

“WE HAVE MET THE ENEMY... AND HE IS US”
Lessons from Twenty Years of the Kauffman Foundation’s
Investments in Venture Capital Funds
and The Triumph of Hope over Experience

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Ewing Marion
KAUFFMAN
Foundation

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We also thank our colleagues and readers Paul Kedrosky, Robert Litan, Mary McLean, Brent Merfen, and Dane Stangler for their valuable input.

We also are grateful for the more than thirty venture capitalists and institutional investors that we interviewed, who shared their candid views and perspectives on these topics.

A NOTE ON CONFIDENTIALITY

Despite the strong brand recognition of many of the partnerships in which we've invested, we are prevented from providing specifics in this paper due to confidentiality provisions to which we agreed at the time of our investment. Similarly, the data and analyses we present in this paper are mostly our own because detailed information about VC fund performance and structures is nearly impossible to obtain given the confidentiality terms in the typical limited partner agreement.

EXECUTIVE SUMMARY

Venture capital (VC) has delivered poor returns for more than a decade. VC returns haven't significantly outperformed the public market since the late 1990s, and, since 1997, less cash has been returned to investors than has been invested in VC. Speculation among industry insiders is that the VC model is broken, despite occasional high-profile successes like Groupon, Zynga, LinkedIn, and Facebook in recent years.

The Kauffman Foundation investment team analyzed our twenty-year history of venture investing experience in nearly 100 VC funds with some of the most notable and exclusive partnership “brands” and concluded that the Limited Partner (LP) investment model is broken¹. Limited Partners—foundations, endowments, and state pension fund—invest too much capital in underperforming venture capital funds on frequently mis-aligned terms. Our research suggests that investors like us succumb time and again to narrative fallacies, a well-studied behavioral finance bias. We found in our own portfolio that:

- Only twenty of 100 venture funds generated returns that beat a public-market equivalent by more than 3 percent annually, and half of those began investing prior to 1995.
- The majority of funds—sixty-two out of 100—failed to exceed returns available from the public markets, after fees and carry were paid.
- There is not consistent evidence of a J-curve in venture investing since 1997; the typical Kauffman Foundation venture fund reported peak internal rates of return (IRRs) and investment multiples early in a fund's life (while still in the typical sixty-month investment period), followed by serial fundraising in month twenty-seven.
- Only four of thirty venture capital funds with committed capital of more than \$400 million delivered returns better than those available from a publicly traded small cap common stock index.
- Of eighty-eight venture funds in our sample, sixty-six failed to deliver expected venture rates of return in the first twenty-seven months (prior to serial fundraises). The cumulative effect of fees, carry, and the uneven nature of venture investing ultimately left us with sixty-nine funds (78 percent) that did not achieve returns sufficient to reward us for patient, expensive, long-term investing.

Investment committees and trustees should shoulder blame for the broken LP investment model, as they have created the conditions for the chronic misallocation of capital. In particular, we learned that investment committees and trustees:

¹ As of February 29, 2012, the Kauffman Foundation endowment of \$1.83 billion was invested in a globally diversified portfolio, comprising public and private equity, alternative strategies (including hedge funds), and fixed-income securities. About \$249 million was invested in or committed to venture capital and growth equity funds.

- Create buckets of “investment classes” for staffs to fill when they establish target allocations to VC; large LPs must invest in very large funds to put their allocated capital to work, yet big VC funds most often fail to generate market-beating returns.
- Make investment decisions based on seductive narratives such as vintage year and quartile performance, which rely heavily on internal rate of return measures that often are misleading and aren’t persistent over time.
- Fail to judge investments in venture capital against returns from small capitalization public stock investing.

The most significant misalignment occurs because LPs don’t pay VCs to do what they say they will—generate returns that exceed the public market. Instead, VCs typically are paid a 2 percent management fee on committed capital and a 20 percent profit-sharing structure (known as “2 and 20”). This pays VCs more for raising bigger funds, and in many cases allows them to lock in high levels of fee-based personal income even when the general partner fails to return investor capital.

Furthermore, our research shows that LPs regularly accept the risks of investing in a “black box” of VC firm economics. It is common for institutional investors to make investments in VC funds without requiring information about general partner (GP) compensation, carry structure, ownership, and firm-level income, expenses, or profits.

Understanding the costs and long-term investment results of VC fund investing reveals still more nettlesome problems for investors:

- The average VC fund fails to return investor capital after fees.
- Many VC funds last longer than ten years—up to fifteen years or more. We have eight VC funds in our portfolio that are more than fifteen years old.
- Investors are afraid to contest GP terms for fear of “rocking the boat” with General Partners who use scarcity and limited access as marketing strategies.
- The typical GP commits only 1 percent of partner dollars to a new fund while LPs commit 99 percent. These economics insulate GPs from personal income effects of poor fund returns and encourages them to focus on generating short-term, high IRRs by “flipping” companies rather than committing to long-term, scale growth of a startup.

To fix what’s broken in the LP investment model, institutional investors will need to become more selective and more disciplined investors in venture capital funds. The best investors will negotiate better alignment, transparency, governance, and terms that take into account the skewed distribution of VC fund returns. The Kauffman Foundation’s approach to venture capital investing in the future will be to:

- Invest in VC funds of less than \$400 million with a history of consistently high public market equivalent (PME) performance, and in which GPs commit at least 5 percent of capital;

- Invest directly in a small portfolio of new companies, without being saddled by high fees and carry;
- Co-invest in later-round deals side-by-side with seasoned investors;
- Move a portion of capital invested in VC into the public markets. There are not enough strong VC investors with above-market returns to absorb even our limited investment capital.

**“You let one ant stand up to us...then they all might stand up.
Those puny little ants outnumber us 100 to 1, and if they ever figure that out,
there goes our way of life!”**

Hopper’s speech to the grasshoppers, *A Bug’s Life*

INTRODUCTION

It’s become a bit of a sport among venture capital (VC) insiders and observers to assert that the venture capital model is broken.² Industry returns data show that VC returns haven’t beaten the public market for most of the past decade, and the industry hasn’t returned the cash invested since 1997, certainly a compelling sign that *something* must be wrong. It’s so easy to point the finger of blame directly at VCs—there are too many of them, they’re raising too much cash, they’re sitting on too much cash, they’re investing too much cash, they’re taking home too much cash....you get the idea.

As tempting as those arguments are to pursue, they miss the bigger picture and the fundamental problem. After all, who is financing all these VCs with their big funds, big piles of investible cash, big fees, and unimpressive returns? Limited partners (LPs), of course. All the state pension funds, endowments, foundations, and other institutional investors who, with one collective closing of their checkbooks, could bring the VC industry to a grinding halt, but don’t. Why not? After all, the VCs have effectively shut down their own investing—many General Partners (GPs) crack their checkbooks the smallest bit to contribute a token 1 percent commitment of partner capital to their own funds, then LPs swoop in to fund the remaining 99 percent. What are we thinking?

At the Kauffman Foundation, our investment team decided to seriously consider this question and analyze our own large and (largely) underperforming VC portfolio, question our assumptions, and revisit exactly what we’ve been thinking about investing in venture capital. This paper explores venture capital investing from the perspective of the LP and is targeted to an audience of institutional investors and their investment committees and trustees. It considers: Is it the VC model that’s broken, or the LP investment model? Our conclusion is that the LP investment model is broken. Too many LPs invest too much capital in underperforming VC funds and on misaligned terms.

We believe that to really understand and constructively address what’s ‘broken’ in VC, we need to follow the money. And the money trail leads right to the LP boardroom, where investment committees oversee venture capital investing. It’s in the boardroom that VC allocations are created, VC fund performance is evaluated, investment consultants are heard, and investment decisions are approved. Investment committees are partly responsible for the broken LP investment model through their setting and approving of targeted allocations to VC, an acceptance of inconsistent and not fully informative VC performance reporting, and either a lack of awareness or tolerance of the opaque economics and misaligned terms on which most investments in venture capital funds are made.

² Scott Austin, Majority of VCs in Survey Call Industry Broken, *Wall Street Journal*, June 20, 2009. <http://blogs.wsj.com/venturecapital/2009/06/29/majority-of-vcs-in-survey-call-industry-broken/>. Also see AngelBlog for links to several articles, http://www.angelblog.net/The_VC_Model_is_Broken.html.

Prior to publishing this paper, we shared our perspectives and tested our arguments with more than thirty LPs and VCs (some of whom we invest in and others where we do not) to solicit their views and feedback. Our discussions with other LPs suggest widely disparate levels of fiduciary oversight exercised by investment committees and, in some cases, raised concerns that GPs serving on committees may bring their own economic biases to decision-making. Many investment committees either aren't asking the questions or aren't looking at the data that would inform them about the average underperformance of VC investments during the past fifteen years, and the frequently misaligned terms upon which those investments are made. Without that oversight, there is little incentive for investment staff or investment consultants to aggressively negotiate terms and conduct performance analysis that is not requested or required by their investment committees.

The analysis of our VC portfolio and the data we generated challenges us to rethink our long-held assumptions about investing in venture capital and explicitly acknowledge that most of what we believed to be true is not supported by data from our more than twenty years of investing experience. We offer our new assumptions that now underlie our investment decisions in venture capital, which we discuss in detail in the next section:

Assumption 1: 'Top-Quartile' and 'Vintage-Year' performance reporting is, at best, not fully informative, and is, at worst, misleading.

Assumption 2: The average VC fund barely manages to return investor capital after all fees are paid.

Assumption 3: VC mandates do not produce "VC returns" that exceed a public equity benchmark by 3 percent to 5 percent per year.

Assumption 4: The life of a VC fund is frequently longer than ten years. VC funds are structured to invest capital for five years and to return all capital within ten years, but we see a large percentage of our fund lives extending to twelve to fifteen years.

Assumption 5: Big VC funds fail to deliver big returns. We have no funds in our portfolio that raised more than \$500 million and returned more than two times our invested capital after fees.

Investment committees have a primary role to play in fixing the institutional investment model. To do so, they must ask investment staff and consultants the questions and require the data to rigorously evaluate VC fund and general partner performance, and to improve VC firm transparency and GP/LP alignment. The following recommendations constitute the most important actions that investment committees can take to repair the broken LP investment model:

Recommendation 1: Abolish VC Mandates: The allocations to VC that investment committees set and approve are a primary reason LPs keep investing in VC despite its persistent underperformance since the late 1990s. Returns data is very clear: it doesn't make sense to invest in anything but a tiny group of ten or twenty top-performing VC funds. Fund of funds, which layer fees on top of underperformance, are rarely an effective solution. In the absence of access to top VC funds, institutional investors may

need to accept that investing in small cap public equities is better for long-term investment returns than investing in second- or third-tier VC funds.

Recommendation 2: Reject the Assumption of a J-Curve: The data we present indicate that the “J-curve” is an empirically elusive outcome in venture capital investing. A surprising number of funds show early *positive* returns that peak before or during fundraising for their next fund. We see no evidence that the J-curve is a consistent VC phenomenon or that it predicts later performance of a fund. Committees should be wary of J-curve-based defenses of VC investing.

Recommendation 3: Eliminate the Black Box of VC Firm Economics: Institutional investors aren’t paid for taking on the additional risk of investing in VC firms with ‘black box’ economics. Investment committees can stop accepting that risk by requiring consultants and their investment staffs to acquire and present information on VC firm economics, including compensation, carry structure, GP commitment, and management company terms and performance, in order to obtain investment committee approval.

Recommendation 4: Pay for Performance: The current market standard 2 percent management fee and 20 percent profit-sharing structure (“2 and 20”) pays VCs more for raising bigger funds and, in many cases, allows them to lock in high levels of fee-based personal income regardless of fund performance. Creating and negotiating a compensation structure that pays fees based on a firm budget, and shares profits only after investors receive their capital back plus a preferred return, would mean LPs pay VCs for doing what they say they will—generating excess returns above the public market.

Recommendation 5: Measure VC Fund Performance Using a Public Market Equivalent (PME): Evaluate VC fund performance by modeling a fund’s cash flows in comparable indexes of publicly traded common stocks. We use the small capitalization Russell 2000 as a benchmark as we believe it better reflects the higher price volatility, higher beta, and higher sensitivity of small companies to economic cycles than the large capitalization S&P 500 index does. Adopt PME as a consistent standard for VC performance reporting, similar to the Global Investment Performance Standards.³ Require consultants or investment staff to present PMEs as part of any investment decision. Reject performance marketing narratives that anchor on internal rate of return (IRR), top quartile, vintage year, or gross returns.

In our discussions with institutional investors, we’ve been struck by the prevailing reluctance to initiate changes in the LP investment model. This seems to stem partly from investors’ general fear that they will be denied access to top-performing funds if they “rock the boat” by negotiating more favorable terms that offer more alignment. The access issue is a real one, but is material only for a small select group of top-tier funds. The cases in which access to one of the ten or twenty top-performing funds is at stake doesn’t support the systemic reluctance, expressed by LPs with whom we talked, to

³ Global Investment Performance Standards (GIPS) were created by the CFA Institute to standardize how investment firms calculate and report performance. <http://gipsstandards.org/>.

either more aggressively negotiate key economic terms or exercise the discipline to either sell or walk away from further investments in a partnership that is underperforming or misaligned.

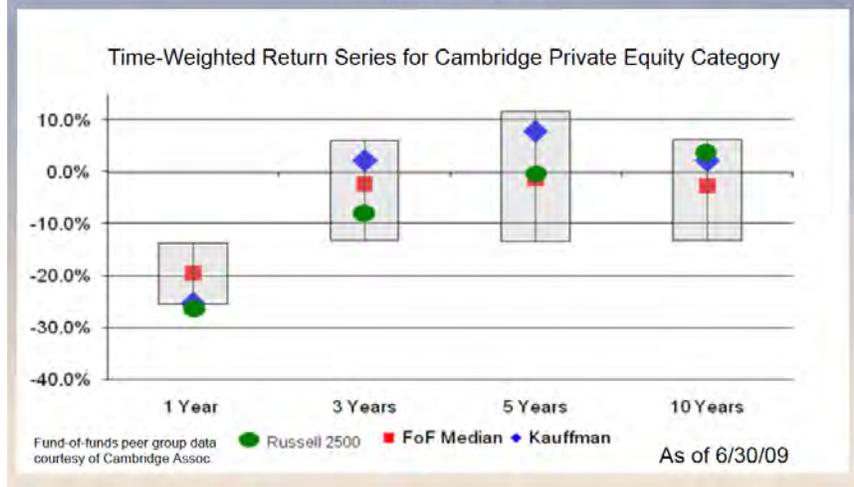
It might be true that investors in funds with a strong historical track record of top performance have little incentive to insist on changes. But we know that many LPs aren't invested in that small group of top funds. Negotiating stronger alignment and better terms may not turn a mediocre fund into a top-performing one, but the right terms can certainly turn a mediocre fund into one that generates materially better returns. Better terms also can eliminate GPs' ability to generate high personal incomes for themselves from fees while generating below-market returns on investment performance for their LPs.

