methods (43%).

Outcomes. Our sample contains 112 (61%) cases that reached judicial resolution and 62 cases (39%) 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 41% of cases, while losing 22%. VCs are more successful in defending cases brought against them than in securing a victory for their own suits (winning 9% of resolved cases).

4. Probabilistic Models of VC litigation

In this 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 .¹⁵

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 162 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.¹⁶ Our panel has 51,586 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. These variables change over time on an annual basis (*VC age*) or as VCs raise new funds (*Funds under mgmt*, *Deal Flow*, and *Past performance*). 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

¹⁵ We do not have multiple lawsuits for any VC firm in any single year in our sample.

¹⁶ We repeat the analysis using a 10-year cut-off and the results remain qualitatively the same.

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 VC age, deal flow and funds under management variables.

Second, we use 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.¹⁷ *Diversified* is a dummy equal to one if the VC firm makes diversified investments (across industries), and zero otherwise. Finally, *Hi-tech* is a dummy variable equal to one if the VC firm focuses on hi-tech industries such as biotechnology, internet, medical devices, etc., and zero otherwise. Information on VC industry and stage preferences and location comes from VentureXpert.

Table 3 presents the coefficient estimates of the random effects probit model of VC litigation. Focusing on Model 3, which includes both time-variant and invariant variables, we find that VC firms that perform better are less likely to get embroiled in a lawsuit, a result which provides some support for Hypothesis 1. In contrast, we find that more reputable firms are more likely to participate in a lawsuit. The coefficients on *Funds under mgmt*, *VC age*, and *Prior Deal Flow* are positive and significant at the 1% level. These results are not

¹⁷ 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, VCs might be tempted to behave opportunistically.

consistent with Hypothesis 1, but perhaps the positive coefficients are due to a possible mechanical relation between number of deals and probability of litigation. To address this concern, in Models 4 and 5 we include quadratic terms of *Funds under mgmt* and *Deal flow*. The coefficients on the quadratic terms are negative and significant, suggesting that the more reputable a VC firm becomes, the probability of a lawsuit decreases in proportional terms. One possible explanation for the concave effect is that more reputable VCs are better managers – maybe they have more resources and experience and are able to resolve any contentious issues internally. Another explanation for concavity is that the reputational loss is proportionately larger for more reputable firms. To avoid loss of reputation, more reputable VCs may be more likely to steer clear of litigation or may devote more resources to muster legal defense.

We also find that VC firms focusing on early-stage startups are more likely to get sued. Most probably this 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, there are fewer investors in that type of firms. Syndication usually constrains VC misbehavior. Lastly, we use an ordered probit model to investigate whether more reputable VCs are less likely to engage in equity or asset tunneling lawsuits, but do not find any significant results. Thus we find only partial support for Hypothesis 1.

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 those would be more severe the more egregious

the 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 last measure can be also interpreted as a proxy for VC performance following the litigation.

We perform a pre vs. post analysis of these measures using matching firms. We perform two matching procedures, based on the findings in Section 4: 1) match each of our sample VCs to another VC firm with the same age and as close as possible funds under management; and 2) match to a peer firm with the same age and as close as possible past performance as measured by the proportion of portfolio firms going public. Each reputation and performance variable is adjusted by the value of the corresponding reputational or performance measure of the peer firm. The mean and median tests are based on a comparison of the difference between sample and peer firm measure post lawsuit to the difference of the sample and peer firm pre lawsuit. 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 yields qualitatively similar results and is not reported.

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 year 2003. This yields a sample of 158 unique lawsuit-VC observations.

