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THE VENTURE CAPITAL INVESTMENT BUST: DID AGENCY COSTS PLAY A ROLE? WAS IT SOMETHING LAWYERS HELPED STRUCTURE?

JOSEPH BANKMAN* AND MARCUS COLE**

INTRODUCTION

The rise of the venture capital industry has attracted the attention of a wide array of scholars. Scholars in the Law and Economics tradition have focused on the legal structure of start-up corporations backed by venture capital funds and explained that the corporations' structure is a response to the problem of agency costs.¹ Venture capitalists possess expertise and information that their individual and institutional investors lack. These investors hire the venture capitalists to select investments and monitor the behavior of the managers/entrepreneurs of the start-ups. Venture capitalists possess the power, through the corporate charter, to remove managers at will. The "carrot" of stock options motivates the managers, but they are worried about the "stick" that the venture capitalists wield as monitors. Perhaps more significantly, managers must repeatedly return to the venture capitalists for funding. Venture capitalists are restrained from abusing their power over entrepreneurs because they must relinquish their monitoring role after an initial public offering.² Additionally, venture capitalists are restrained from abusing their power in two ways: by the requirement that the venture

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1. There is a substantial body of literature on this subject, dating back as least as far as William A. Sahlman, *The Structure and Governance of Venture-Capital Organizations*, 27 J. FIN. ECON. 473 (1990); see also PAUL A. GOMPERS & JOSH LERNER, *THE VENTURE CAPITAL CYCLE* (1999); Anat R. Admati and Paul Pfleiderer, *Robust Financial Contracting and the Role of Venture Capitalists*, 49 J. FIN. 371 (1994); Paul A. Gompers, *Optimal Investment, Monitoring and the Staging of Venture Capital*, 50 J. FIN. 146 (1995); Josh Lerner, *Venture Capitalists and the Oversight of Public Firms*, 50 J. FIN. 301 (1995).

2. See Bernard S. Black & Ronald J. Gilson, *Venture Capital and the Structure of Capital Markets: Banks Versus Stock Markets*, 47 J. FIN. ECON. 243 (1998).

capitalist must return to the market repeatedly for funds and thereby face reputational consequences for misbehavior, and by the contingent nature of the venture capitalist's compensation.

The literature on this subject dates back over a decade, during which time venture capital funds have experienced good and bad times. The bulk of the literature has been written in the past seven years, however, at a time when venture capital-backed investments realized extraordinary returns. Perhaps because this literature has been written against a backdrop of prosperity, it tends to emphasize the strong points of the venture capitalists' organizational and legal structure.

Venture capital-backed investments continue to offer extraordinary returns, but now the returns are extraordinarily poor. These investments are not marked to the market at regular intervals, so an "apples-to-apples" comparison with publicly traded investments is not possible. It is generally believed, however, that venture capital-backed investments have declined in value at least as much as the NASDAQ, or indices such as the CBOE Technology Index. Moreover, because of the nature of venture capital investments, this decline is unlikely to reverse itself in time to help current investors. The staged nature of venture capital financing, described below, leaves start-ups with only enough funds to operate for a relatively short period of time. Some of the approximately \$150 billion invested by venture capitalists in the past two years has already been spent on companies that have been unable to raise funding needed for further operations.³ These companies have simply disappeared, and along with them, so has their investors' money. Virtually all of the remaining companies will require further funds within a year or so. The public markets are not supplying financing through initial public offerings; public companies have cut back or eliminated acquisition programs, and the flow of investment into the venture capital firms and the flow of investment from these firms to start-ups has slowed noticeably.⁴ Only the most successful start-ups may be able to obtain

3. According to Venture Economics and the National Venture Capital Association, venture capital investments were slightly under \$65 billion in 1999 and slightly over \$100 billion in 2000. Nat'l Venture Capital Ass'n, *National Venture Capital Profile for United States*, at <http://www.ventureeconomics.com/vec/stats/2000q4/us.html> (last visited Nov. 14, 2001).

4. Venture capital commitments from investors dropped 32 percent from fourth quarter 2000 to first quarter 2001, and amounts invested by venture capital firms to start-ups fell approximately 45 percent. Press Release, Nat'l Venture Capital Ass'n, *Venture Capital Fundraising Declines in Q1, While Average Fund Size Increases* (May 15, 2001), available at http://www.nvca.org/VEpress05_15_01.htm.

funding, and the market value of the remaining companies in the field may fall to liquidation value.

What makes this decline particularly interesting is that it did not come as a surprise to the venture capital community. Venture capital investments increased dramatically during the period between 1990 and 2000.⁵ The number of investment opportunities did not increase by a similar percentage, however. The predictable effect of the sudden influx of funds was a diminution in quality of investments and an increase in investment valuations/cost. By the end of 1999, many venture capitalists and industry observers publicly predicted poor returns for the industry in general, if not for their own investments.⁶ A commonplace sentiment was that, in the words of one industry observer, the “low hanging fruit” had already been picked, and the remaining fruit could not be profitably harvested. Yet the venture capitalists continued to invest.

More money was invested in the last two quarters in the year 2000 than was raised by venture capitalists in the first seven years of the decade.⁷ What explains that investment? Was there something in the nature of the contract between venture capitalists and their investors that encouraged overinvestment?

We put these questions to several venture capitalists, investors, lawyers, entrepreneurs, and other industry observers. We have tried to include virtually every explanation given by every venture capitalist we interviewed, and to integrate their explanations with facts and related theories. We have done this because (to give away our conclusion) we feel that there is no single “correct” explanation

5. Funds raised by venture capital firms increased from \$3.4 billion in 1990 to more than \$100 billion in 2000. Nat'l Venture Capital Ass'n, *Latest Industry Statistics*, at <http://www.nvca.org/ffax.html> (last visited Sept. 27, 2001).

6. See, e.g., David Streitfeld, *High-Tech Anxiety Hits Silicon Valley; Innovation Capital Waits for the Bubble to Burst*, WASH. POST, Dec. 25, 1999, at A1, available at 1999 WL 30310352.