There's also a general narrative espoused by some LPs that investing in VC funds is a "relationship business," and that these relationships would suffer damage by negotiating better LP terms and alignment. Our belief is that the best relationships are fair and balanced partnerships based on transparency, accountability, and aligned interests. We know we're not the first to identify these issues. Since 2009, the Institutional Limited Partners Association (ILPA) and its more than 200 members have advocated for greater transparency, governance, and alignment of interests between LPs and GPs.⁴ Structuring those kinds of partnerships requires discipline and negotiation.

The Kauffman Foundation began investing in VC funds in 1985 and has been a limited partner in more than 100 funds managed by more than sixty General Partners, many of which have been considered "top-tier." We conducted significant historical performance analyses of our venture capital portfolio and the results show chronically disappointing returns over most of the twenty years studied, no matter which way we slice the performance data—IRRs, investment multiples, or PME. This was a surprising and unexpected conclusion. As recently as 2009, we reported our comparative performance to our investment committee as evaluated against fund-of-fund returns provided by Cambridge Associates. It showed the Kauffman PE portfolio (including both VC and buyouts) to be in the "top quartile" of such investors.

⁴ See the ILPA's Private Equity Principles. <http://ilpa.org/index.php?file=/wp-content/uploads/2011/01/ILPA-Private-Equity-Principles-version-2.pdf&ref=http://ilpa.org/principles-version-2-0/&t=1332038765>.

Kauffman Top Quartile Private Equity Performance



Our performance since 2009 is negatively impacted by our elimination of poor-performing funds through select sales in the secondary market. The discounted prices we accepted for underperforming funds resulted in short-term realized losses in our portfolio, hurting our performance relative to our peers, but we believe that a more concentrated portfolio focused on a consolidated group of our best-performing funds will achieve better long-term returns. Going forward, we will continue to shrink the size of our VC portfolio through attrition, by passing on serial fundraises, and by conducting additional select sales in the secondary market.

That said, we are still an active venture capital investor. We continue to bet with small, early-stage funds and larger, growth equity funds with strong performance track records. During 2011, we made both new and serial fund investments of about \$70m in a select group of VCs. What's changed for us as a result of the analysis we share in this paper is the type of VC firm in which we choose to invest. We're looking for partnerships where we can negotiate better GP/LP alignment, transparency, governance, and terms that take into account the skewed distribution of VC fund returns.

AN INVESTMENT COMMITTEE PRIMER: FIVE NEW ASSUMPTIONS THAT UNDERLIE THE KAUFFMAN FOUNDATION'S VC INVESTMENT DECISION-MAKING

ASSUMPTION 1: 'Top-Quartile' and 'Vintage-Year' performance reporting is, at best, not fully informative, and is, at worst, misleading.

There's a running joke among venture industry insiders that every fund must be "top quartile" because it's such an oft-used descriptor. Pick up any private placement memorandum and see for yourself. The problem with top quartile is that it's a self-referencing performance measure that tells us only that the fund is in the top 25 percent of all VC funds formed in the same year. That might be interesting, but it's not very useful for decision-making because it fails to convey whether the fund's returns have met or exceeded the performance hurdle of 3 percent to 5 percent annual returns above the public markets that most investors expect from illiquid, risky venture capital investments. It doesn't reveal whether a fund achieves a 'venture rate of return' of more than twice the invested capital after fees. "Top quartile" doesn't even inform us if the fund returns were positive. It is possible for a top quartile fund to underperform the public markets, fail to return investor capital, and even generate a negative return. For institutional investors trying to allocate capital to generate market-beating returns, "top quartile" does not give us a complete picture of performance and is not a particularly useful measure.

Vintage year also fails to incorporate any measure of external market performance and tells us nothing about whether a fund actually generated the excess return above the public markets that LPs seek. Instead, vintage-year measures focus on which VC fund formed in a specific year performed best among the universe of VC funds formed in that same year. The narrative behind vintage year postulates that a fund manager should be compared only to managers who faced the same market environment at fund inception, yet it fails to take into account any measure of public market performance. A top vintage-year performer can still underperform the public markets.

Vintage year is a relative performance measure that possibly is useful to investors who have a mandate and therefore are forced to select firms to invest in during a specific year in order to 'spend' their allocations. Historically, many institutional investors did have mandates, so vintage-year performance measures helped them evaluate how well they did, given the limited universe of funds available in the year they invested.

Today, the investing environment is different. Most LPs are looking at performance across their entire portfolio and trying to decide *whether* to invest in VC, or how much to invest in private versus public equities, issues that vintage-year measures ignore. The advantage of PME analysis is that it establishes a consistent standard of performance measurement *among* VC funds, as well as *between* public and private equity managers

Vintage-year and top-quartile measures can be misleading due to their reliance on IRRs that are vulnerable to 'manipulation' in the short term and are not persistent over the

term of a fund's life. IRRs are influenced by the timing of investment cash flows and the length of time an investment is held, so a fund with limited capital invested and returns from early exits or early valuation write-ups can generate attractive IRRs in the short term. For example, a company that is sold and returns more than twice the invested capital in three years generates a 26 percent IRR, but the same multiple generated by a sale in year ten results in only a 7.2 percent IRR. As Josh Lerner, a professor at Harvard Business School and leading researcher on venture capital, notes, "When you look at how people report performance, there's often a lot of gaming taking place in terms of how they manipulate the IRR."⁵

Our portfolio analysis shows clearly that high IRR performance frequently is generated early in a fund's life, either before or during fundraising for the next fund, but that those early high IRRs do not predict a fund's eventual performance. We evaluated our funds based on the difference between maximum IRR, and final IRR and PME in order to assess whether peak IRRs early in a fund's life might foretell the outcome. What we learned is that our best-performing funds—those launched prior to 1995—did not report peak returns until the sixth or the seventh year of their lives. That pattern began to change in the late '90s, when peak returns almost always were reported during the fund's five-year investment period, usually in the first thirty-six months. We also see that peak IRRs are not consistent predictors of high final returns.

⁵ Inside IRR, Private Equity International, The First Ten Years, p. 34–36.

Do peak IRRs predict final fund performance?

FUND	VINTAGE	PEAK IRR	PEAK IRR MONTH	MONTH NEXT FUND CAP CALL	FINAL IRR	FINAL PME*
Fund A	1992	29.2	57	115	20.8	1.35
Fund B	1993	16.8	73	NA	6.8	.73
Fund C	1994	50.5	71	113	27.7	2.71
Fund D	1995	59.7	6	54	16.0	1.71
Fund E1	1996	84.0	39	68	26.3	2.55
Fund F	1997	140.7	33	55	22.2	1.26
Fund G	1998	>200.0	19	36	18.2	1.23
Fund H1	1999	>200.0	8	18	-23.0	.14
Fund E2	2000	44.2	8	24	-10.6	.26
Fund I	2001	9.2	89	140	-.09	1.00
Fund H2	2002	31.6	2	NA	-7.1	.41
Fund J	2003	24.5	18	44	6.9	1.27
Fund K1	2004	32.2	44	86	13.1	1.53
Fund E3	2005	14.8	38	NA	-7.1	.70
Fund L	2006	66.3	4	41	11.0	1.08
Fund K2	2007	69.4	8	44	42.9	1.81

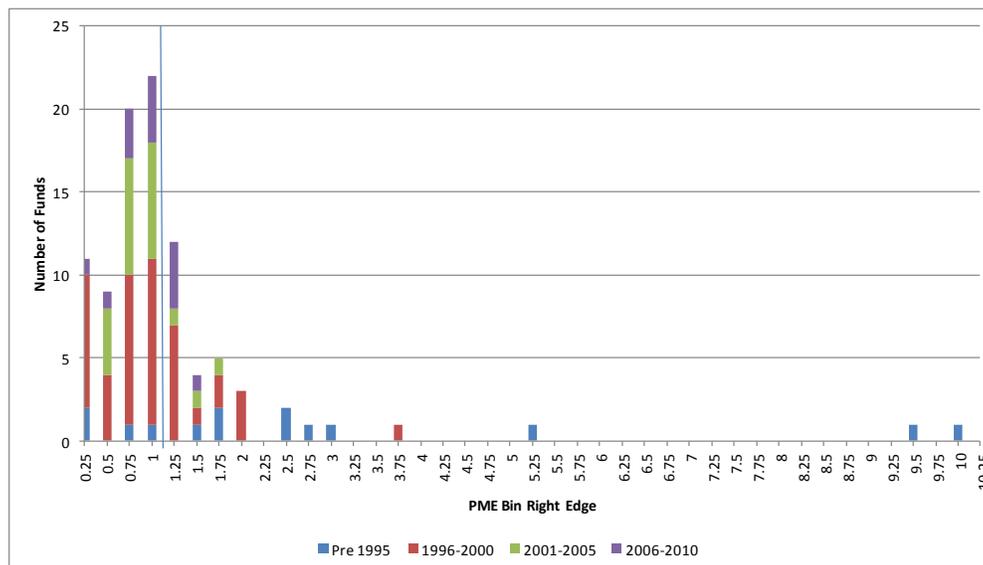
For vintage years 2002 and later, the PME is as of 6/30/11. The benchmark is the Russell 2000. All IRRs and PMEs are net figures.

Source: Kauffman Foundation VC portfolio.

The table above tells us that almost all GPs use peak IRRs to raise serial funds. In the sixteen years we sample, there were only two peak IRRs less than 15 percent; write-ups in value prove seductive to investors even though they are not consistent predictors of a fund's ultimate performance. The sample of funds above all suffered the worst retreat from peak to final IRRs of funds that we owned in each vintage year. In eight of the sixteen years, funds with the largest subsequent contraction of returns showed peak IRRs in excess of 50 percent and final IRRs that were significantly lower. After 1995, only three funds delivered final excess returns that justify the risk and illiquidity inherent in venture investing. Our analysis suggests that skepticism of early, high-fund IRRs is prudent.

When we forget about IRR and look only at performance between the public markets and our VC portfolio, we see that our best-performing funds relative to the Russell 2000 index are pre-1995 vintage years. There is some select good performance (but overall mediocre returns) from the 1996–2000 Internet boom funds, and there are poor returns from 2000 forward.

PME is a more informative measure of performance than vintage year



Source: Kauffman Foundation VC portfolio, 1989–2010. The Russell 2000 is the public benchmark.

This PME chart reveals the distribution of venture funds in our portfolio that delivered the 3 percent to 5 percent annual returns above the public markets that we expect from VC. A fund that delivered 3 percent above the Russell 2000 index over ten years would generate a PME of about 1.3, while 5 percent excess returns would yield a PME of about 1.5. Over twenty years in our portfolio, only sixteen funds out of ninety-four delivered a PME of at least 1.5, and only twenty funds out of ninety-four exceeded a PME of 1.3. Of the funds with PMEs greater than 1.5, ten of sixteen (nearly two-thirds) were launched prior to 1995. Our experience shows that since 1995 it is improbable that a venture fund will deliver better net returns than an investment in the public markets.

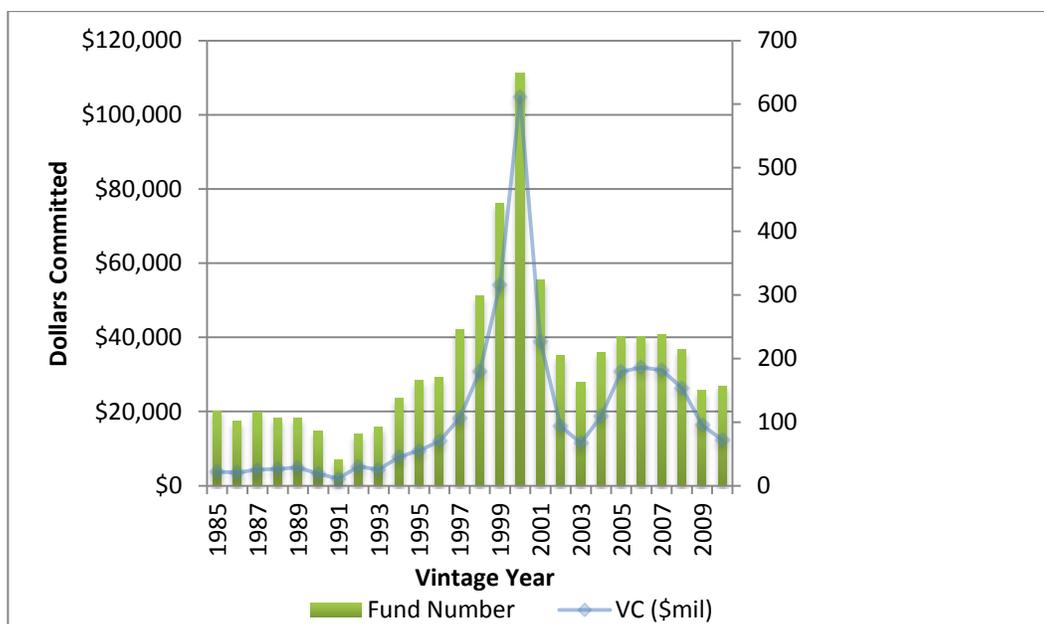
We acknowledge that many GPs find top-quartile and vintage-year performance attractive ways to market their funds, and that investment consultants may believe that “top vintage-year performer within our universe” is a compelling pitch. We also acknowledge that vintage-year measures vastly simplify the job of investment staff and consultants who are freed from obtaining and analyzing the data to evaluate cash flow decisions of GPs over the life of the fund. It’s more challenging to see what benefits accrue to LPs by adopting such relative and self-referential measures of performance. In our later section on Public Market Equivalent, we recommend PME as a new standard performance measure that manages to avoid the many shortcomings of quartiles and vintage years.

ASSUMPTION 2: The average VC fund barely manages to return investor capital after all fees are paid.

Investing in venture capital in the early to mid-1990s generated strong, above-market returns, and performance by any measure was good. What has happened since? Our colleague Paul Kedrosky asserts that the venture capital industry is too big and must shrink to effectively fund entrepreneurs and generate competitive returns.⁶ Longtime venture investor Bill Hambrecht notes that, “When you get an above-average return in any class of assets, money floods in until it drives returns down to a normal, and I think that’s what happened.”⁷

When we look at VC fundraising by vintage year, we see that LPs are committing far more capital to venture capital today than during the industry’s best return years in the late ’80s and early ’90s. We see also that the number of VC funds, the amount committed per fund, and the total capital invested in VC all remain at much higher levels than at any time other than the stock market’s Internet bubble in the late ’90s.