5.1. Post-litigation funds raised

One important issue in the empirical analysis in this section is the fact that some sample VCs and control firms do not raise any funds after the year of litigation. This is

important information that should be taken into consideration. There are various reasons why these firms do not have funds after the lawsuits, one of them being the impact of the lawsuit. At any rate, this presents us with the dilemma of whether we should keep these observations in the sample or throw them away. We deal with this issue in two ways. First, if a sample 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 2.¹⁸ Second, we repeat our analysis using only those VCs and *corresponding* matching firms that have post-litigation information. Consequently, we exclude all cases where a sample firm has post-litigation observations and its control firm does not, or vice versa. For robustness we present results in Panel A for matching based on VC firm age and funds under managements and in Panel B for 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 4. They provide support for the negative reputation effect of lawsuits. First, looking at the full sample we find that on average VCs embroiled in litigation experience a decrease in the size of funds raised after the year of the lawsuit. The result is significant at the 1% level for the mean and at the 6% for the median tests. For example, before the lawsuit the average scaled difference in funds under management between VCs in our sample and matching firms is 0.0701, while after the lawsuit this difference decreases significantly to -0.0045 (p-value of t-test for equality of means is 0.01).

¹⁸ 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.

Next, we focus on the sub-sample of lawsuits in which VCs are defendants, which has 125 unique lawsuit-VC observations. We find that the average difference in post-litigation funds raised between sample VCs and control firms is larger (-0.0066) than that for the whole sample (-0.0045). The difference in both means and medians pre- and post-litigation remains statistically significant. When we consider cases where the VC is defendant and the suit alleges tunneling, the differences are even bigger and again statistically significant. The difference in post-litigation funds raised between sample VCs and control firms is now -0.0095, although the sample size drops to 24 observations and the p-values of the tests decrease. We examine cases of VC expropriation, and find similar results.

Lastly, we separately investigate the cases where the VC is defendant and lost the lawsuit. This is where we expect the effect of litigation to be the strongest. For this sub-sample, we find that there is a significant difference in the means of pre- and post-litigation fund size, but not for medians. However, caution is needed when interpreting these results given that the sample size is only 26. Consequently, the evidence in Panel A in Table 4 suggests that VCs involved in litigation suffer reputational consequences. This supports Hypothesis 2. The results in Panel B are qualitatively similar to Panel A, which affirms that our findings are robust to the matching methodology. To express the reputational loss in economic terms, we calculate the percentage change in the scaled (by the total amount of VC commitments in the year of the fund) size of the first fund after the litigation compared to the last fund before the litigation. For the sample of VC defendants with both pre- and post-litigation funds, the litigation decreases the next fund's amount by a median of roughly 8%. Given that the average size of the pre-litigation fund in this sub-sample is \$364 million, this percentage change translates into a decrease of \$29 million (in year 2000 dollars). For the

whole sample, the median change in fund size is much bigger (roughly 90%), reflecting the fact that a big portion of our sample does not raise any funds after the lawsuits.

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 as a consequence of the negative publicity associated with lawsuits fewer startups will be willing to accept financing from VCs involved in litigation. Thus, VCs might lose valuable deal flow. To measure changes in pre- and post-litigation deal flow, we compare the control firm-adjusted number of companies that receive financing from each VC in our sample before and after the year of litigation. 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 5. Similar to Table 4, we present results from matching based on age and funds under management in Panel A and age and percent deals going public in Panel B. Again, the evidence suggests that VCs involved in litigation suffer significant decreases in deal flow. For example, in Panel A in Table 5 the average pre-litigation deal flow for the full sample is 0.0646 compared to 0.0021 after litigation (p-value of the Wilcoxon signed rank test is 0.01). 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 lose in court or engage in various expropriation activities. Overall, the results in Panel A of Table 5 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