7. \$45.8 billion was invested in the last two quarters in 2000 as against \$43.3 billion raised in 1990–1996. See Press Release, Nat'l Venture Capital Ass'n, *Venture Capital Investment Activity Returns to 1999 Levels* (May 2, 2001), available at http://www.nvca.org/nvca05_02_01a.html; Press Release, Nat'l Venture Capital Ass'n, *Venture Capital Fundraising Slows in Fourth Quarter, but Hits New Record for the Year* (Feb. 22, 2001), available at http://www.nvca.org/VEpress02_23_01.htm. In any given year, the amounts raised and invested by venture capital firms may vary; over a large number of years, however, the amounts should be roughly consistent. Venture capital investments are defined differently by different organizations, but all statistics show that year 2000 investments dwarfed those of previous years. See, e.g., Beacon Mgmt., *Venture Capital Statistics*, at http://www.beaconmgmt.com/Corporate_Finance/Venture_Capital_Statistics/venture_capital_statistics.htm (last visited Aug. 2, 2001) (showing venture capital investments for the following years, in billions of dollars: 6.3 in 1995; 9.1 in 1996; 11.4 in 1997; 15.1 in 1998; 38.2 in 1999; and 68.8 in 2000).

for last year's overinvestment, and that we learn something from almost any explanation. We have tried to group related explanations and demonstrate the analytical or empirical difficulties with some of the more unlikely ones. In an effort to promote frankness and candor, we promised interviewees confidentiality, and guaranteed anonymity in all quotations appearing in this Article.⁸

In Part I, we provide background information on the structure of venture capital-funded investments. In Part II, we discuss some explanations for continued investment that do not implicate agency costs. One explanation is that venture capitalists did not believe that the market, or at least their investment, was overvalued. Another explanation is that venture capitalists regarded the decision to invest funds as that of an investor, while their job was simply to optimize return subject to this decision. Some who hold this view feel the investors were misinformed, while others think that the investors followed a "greater fool" theory, in which they would be able to sell their investments at a profit to less sophisticated retail investors through an initial public offering. A final explanation is that the venture capitalist's decision to invest was driven by a desire to maintain reputation among entrepreneurs and skilled technology workers. This fear of "reputational loss" does not implicate agency costs. Investors in one fund are apt to be investors in a later fund, and so they share the reputation-related gains from current investments.

In Part III, we discuss (and for the most part reject) explanations for investment based on herd behavior or cognitive biases. In Part IV, we develop an agency cost explanation for investments. The unprecedented flow of funds into the sector in 2000 offered venture capitalists a huge upside in the form of "carry" on future profits, and significant guaranteed income in the form of management fees. Many venture capitalists expressed the opinion that for venture capitalists other than themselves, the presence of this private gain distorted decision making.

Assumptions as to future investor behavior are different for the agency hypothesis than for the reputational loss hypothesis we discuss in Part II. The investment boom in 1998–2000 is seen as a one-time

8. Venture capitalists and other industry actors are often reluctant to talk frankly about industry practices, particularly with respect to practices that may have produced the boom-bust cycle. Many, in fact, specifically insisted upon assurances of anonymity and confidentiality before agreeing to speak with us.

aberration. Investment in future years is seen as very low, even for venture capitalists who correctly predicted a down market and avoided investing at the peak. Venture capitalists who optimized private gain by overinvesting in 2000 realized subnormal returns on that investment and suffered a loss of reputation among investors. The significance of that reputational loss is minimized by the low investment pool available in later years. In game theoretic terms, some venture capitalists felt that a multiperiod game had devolved into a one-period game, and acted accordingly.

Our description of agency costs in Part IV is consistent with financial literature on this subject. Our hypothesis that investment (measured from an *ex ante* perspective) was not optimal but was distorted by agency costs is broadly consistent with Kaplan and Stein's description about an earlier "boom-bust" cycle in the leveraged buy-out craze of the 1980s.

Our hypothesis that agency costs play a role in soliciting or accepting funds is also similar in many respects to Paul Gompers's hypothesis that agency costs cause less well-established venture capitalists to "grandstand" and take companies public too early in order to obtain new funds.⁹ Not surprisingly, the policy recommendations that flow from this hypothesis are similar to those suggested by Gompers.

Under the most plausible variant of the agency cost hypothesis, well-established venture capitalists believe they will be able to continue to raise funds in future years. These firms are concerned with reputation effects that stem from overinvestment, and so are likely to reduce funding when valuations seem excessive. Newly established venture capitalists have less of a reputation to lose, and attract less-sophisticated investors who are more likely to be short-term investors. These predominantly newly established venture capitalists behave as if they are in a one-period game.

I. THE STRUCTURE OF VENTURE CAPITAL-BACKED INVESTMENTS

While there is great variation throughout the world of venture capital finance with regard to the structure of venture capital firms and investment vehicles, most structures are based upon a fairly

9. Paul A. Gompers, *Grandstanding in the Venture Capital Industry*, 42 J. FIN. ECON. 133 (1996).

simple standard form.¹⁰ The venture capital firm solicits investors by issuing a prospectus detailing the purpose and scope of the fund to be raised and the nature of the investments sought.¹¹ The prospectus also details the legal form that will govern the relationship between the venture capital firm and the fund participants (i.e., investors). The legal form most characteristic of venture investing is the limited partnership.¹² The venture capital firm acts as the general partner of the limited partnership, responsible for management of the fund and all investment decisions involving disposition of the fund's assets. For these responsibilities the venture capital firm receives an annual management fee, typically two to three percent of the total capitalization of the fund.¹³ In addition, the venture capital firm will command a "carry"—a percentage of the fund's equity share of any portfolio investments—in the range of 15 to 35 percent.¹⁴

The remaining share of any fund investments is held by the limited partners on a pro rata share basis. An investor becomes a limited partner by "subscribing" to one or more shares of the fund at issue. Subscriptions are obtained by agreeing to a capital call commitment. Under a capital call commitment, limited partners are obligated to forward specified amounts of capital whenever the general partners issue a capital call.¹⁵ Funds establish a timetable for regular capital contributions over a designated period of time, typically two years, with contributions being made quarterly.¹⁶ The schedule of regular capital calls is designed to result in the raising of the fund's articulated capital goal.¹⁷

The limited partnerships are not just limited as far as legal liability—they can be quite limited in number, too. Participation in funds managed by the most well-established and prestigious venture capital

10. See Paul Gompers & Josh Lerner, *The Use of Covenants: An Empirical Analysis of Venture Partnership Agreements*, 39 J.L. & ECON. 463, 469 (1996); Sahlman, *supra* note 1, at 487–93.