The institutionalization of Venture Capital: Fewer funds with a lot more money



Source: NVCA Annual Yearbook, 2011.

During the past fifteen years of poor performance, investors have committed about \$20b *each year* to VC, about four times the \$500 billion in capital committed to venture capital *in total* during the decade 1985–1995. The flow of capital into VC has slowed

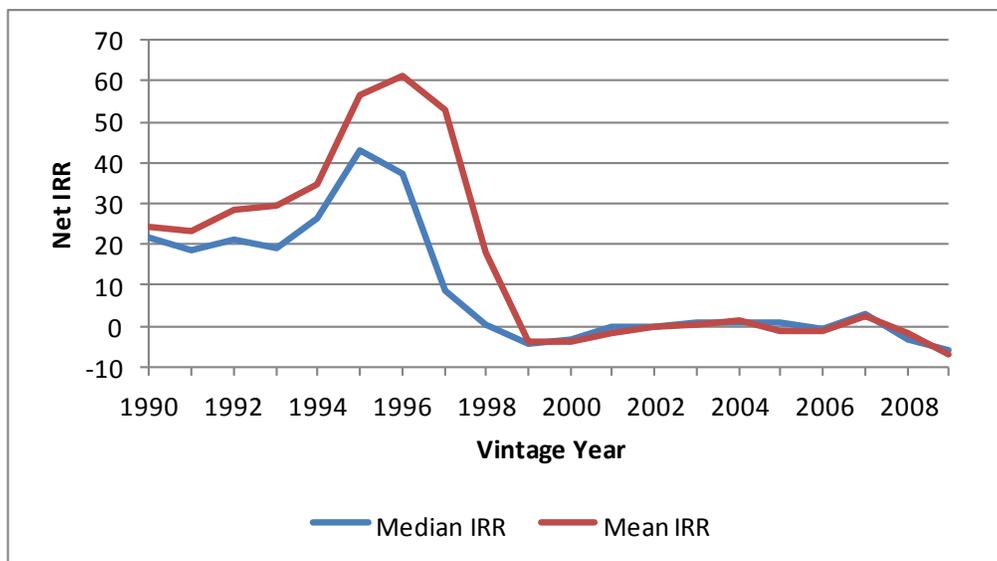
⁶ Paul Kedrosky, Right-Sizing the U.S. Venture Capital Industry, Kauffman Foundation, June 10, 2009. <http://www.kauffman.org/newsroom/venture-capital-industry-must-shrink-to-be-an-economic-force-kauffman-foundation-study-finds.aspx>.

⁷ Bill Hambrecht interview at the Kauffman Foundation, February 2012.

over the past few years, but still has a way to go to return to pre-1995 levels.⁸ If it's true that too much capital is dragging down returns, money should be flowing out of VC until returns normalize. Despite more than a decade of poor returns relative to publicly traded stocks, however, there appears to be only a modest retrenchment by LPs. We wonder: why are LPs so committed to investing in VC despite its persistent underperformance?

LP hopes for VC returns are high, and those hopes fuel new money into VC funds nationwide. A Probitas Partners survey of nearly 300 institutional investors found that two-thirds of investors expect a 2x+ multiple from top quartile, early-stage VC funds.⁹ Contrary to those lofty expectations, Cambridge Associates data show that during the twelve-year period from 1997 to 2009, there have been only five vintage years in which median VC funds generated IRRs that returned investor capital, let alone doubled it. It's notable that these poor returns have persisted through several market cycles: the Internet boom and bust, the recovery, and the financial crisis. The chart below shows that, in eight of the past twelve vintage years, the typical VC fund generated a negative IRR, and for the other four years, barely eked out a positive return.

The average VC fund barely returns investor capital after fees



Source: Cambridge Associates, 2010 Benchmark Report, vintage year 1990–2009 funds (http://www.nvca.org/index.php?option=com_content&view=article&id=78&Itemid=102).

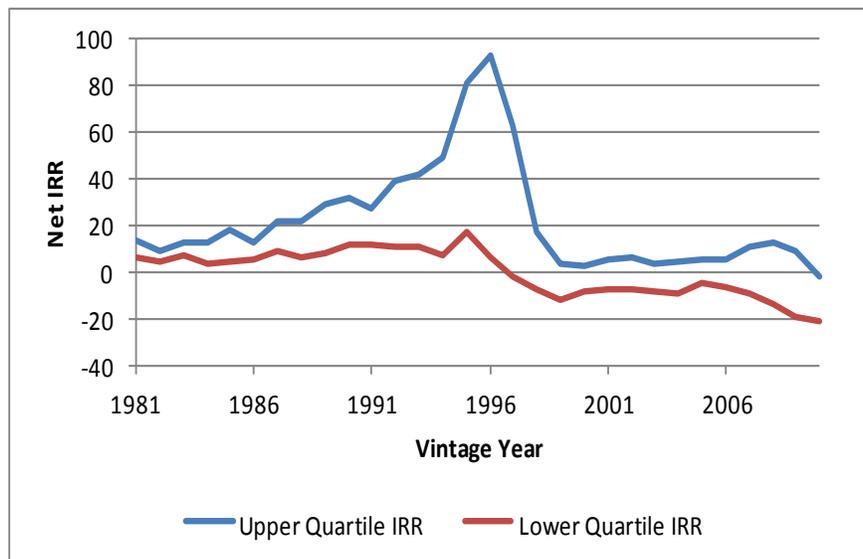
The chart below shows us that top quartile fund returns since 1998 hover around breakeven, but the bottom quartile generates only negative returns since 1996. This performance gap between the top and bottom quartiles highlights the importance of GP selection. The historic difference between top- and bottom-quartile IRRs demonstrates that only a few high-performing GPs help to generate the expected high “venture rate of

⁸ NVCA Yearbook, 2011; NVCA VC Fundraising Q4 2011 press release at http://www.nvca.org/index.php?option=com_content&view=article&id=78&Itemid=102.

⁹ Probitas Partners, Private Equity Market Review and Institutional Investor Trends Survey for 2010, http://probitaspartners.com/alternative_investments_publications/white-papers-and-surveys.html.

return” from venture investing anticipated by many LPs. VC returns typically are concentrated in only ten to twenty partnerships out of hundreds competing for investor capital, and that elite group of investment managers can disproportionately impact average return results for VC funds as a whole. We suspect that the performance gap between the top decile of VC funds, or even the top ten funds, and the mean, is even more dramatic, but we were unable to find published data on top decile or top ten VC fund performance.

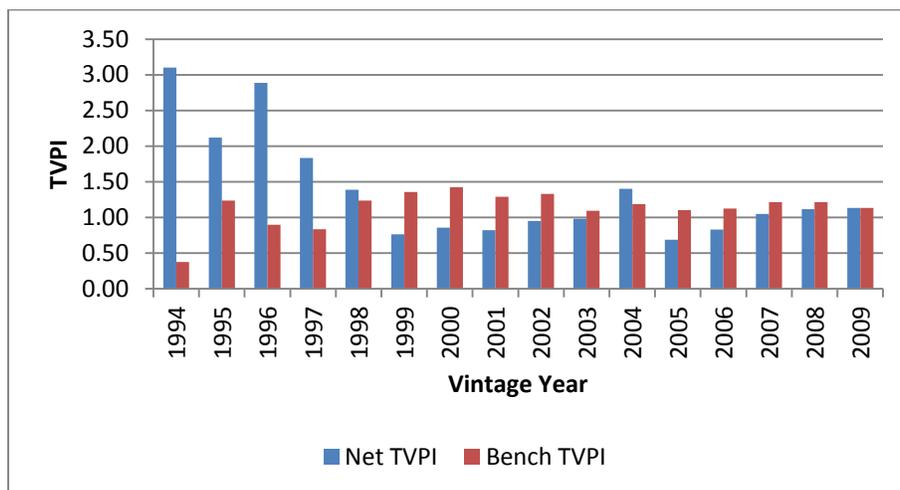
The performance gap between top- and bottom-quartile funds



Source: Cambridge Associates, 2010 Benchmark Report (http://www.nvca.org/index.php?option=com_content&view=article&id=78&Itemid=102).

An evaluation of investment multiples in a typical VC fund yields the same conclusion about low-average VC fund returns. In addition to IRR, many investors look to a metric termed Total Value to Paid In Capital (TVPI). Total Value is the current value of a portfolio and all distributions returned to investors. The TVPI ratio reflects this Total Value divided by all capital called from investors. From 1998–2009, TVPI is slightly greater than breakeven (1x) in only five of eleven years. When we calculated the same flows—capital calls and distributions—as if the Foundation had instead invested in the Russell 2000 stock index, we find that TVPI has not significantly exceeded the Russell 2000 since 1997.

The Kauffman VC portfolio TVPI hasn't significantly outperformed the Russell 2000 TVPI since 1997



Source: Kauffman Foundation VC portfolio analysis, ninety-one funds, vintage years 1994–2009. The benchmark is the Russell 2000 index. The Kauffman Foundation portfolio mean TVPI is 1.37 and median TVPI is 1.08.

Do actual VC returns ever meet LP expectations? Yes, a very few top VC funds deliver above-market, 2x+ net multiple returns that investors anticipate, but most do not. In our portfolio of ninety-nine funds, only sixteen have generated a 2x or greater net multiple compared to fifty funds that failed to return our capital.

Half of the VC funds in the Kauffman Foundation portfolio fail to return investor capital

Net Return Multiple	No. of Funds
<1x	50
1x-<2x	33
2x-<3x	10
3x+	6

Source: Kauffman Foundation VC portfolio analysis of ninety-nine VC funds, 1989–2011.

The mean net multiple in our portfolio of ninety-nine funds is 1.31x. We know that we're not the only LPs to fall far short of generating a 2x+ net return in our portfolio, as the table below illustrates. Data available from state and public employee pension funds show that VC has failed to meet the expectations of other investors.

Major LPs fail to realize a 2x+ net multiple ‘venture rate of return’

LP	Portfolio Multiple*
Kauffman Foundation VC Portfolio	1.31x
Washington State Investment Board	1.40x
Oregon Public Employee Retirement Fund	1.50x
NY State Retirement Plan	1.04x

Sources: Kauffman Foundation VC portfolio analysis, Kauffman Foundation analysis from the Washington State Investment Board,¹⁰ the Oregon Public Employees Retirement Fund,¹¹ and the New York State retirement plan.¹²

* The Kauffman Foundation multiple is net of carry and fees. We believe all other figures are gross.

The historic narrative of VC investing is a compelling story filled with entrepreneurial heroes, spectacular returns, and life-changing companies. The quest to invest in the next Google guarantees that VC will retain its allure and glamour, even in the face of the disappointing results we’ve just discussed. Investors are still attracted to the ‘lottery ticket’ potential VC offers, where one lucky ‘hit’ investment like Zynga or Facebook can offer the potential to mitigate the damage done to a portfolio after a decade of poor risk-adjusted returns. The data suggest that such ‘hits’ are unlikely to salvage industry returns, but may benefit investors in the right fund at the right time.

ASSUMPTION 3: VC mandates do not produce “VC returns” that exceed a public equity benchmark by 3 percent to 5 percent per year.

The quest for consistent, high multiples on invested capital and annualized IRRs that far exceed public market equivalents historically have driven investment committees to create (or their consultants to recommend) policy portfolios with mandated allocations to VC.¹³ These mandates require investment staff to invest a fixed percent of the portfolio or a fixed amount of capital into VC, and appear to be anchored to the misconception that allocating capital to a diversified basket of VC funds will result in a high “VC return” portfolio.¹⁴

Venture capital investment mandates lead to what some institutional investors term “bucket filling,” and is one reason why LPs continue to invest in venture capital despite

¹⁰ Washington State Investment Board, <http://www.sib.wa.gov/financial/pdfs/quarterly/ir123110.pdf>.

¹¹ Oregon Public Employee Retirement Fund
<http://www.ost.state.or.us/FactsAndFigures/PERS/AlternativeEquity/FOIA%20Q3%202011.pdf>.

¹² New York State and Local Retirement System, Comprehensive Annual Financial Report, 2011.
http://www.osc.state.ny.us/retire/about_us/annual_report_2011/index.php, and authors’ calculations.

¹³ Josh Lerner, Private Equity Returns: Myth and Reality
<http://www.law.harvard.edu/programs/lwp/Session%20III%20-%20Lerner%20FINAL.pdf>.

¹⁴ Josh Lerner, Antoinette Schoar, and Wan Wong, Smart Institutions, Foolish Choices?: The Limited Partner Performance Puzzle, 2005. <http://www.mit.edu/~aschoar/SmartInstitutions.pdf>.

poor historical returns. GPs we interviewed are very aware of “bucket filling” behavior, and said LPs with VC mandates act like the money is “burning a hole in their pockets.” They just need to spend it. Institutional investors governed by mandates presumably attempt to get into the ten to twenty top-tier VC funds; but if they can’t, they’re left to choose from second- and third-tier funds—a strategy that nearly guarantees returns unlikely to exceed a low-cost, liquid, small cap public index.