Lastly, we test for possible changes in the quality of VC deal flow prior to and after the year of litigation. Hypothesis 2 predicts that the lawsuits will have a negative effect on the quality of deals which the VCs involved in lawsuits invest in. We measure deal flow quality by the control firm-adjusted fraction of portfolio firms that go public.¹⁹ Again, we compare the value of the control firm-adjusted measure before and after the litigation and test for significant differences. Due to the fact that we need to have investments in order to be able to calculate these ratios, here we use only the sample VCs and corresponding matching 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 difference in quality of deal flow prior to and after the litigation when we match on firm age and funds under management (Panel A). All of the control-firm adjusted pre-litigation measures are positive and all of the post-litigation measures are negative. The differences are statistically significant at conventional statistical levels. For example, the average control firm-adjusted fraction of IPOs for VC defendants is 0.0558 before litigation and only -0.0226 post litigation. The same holds true when we consider medians – the pre-litigation medians are larger than the post-litigation ones and the differences are significant. Similarly, there is evidence for a reduction in quality of fund flow in Panel B, where we match by age and performance. There we obtain significant results (both for means and medians) for the full sample and the sub-sample involving VC

¹⁹ We obtain qualitatively similar results when we use the fraction of portfolio firms that go public or get acquired as a measure of success.

tunneling, but not for cases where the VC is defendant and engages in tunneling. Overall, these findings are consistent with the results from the previous two sub-sections and lend support for Hypothesis 2.

5.4. Multivariate Analysis

We also try to determine the changes in fund size and quantity and quality of deal flow using a regression framework. In Table 7, we 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*), preferred investment stage (*Stage*), industry preference (*Hi-tech* and *Diversified*), a dummy variable for tunneling, a dummy variable for the outcome of the lawsuit (*VC lost*), and a dummy variable for firms with multiple lawsuits (*Multi-lawsuit*).

Models 1 and 2 in Table 7 present the results on funds under management. We can see that the coefficient on prior 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. The results also suggest that firms with multiple lawsuits and firms that lose the law suits are viewed more negatively by VC investors – the coefficients on *Multi-lawsuit* and *VC lost* are negative and significant at the 10% level. Firms that invest in multiple industries (*Diversified*) also experience significant decline in fundraising.

Models 3 and 4 of Table 7 present a regression of the control firm-adjusted change in deal flow on a 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. Lastly, in Models 5 and 6 we examine the change in the quality of deal flow. Here only *VC Age* is significant, and only when the

control firm is selected by matching on age and funds under management. Overall, the results in Table 7 suggest that more reputable firms tend to experience larger reputational losses following a law suit than less reputable firms. There is also some evidence that firms that are sued more frequently and firms making diversifying investments also experience larger declines in reputation.

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 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.

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

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 329 identifiable VC parties in the 280 lawsuit sample, we match 175 VC firm names with the VentureXpert universe. This results in 202 lawsuits. We then search on Google whether the remaining parties are VCs. We confirm that parties to seven lawsuits are not VCs. Of the remaining 195 lawsuits, two lawsuits have missing filing and disposition date and we drop them from further analysis. This leaves us with the final sample of 193 lawsuits and 175 unique VC firms.

Our analysis requires information on the year when a complaint is filed. Westlaw provides information on the filing year for 73 cases. The remaining 104 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 73 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 175 VC firms appearing in our lawsuit sample which are also covered in VentureXpert, thirteen 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 match each of the remaining 162 firms which appear in 184 lawsuits and result in 227 unique lawsuit-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) and the cumulative size of funds under management from the year of founding of the firm to the year of filing of the lawsuit. 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 162 firm/227 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 two 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 three 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 10 such firms, we choose the best matching company to be the one closest in scaled size. If there are less than 10 firms founded in the same year, we look at firms founded within one year. If there are more than 10 of them, we choose the best matching company as the company closest in size. If there are less than 10 we increase sequentially the

window to within two years and then within three years. Last, if there are less than 10 companies founded within three years of the sample firm, we just take the closest firm in scaled size anyway.

After finishing the matching procedure, we have 162 companies and 227 unique firm-lawsuit combinations. The matching procedure matched firm age very well (the average age of the best matches is within two months of the average age of the sample firms), but because of our mapping of multiple firm names in VentureXpert to a single meta-firm name for our sample firms but not for the rest of the universe, the sample firms are on average 9% larger than the best matches. This difference is larger for the older firms.