11. See Nat'l Venture Capital Ass'n, *The Venture Capital Industry: Commitments and Fund Raising*, at <http://www.nvca.org/def.html> (last visited May 13, 2001).

12. GOMPERS & LERNER, *supra* note 1, at 8; Nat'l Venture Capital Ass'n, *The Venture Capital Industry: Types of Firms*, at <http://www.nvca.org/def.html> (last visited May 13, 2001).

13. Paul Gompers & Josh Lerner, *An Analysis of Compensation in the U.S. Venture Capital Partnership*, 51 J. FIN. ECON. 3, 6, 20–23 (1999).

14. *Id.* at 14–20 (observing that most funds have a carried interest of 20 percent).

15. JOSH LERNER, A NOTE ON PRIVATE EQUITY PARTNERSHIP AGREEMENTS 2 (Harvard Bus. Sch., Case Note No. 9-294-084, 1998); Nat'l Venture Capital Ass'n, *The Venture Capital Industry: Capital Calls*, at <http://www.nvca.org/def.html> (last visited May 13, 2001).

16. LERNER, *supra* note 15, at 2 (noting that all funds are typically drawn down fully between the second and fourth anniversaries of the fund's formation).

17. *Id.*; Nat'l Venture Capital Ass'n, *supra* note 15.

firms is limited to a select number of investors, all of whom “qualify” for the privilege to subscribe by meeting the venture capital firm’s strict standards for participation.¹⁸ Even when an investor satisfies the firm’s criteria, elite funds are typically oversubscribed.¹⁹ Preference is given to investors in the firm’s previous offerings. For example, an investor can realistically hope to participate in next year’s Mayfield fund only if she subscribed to this year’s fund.²⁰

Limited partners tend to share certain characteristics. They are typically institutional investors, such as pension funds or wealthy individuals who meet strict participation requirements.²¹ Many venture capital firms will raise “side-by-side” funds comprised of investors grouped by similarity of characteristics. These side-by-side funds might include an “entrepreneurs’ fund,” comprised of limited partners who were themselves successful entrepreneurs, with an interest in steering opportunities toward the partnership. Side-by-side structures typically involve an institutional investors’ fund, constituting 90 percent of the assets available for investment, with an entrepreneur fund presence supplying the remaining 10 percent.²² These side-by-side funds are then treated as one fund for investment purposes. In other words, when the main fund invests in an enterprise, all side-by-side funds participate in the investment proportionately.²³

The common structure of venture investment isolates the interests of any given fund’s investors from those of past and future funds, though this is softened by implicit norms of reinvestment at similar terms. The agreement between investors and venture capitalists creates agency costs (principally management fees but to some extent the option value of the carry). We discuss these costs in Part IV, as a partial explanation of the investment boom-bust, but first we discuss non-agency cost explanations for investment behavior.

18. GEORGE W. FENN ET AL., THE ECONOMICS OF THE PRIVATE EQUITY MARKET 36 (Bd. of Governors of the Fed. Reserve Sys., Staff Studies Series No. 168, 1995).

19. *Id.* at 36 n.88 (discussing oversubscription of Kleiner Perkins Caufield & Byers).

20. *See id.* at 36; Gompers, *supra* note 9, at 137.

21. JOSH LERNER, A NOTE ON THE PRIVATE EQUITY FUNDRAISING PROCESS 1–2 (Harvard Bus. Sch., Case Note No. N9-201-042, 2000); FENN ET AL., *supra* note 18, at 45–49.

22. LERNER, *supra* note 21, at 2.

23. *Id.*

II. NON-AGENCY COST EXPLANATIONS FOR INVESTMENT

A. *No Perceived Overvaluation*

One obvious explanation for why venture capitalists invested in 2000 is that the investments seemed to be good ones. The fact that the investments turned out poorly does not necessarily suggest that the venture capitalists, as agents, were conflicted. It may simply tell us that, like investors in markets everywhere, the venture capital community failed to see a downturn coming. Certainly some venture capitalists interviewed made statements consistent with that explanation. When asked why so many investments were made at such high valuations, one venture capitalist said, "Some people were stupid and blind—and I was one of them." A related explanation is that certain venture capitalists felt that investments were in general overvalued, but that they were able to pick undervalued investments. Another venture capitalist bluntly said when asked the "why did you invest" question, "My ___ didn't stink."

B. *Deference to Investor Determinations of Portfolio Allocation*

Another explanation given for continued investment is that venture capitalists felt the decision to invest in venture capital must be made by the investor; the venture capitalist's job is simply to optimize return subject to that decision. Investors in traditional venture capital funds are either high net worth individuals or institutional investors.²⁴ It may be presumed that these investors are sophisticated and have made an independent decision as to how to allocate their investment portfolio. Venture capitalists understandably point to this sophistication to justify investing even during times of perceived high prices and lower returns. Venture capitalists express a similar attitude when asked whether they considered simply holding funds already collected or pledged because of pending decline in the market. As one venture capitalist stated, "Investors have given us funds to invest in *technology*, not T-bills." This

24. In recent years, corporations have supplied significant funding for technology-related start-ups. This funding differs from traditional funding in that it almost always has "strategic" benefits for the corporate investor (e.g., a wireless messaging start-up funded by a telecommunications company) and is often carried out "in-house" by a venture capital department. At least some corporations, however, have "outsourced" this type of investment to venture capitalists. See, e.g., Atrium Capital, *Corporate Partners*, at <http://www.atriumcapital.com/indexcorporatepartners.htm> (last visited Sept. 27, 2001).

explanation of the “investor’s portfolio allocation” is related to the theory that venture capitalists are rationally concerned only with performance relative to other venture capitalists—a theory that we discuss in Part III.