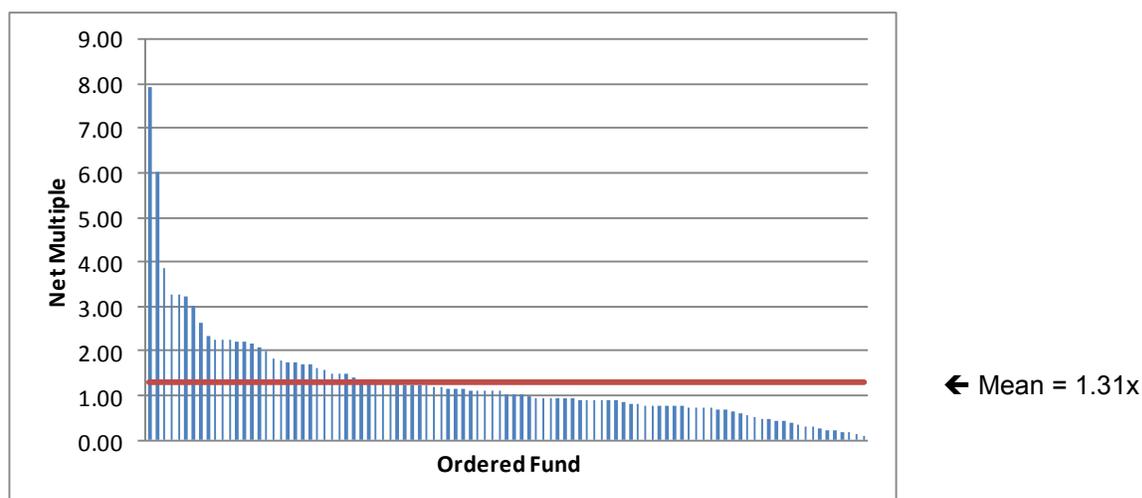
VC mandates fail because generating great VC returns is entirely dependent on *which* funds you’re in, not *how many* funds.¹⁵ Generating great VC returns requires access to the small group of best-performing funds. One study conducted by a fund-of-funds investment manager revealed that, from 1986–1999, a mere twenty-nine funds raised 14 percent of the capital in the industry, but generated an astonishing 51 percent of total distributions—about a 3.6x multiple. The remaining 500+ funds in the industry generated a 0.4-0.6x multiple. *Put another way, the study concludes that the twenty-nine top funds invested \$21 billion and returned \$85 billion, while the rest of the VC fund universe invested \$160 billion and returned a scant \$85 billion.*¹⁶ This is a surprising result given the strong venture capital returns from that time period.

This performance skew is most dramatically reflected in the distribution of VC returns. In our portfolio, we find a distribution in which only sixteen of ninety-nine funds generate a VC return of 2x+. The remaining funds form a long tail of underperformance, producing an average return of 1.31x. When such a skewed concentration of returns is present, investing in a large diversified group of VC funds almost certainly will result in a diluted average return compared to investing in a small group of select top-performers that drive returns for the industry. Even a strategy of targeting “top quartile” funds actually will include many less-than-top-performing funds that will exert a drag on returns.

¹⁵ Josh Lerner, Private Equity Returns: Myth and Reality, <http://www.law.harvard.edu/programs/lwp/Session%20III%20-%20Lerner%20FINAL.pdf>.

¹⁶ Shedding light on the concentration of VC returns, Flag Capital Management, 2005. <http://www.flagcapital.com/pdf/1Q2005.pdf>.

A small number of funds generate big VC returns



Source: Kauffman Foundation VC portfolio, ninety-nine funds, 1989–2011. Net multiple values as of 12/31/2011.

VC mandates are becoming less prevalent than they once were, and LPs have told us that investment consultants are moving away from recommending them. It's become clear that diversification is not a strategy that works in venture capital; disciplined investment into the subset of consistent top performers is. It matters little if you have a portfolio of VCs that invest in different geographies, sectors, and stages. If they are not top-tier VCs, you are very unlikely to generate top-tier returns. There is also strong evidence that VC performance is persistent at both the top and bottom,¹⁷ which means an avoidance of VC mandates combined with a focus on track record and strong historical success is one of the best ways to avoid the trap of “bucket filling.”

ASSUMPTION 4. The life of a VC fund is frequently longer than ten years. VC funds are structured to invest capital for five years and to return all capital within ten years but we see a large percentage of our funds extending to twelve to fifteen years.

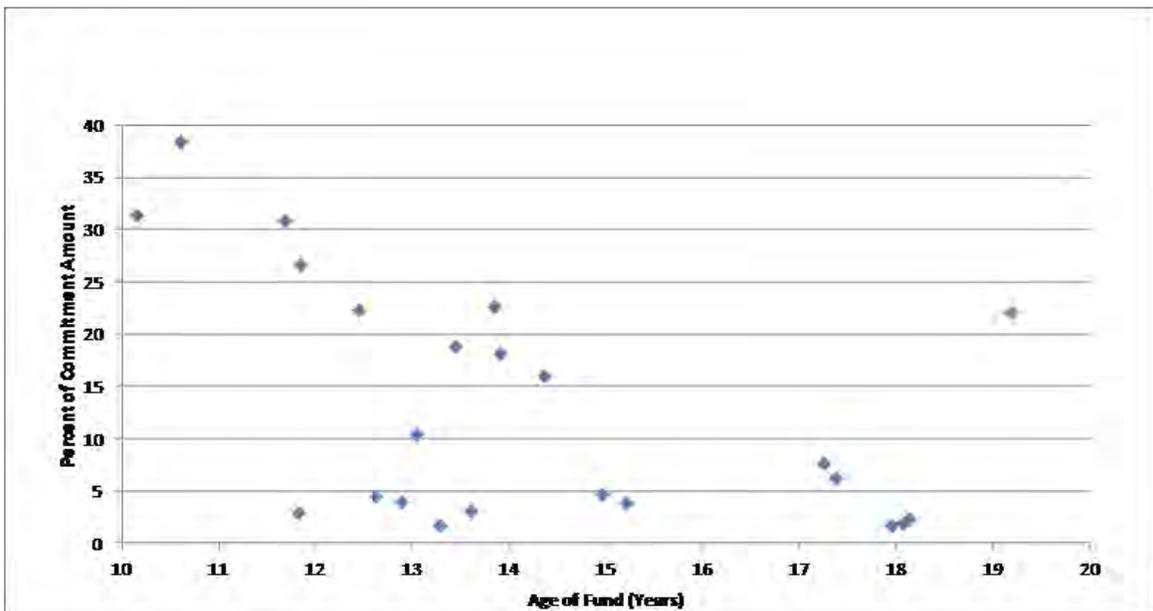
Like their investors, VC funds live longer now than they did twenty years ago. VCs structure and market their funds based on a standard partnership life of ten years. Investors rely on this ten-year timeframe and expect returns that compensate them for the lack of liquidity over a decade. Our data indicate that few funds actually liquidate within a ten-year time period. In the volatile economy and exit markets of the past decade (and for the foreseeable future), VC fund life extensions have become the new normal. Funds regularly require at least twelve years, and often more, to completely exit or liquidate all investments and complete the life of the fund.

¹⁷ Steven Kaplan and Antoinette Schoar, Private Equity Performance: Returns, Persistence and Capital Flows, <http://www.mit.edu/~aschoar/KaplanSchoar2005.pdf>.

Longer fund lives are an expensive trend for LPs, who often are asked to pay additional management fees for a fund that extends beyond ten years. Many funds have several companies left in the fund at the ten-year mark, and demand additional fees, frequently based on the value of the portfolio (e.g., 1.5 percent of the cost basis of the remaining portfolio). The alternative available to LPs is to receive a FedEx package of private company share certificates. Which of the two evils is lesser?

The chart below illustrates the long lives of venture capital funds in the Foundation's current portfolio. We have twenty-three funds more than ten years old, and eight funds that are fifteen years or older. The amount of capital stranded in these funds is not insignificant, with six funds twelve years and older retaining 15 percent or more of committed capital.

The Kauffman VC portfolio has significant capital tied up in funds >ten years old



Source: Kauffman Foundation VC portfolio.

Ray Rothrock, a managing director of Venrock, told an industry conference, “(A) lot of LPs have to get their minds around a timeframe not of a ten-year partnership model, but more like fifteen years or seventeen years.”¹⁸ If that’s true, and it looks like it is in Kauffman’s portfolio, LPs will need to factor in the fee and liquidity costs of an extended fund life when making VC investment decisions.

¹⁸ Harvard Business School Conference, January 9–10, 2008.
<http://www.hbs.edu/centennial/colloquia/abstracts/HBSVCConferenceReport.pdf>.

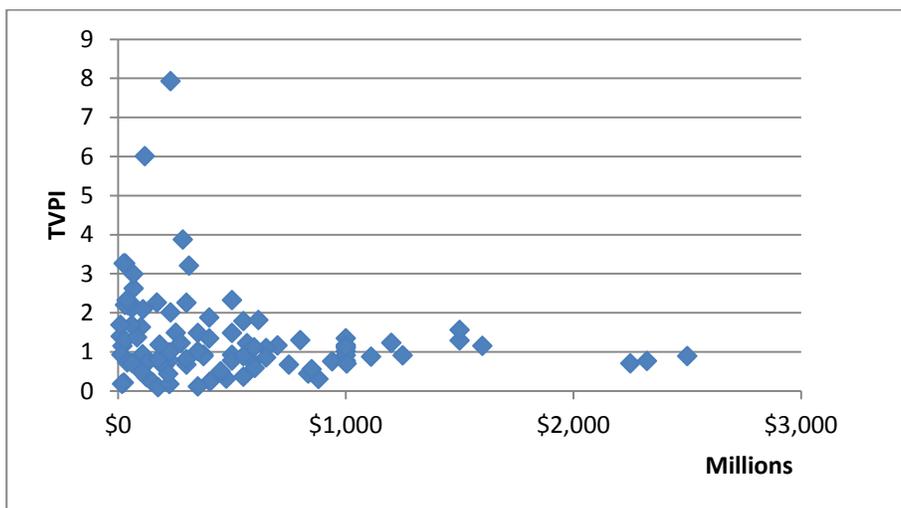
ASSUMPTION 5: Big VC funds fail to deliver big returns. We have no funds in our portfolio that have raised more than \$500m and returned more than 2x our capital after fees.

The best-performing GPs face increasing demand for access to subsequent funds, and many understandably succumb to the pressure to raise larger funds. There are plenty of examples of this behavior in the market—Accel, Greylock, NEA, Oak, and Sequoia have each raised \$1b+ funds in the past few years, in some cases despite declining returns.¹⁹ Other funds such as Benchmark, First Round, and Foundry are focused on early-stage investing with fund sizes generally less than \$500m.

We discussed above how VC allocations or mandates can create pressure among LPs to invest in whatever funds they can access. Many good small funds are closed to new investors, and institutional investors with large balance sheets cannot move the performance needle without large allocations if they choose to invest in VC. This creates pressure to invest in big funds, even if the expected returns are lower, and makes very long odds for large institutional investors trying to win the VC investing game.

In our own portfolio, we found that we earned an investment multiple of two times our invested capital only from venture funds whose commitment size was less than \$500 million; not a single fund that exceeded that capital raise earned more than twice the invested capital after fees.

No Kauffman Foundation VC fund >\$1billion returns more than twice the invested capital after fees

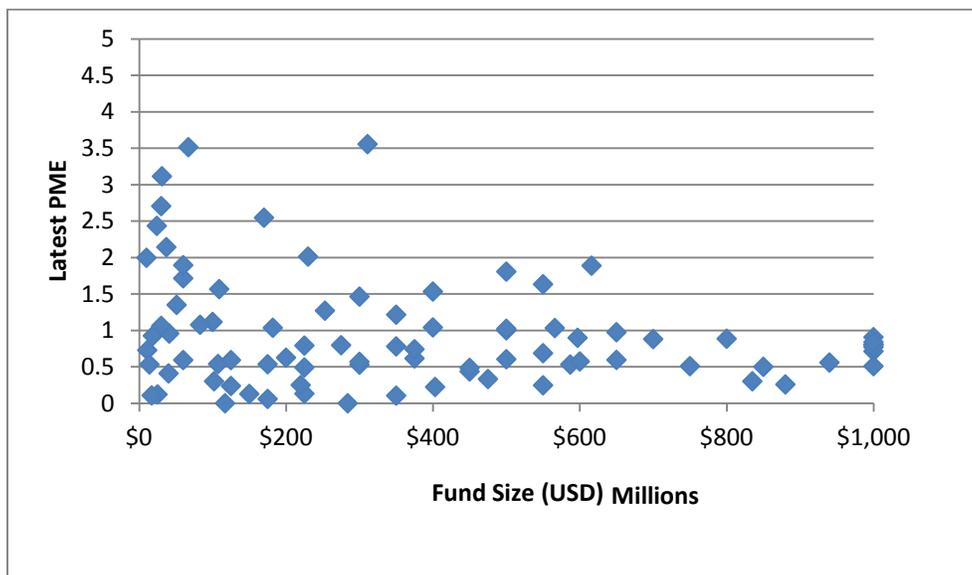


Source: Kauffman Foundation VC portfolio analysis, ninety-five VC funds, vintage years 1989–2007.

¹⁹ Bryce Roberts, What Happens if Venture Capital Gets Too Concentrated at the Top?, May 2011. <http://finance.fortune.cnn.com/2011/05/23/fear-of-a-vc-monoculture/>.

Furthermore, our PME analysis shows that the preponderance of VC funds that exceeded our expected high returns relative to public equities raised less than \$500 million.

The Kauffman Foundation's best-performing VC funds are smaller than \$500m



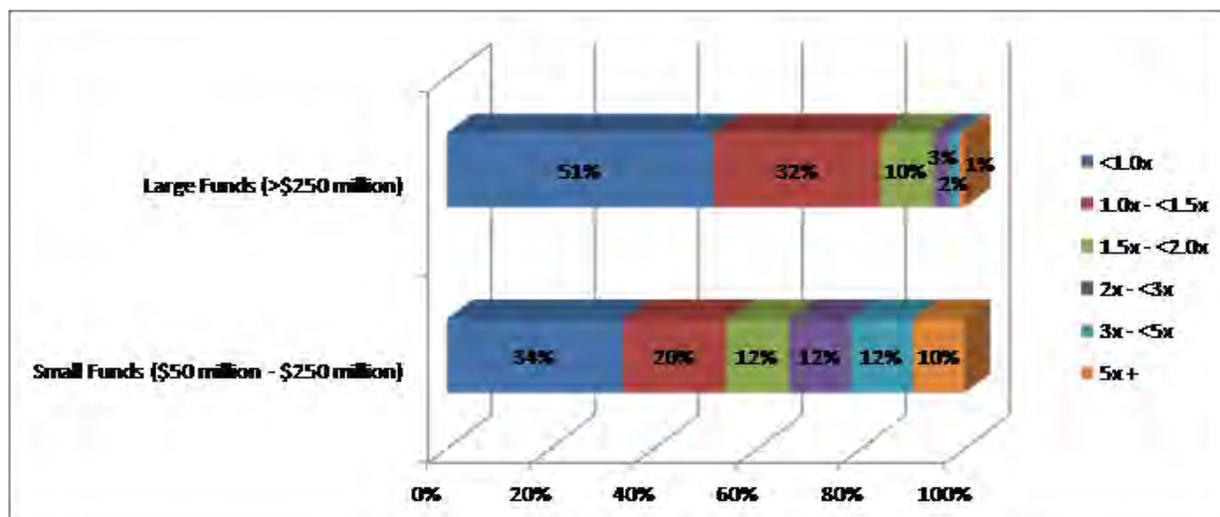
Source: Kauffman Foundation VC portfolio analysis, ninety-five VC funds, vintage years 1989–2007.