The procedure for matching on age and pre-litigation fund performance is similar. Here instead of matching on funds under management as a second matching criterion, we use the performance of the last fund raised prior to the year of litigation. Performance is measured as the fraction of portfolio firms that go public for that particular fund. Once we select 10 or more control firms based on age, then we select the closest one in terms of performance. This procedure also yields relatively precise matching in terms of performance, with the median difference being 0 and the mean difference equal to -0.019.

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 in 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

We collect lawsuits by searches in West Law, business media, and PACER. The total number of lawsuits in our sample is 184.

Characteristic	Number of lawsuits
<i>Defendant/Plaintiffs Composition:</i>	
VCs Among Defendants	140
Founders Among Defendants	1
VCs Among Plaintiffs	44
Founders Among Plaintiffs	39
<i>Alleged Tunneling Method:</i>	
Freezout	5
Dilution	4
Acquisition on Unfavorable Terms	21
Misappropriation of Business Opportunity	7
Asset Transfer	23
<i>Where Case Brought: (State Name/No. of Federal Suits):</i>	
CA	30
NY	22
DE	26
MA	13
FL	10
TX	9
PA	7
IL	7
All federal (no bankruptcy)	112
All state	66
Bankruptcy	6
<i>Class Actions</i>	16
<i>Lawsuit Outcome:</i>	
VC Won at Trial or Pre-Trial Motion (Partly Won)	19 (27)
VC Lost at Trial or Pre-Trial Motion	25
Case Dismissed on Procedural Grounds	10
Case Dismissed on Substantive Grounds	31
Case settled	4
Case Ongoing	51

Table 2
Summary statistics for sample VCs

The table presents summary statistics for the VCs in our litigation sample. Information on stage preference and diversified industry preference are taken from VentureXpert. All dollar values are in converted into year 2000 dollars.

Variables	Sample 1976-2007					Sample 1976-2003				
	Mean	Median	Std	Min	Max	Mean	Median	Std	Min	Max
Age (years)	17.2	13	17.6	1	94	16.9	13	16.9	1	93
Num. of funds pre-litigation	7.8	4	9.7	1	68	8.1	4	10.7	1	68
Avg. fund size pre-litigation (mill.)	355.7	88.1	1,095.3	0.01	12,229.1	356.1	76.6	1,202.4	0.04	12,229.1
Aggregate fund size pre-litigation (mill.)	2,789.3	525.2	5,207.0	0.16	31,872.4	2,905.5	451.5	5,373.5	0.75	25,446.5
Stage preference (1 if early; 0 if late)	0.3	0	0.4	0	1	0.3	0	0.4	0	1
Diversified (1 if early; 0 if late)	0.1	0	0.3	0	1	0.1	0	0.3	0	1
Hi-tech (1 if hi-tech; 0 otherwise)	0.2	0	0.4	0	1	0.2	0	0.4	0	1
Number of VC firm-lawsuit observations			227					158		
Number of VC firms			162					121		

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 162 are involved in lawsuits. 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. Stage is a dummy equal to one if the VC firm focuses on early-stage firms, and zero otherwise. Diversified is a dummy equal to one if the firm invests in several industries, and zero otherwise. Hi-tech is a dummy variable equal to one if the VC firm's industry focus is on hi-tech industries. 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)	0.356 *** [7.05]		0.356 *** [7.53]	0.328 *** [7.14]	0.267 *** [5.47]
Past performance	-0.546 *** [-2.83]		-0.503 ** [-2.60]	-0.496 ** [-2.58]	-0.521 ** [-2.62]
Funds under mgmt	2.040 *** [5.42]		2.127 *** [5.47]	4.422 *** [4.68]	
Funds under mgmt ²				-2.977 *** [-2.82]	
Deal flow					9.749 *** [6.11]
Deal flow ²					-11.608 ** [-2.72]
Stage		0.364 *** [4.58]	0.394 *** [4.27]	0.376 *** [4.16]	0.323 *** [3.50]
Diversified		-0.029 [-0.22]	-0.257 [-1.50]	-0.261 [-1.58]	-0.182 [-1.17]
Hi-tech		0.146 [1.58]	0.160 [1.55]	0.152 [1.48]	0.164 [1.58]
Intercept	-4.132 *** [-21.11]	-3.477 *** [-35.05]	-4.173 *** [-22.93]	-4.097 *** [-23.27]	-4.036 *** [-20.91]
Num. obs.	51,586	51,586	51,586	51,586	51,586
p-value of χ^2	0.00	0.00	0.00	0.00	0.00
Log-likelihood	-1,285.31	-1,285.31	-1,109.08	-1,104.78	-1,087.25