It is important to point out the limitations of, as well as intuition behind, the investor’s portfolio allocation explanation. It would appear to be in neither the venture capitalists’ nor the investors’ interest to have the allocation decision made without the input from the venture capitalist. One would expect venture capitalists to have a level of expertise in their field that is not shared by fund managers or sophisticated individuals. This expertise underlies and justifies the role of the venture capitalist. The belief that venture capitalists would have expertise in choosing among investments but no useful input to add as to the absolute or relative merits of those investments, as against investments in other sectors, is somewhat extreme. A venture capitalist who felt the market was overvalued might tell his investors to wait or at least to be prepared for subpar returns. Few, if any, appeared to have made this *ex ante* disclosure. A venture capitalist that did not make this disclosure might similarly ignore the investor’s portfolio allocation decision if it felt strongly enough that the market was overvalued. A policy of underinvestment would garner the venture capitalist a superior return relative to its peers. It’s possible that an institutional investor would rank venture capitalists only by the return per dollar invested. Still, it seems likely that a venture capitalist who predicted a downturn would gain reputation among current and past investors. These investors would readily forgive a venture capitalist who overrode their decision to buy in an overheated market. One might suspect, therefore, that a venture capitalist who placed a high value on reputation would be less likely to adhere to the norm of sector neutrality.²⁵

A final point on investor’s portfolio allocation theory is that the peculiar rules and methods on allocation were a prime contributor to the boom-bust cycle in the industry. Institutional investors such as endowments and pension plans often prohibit investments that are too small to justify time and transaction costs, or investments in which

25. The agency cost hypothesis we offer in Part IV, *infra*, assumes that future investment is predicted to be low, at least for less well-established firms. Low future investment encourages agent opportunism by making reputation less important. The same assumption—low future investment—would support sector allocation neutrality by reducing reputation-related gains for those venture capitalists who are willing to tell investors that the sector is overvalued or increase returns by maintaining a high cash position in times of overvaluation.

the institution will comprise too large a percentage of total funding. Thus, a fund might prohibit investments below \$5 million or contributing more than 20 percent of funds to any investment.

Until recently, most venture funds were too small to justify investments under these criteria. Institutional investors provisionally allocated funds to venture capital that, due to these restrictions, could not be invested. The rise in size of the venture funds opened the field for institutional investors, and that, as much as anything, created the huge demand for investments and excessive valuations, which led to the recent bust. In referring to these previously binding restrictions on investments, one venture capitalist stated, "If you push on a door for years and years and all of a sudden it opens, odds are you'll fall on your face."

C. The Greater Fool Theory

The focus of the investor's portfolio allocation explanation is on venture capitalists and their acceptance of their investors' decisions. No motivation is ascribed to investors, though it is presumed they are misinformed. An alternative explanation, given by several venture capitalists, is that investors knew that the market was overheated and that they were buying in at high valuations. They were willing and eager to do so, however, because their investment would ultimately be "unloaded" upon less-informed investors in the public markets. With virtually no limit to the appetite of the IPO market, and the historically unprecedented rise in post-IPO stock values, venture capital firms could continue to justify investment despite weaknesses in underlying business models.

D. Reputation

A venture capitalist's chief asset (apart from human capital) is its reputation, and an important component of reputation is its standing among the overlapping groups of entrepreneurs and technologically skilled workers. Many venture capitalists interviewed felt that absenting themselves from the marketplace would cause a certain reputational loss. "You can't call yourself a venture capitalist and at the same time tell everyone you're not making any investments," said

one venture capitalist. "That would be like calling yourself a car salesman when you don't sell cars. No one will take you seriously."

Reputational loss would stem, in particular, from instances in which the venture capitalist had served as the lead investor for a company but would now decline to provide follow-up financing. This behavior might well doom the company—not only because it would deprive the company of a likely source of funds, but also because it would send a no-confidence signal to other investors.²⁶

The venture capitalist would acquire a reputation for not supporting its portfolio companies. This would make it hard to attract entrepreneurs and existing companies to their portfolio, and to attract employees to their existing portfolio companies. More speculatively, the venture capitalist's failure to compete in the marketplace for initial financing might lead entrepreneurs to dismiss the venture capitalist as a source of financing. This reputation might remain even in later periods in which the venture capitalist wished to invest.

If implicit contracts are ignored, reputation-based decisions that made sense for a venture capitalist would not necessarily be in the interest of its investors. Investors who fund venture capital investments do so through limited partnerships or limited liability companies. They do not receive an interest in all future investments of a venture capitalist, merely in the investments made with a particular limited partnership. A particular limited partnership may fund a year or so worth of investments, while subsequent investments will be funded by a new limited partnership.

In effect, investment in a limited partnership gives the investor only a temporary interest in the venture capitalist's profits. Profits realized after that temporary interest go to the venture capitalist and the next set of investors. Furthermore, there is no guarantee that the next partnership will be offered on the same terms as the last partnership. One of the most important changes in the past year has been the increase in management fees charged by venture capitalists; this fee is up 50 percent, from 2 percent to 3 percent. At first glance, this suggests that today's investors are charged for a benefit that goes to tomorrow's investors. This problem is not faced in corporate

26. The strength of the no-confidence signal would be lessened to the extent the venture capitalist made it clear that it was directed at the market in general rather than a particular company; but the net effect of a lead investor in an earlier round refusing to provide follow-up financing would be negative.

investments, since today's shareholders have the right to participate in tomorrow's investments.