Our data on the relationship between fund size and returns is supported by other empirical work within the industry. Silicon Valley Bank conducted a study on VC fund size and performance, examining Total Value to Paid In (TVPI) capital returns from 850 VC funds from vintage years 1981–2003.²⁰ There are three main conclusions to be drawn from SVB's analysis:

- The majority (51 percent) of funds larger than \$250 million fail to return investor capital, after fees;
- Almost all (93 percent) of large funds fail to return a “venture capital rate of return” of more than twice the invested capital, after fees.
- Small funds under \$250m return more than two times invested capital 34 percent of the time; a rate almost six times greater than the rate for large funds.

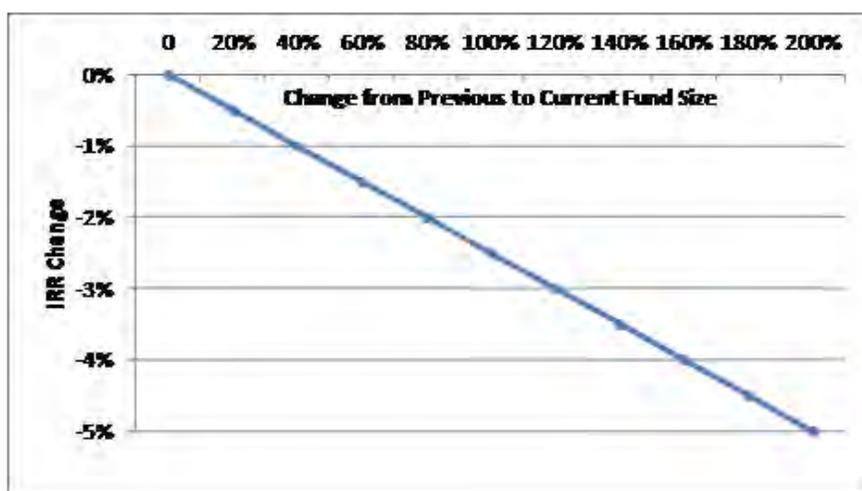
²⁰ Silicon Valley Bank, Dialing Down: Venture Capital Returns to Smaller Fund Sizes, 2009. http://yelnick.typepad.com/files/vcupdate_0410.pdf.

Smaller VC Funds Outperform Larger-Sized Funds



Source: Silicon Valley Bank, Dialing Down: Venture Capital Returns to Smaller Fund Sizes, 2009.

Industry research conducted by Josh Lerner finds a similar relationship between IRR and fund size.²¹ He finds that VCs that perform well raise successively larger funds, and they often see consistent or improving returns up until the fund size grows larger than \$500m, after which performance starts to degrade. He also finds a concave relationship between IRR and fund size, and a negative relationship between change in IRR and change in fund size for a given firm.²²



Source: Josh Lerner and Antoinette Schoar, Smart Institutions, Foolish Choices?, 2005.

²¹ The Future of Venture Finance, A Kauffman Foundation Summit, January 14–15, 2010.

²² Josh Lerner, Antoinette Schoar, and Wan Wong, Smart Institutions, Foolish Choices?: The Limited Partner Performance Puzzle, 2005. <http://www.mit.edu/~aschoar/SmartInstitutions.pdf>.

Other academic researchers have found that, for funds raised by the same GP, a 50 percent increase in fund size is associated with roughly a 0.07 decline in PME, which translates into a 1.5 percent to 2 percent decline in a fund's IRR.²³ They further find that best-in-class funds tend to have persistent top performance across serial funds, and they hypothesize that those top funds maintain their performance because they choose to stay smaller than those that suffer poor returns in later funds.

The institutionalization of venture capital investing has led inevitably to the growth in fund size. Endowments and foundations were early investors in a category deemed too risky for large corporate and state pension funds. The excess returns of VC funds from the mid-to-late 1990s induced more risk-averse investors to jump in—right about the time that the Internet bubble was about to burst. Today we see that enormous funds fail to generate excess returns, and fee-based economics misalign the interests between GPs and LPs, and create an environment for VCs to act like high-fee asset managers instead of nimble backers of high-risk, high-return entrepreneurial companies.

THE MYTH OF THE J-CURVE AND THE TRIUMPH OF FUND RAISING OVER FUND PERFORMANCE

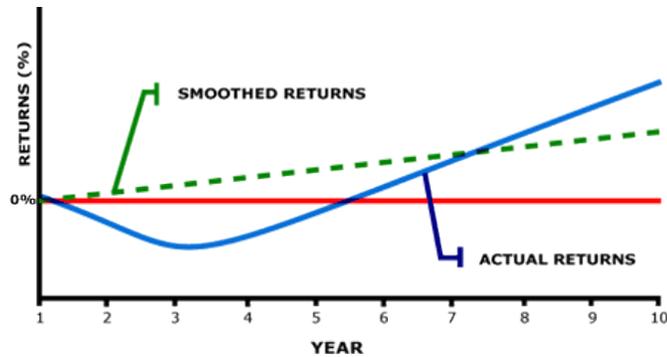
The J-curve effect is a prevalent and widely accepted theory about the expected return profile of VC funds.²⁴ The J-curve describes returns over the ten-year life of a venture fund. It illustrates how VC returns are negative early in a fund's life due to management fee drag and the negative performance of early "lemon" investments, and then turn positive in the latter half of a fund's life when investments are exited. The J-curve encourages LPs to accept early negative returns, and to wait for the highest returns on invested capital until the final years of an expected ten-year term.

Our analysis of public data, and of the Foundation's own history, shows that the J-curve effect is an elusive outcome, especially in funds started after the mid-1990s. We conducted a detailed search of academic literature and professional publications and failed to discover empirical data that substantiate the existence of the J-curve today. Instead we found only theoretical descriptions and illustrative graphics. Below is a conceptual illustration of the J-curve from the CALPERS website (which does not appear to be based on actual CALPERS data).²⁵

²³ Steven Kaplan and Antoinette Schoar, *Private Equity Performance: Returns, Persistence, and Capital Flows*, 2005. <http://www.mit.edu/~aschoar/KaplanSchoar2005.pdf>.

²⁴ http://www.carriedinterest.com/2006/02/weekly_private__2.html; http://www.avc.com/a_vc/2006/02/the_j_curve.html; <http://www.amazon.com/Beyond-Curve-Managing-Portfolio-Venture/dp/product-description/047001198X>.

²⁵ CALPERS, *Understanding Private Equity Performance*. <http://www.calpers.ca.gov/index.jsp?bc=/investments/assets/equities/aim/private-equity-review/understanding.xml>.



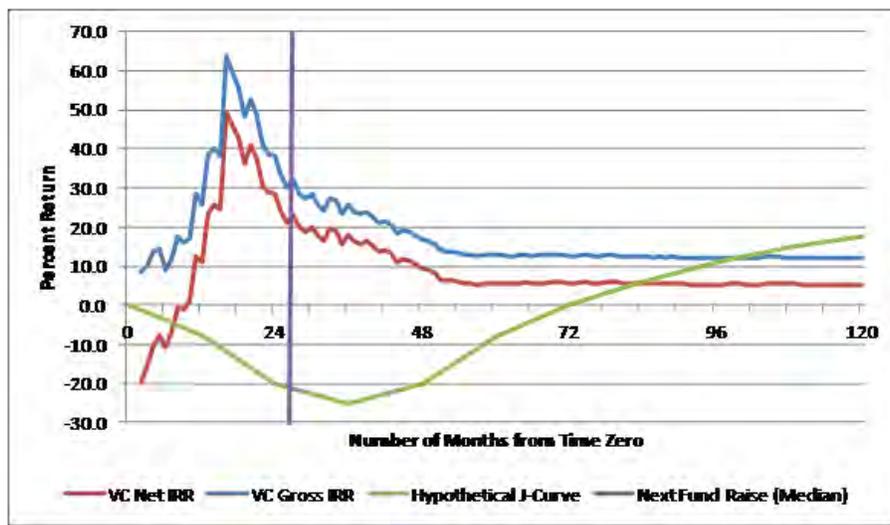
Source: CALPERS,
<http://www.calpers.ca.gov/index.jsp?bc=/investments/assets/equities/aim/private-equity-review/understanding.xml>.

Our analysis of the J-curve effect based on data from the Kauffman portfolio relies on the assumption that manager skill in timing both new investments and sales of existing successful companies is consistent through a ten-year fund life. For instance, the most skillful managers who raised capital in 1999 in the heart of the Internet bubble would have avoided extreme valuations and a rush to invest. Less skillful managers, or those optimizing management fee income, would have instead rapidly invested in order to raise a subsequent fund and thereby amplify fee income to the partnership.

We evaluated all our venture fund investments on the same ten-year investment horizon. We centered all eighty-eight VC funds from vintage years 1995–2009 on a time zero axis and plotted both gross and net dollar-weighted IRRs. Our aggregate portfolio data reveals a trend of early positive returns that resembles the shape of an “n-curve,” where net IRR *peaks* in month sixteen (presumably driven by increases in company valuations, which the GPs themselves determine), and retreats precipitously over the remaining term of fund life.²⁶

²⁶ Thanks to Liam Donohue of .406 Ventures for the term “n-curve.”

The Kauffman Foundation VC portfolio “n” curve



Source: Kauffman Foundation VC portfolio analysis.

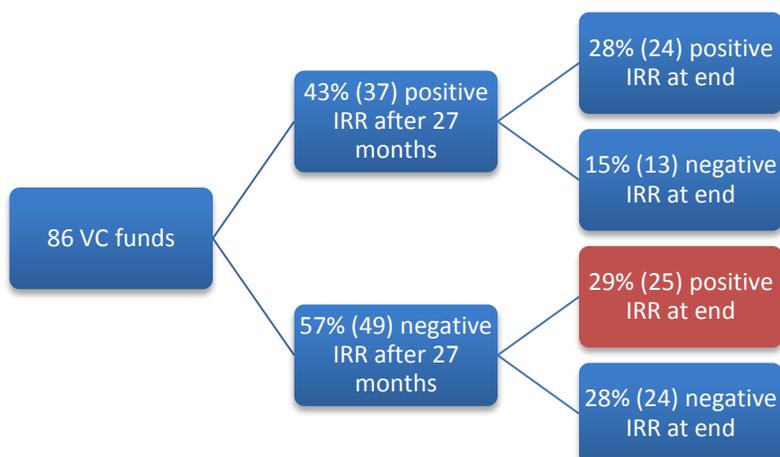
Note: The peak IRRs that our data show in part reflect the historically unprecedented returns from VC during the Internet boom. Excluding those extreme years changes the height, but doesn't alter the shape of the anti-J-curve.

An analysis of our VC investing experience reveals that, in the aggregate, our funds:

- Report a peak IRR in the sixteenth month of existence and early in a fund's investment period;
- Raise and close a subsequent serial fund shortly after the IRR peaks. The *next* fund's first capital call occurs at a median twenty-seven months of a fund's life, still within the previous fund's investment period;
- Experience a steady erosion of both IRR and investment multiple over the average fund's remaining life, creating a return shape better termed an “n” curve than a “J” curve.

We also found that, in the Kauffman portfolio, the J-curve is an unusual outcome, not an expected pattern of fund returns. Our analysis indicates that only twenty-five funds (29 percent) in our portfolio produce returns that resemble a J-curve pattern of early negative returns that turn positive. Our data also show that if a fund generates a negative IRR early in its life, as the J-curve suggests, the odds are no better than random that the fund will remain negative or reverse that trend and generate a positive IRR from year five onward.

The elusive J-curve in the Kauffman Foundation VC portfolio



Source: Kauffman Foundation VC portfolio, vintage years 1989–2007.

We also found that returns data from CALPERS and other institutions fail to offer empirical validation for the existence of a J-curve. CALPERS declares that returns are “not meaningful” from about 100 vintage year 2007–2011 funds due to the J-curve effect.²⁷ But, rather than showing weak early IRRs (a J-curve), CALPERS fund data for the period show that more than twice as many fund IRRs are *positive* than negative. CALSTRS reports similar data. More than twice as many recent vintage-year funds report positive returns. The Oregon Public Employees Retirement Fund also reports nearly twice as many positive as negative returns for recent vintage-year funds.

The elusive J-curve in other major LP portfolios

LP	Early Positive IRRs	Early Negative IRRs (as expected by the J-Curve)	Percent of Funds Not Exhibiting a J-Curve Dip in the First Five Years
CALPERS	71	29	71%
CALSTRS	45	18	71%
Oregon	43	23	65%

Source: CALPERS, <http://www.calpers.ca.gov/index.jsp?bc=/investments/assets/equities/aim/private-equity-review/aim-perform-review/home.xml>; CALSTRS, <http://www.calstrs.com/Investments/portfolio/privateequityperformance.pdf>; OPERF, <http://www.ost.state.or.us/FactsAndFigures/PERS/AlternativeEquity/FOIA%20Q3%202011.pdf>.

These data suggest that the J-curve effect is mostly notable by its absence. More distressingly, it suggests that too many fund managers focus on the front end of a fund’s performance period because that performance drives a successful fundraising outcome in subsequent funds.

²⁷ CALPERS, AIM Program Fund Performance Review. <http://www.calpers.ca.gov/index.jsp?bc=/investments/assets/equities/aim/private-equity-review/aim-perform-review/home.xml>.

Quarterly data over the past seven years from Fenwick & West confirm what our “n-curve” results suggest: GPs write up portfolio company valuations considerably and frequently early in their fund’s life, which results in early positive returns instead of a negative IRR dip. The chart below indicates that the majority of subsequent financings from the past several years are up rounds, and that the average per-share increases in valuation range from 73 percent to more than 100 percent.²⁸ Some academic research also has found that high valuation of existing investments accounts for inflated PE returns.²⁹

Subsequent financings often lead to significant write-ups in unrealized portfolio company valuations

	4Q04	4Q05	4Q06	4Q07	4Q08	4Q09	4Q10
Percent up round financings	60%	69%	67%	69%	54%	47%	67%
Price change for all Series	84%	81%	119%	91%	80%	73%	104%
Price change Series A to Series B	99%	152%	108%	105%	105%	74%	103%

Source: Fenwick & West, Trends in Terms of Venture Financings in Silicon Valley, 2005–2011.

The “n-curve” we found in our portfolio suggests that many VCs have moved from professional risk-taking and investing to professional fundraising. Under 2 and 20, raising more and bigger funds frequently can be much easier and far less risky than making the right bets on the best companies. GPs can create and show positive IRRs early in a fund’s life to best position themselves prior to the next anticipated fundraising roadshow. LPs support this behavior by re-upping early, making investment decisions based on early high IRRs and investing in ever-larger funds.