Table 4
Changes in fundraising following litigation

The table presents results of univariate tests for changes in pre- and post-litigation funds raised. 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. From the aggregate funds raised by each sample VC we subtract the aggregate funds raised (pre- or post-litigation, scaled by VC commitments in the year of the fund) by its corresponding matching VC firm. Matching firms in Panel A are the closest firms without a lawsuit to each sample firm by age and funds under management in Panel B by age and performance (measured as percent of investments going IPO of the last fund prior to litigation). Mean and Median is the mean and median of this difference. The tunneling sample includes lawsuits involving dilution, freeze-out, control transfer, and asset transfer. *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. Matching by Age and Funds under Management

	Full Sample			Only firms where VC and matching firm have both pre and post data		
	Num. Obs.	Mean	Median	Num. Obs.	Mean	Median
Full sample	158			58		
Pre-litigation		0.0701	0.00001		0.0909	0.0002
Post-litigation		-0.0045	0.00		-0.0124	-0.0046
p-value of test pre=post		(0.01)	(0.06)		(0.01)	(0.01)
VC defendant	125			47		
Pre-litigation		0.0773	0.00001		0.0892	-0.00001
Post-litigation		-0.0066	0.00		-0.0191	-0.0048
p-value of test pre=post		(0.01)	(0.06)		(0.02)	(0.01)
VC defendant and tunneling	67			28		
Pre-litigation		0.0396	0.00		0.0818	0.0029
Post-litigation		-0.0146	0.00		-0.0303	-0.0049
p-value of test pre=post		(0.01)	(0.21)		(0.06)	(0.02)
VC defendant and VC lost	26					
Pre-litigation		0.1482	0.0006			
Post-litigation		-0.0201	-0.0013			
p-value of test pre=post		(0.01)	(0.38)			

Table 4 (Cont.)*Panel B. Matching by Age and Performance*

	Full Sample			Only firms where VC and matching firm have both pre and post data		
	Num. Obs.	Mean	Median	Num. Obs.	Mean	Median
Full sample	158			52		
Pre-litigation		0.1058	0.0033		0.1251	0.0134
Post-litigation		0.0030	0.00		-0.0017	-0.00004
p-value of test pre=post		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant	125			43		
Pre-litigation		0.1062	0.0059		0.1217	0.0325
Post-litigation		0.0002	0.00		-0.0105	-0.0008
p-value of test pre=post		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and tunneling	67			20		
Pre-litigation		0.0892	0.0088		0.1229	0.0094
Post-litigation		0.0007	0.00		-0.0123	-0.0004
p-value of test pre=post		(0.01)	(0.01)		(0.07)	(0.03)
VC defendant and VC lost	26					
Pre-litigation		0.1740	-0.00003			
Post-litigation		-0.0037	-0.0011			
p-value of test pre=post		(0.01)	(0.23)			