In fact, the venture capitalist's pricing of current and future investments may already take into account a lesser return to investors. There is an excess of demand over supply for slots in first-tier venture capitalist investment partnerships. Venture capitalists are not charging "what the market will bear" and in return are requiring a certain degree of loyalty from their investors. This is what we may infer from the reaction of the fund manager of an institutional investor that has been one of the leading sources of venture capitalist financing over the years. "We might well have turned down some of the recent investment opportunities on the grounds the market was overvalued. But if you don't invest in Kleiner, Perkins Fund 22 and 23, you lose the right to invest in Fund 24." It is therefore possible to reconcile decision making that takes into account long-term reputation with what, for want of a better term, may be called "honest agency." Venture capitalists invest in what they suspect to be an overheated market in part to maintain reputation. The investors know they are paying to maintain the venture capitalist's position in the marketplace; they do so because it gives them the ability to invest in the future when they believe slots will be limited.

Is it sensible to overpay to maintain a reputation? This is ultimately an empirical question. What follows are a number of reasons why, as an analytic matter, this explanation may not be as convincing as it first appears. First, if by reputation one means simply a reputation for being a significant and successful investor, it is unclear why a temporary absence from the marketplace would reduce reputation. Second, reputations are to a great extent based on past successes, and success is measured by returns to investors. So a set of poor returns hurts a venture capitalist by reducing reputation to investors. All else being equal, poor returns hurt a venture capitalist's reputation among entrepreneurs as well as technology workers. This implies that funding overvalued investments ought to reduce, rather than enhance, a reputation.

The distinction between follow-up financing for a portfolio company and any other sort of investment may prove helpful. Assume that we are considering only the latter category of investments. It is not clear why someone with an idea that needs funding in March would care whether a venture capitalist funded an overvalued

investment in November, but the reverse might be true. An entrepreneur may favor a venture capitalist who did not participate earlier, both because the venture capitalist presumably avoided low returns, and because the venture capitalist may have a reputation for being “picky” or selective about which companies to fund. Support from these types of venture capitalists may send a signal to others as to the relative value of the entrepreneur’s company. Suppose, in contrast, that by “participating,” a venture capitalist means to support a portfolio company only with follow-up financing. If we ignore risk aversion, this might not change the analysis: a venture capitalist who avoids overpaying will establish the best reputation and it is this reputation that ought to be important for the next set of entrepreneurs.

Once risk aversion is factored in, it is easy to see how entrepreneurs and skilled employees might value a venture capitalist who “sticks with” a company in bad times. Even in Silicon Valley, where employee mobility is well chronicled,²⁷ an employee will have considerable human capital tied up in a start-up. An employee may prefer a venture capitalist that offers a somewhat lower expected return but is less likely to take actions that lead to a radical decline of that human capital. The “reputational loss” explanation becomes more credible to the extent it is confined to providing follow-up funding to portfolio companies. Somewhat surprisingly, though, reputational considerations are often given as justification for “seed” financing and other investments to companies with whom the venture capitalist has no preexisting relationship.

It is possible that the reputational loss explanation is really a story about contacts and technical expertise. Start-ups are very often highly technical, and the return to the venture capitalist is often attributed to the venture capitalist’s ability to advise a company in a technical space and provide contacts within that space. The technology field changes rapidly, and a venture capitalist that withdrew from the field for a substantial length of time might find it had lost its advisory edge. Whether or not a half year or so withdrawal from the field for new investments would cost a venture capitalist anything is unclear.

27. See ANNALEE SAXENIAN, *REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128* (1994); Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. REV. 575 (1999).

III. HERD BEHAVIOR

From a distance, there is something herd-like in the conformity of venture capitalist behavior, and venture capitalists often use herd imagery to describe industry behavior. Venture capitalists are not the only group to seemingly behave in a highly coordinated fashion; a number of economists have set forth theories of "herd behavior." David Scharfstein and Jeremy Stein (together) and Jeffrey Zwiebel have modeled situations in which an agent is more concerned with relative ranking than absolute result.²⁸ These models depend critically on asymmetrical pay-offs; the cost to the agent for unsuccessful deviations from the herd is larger than the gain to the agent for a successful deviation from the herd. The agent in these models is not risk adverse. For a risk adverse agent, herd behavior would make sense even if payoffs are symmetrically distributed around deviation from the norm.²⁹

Herd behavior in these models is a form of agency cost;³⁰ theories of herd behavior may in practice be tethered to non-agency cost theories of cognitive bias. Marcel Kahan and Michael Klausner rely on herd behavior and on status quo bias,³¹ anchoring bias,³² and conformity bias³³ to help explain conformity of corporate contracts.

Incorporating the real-world structure of venture capital into these economic and social psychology models would be a difficult task. Potentially, the models might explain the apparent conformity of venture capitalist behavior—why each venture capitalist seems to ride with the herd. These models would not, however, explain the herd's behavior. The most that can be said in favor of this approach

28. David S. Scharfstein & Jeremy C. Stein, *Herd Behavior and Investment*, 80 AM. ECON. REV. 465, 467–69 (1990); Jeffrey Zwiebel, *Corporate Conservatism and Relative Compensation*, 103 J. POL. ECON. 1, 4–6 (1995). Both articles are discussed in Marcel Kahan & Michael Klausner, *Path Dependence in Corporate Contracting: Increasing Returns, Herd Behavior and Cognitive Biases*, 74 WASH. U. L.Q. 347 (1996).

29. Kahan and Klausner make a similar argument to explain conservatism in corporate contracting. Kahan & Klausner, *supra* note 28, at 359–65.

30. It is not, of course, the form of agency cost one intuitively associates with corporate managers (e.g., excessive pay or perks).

31. Status quo bias is defined as a preference for the present state and an unwillingness to buy an object one does not have or sell an object one owns. Kahan & Klausner, *supra* note 28, at 359; see also William Samuelson & Richard Zeckhauser, *Status Quo Bias in Decision Making*, 1 J. RISK & UNCERTAINTY 7 (1988).