The J-curve forms the cornerstone of the GP argument that early fund returns shouldn’t be published because they are negative (but they will eventually turn positive), and because negative results create confusion and publicity that will put pressure on LPs to reduce investing in VC. When the University of Texas started publishing VC fund returns under Freedom of Information Act (FOIA) requests in 2002, their actions quickly divided the GP community (the National Venture Capital Association stood by quietly). At one extreme, Sequoia Capital severed its twenty-two-year relationship with the University of California, and then with the University of Michigan, to keep their performance figures from being disclosed.³⁰ Benchmark and Charles River Partners declared they would not accept public capital investors into their funds for the same reason.³¹ On the other side, a small group of GPs, such as Fred Wilson at Union

²⁸ Fenwick & West, Trends in Terms of Venture Financings in Silicon Valley, 2005–2011. www.fenwick.com.

²⁹ Lukovic Phalippou and Oliver Gottschlag, The Performance of Private Equity Funds, *The Review of Financial Studies*, 2005. Vol. 22, Issue 4, pp. 1747–1776, 2009.

³⁰ Ann Grimes, VCs scramble to keep their numbers secret, *Wall Street Journal*, May 11, 2004. www.signallake.com/innovation/051104WSJ_comVentureCapitalistsScrambleToKeepTheirNumbersSecret.htm. Also see Ann Grimes, Venture Funds’ Best-Kept Secret, May 27, 2004.

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/articles/venturecapitalreturns.htm.

³¹ http://www.illinoisvc.org/filebin/PDFs/IV_FOIA%20Backgrounder.pdf.

Square and Gerry Langelier at OVP, came out vocally in support of FOIA disclosures, chiding their fellow investors for “hiding” from their performance.³²

Today, the GP community remains divided in how it handles existing FOIA investors, most of whom are obligated to publish VC fund returns. It’s now commonplace for prospective LPs to be asked on Subscription Agreements if they are subject to FOIA, which allows GPs to identify, and then accept or reject them, *a priori*. But, as we’ve seen, if early-fund returns often are positive, and the J-curve pattern is an unusual outcome, then the GP argument doesn’t hold, and recent vintage-year fund performance data should be published.

Investment committees can take steps to evaluate the existence of the J-curve effect and reduce the frequency of “n-curve” behavior in their own portfolios.

- The only way to evaluate possible J-curve effects in any fund, or for any VC firm across serial funds, or in aggregate for any portfolio, is to analyze and graph the returns over time. Investment committees can request this data regularly to monitor the early valuation and fundraising behavior of GPs, and to evaluate the frequency of J-curve returns in their own portfolios. It is also useful to analyze peak IRRs relative to end-of-fund-life returns.
- Consider fund structures that mitigate the “n-curve.” The ten-year fund with a five-year investment period creates the incentives to quickly make and exit successful investments early in order to raise the next fund before the investment period on the prior fund is over. Evergreen fund structures offer an alternative that reduces the impact of cumulative fees and eliminates the time pressure to produce positive short-term returns in time for the next fundraise. An evergreen structure reduces the pressure for near-term performance and encourages GPs to adopt a longer view on company exits. It rewards GPs for maximizing scale growth opportunities and long-term returns within the portfolio.
- Negotiate alternatives to the usual 2 and 20 compensation structure, thus mitigating the pressure for fund raising over fund performance. In the next section, we discuss alternatives to 2 and 20 that reward performance over fundraising, and better align the interests of LPs and GPs.

³² AVC blog, http://www.avc.com/a_vc/2004/05/transparency_co.html; and OVP blog, http://www.ovp.com/Resources/Category/0001/0001/57/HTA_FOIA_6_04.pdf.

You get what you pay for: a good, hard look at 2 and 20

Somewhere along the way, LPs and their investment committees largely abdicated the responsibility for creating and negotiating compensation structures that pay VCs to do what they promise to do: generate returns in excess of public equities. Many LPs state that their minimum target return for venture capital is 300 to 500 basis points above a public benchmark.³³ Yet, they don't structure compensation based on that outcome. Instead, institutional investors allow VCs to "charge" them based on the "market standard" 2 and 20. Here is how a typical 2 and 20 compensation model works:

- VC firms earn a 2 percent per year management fee on committed capital during the first five years of the fund (the investment period);
- After the investment period, the annual fee usually steps down but continues through the fund's life (e.g., 2 percent on the lower of invested capital or market value of the portfolio);
- The VC firm earns 20 percent of all investment profits on a deal-by-deal basis when a portfolio company is sold.

This structure has been the industry standard for so long that it's difficult to trace its origins or rationale. The same 2 and 20 model remains nearly universal today. One study analyzed compensation from ninety-three VC funds raised from 1993–2006 and found that 90 percent of the funds charged a 2 percent or more fee, and 95 percent of funds charged a 20 percent carry.³⁴ In an earlier analysis, Paul Gompers and Josh Lerner reached a similar conclusion.³⁵

It's interesting that VCs have positioned themselves as supporters, financiers, and even instigators of innovation, yet there has been so little innovation within the VC industry itself. There have been changes—more funds, more money, bigger funds, and bigger deals—but very little 'creative destruction' around how funds are structured, capital is raised, or VCs are paid. For more than twenty years, most LPs have accepted the following terms:

- A ten-year fund;
- A five-year investment period;
- A 2 percent management fee on committed capital;
- An 80/20 LP/GP split of any profits on investments;
- One percent GP capital commitment invested in their own fund;
- Serial fundraising every twenty-four to thirty-six months.

³³ Ernst & Young, The Limited Partner Venture Capital Sentiment Survey, October 2010. [http://www.ey.com/Publication/vwLUAssets/2010_Limited_Partner_VC_Sentiment_Survey/\\$FILE/LP%20Sentiment%20Survey%20Report%20-%20October%202010.pdf](http://www.ey.com/Publication/vwLUAssets/2010_Limited_Partner_VC_Sentiment_Survey/$FILE/LP%20Sentiment%20Survey%20Report%20-%20October%202010.pdf).

³⁴ Andrew Metrick and Ayako Yasuda, The Economics of Private Equity Funds, 2010. <http://www.stanford.edu/~piazzesi/Reading/MetrickYasuda2010.pdf>.

³⁵ Paul Gompers and Josh Lerner, 1999, "An Analysis of Compensation in the U.S. Venture Capital Partnership," *Journal of Financial Economics*, 51, 3–44.

The general perception is that VCs are paid based on how well their investments do. If true, that would align the interests both of LPs, who want to maximize their returns, and VCs, who are rewarded for making high-risk, high-return investments. A closer look at compensation data shows that, while a select group of VCs remain focused on delivering great investment performance to their investors, too many are compensated like highly-paid asset managers.

Public data on GP compensation amounts and structure is difficult to obtain, yet one recent study that analyzed ninety-four VC funds and estimated the amount of partner revenues from management fees and carry found that VC funds receive nearly two-thirds of their revenues from fixed fees rather than from performance-based carry.³⁶ VC funds received a median \$14.61 per \$100 under management, compared to only \$8.20 in carry. Another study analyzed vintage-year funds from 1986 through 1997, and also found that average VC compensation is not really performance-based at all.³⁷ The authors found that an average VC received about half its compensation from the management fee, a surprising finding given the historically unprecedented nature of fund returns during this period of the Internet bubble in the late 1990s.

Many LPs are keenly aware of the misalignment inherent in the 2 percent flat management fee, which pays VCs more for raising bigger funds and pays them steadily whether or not they perform. A recent Probitas Partners survey of 291 institutional LPs found that 48 percent of respondents identified the overall level of management fees as an area of concern.³⁸ The same percent of LPs also reported fears that fee levels were destroying the alignment of interests between GPs and investors. An Ernst and Young survey of LPs found that 89 percent of respondents want to see changes to the management fee.³⁹

For smaller funds, a 2 percent fee might be a reasonable way to cover fund expenses. But the impact of fee income is most mis-aligning in the expanding universe of \$1b+ funds, a fund size that generates \$20m *per year* in fees from a single fund, whether there are five partners or twenty-five, one office or ten, positive returns or losses. As one GP told us: “The management fee is like heroin. No one can step away from 2 and 20.”

If you don't consider the management fee from a single fund sufficient to potentially misalign GP and LP interests, then consider the cumulative effect of fees paid on a series of subsequent funds. Data from the Foundation's portfolio indicate that the median time to the first capital call of a subsequent fund is 26.6 months. As a thought

³⁶ Andrew Metrick and Ayako Yasuda, *The Economics of Private Equity Funds*, 2010.
<http://www.stanford.edu/~piazzesi/Reading/MetrickYasuda2010.pdf>.

³⁷ Kate Litvak, *Venture Capital Limited Partnership Agreements: Understanding Compensation Arrangements*, *The University of Chicago Law Review*, Vol. 76, Issue 161, pp. 161–218.

³⁸ Probitas Partners, *Private Equity Market Review and Institutional Investor Survey*, 2010.
http://probitaspartners.com/alternative_investments_publications/white-papers-and-surveys.html.

³⁹ Ernst and Young, *The Limited Partner VC Sentiment Survey*, 2010.
[http://www.ey.com/Publication/vwLUAssets/2010_Limited_Partner_VC_Sentiment_Survey/\\$FILE/LP%20Sentiment%20Survey%20Report%20-%20October%202010.pdf](http://www.ey.com/Publication/vwLUAssets/2010_Limited_Partner_VC_Sentiment_Survey/$FILE/LP%20Sentiment%20Survey%20Report%20-%20October%202010.pdf).

experiment, assume a VC partnership raises a \$250 million fund. Early in year three, exhibiting early positive IRRs, the firm raises a subsequent \$350 million fund. Demand for Fund III remains strong, and the GPs raise another \$500 million fund later in year five. Each new fund adds a fresh income stream to the residual fees older funds continue to generate over the ten-year life. Without visibility into the firm financials, LPs don't see the total *cumulative* management fees the firm receives, and, more importantly, don't know where those fees go. In this theoretical example, a moderately successful VC firm raises three smaller-sized funds within the investment period of the first fund; and the operating income climbs to more than \$19 million by year five. Our experience would indicate that VCs may somewhat increase fixed costs like additional staff with subsequent funds, but in most cases expand very conservatively.

Pay for Non-Performance: Cumulative management fees are significant and contribute to misalignment between LPs and GPs

	Fund I: \$250,000,000	Fund II: \$350,000,000	Fund III: \$500,000,000	Total Fee Income
Year 1	\$5,000,000			\$5,000,000
Year 2	\$5,000,000			\$5,000,000
Year 3	\$5,000,000	\$7,000,000		\$12,000,000
Year 4	\$5,000,000	\$7,000,000		\$12,000,000
Year 5	\$5,000,000	\$7,000,000	\$7,500,000	\$19,500,000
Year 6	\$5,000,000	\$7,000,000	\$10,000,000	\$22,000,000
Year 7	\$5,000,000	\$7,000,000	\$10,000,000	\$22,000,000
Year 8	\$5,000,000	\$7,000,000	\$10,000,000	\$22,000,000
Year 9	\$5,000,000	\$7,000,000	\$10,000,000	\$22,000,000
Year 10	\$5,000,000	\$7,000,000	\$10,000,000	\$22,000,000

We assume the first capital call of the next fund is twenty-seven months after the last fund.
Source: Kauffman Foundation investment staff analysis.

This example helps us understand why GPs, particularly GPs of medium and large-sized funds, find a 2 and 20 model attractive. Flat management fees based on the fund's committed capital insulate GPs from significant personal income effects of poor performance. Even if you agree that the management fee severely limits (the more cynical among us might even say *eliminates*) the downside risk to GPs of underperformance, one could argue that the effect is short-term. After all, if the GP doesn't perform, it's unlikely the firm will be able to raise a subsequent fund, so the management fee goes away—it's a short-term perk at best. If only this were true. Sadly, it is well documented in the industry that many, many underperforming fund groups can and do raise subsequent funds as LPs fill their VC allocations, convince themselves that early fund IRRs will persist, anchor to misleading performance metrics, or rely instead on 'relationships' when making investment decisions.

A better option than the 2 percent flat management fee is a budget-based management fee based on VC firm operating expenses. The budget-based fee offers better alignment

between GPs and LPs, gives GPs sufficient capital to operate their firm, and provides LPs with transparency into firm economics.

The 20 percent carry structure has become another immovable, unchangeable industry standard. This is confusing when one considers that high-performing VCs (who presumably would have the most leverage to negotiate carry) would benefit the most from a sliding scale carry structure that increased with performance. Landmark Partners explored the bold idea of carried interest auction, in which top-performing GPs that are over-subscribed would select their LPs by taking bids on the maximum carry each LP would pay.⁴⁰ Landmark simulated an auction among thirty-five LPs to invest in a top-tier fund that had been charging a 25 percent carry. The carry bids ranged from 22 percent to 72.5 percent, and the market-clearing interest for the \$250m fund was 42.50 percent.

If a real auction would generate similar results, then top-performing GPs are leaving a lot of money on the table. GPs who believe in their abilities to generate great returns would seem much more likely to prefer reduced management fees and higher carry percentages. LPs willing to pay for skills that create high returns certainly would prefer this structure. Similarly, emerging managers who come to market with a riskier profile than well-established firms would seem to benefit from offering investors a carry-dominated compensation structure with lower ongoing management fees. So why would GPs—top performers and emerging managers included—structure compensation systems that rely heavily on a management fee and constraints carry to a mere 20 percent of profits?

Our interviews with General Partners blame LPs for insisting on consistent and historical fee practices. They report general rebellion by existing LPs to any change in structures that might require additional explanation or analysis for investment committees. GPs insist that they have to sell what LPs will buy and they say that LPs as a group are not at all interested in discussing any alternative structures to the 2 and 20 model. Our interviews indicate that many GPs are, not surprisingly, generally interested in increased carry and more resistant (but still open) to reduced management fees based on a budget. Our discussions with LPs confirm that it's they who consistently express strong opposition to almost any deviation from 2 and 20.

One experienced GP raising his own first-time fund said he offered a budget-based management fee, and was open to a sliding carry based on performance (e.g., 25 percent above 2x), but felt that such a departure from industry practice sent the message to prospective LPs that the fund was desperate to attract new investors by offering unique and better-aligned economic terms.