Table 5
Post-litigation quantity of deal flow

The table presents results of univariate tests for changes in pre- and post-litigation deal flow. The sample includes only lawsuits that commence by the end of year 2003. For each sample VC, the aggregate number of companies financed before and after the year of litigation is calculated. The number of investments made by each fund raised (pre- or post-litigation) is scaled by the total number of firms financed by VCs during the year of the fund. From the aggregate number of investments made by each sample VC we subtract the aggregate number of investments (pre- or post-litigation, scaled by the total number of firms financed by VCs in the year of the fund) made by its corresponding matching firm. Matching firms in Panel A are the closest firms without a lawsuit to each sample firm by age and funds under management, in Panel B by age and performance (measured as percent of investments going IPO of the last fund prior to litigation). Mean and Median is the mean and median of this difference. The tunneling sample includes lawsuits involving dilution, freeze-out, control transfer, and asset transfer. *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. Matching by Age and Funds under Management

	Full Sample			Only firms where VC and matching firm have both pre and post data		
	Num. Obs.	Mean	Median	Num. Obs.	Mean	Median
Full sample	158			58		
Pre-litigation		0.0646	0.0051		0.0731	0.0391
Post-litigation		0.0021	0.00		0.0034	0.0002
p-value of test pre=post		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant	125			47		
Pre-litigation		0.0727	0.0067		0.0843	0.0374
Post-litigation		0.0020	0.00		0.0034	-0.0002
p-value of test pre=post		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and tunneling	67			28		
Pre-litigation		0.0505	0.0099		0.0743	0.0412
Post-litigation		0.0018	0.00		0.0027	-0.0006
p-value of test pre=post		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and VC lost	26					
Pre-litigation		0.0819	0.0011			
Post-litigation		-0.0192	-0.0023			
p-value of test pre=post		(0.01)	(0.40)			

Table 5 (Cont.)*Panel B. Matching by Age and Performance*

	Full Sample			Only firms where VC and matching firm have both pre and post data		
	Num. Obs.	Mean	Median	Num. Obs.	Mean	Median
Full sample	158			52		
Pre-litigation		0.0709	0.0079		0.1135	0.0288
Post-litigation		0.0012	0.00		-0.0042	-0.0009
p-value of test pre=post		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant	125			43		
Pre-litigation		0.0763	0.0082		0.1149	0.0335
Post-litigation		0.0006	0.00		-0.0072	-0.0008
p-value of test pre=post		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and tunneling	67			20		
Pre-litigation		0.0622	0.0171		0.0904	0.0471
Post-litigation		0.0034	0.00		-0.0083	0.0001
p-value of test pre=post		(0.01)	(0.01)		(0.01)	(0.01)
VC defendant and VC lost	26					
Pre-litigation		0.0970	0.0008			
Post-litigation		-0.0063	-0.0001			
p-value of test pre=post		(0.01)	(0.06)			

Table 6
Post-litigation 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. From the fraction of IPOs for each sample VC we subtract the fraction of IPOs (pre- or post-litigation) for its corresponding matching firm. Matching firms in Panel A are the closest firms without a lawsuit to each sample firm by age and funds under management, in Panel B by age and performance (measured as percent of investments going IPO of the last fund prior to litigation). Mean and Median is the mean and median of this difference. The tunneling sample includes lawsuits involving dilution, freeze-out, control transfer, and asset transfer. *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. Matching by Age and Funds under Management

Sample	Num. Obs.	Mean	Median
Full sample	58		
Pre-litigation IPOs		0.0457	0.0301
Post-litigation IPOs		-0.0133	-0.0048
<i>p</i> -value of test pre=post		(0.01)	(0.03)
VC defendant	47		
Pre-litigation IPOs		0.0548	0.0385
Post-litigation IPOs		-0.0182	-0.0103
<i>p</i> -value of test pre=post		(0.01)	(0.02)
VC defendant and tunneling	28		
Pre-litigation IPOs		0.0469	0.0356
Post-litigation IPOs		-0.0269	-0.0151
<i>p</i> -value of test pre=post		(0.02)	(0.02)