32. Anchoring bias refers to the tendency of persons to base judgments on initial reference points. Here, of course, the initial reference points would be the existing valuations of companies. Kahan & Klausner, *supra* note 28, at 362.

33. *Id.* at 363.

is that it suggests that there might be a certain inertia behind any action, and that the inertia may have made it more difficult for the herd to change direction by scaling back its investment activities.

IV. AGENCY COST THEORIES

A. Generally

Sources of agency costs in the relationship between venture capitalists and their investors are well documented in the literature.³⁴ For our purposes, the most important of these costs is the relationship between funds taken in and fees. As noted in Part I, venture capitalists invest funds of the limited partnerships. The partnerships are funded for the most part by institutional and individual investors and managed by the venture capitalists. The venture capitalists have historically received a 2 percent management fee, but in recent years this fee has gone up to 3 percent. In addition, the venture capitalists receive 20 percent of the upside on investments. With all else being equal, the venture capitalist's gross is proportional to the amount of money invested.

The idea that managers benefit from increased investment to manage has a long history in corporate law, where it has been used to explain high prices paid for corporate acquisitions.³⁵ What is worth noting here is that the temptation, in the form of increased compensation, is much stronger for venture capitalists than for managers. The unprecedented infusion of funds in 2000 presented venture capitalists with an opportunity to dramatically increase their compensation by simply accepting contributions from willing investors. From the perspective of some venture capitalists, this opportunity was too attractive to turn down. "Everybody knew it was like a game of musical chairs, and it was only a question of when the music stopped," said one venture capitalist. "But everyone wanted to get in while the getting's good."

If the venture capitalists felt the market was overheated, return on new funds would in one sense be disappointing. The carry that is carved out of profits might be low or nonexistent. Even here, the

34. See, e.g., Sahlman, *supra* note 1, at 493–503.

35. See Bernard S. Black, *Bidder Overpayment in Takeovers*, 41 STAN. L. REV. 597, 627 (1989) (recognizing the incentives for managers to engage in "empire building" by increasing the size of the asset pool within their control).

venture capitalist would have a different incentive than the investor. The carry represents a free option to the venture capitalist, and the option has value even if the expected return on the investment is negative. For the investor, however, a negative expected return is just that. More significantly, in the past few years, the fixed management fees alone have become significant enough to support a high lifestyle, even absent profits. A leading venture capitalist in 1995 may have taken in \$100 million in funds, realizing \$2 million in annual management fees. That same venture capitalist in 2000 might have taken in \$1 billion, and realized \$30 million in annual management fees because of the increase in management fees from 2 percent to 3 percent. Since staffs and expenses have not increased proportionately with the inflow of funds, the management fee structure guaranteed high annual returns to the venture capital firm and its partners. "A lot of venture capitalists just got hooked on management fees," said one venture capitalist.

It is wrong to treat the additional managerial income as simply a no-cost boon to the venture capitalist. That simplistic assumption would be true only for those venture capitalists who are "one-period players." Venture capitalists who intend to raise money in the future will be hurt by low returns today. A venture capitalist who believed the market was overvalued, but had access to fixed dollars in the next few investment periods, would be better off deferring the investment to a later period. The return would be higher, and the higher return would presumably attract more capital in subsequent periods.

Venture capitalists who believe that their colleagues put self-interest above investor interest do not believe that investment dollars were fixed so that deferral of investment was a viable option. Instead, they believe that 2000 represented a huge one-time influx of funds, and that subsequent years were apt to be not only lower than 2000, but lower than normal. This particularly would be the case if the market crashed. The reduction in investor interest after the crash would offset whatever advantage the venture capitalist could get from having sat out the last frenzied round of investments. As one venture capitalist stated, "Even if [venture capitalists who invested in high pre-crash prices] lost in this period of craziness, they would still be better off than those who hadn't raised money."

Anecdotal support to this theory is also offered by another venture capitalist, who had invested successfully prior to 2000 but hadn't invested in 2000 because of his small size and the timing of his funds

closing. He has found it impossible now to raise additional funds. In addition, his investors have made inquiries about reneging on amounts already pledged. This venture capitalist believes these investors are performing a kind of "triage"—one with an ironic twist. Because his investors have lost funds in other investments, they are now considering withdrawing from his limited partnership.

A belief that no funds will flow into the sector after a crash has a perverse incentive effect for venture capitalists. The more overheated they find the market, the more likely a crash, and the more likely a crash, the greater the rewards for raising and investing funds in the overheated market. In game theoretic terms, a multiperiod game suddenly becomes a one-period game; the change is seen by one party, which changes its behavior accordingly. All of this is not to suggest that venture capitalists would have invested funds had they known the market would crash. The conventional intuition that a venture capitalist would be better off sitting out an overheated market, however, is, at the very least, simplistic.

Add to this the realities of the general uncertainty of future markets, or a venture capitalist's position in those markets, and the time value of money, and one can understand one venture capitalist's mantra, "Money now is better than money later."

B. Reputation across Venture Capital Firms

The agency hypothesis relies upon the assumption that reputation costs from misinvesting are apt to be low because of the assumed decline in future investment. It seems unlikely that all firms would experience (or would be thought to experience) the same decline. More probably, the decline would fall disproportionately on less-established firms. Well-established firms, whose funds are oversubscribed before the crash, should still be able to raise new capital, albeit less of it and on less good terms. Less well-established firms, which in good times depend upon the overflow from their more senior counterparts, would be left without funds. If this is the case, or if this is thought to be the case, then well-established firms still have reputations to protect. These firms remain in a multiperiod game. The less well-established firms may realize, however, that they are in the final period of their game.

Our agency hypothesis, amended to reflect the distinction explained, would predict that less well-established firms may have been more aggressive in raising and investing funds and in bidding up

investment in late 2000. Other factors might support this same result. For example, partners in less well-established firms will not have enjoyed huge returns from prior investments and will be "hungrier" to maintain their current income. This may be particularly true of partners who have come from another occupation (such as law) and given up stable and substantial incomes. Partners in well-established venture capital firms, in contrast, will have considerable wealth and may place a higher value on quality-of-life concerns, and welcome the hiatus they receive from reducing current investments.