Another GP from a top-performing fund that consistently is oversubscribed (thus putting him in a position to negotiate carry) told us his firm was reluctant to “seem greedy” and risk alienating its investors by asking for higher carry on its best returns, even if the offer were made in conjunction with a reduced management fee. A third GP of an

⁴⁰ Ian Charles, A Carried Interest Auction?, PEHub, March 2008. <http://www.pehub.com/2090/a-carried-interest-auction/>.

oversubscribed fund told us he would love a sliding carry structure. He said he was in the middle of fundraising and could either stick with the 2 and 20 structure and close the fund in a few months, or risk spending ‘a year and a half’ educating, explaining, and overcoming suspicion about a new structure, and maybe get the fund closed. It was a risk he didn’t want to take. Several GPs indicated that they and their partners had discussed offering alternative structures and received very negative responses (one GP raising his second fund characterized it as a “visceral negative reaction”) from their LPs to anything other than the 2 and 20 model.

Instead of innovating with new carry structures, the best-performing VCs tend to raise *both* the management fee and carry—to a 2.5 percent and 25 percent, or 3 percent and 30 percent. It’s the best of both worlds for those GPs; above-market guaranteed fees independent of performance and above-market carry for performance. LPs chose to accept this singular deviation from 2 and 20, and line up to invest.

The 20 percent carry is, in principle, less egregiously misaligning than the 2 percent management fee. But the devil is in the details. How the carry is paid out is material. If carry is paid out to LPs by investment, as each exit occurs, then GPs can end up taking carry distributions on profitable deals done early in the fund’s life, before it’s clear that the fund overall will break even. In the worst case, this can lead to clawbacks at the end of the fund’s life, in which GPs have to pay back excess carry they received from earlier exits.

Clawback provisions are difficult and contentious to enforce. In one notable case, Mayfield’s treatment of LPs during clawback disputes made it into industry media reports, and reportedly cost them seven LP relationships.⁴¹ Most Limited Partnership Agreements (LPAs) structure clawbacks as payable “after tax,” which can return as little as 60 percent of what the LP is owed, even though the GP did not rightfully earn the carry. If capital gains rates increase in 2013 as expected, the negative effect for LPs will be compounded. Only a few funds require a portion of carry to be escrowed to provide for the possibility of clawback. The better structure (and one possible solution to the clawback problem) is what’s known as a ‘European style’ waterfall, where carry is calculated based on capital drawn over the life of the fund rather than deal by deal. The most aligned carry structure is one where LP capital is returned first, followed by a preferred return or ‘hurdle’ on LP capital, then a carry split between GPs and LPs on profits.

When GPs make investments in companies, they regularly structure minimum return provisions such as liquidation preferences, dividend payouts, and redemption options. LPs can similarly structure a minimum return through return of capital provisions plus a preferred hurdle that equals the return rate of investing in a liquid and less-risky security. This structure is more common in mid-market buyout firm investments, which regularly offer LPs return of capital plus an 8 percent hurdle before the carry split kicks in. It is rarely negotiated by LPs in venture capital funds. A few VC firms in the

⁴¹ Mayfield takes LP lumps, PE Week Wire, Aug. 12, 2005. <http://www.preqin.com/item/mayfield-takes-lp-lumps/101/620>.

Foundation's portfolio include a similar preferred return of 8 percent to 10 percent, which ensures that the GPs are paid only for value creation above ordinary returns we could obtain in a less risky and more liquid public equity investment.

It's difficult to understand why LPs have allowed the 2 and 20 model to persist, unchallenged, during two decades of enormous growth in the VC industry, the emergence of billion dollar funds, and more than a decade of VC fund underperformance. We're aware that some LPs don't perceive any misalignment in current compensation structures. CALPERS, for instance, publicly supports the 2 and 20 compensation structure, noting on its website that, "When this compensation structure is used, the financial interests of the General Partner are aligned with those of the Limited Partners, including CALPERS."⁴²

For LPs that perceive misalignment, the vexing question is why they aren't creating, negotiating, even demanding better-aligned compensation structure that rewards generated investment returns above the public market? Creating a carry-dominated compensation structure is riskier for GPs, and LPs fail to require them to take on that risk.

There is some truth to the old adage "you get what you pay for." Under the existing 2 and 20 structure, many institutional investors pay GPs well to build funds, not build companies. LPs also pay VCs well when they underperform. Under 2 and 20, GPs are paid significant cash compensation even when they don't return investor capital. There are steps that investment committees can take steps to create more pay for performance.

- Eliminate the 2 percent management fee on committed capital. This fee structure pays VCs more for raising bigger funds and, in many cases, pays them well regardless of investment performance. A budget-based management fee with carry on returns that beat a public benchmark will pay VCs to do what they say they will—generate above-market returns. For instance, pay a 20 percent carry if the PME is 1.34 (a 3 percent annual excess return), a 25 percent carry if the PME is 1.62 (a 5 percent annual excess return), and a 30 percent carry if the PME exceeds 1.97 (a 7 percent annual excess return). This structure and a budget-based management fee eliminate the risk that LPs pay high compensation to a fund that doesn't outperform a lower-risk, lower-fee, and fully liquid public index. It also rewards and offers more upside returns to GPs who perform well.
- Negotiate 'European style' waterfalls where profit sharing occurs after investor capital has been returned, with a preferred hurdle.
- Consider an evergreen fund structure as an alternative to the 2 and 20 model. Evergreen funds are structured to better align the incentives between GPs and

⁴² CALPERS,
<http://www.calpers.ca.gov/index.jsp?bc=/investments/assets/equities/aim/programoverview.xml>.

LPs. They have just one annual management fee (not a series of fees that accumulate from subsequent funds), and raise capital from a limited number of LPs on a rolling basis. Investors receive gains from successful exits, which they can choose to reinvest. The fund restructures every few years (usually every four years) and investors can decide whether to continue investing or withdraw their investment based on current values.

In the 1980s, when the VC industry was nascent, several blue chip VC firms were structured as evergreen funds. Old family funds like Venrock (Rockefeller family) and Bessemer (Phipps family) were top evergreen funds formed to invest the family's money, but within the last two decades both funds have adopted a traditional fund structure and expanded their investor base. Now there are only a few evergreen funds in the industry, such as Sutter Hill Ventures and General Atlantic Partners, a larger growth equity firm.⁴³

Evergreen funds are open-ended and therefore not subject to the fixed timeframe of a ten-year fund life or the pressure and distraction of fundraising every four to five years. Without the pressure of regular fundraising, evergreen funds can adopt a longer timeframe, be more patient investors, and focus entirely on cash-on-cash returns, rather than generating IRRs to market and raising the next fund. Bill Ford, one of the founders of evergreen fund General Atlantic Partners, notes an advantage of evergreen fund structures as the "...willingness and ability to take a long-term view on investing because we're not on a two- or three-year fundraising cycle like many firms need to be. We have a tendency to think not only in five-year investment periods, but even longer term to say we're prepared to hold an investment seven, eight, nine, ten years because there's no pressure for us to return capital, or to "end a fund," or to realize returns on a certain timeframe so we can achieve a fundraising objective."⁴⁴

⁴³ The Kauffman Foundation is an investor in funds managed by Bessemer Venture Partners and General Atlantic Partners.

⁴⁴ Bill Ford interview at the Kauffman Foundation Venture Roundtable, 2008.

Do As I Say, Not As I Do...

THE BLACK BOX OF VC FIRM ECONOMICS

“Do as I say, not as I do” is the maxim in force when it comes to VC firm economics. When VCs conduct due diligence on potential portfolio companies, they carry out a comprehensive assessment of the company’s financials (cash flow, burn rate, key expenses, and stock option plans, etc.) and require complete detail on senior management team salaries, bonus amounts, ‘skin in the game,’ and equity ownership. GPs know this information is crucial to understanding company financial health as well as management team incentives, stability, and succession. Every GP we interviewed acknowledged the essential importance of senior management team compensation in their portfolio company investments. One GP emphasized its significance, saying that not only does his firm “know everything about the compensation...a lot of times we structure it.”

LPs have the exact same interest in understanding the firm economics of the partnerships in which we invest, and the compensation structure of the GPs investing our capital. LPs also have the same fiduciary obligation as GPs to understand the economics and incentives that underlie investments, and to evaluate how fees, carry, and ownership align investor and investee interests. What LPs seem to lack is the conviction to *require* the information from GPs in the same way the GPs themselves require it. Even more disconcerting, investment committees and trustees fail to require a disciplined approach to understanding and evaluating firm economics of VC partnerships to which they allocate, approve, and oversee large capital investments.

As the table below illustrates, LPs aren’t seeking any information that GPs themselves don’t require when they make an investment.

Category	What GPs Get: Due Diligence on a Company	What GPs Give to LPs: Due Diligence on their Firm	What LPs need: Due Diligence on a VC Firm
“Skin in the Game”	Detailed capitalization table, company ownership	Overall GP commitment for the fund (market standard is about 1 percent total capital raised)	Partner capital contributions (by partner), partnership ownership
Comp Incentives	Senior management comp amounts and structure—salary, bonus amounts and structure, equity	No standard compensation information given as part of due diligence	Partner comp amounts and structure—salary, bonus amounts and structure, and the allocation of carry, management company agreement
Quarterly Financials	Quarterly company financials—balance sheet, income statement, cash flow	No standard firm financial information given as part of due diligence	Quarterly firm financials—balance sheet, income statement, cash flow
Projected Financials and Budget	Full-year projected financials, annual budget (approved by Board after investment is made)	No standard firm financial or budget information given as part of due diligence	Full-year firm projected financials, annual budget
Past Performance	Historical financials, growth rates	Individual partner track records; cash flow data upon request	Partner track records, investment cash flow data for public market equivalent (PME) analysis

We discussed in the prior section how management fees and management company profits far in excess of firm operating expenses allow GPs to lock in stable, high levels of personal income regardless of fund performance. Additional misaligned behavior occurs when GPs choose not to invest their personal income and assets alongside LPs in new funds. It’s become the ‘market standard’ that GPs, as a group, will invest only 1 percent of committed capital in a new fund. This amount is grossly insufficient to foster alignment of interests. The Foundation expects a 5 percent to 10 percent GP commitment, and for any lower amounts we require a detailed understanding of the commitment amounts relative to personal net worth, especially for senior partners.

Firm economics are enormously important in aligning LP and GP interests. It’s our experience that bad firm economics cause VC firms to lose top-performing partners. The VC firm personnel problems we’ve encountered in our portfolio most often originate from misaligned firm economics and compensation. For example, one firm in the Foundation’s portfolio lost one of its top three best-performing partners just prior to raising its next fund. As part of due diligence, we required information about the firm’s

compensation structure. We discovered that the two founding partners retained full ownership of the firm, enjoyed control over the fee stream and management company profits, and had adopted the habit of awarding themselves generous salaries and bonuses. The carry was allocated in a reasonable way among senior and junior partners, but the prior funds weren't performing well enough to generate carry. The top-performing partners were generating good returns (2x+ multiples on their investments) but the other partners weren't performing as well. As a result, the top performer the firm lost wasn't getting paid from carry, and the senior partners were making no effort to re-allocate management fee income to pay the partner for performance.

Cash compensation and carry allocations that implicitly (or explicitly) reward seniority and tenure at the firm rather than track record can give firm owners the lion's share of fee income and management company profits, but do little to recruit, motivate, or retain promising junior partners and principals. Had we known earlier about the firm's lopsided compensation, we might have been more active in addressing the predictable risk that the top performer would take his track record and go where he could get paid for the returns he generated. We also might have had sufficient information to pass on the new commitment *before* staff turnover undermined our investment objectives with the fund.

The Foundation is not the only LP to think compensation information is important. A survey of ninety-seven LPs conducted by the Center for Private Equity and Entrepreneurship at Dartmouth found that LPs would use carry interest allocation information "...to better understand GP dynamics, including the structure and incentives, team building and succession planning, and changes in key individuals' compensation plans."⁴⁵

We now ask our existing and potential VC partners for firm economics and compensation structures as part of investment decision-making. GPs tell us they understand the logic about why this information is critically important to us as LPs. Despite acknowledging the power of the argument, many still refuse to provide that information, and cite the long queue of potential investors waiting to invest as proof that such disclosures are unnecessary.

Our team's experience obtaining detailed firm financial and compensation structure information has been mixed. In our best-of-class partnerships, our experience has exceeded our expectations. We've asked for and received full transparency and information about the firms' operating expenses relative to the fees, and a detailed understanding of the partner compensation structure—ownership, cash compensation, and carry allocation. In these cases, we're able to have informative and useful conversations about investment team incentives, retention of promising performers, succession planning and continuity, and overall philosophy about team versus individual rewards. During these discussions, GPs have told us that it's highly unusual to discuss

⁴⁵ Center for Private Equity and Entrepreneurship, Tuck School of Business at Dartmouth, Limited Partnership Agreement Conference Proceedings, 2004.
http://mba.tuck.dartmouth.edu/pecenter/research/pdfs/LPA_conference.pdf.

firm economics with prospective LPs and admit that they do not enjoy the experience. These “best cases” do not yet reflect the majority, but these are the funds in which we now most comfortably invest.

We also encounter situations in which GPs refuse to provide the information we request. The GPs agree with our logic, and confirm how important the same information is when they’re making investments, but they refuse to provide transparency “for as long as we can.” One perceived top-tier VC told us during fundraising discussions that “carry structure doesn’t go outside the firm,” and that “compensation amounts and carry splits are private.” Another perceived top-tier GP in which the Foundation doesn’t invest agreed with our view about the importance of transparent partnership economics and he admitted “no good answer” as to why LPs couldn’t receive the same information about his fund, except that the information is “never shared.”

Eliminating the black box of VC firm economics is required if LPs seek to make prudent and aligned VC investments. LPs have historically failed to secure even minimal information rights on issues that foster transparency and are material to aligning LP and GP interests. A well-regarded GP of a perceived top-tier VC fund told us that “LPs have no leverage” to obtain firm economics. We suggested that LPs do have leverage—the same leverage that VCs have when they can’t reach agreement on terms with a potential portfolio company—we can walk away. “Yes,” he said, “but LPs never walk away.”

One of the most interesting features of LP/GP relations is the complete lack of oversight and accountability inherent in the relationship. Under current fund structures and industry standard terms, any one LP has limited influence—the only real influence is not to re-invest in the firm’s next fund. This is partly due to firm governance structure. When GPs raise a fund, they appoint an Advisory Board typically composed of the biggest investors in a fund (their “anchor” investors) with whom they want to cultivate a close and enduring relationship over multiple funds. Unlike a regular Board, the Advisory Board generally does not meet independently, has no ongoing oversight responsibilities (e.g., approving budgets or compensation, or overseeing an audit), and has very limited (if any) approval rights—most events or actions that require LP approval require a majority or two-thirds of the LPs to sign off, so, practically speaking, the Advisory Board doesn’t have rights independent of the entire group of LP investors.