Table 6 (Cont.)*Panel B. Matching by Age and Performance*

Sample	Num. Obs.	Mean	Median
Full sample	52		
Pre-litigation IPOs		0.0519	0.0599
Post-litigation IPOs		-0.0129	0.00
p-value of test pre=post		(0.01)	(0.04)
VC defendant	43		
Pre-litigation IPOs		0.0558	0.0606
Post-litigation IPOs		-0.0226	0.00
p-value of test pre=post		(0.01)	(0.03)
VC defendant and tunneling	20		
Pre-litigation IPOs		0.0354	0.0460
Post-litigation IPOs		-0.0150	0.00
p-value of test pre=post		(0.10)	(0.26)

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 158 VC firms that participate in lawsuits during 1976-2003. Control firms are selected based on age and size (funds under management) prior to litigation or on age and performance of the last fund prior to litigation. Fund performance is measured as percent of investments going public of the last fund prior to litigation. VC Age is the log of the age of the VC firm as of the year of litigation. Percentage IPOs is the median (across all funds prior to litigation) fraction of portfolio firms going public. Stage is a dummy equal to one if the VC firm focuses on early-stage firms, and zero otherwise. Multi-stage is a dummy variable equal to one if the VC firm has participated in previous lawsuits. 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 VC firm engages in expropriation-type activities. VC lost is a dummy equal to one if the VC is defendant and lost the case. Diversified is a dummy equal to one if the VC firm invests in several industries, and zero otherwise. Hi-tech is a dummy variable equal to one if the VC firm's industry focus is on hi-tech industries. 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	Changes in fund size		Changes in quantity of deal flow		Changes in quality of deal flow	
	<u>Matching:</u> Age & size	<u>Matching:</u> Age & perf	<u>Matching:</u> Age & size	<u>Matching:</u> Age & perf	<u>Matching:</u> Age & size	<u>Matching:</u> Age & perf
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(VC age)	-0.084 *** [-3.01]	-0.106 *** [-4.43]	-0.073 *** [-4.51]	-0.074 *** [-4.49]	-0.068 ** [-2.07]	0.047 [0.50]
Percentage IPOs	0.003 [0.02]	0.083 [0.60]	0.016 [0.18]	0.001 [0.02]		
Stage	0.067 * [1.90]	0.054 * [1.66]	0.059 ** [2.23]	0.038 [1.50]	-0.095 [-1.55]	0.109 [0.59]
Multi-lawsuit	-0.103 * [-1.76]	-0.095 * [-1.77]	-0.037 [-1.18]	-0.051 * [-1.68]	-0.063 [-1.33]	-0.151 [-1.68]
VC defendant	-0.056 [-0.96]	-0.031 [-0.69]	-0.059 * [-1.76]	-0.046 [-1.47]	0.028 [0.58]	-0.089 [-0.75]
Tunneling	0.048 [0.99]	0.015 [0.39]	0.024 [0.91]	0.010 [0.39]	-0.066 [-1.01]	0.058 [0.66]
VC lost	-0.162 * [-2.15]	-0.119 * [-1.78]	-0.049 [-1.05]	-0.053 [-1.02]	0.009 [0.12]	-0.035 [-0.35]
Diversified	-0.279 *** [-2.91]	-0.267 *** [-2.88]	-0.065 [-1.58]	-0.067 * [-1.65]	-0.134 [-1.27]	-0.028 [-0.36]
Hi-tech	-0.079 * [-1.88]	-0.008 [-0.19]	-0.0004 [-0.01]	0.022 [0.67]	0.090 [1.33]	0.061 [0.43]
Constant	0.615 *** [4.55]	0.729 *** [6.33]	0.250 *** [3.56]	0.344 *** [4.57]	0.315 ** [2.48]	-0.224 *** [-0.66]
Num. obs.	158	158	158	158	58	52
Adjusted R ²	0.36	0.44	0.40	0.40	0.48	0.32