Well-established firms may also differ from newer firms by investor characteristics. Well-established firms may have sophisticated long-term investors; newer firms may have less sophisticated investors, who are more likely to leave the sector in the event of a downturn. This client mix would make it more likely that newer established firms would behave as if they were in a one-period rather than multiperiod game.

Exactly how one would define or measure "pushing the envelope" or "behaving as if one were in a one-period game" is a difficult issue. The year 2000 was a banner year for venture capital investment. It was certainly not the case that well-established venture capital firms sat out 2000. One possibility, though, is that well-established firms raised and invested a much smaller proportion of available funds than did newer firms. This is consistent with a statement of a junior partner of one of the most well-established firms. "We could have easily raised and invested \$5 billion dollars last year," the partner reported, "but we invested less than a billion. We didn't feel we could profitably invest the rest. My guess is that other firms just took all they could get."³⁶

There is also some anecdotal support for the theory that quality-of-life concerns influenced investment. A few months ago, one well-established firm, Crosspoint Ventures, cancelled plans for a limited partnership which had already been oversubscribed.³⁷ Reasons for

36. The fact that less well-established firms were more aggressive in investing and even the fact that such firms knowingly made investments with lower ex ante returns than those made by more established firms would be consistent with this version of the agency hypothesis but would also be consistent with other explanations. For example, the less well-established firms may charge investors less: they may require lower fees, lower carry or lower minimum investments.

37. Carol Emert, *VC Mavericks: Crosspoint Venture Partner Puts Forth Some Provocative Views on Investing*, S.F. CHRON., Feb. 4, 2001, at D-5, available at <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2001/02/04/BU173880.DTL>.

the cancellation included the desire of general partners to reduce workload.³⁸

C. Extensions and Limitations of the Agency Hypothesis

In our analysis, the agency hypothesis is presented against a backdrop of poor returns and used to provide a partial explanation of those returns. A more generalized statement of the hypothesis is that reputation alone may not be an adequate check on venture capitalist opportunism. The cost of lost reputation after a down period may be minimized by the decline in investments. Thus, the hypothesis might offer insight into the *ex ante* incentives created by the relationship between investors and venture capitalists, even if the most recent downturn is attributable to other factors.

One final limitation of the agency hypothesis is that agency costs cannot explain why investment dollars became more readily available during the late 1990s. The first-level answer to that question is that money became more available because returns had been stellar, but that leaves unanswered the question as to why investors themselves did not realize that increased investment would reduce future returns. All the agency cost hypothesis can answer is the question of why venture capitalists did not defer raising capital when funds were plentiful but returns were expected to be poor.

D. Comparison with Finance Literature

1. LBO Analogy

The boom-bust in venture capital-backed investments is similar in many ways to the earlier boom-bust in leveraged buy-outs (“LBO”). Investments in LBOs increased from \$1 billion in 1980 to a high of \$60 billion in 1988, only to fall back down to \$4 billion two years later. As might be expected, the supply of funds lagged returns; investments increased when returns on prior investments were high and fell when prior investment returns turned negative. The LBOs were funded by limited partnerships, and these partnerships were funded by institutional investors. Some of the investors in LBOs later became leading investors in venture capital partnerships, and the

38. *Id.* The cancellation came after the valuation peak but well above current values; it is possible therefore, that at the time of the cancellation, valuations were no longer perceived excessive.

analogy between LBO investments and venture investments is often remarked upon by institutional investment managers.

The causes of the LBO boom-bust are the subject of a paper by Steven Kaplan and Jeremy Stein.³⁹ They examined LBO pricing, capital structure and management incentive structure throughout the 1980s. They found that as the decade wore on, deals got more expensive, the capital structure got riskier and managers withdrew more in fees and equity. Among a cross section of investments at any time, they also found increases in the price, riskiness of capital structure, and management withdrawals were positively correlated with subsequent financial distress. They found the data most consistent with a hypothesis that an overheated phenomenon had taken hold of the LBO market. They rejected what they characterized as the alternative hypothesis that increased liquidity in the asset market made high prices, debt-laden capital structure and lower managerial equity economically rational. They also rejected the theory that subsequent financial distress was due to unforeseen exogenous shocks to the economy.

In explicating the overheated market hypothesis, Kaplan and Stein discuss the role of agents. Even more so than the bankers, other interested parties are also successful in extracting money from the deals up front. Ostensibly well-informed players such as management, buyout promoters, and investment bankers are increasingly able to earn compensation simply for completing a transaction, rather than having their fortunes ride on its eventual success or failure. Thus, instead of providing a system of checks and balances, these "smart money" participants may be quite eager to go along, even with deals that they view as precarious.

It should be apparent that the story Kaplan and Stein detail about the LBO craze is similar to that offered under our agency cost hypothesis. One significant difference between our paper and theirs is that we provide a theory on why smart money participants may find it rational to collect fees and "go along" rather than buck trends and gain reputation. The smart money participants believe they are closer to a one-period game than a multiperiod game.

39. Steven N. Kaplan and Jeremy C. Stein, *The Evolution of Buyout Pricing and Financial Structure in the 1980s*, 108 Q.J. ECON. 313 (1993).

2. Finance Literature on Venture Capital

Our agency cost hypothesis is also broadly consistent with the finance literature on venture capital. As noted above, the literature on the subject emphasizes the ways in which the legal and organization structure minimizes agency costs. Agency costs are not deemed eradicated, however, and a number of scholars have described existing costs at some length. Of particular interest is the work Paul Gompers did on the decision of a venture capital firm to take a company public prematurely—a practice he called “grandstanding.”⁴⁰ Gompers found that as opposed to well-established venture capital funds, younger, less-established venture capitalists take companies public earlier.⁴¹ They sit on the board for briefer periods of time prior to going public,⁴² have smaller equity stakes in these companies,⁴³ and are more likely to have the timing of the public offering fall shortly before the introduction of a new fund.⁴⁴ Significantly, Gompers found that the public offerings of these younger firms are more underpriced at the time of the offering than those of better-established firms. These findings support Gompers’s hypothesis that less-established firms sacrifice value in order to show the market a success story in the form of a public offering. This is designed to increase investment in their forthcoming fund. Gompers concludes that the lure of additional investment for less well-established venture capital firms causes the funds to represent current investors poorly.⁴⁵ Gompers recommends a shift toward contingent compensation, the carry, and away from fixed management fees.⁴⁶ Our hypothesis here is somewhat similar: the lure of additional capital causes venture capitalists to misrepresent the investors

40. Gompers, *supra* note 9, at 134.

41. *Id.* at 139–41.

42. *Id.* at 147–50.

43. *Id.* at 138, 150–53.

44. *Id.* at 146–47.

45. An alternative explanation is that second-tier venture capitalists may discount the price of their services to reflect the fact that the venture capitalists will sacrifice value to gain market share. The discount may be in the form of reduced fees, reduced carry, or reduced minimum investment requirements. Investors may not suffer a reduced return, and the practice—sacrificing return to increase market share—may be consistent with an efficient market.

46. Gompers fails to mention that decision making would be distorted even with 100 percent contingent compensation, provided that the present value risk adjusted incremental return from new funds outweighs the cost to the venture capitalist, in the form of reduced “carry,” from mistiming the public offering. The distortion would be reduced, however, because more of the return would be in the form of carry. The venture capitalist would thus bear more of the costs from mistiming the public offering.

supplying that capital. Reducing the fixed portion of venture capital compensation, as suggested by Gompers, would reduce this problem as well. It would not eliminate agency costs because the venture capitalist would still get a free option in the form of the carry.

In Gompers's model, established venture capitalists have no incentive to mistime public offerings because the reputational gain from doing so is slight: they already have success stories. It is possible, though not mentioned by Gompers, that established venture capitalists also suffer a reputational loss from mistiming public offerings.

E. Emotional Connection to Portfolio Companies

We have thus far dealt with a possible nonalignment of monetary incentives between investors and venture capitalists. There may be nonmonetary factors that have the same effect, at least with respect to follow-up funding for portfolio companies. An entrepreneur typically meets with the venture capitalist from a given firm who specializes in the relevant sector or technology. If the meeting goes well, that venture capitalist will recommend the investment to his or her partners. Once a company is funded, the same venture capitalist will represent the venture capital firm on the board of the start-up. If the management team is inexperienced, the venture capitalist may be intimately involved in day-to-day operations. The staggered nature of financing means that for any venture capitalist a substantial portion of expenditures are on follow-up financing for portfolio companies. Any cutbacks necessarily reduce this funding, and a company that is not funded by its lead venture capitalist will generally not find any other sources of funding. Venture capitalists described closing off funding as the worst part of their job. "It's very painful to let companies shut down; by then you've become the entrepreneur's best friend and confidant." "You are emotionally involved," said another venture capitalist. "You can see why a lot of people aren't willing to say 'no' [to follow-up financing]."

Emotional ties to portfolio companies are a constant in venture capital and therefore cannot directly explain overinvestment at a time when valuations were high. Indeed, at a time of high valuations it may be more likely that existing companies will receive follow-up funding without significant support from the lead investor from the prior round. Emotional ties to portfolio companies may, however, comprise one of many reasons why it is difficult to correct a course of

overinvestment. As the market deteriorates, portfolio companies become more and more dependent upon their current venture capitalist, raising the dynamic described above.

The discussion of follow-up funding of portfolio companies is related to the discussion of the follow-up funding in Part II. There, we hypothesized that failure to provide follow-up funding would reduce a venture capitalist's reputation among entrepreneurs and technologically skilled employees. The venture capitalist acts to preserve her reputation and the reputational benefits are shared with repeat investors in later funds. Here, we treat the funding simply as imposing an agency cost. The venture capitalist acts out of a sense of duty and affection to preserve the jobs of employees. Investors do not share in the payoffs to this action.⁴⁷

Emotional ties to portfolio companies may also explain differing investment patterns within venture capital. In the past, venture capitalists diversified their portfolio by seeking other companies to provide the bulk of follow-up funding to existing portfolio companies and by providing follow-up funding to portfolio companies of other venture capitalists. Now that the market has fallen precipitously, a much greater percentage of follow-up funding is going to a venture capitalist's own portfolio companies. More likely, though, changing investment patterns have multiple causes, and for that reason are a subject for a different paper.

CONCLUSION

Our interviews with venture capitalists, entrepreneurs, and industry lawyers reveal that the motivations behind high valuation investments in 2000 are complex. Firms may have felt valuations were not high in general, or not high for the investments they made. Firms may have felt that investment decisions were that of their limited partners, and their role was merely to optimize returns subject to those decisions. Firms may have invested to retain reputation, with reputational gains accruing to the firm and its long-term repeat

47. We can treat the reputational investment vis-à-vis entrepreneurs and skilled employees as a form of agency cost as well—if we assume that current investors will not participate in later investments. The most logical reason to think current investors will not participate is outlined above: investment after the crash will be low. But if subsequent investment is low, it is unclear why venture capitalists, who under this hypothesis no longer care much about reputation among investors, would sacrifice current return to maintain reputation among entrepreneurs and employees.

investors. Herd behavior may explain why behavior is “sticky” and firms didn’t change their behavior as valuations rose.

Agency cost theories look to the wedge between venture capitalist and investor interest caused by the fixed management fees, and, to a lesser extent, the “free” option value of the profits interest. Agency theories rely critically on the assumption that venture capitalists had private knowledge that future investment flows were apt to be lower than 2000 investment. This turned a multiperiod game into something approaching a one-period game, and some venture capitalists behaved accordingly. Agency costs are most likely to form part of the explanation for less well-established firms. Such firms have less reputational capital to risk, and have an investor base that is less sophisticated and less likely to make new investments after a downturn in the market.