There is a lot of room to improve VC firms’ governance and oversight. Below is a set of limited information and approval rights that would have a meaningful impact on increasing transparency and accountability for LPs.

Category	What GPs Get from Portfolio Companies: Governance	What GPs Give to LPs: Governance	What LPs Need: Governance
“Board” Seat	The right to appoint a Director to the Board	An Advisory Board composed of GP-appointed LPs	The right to elect LP representatives to fund Advisory Boards
Information Rights	Information rights to detailed company quarterly and annual financials	No firm-level information rights	Information rights to detailed firm quarterly and annual financials
Budget Approval Rights	Right to review and approve annual company budgets	No right to review or approve firm budgets	Right to review and approve annual firm budgets

The bottom line is that no LP can fulfill its fiduciary obligations by accepting the additional risk of investing in a firm with “black box” economics around its financials, GP compensation, ownership structure, and carry allocations. LPs must begin to *require* this information during due diligence. The additional risk the lack of transparency introduces is difficult to justify. The Foundation is no different from other LPs in having failed in the past to consistently gather complete information about firm economics, but it’s a mistake our investment team is committed to avoiding in the future. Investment committees can take these steps to eliminate the black box of VC firm economics:

- Require investment staff and consultants during due diligence to acquire a complete understanding of VC firm economics, management company performance, ‘skin in the game,’ and partner compensation structure and amounts. If we and other LPs don’t require and understand this information, we take on *unjustifiable* risk related to fund performance, organizational stability, and quality of the investment team. And, as we saw earlier in our discussion on VC fund returns, LPs aren’t getting paid for taking on this additional risk.
- Seek a minimum number of oversight and approval rights at the VC firm level to foster transparency and accountability.

Public Market Equivalent (PME) Performance Discussion and Rationale

As we have previously discussed, the world of VC performance measures often confuses, sometimes misleads and, only on rare occasions, informs. There are IRRs, TVPIs, vintage years, and quartiles. Then there's the most mystifying measure: gross performance, which many GPs continue to report instead of the net returns that LPs receive (presumably because the gross numbers are bigger). None of these measures alone is sufficient to help LPs evaluate whether or how much to invest in VC because they don't incorporate the risk, illiquidity, and fees of investing in private equity relative to public equity.

We've come to believe that PME, despite some statistical limitations, is the most informative measure of VC fund performance. We use PMEs based on fund cash flow data to see the benefits and opportunity costs of investing in public versus private equity, and to compare performance among GPs.⁴⁶ Kaplan and Schoar (2005) best describe the concept of PME:⁴⁷

We think PME is a sensible measure for LPs as it reflects the return to private equity investments relative to public equities. For example, a private equity fund investing \$50 million in March 1997 and realizing \$100 million in March 2000 would have generated an annualized IRR of 26 percent. However, an LP would have been better off investing in the S&P 500 because \$50 million in the S&P 500 would have grown to \$103.5 million over that period. The PME of 0.97 (or 100/103.5) for this investment reflects the fact that the private equity investment would have underperformed the S&P 500.

We calculate PMEs using public benchmarks that most closely match the investment style of the private fund. We've noted the tendency for consultants and investment committees to compare VC returns to or benchmark against the large capitalization weighted S&P 500 index rather than to a small capitalization benchmark. We prefer to benchmark early-stage VC funds against the Russell 2000 index of the nation's smallest publicly traded companies, as we believe that index best reflects the higher price volatility, higher beta, and higher sensitivity of small companies to economic cycles.

A VC fund with a ten-year life should deliver a PME of 1.34 or greater to justify the expectation of 3 percent annualized returns above a public benchmark. A PME of 1.0 indicates that the VC fund performed the same as the public market. A PME greater than one indicates that the venture fund beat the public market, and a PME less than one says the Foundation unnecessarily tied up money in a high-fee, poorly performing alternative to publicly traded stocks. Our data show that, of ninety-six VC funds in our portfolio from 1989–2010 vintage years, only twenty-five funds delivered the expected VC return of 3 percent annual excess returns.

⁴⁶ See Appendix A: Sample PME Calculation for more detail.

⁴⁷ Steven Kaplan and Antoinette Schoar, *Private Equity Performance: Returns, Persistence and Capital Flows*, August 2005. <http://www.mit.edu/~aschoar/KaplanSchoar2005.pdf>; see also James M. Kocis, James C. Bachman IV, Austin M. Long III, and Craig J. Nickels, *Inside Private Equity*, 2009. <http://www.amazon.com/Inside-Private-Equity-Professional-Investors/dp/0470421894>.

Vintage Group	Number of Funds	Venture Returns 3 Percent Better Than A Public Index	“Batting Average”
Before 1995	14	10	.710
1996–2000	48	8	.166
2001–2005	21	2	.095
2006–2010	13	5	.385

When we consider the asset flow into venture capital funds from about 1997 to today, we must ask whether there is just too much money chasing a small and finite number of companies able to scale and grow sufficiently to reward investors for a decade of patient waiting. We find that, in the Foundation’s portfolio, the majority of our investments in vintage years prior to 1995 exceeded the returns offered in the public stock market by more than 3 percentage points a year. At a .710 “batting average,” the fund managers belonged in any hall of fame. Over sixteen subsequent years, in a market where ample capital drives the value of early stage companies up sharply, success has been elusive.

A specific example from the Foundation’s portfolio will illustrate Kaplan and Schoar’s point that PME is a helpful tool for helping LPs decide where to invest. Below are the PME results of a traditional, early-stage VC firm in our portfolio. A cursory reading of the returns would suggest that Fund II displayed the highest level of early-stage investing skill because the net IRR was higher than returns to LPs in all other funds. However, the PME evaluation counter-intuitively suggests that Fund I demonstrated a higher level of investment skill as returns exceeded those available in publicly traded common stocks by more than two times, net of all fees and carry.

PME is useful for investment decision-making

Fund	Net IRR	Net Multiple	PME
I	28%	2.20	2.68
II	46%	1.74	1.95
III	-2%	0.89	0.59
IV	2%	1.09	0.92
V	-14%	0.72	0.62

The benchmark for the PME is the Russell 2000.
Source: Kauffman Foundation VC portfolio analysis.

The PME is particularly useful for investment decision-making. In the above example, an LP considering whether to participate in a prospective Fund VI can better quantify the chronic poor performance of Funds III, IV, and V when measured against returns from public equity markets. The PME tells us clearly that, in the most recent three funds, we weren’t compensated for the risk, illiquidity, and high fees we accepted when we invested in this private fund instead of a public equity index.

PMEs also can add transparency across portfolios for investment committees, and allow for easier evaluation of consultant and investment staff performance. For instance, University of California investment committee members likely have a challenging time comparing portfolio performance to other LPs, or across the UC system. Each university uses its own benchmark, some of which seem difficult to interpret at first glance.

PME can increase transparency and comparability of returns across VC portfolios

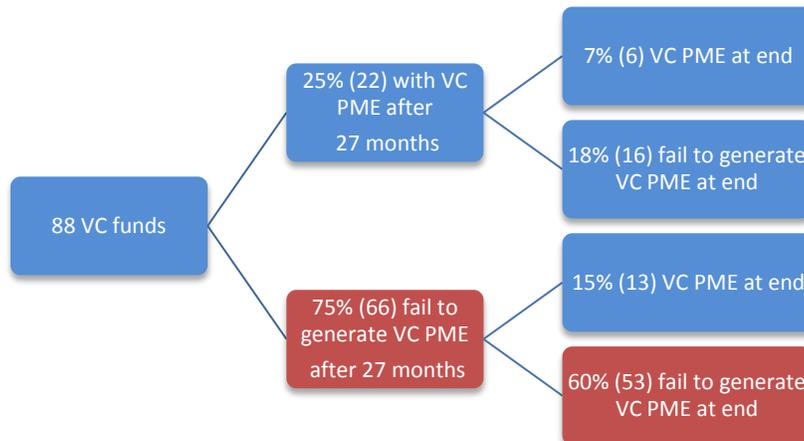
LP	Current Benchmark
CALPERS	Wilshire 2500 ex-Tobacco
CALSTRS	Custom benchmark
UC Berkeley	"Benched against itself"
UCLA	"Actual PE returns"
UC Irvine	Russell 3000 + 3%
UC San Diego	S&P 500 + 5%
UCSF	S&P 500 + 7%
UC Santa Cruz	"Actual return of private equity portfolio"

Source: 2010 UC Annual Endowment Report, www.calpers.org, www.calstrs.org.

If the investment committee used PME based on a standard public benchmark determined *a priori*, it could easily compare portfolio performance across the UC system, and relative to other LPs. LPs could allocate their capital more effectively if performance data were calculated and reported in this standardized manner. Fund performance data that is consistent and standardized creates transparency that lowers the 'costs of capital' (due to information asymmetry and risk) for all parties financing and growing young companies. With new regulatory guidance expected from the SEC for private equity, a clear, standard performance measure such as PME would benefit all participants in the industry.

We discussed earlier that the 'J-curve' effect has been tied exclusively to discussions about a fund's IRR—a time-weighted calculation subject to enormous bias and estimation errors. We were curious whether our preferred PME measurement might be relevant in the context of a J-curve analysis. We looked at PME in eighty-eight funds and found that funds that lag public markets early in their life were very likely (71 percent) to persist with poor relative returns. We didn't find a dominant J-curve effect—only 15 percent of the funds exhibit a J-curve pattern of returns—but early poor PME ratios may do a better job than early poor IRRs in helping investors identify venture commitments that may be problematic.

Most VC funds do not generate returns of 3 percent to 5 percent better than public markets as investors expect



Source: Kauffman Foundation VC portfolio. The public benchmark is the Russell 2000.

The Foundation now calculates cash flow-based PMEs for all our VC funds on a quarterly basis, and uses PMEs regularly to make investment decisions. Over the past several years, as we have consolidated our portfolio, we have used PME to prioritize our best-performing funds, and to concentrate our investment activity and increase our investment amounts in those partnerships. We've also used it to identify where we have capital tied up in poorly performing partnerships, and to develop a list of partnerships we would be willing to sell on the secondary market.

Investment committees can take steps to understand how the funds in their portfolios perform against a public benchmark and to start using PME as a tool in investment decision-making.

- Require their investment staff and consultants to calculate cash flow-based PMEs for each fund in the portfolio to evaluate how many generate the excess returns of 3 percent to 5 percent above the public market sought by most investors.
- Require cash flow data on prior funds to calculate historic PMEs before investing with a new GP or re-upping in existing partnerships. PMEs from older funds will provide information on GP performance persistency and consistency across different market cycles.

**A STRANGE GAME.
THE ONLY WINNING MOVE IS NOT TO PLAY.
HOW ABOUT A NICE GAME OF CHESS?**

Joshua (the supercomputer) from the movie *War Games*

We wrote this paper to share our historic investment performance and shortcomings, as well as our analysis of the Foundation's two decades of investing in venture capital. Based on our data, we've reached the conclusion that the LP investment model is broken. It's clear that LPs *can* be better and different investors in VC. We've highlighted some recommendations for LPs to conduct more rigorous performance analysis on VC funds, and to evaluate, negotiate, and structure investments in VC firms that are more transparent and aligned. The remaining question in our minds is: Do LPs have the interest, engagement, and will to actually *be* different and more selective investors in VC?

We talked with a number of LPs who did not agree with the arguments we make in this paper, or didn't "get" why we think they're important. During our discussion about VC firm economics, one LP said that he didn't worry about management fees or firm budgets because "those guys have to make a living too," so it just wasn't a big issue for him to explore during due diligence. Another LP said that negotiating alternatives to 2 and 20 "isn't worth the energy." Several peers listened to our list of topics and responded by cautioning us that "this is a relationship business," implying a view that we are better off accepting the status quo and being in misaligned, underperforming VC relationships than pursuing negotiations for better terms.

Being a better investor in VC for most LPs will translate into being a much more selective investor. The data are clear that great VC returns are concentrated in a small number of select top firms. In our discussions with Cambridge Associates, they indicated there are about fifty 'top-performing' VC funds.⁴⁸ Flag Capital Management says there are twenty-nine (p. 17). Most LPs estimate that number to be much closer to ten. If we accept the Cambridge figure as correct, and if the NVCA statistics are accurate that several hundred VC funds exist in the United States, then returns from the vast majority of VC fund managers cannot possibly justify the fees, illiquidity, and risk that LPs assume when they invest in VC. For LPs that can't gain access to the top-performing VCs, data indicate they will realize higher returns by investing in fully liquid, lower-cost public small cap indexes rather than in the vast array of second- and third-tier VC funds.

LPs who do have access to the ten or twenty top-performing funds may not have much leverage in extracting information or negotiating better terms on their own because the line of investors waiting at the door is so long. The choice in that case is to attempt to rally the interest and engagement of other investors in the fund and create the critical mass to negotiate term changes, or to simply look the other way and take the great returns. We have chosen to stand down on terms when faced with an investment

⁴⁸ Meeting with David Ingram, Cambridge Associates, October 26, 2011.

decision in a top-tier fund where our analysis convinces us that outsized historic returns are common and likely to continue.

There will not likely be significant pushback on the industry's GP-favorable terms until investment committees find and exercise more fiduciary courage. Investment committees have a real role to play in asking their investment staff the questions and requiring the data to better evaluate VC firm performance, and improve transparency and GP/LP alignment.

The data we've reviewed in this paper demonstrate that VCs are good capitalists. They act in ways that are consistent with maximizing their economic profits. LPs seem to be less-good capitalists, because they repeatedly fail to negotiate key economic terms that have a significant impact on their investment returns. Why is this? Investment committees have to be alert to the possibility of misaligned incentives between their institution and the individuals making investments and investment recommendations. For instance, many institutional investment teams (including ours) have one or more dedicated investors who focus on PE/VC investing. There is little incentive for those investors to alert the investment committee to the poor performance or misaligned incentives of the venture capital industry, or to question whether it makes sense to continue investing at historic levels. After all, who wants to introduce a line of inquiry that could be job threatening? And, speaking of jobs, our own casual review of institutional private equity investors reveals median job tenure of around three years. There is much turnover at the LP investor level, which creates little incentive for any one investor to fight hard on behalf of their institution for better economic terms, especially if they are not getting paid for that outcome and views such behavior as harmful to industry 'relationships,' which the investor likely will find beneficial in landing their next job.

Similarly, investment consultants generate search fees and revenues for investigating and recommending venture capital firms, and may have little incentive to take an independent stance against an underperforming investment category that they are, at the same time, recommending to other clients. Committees that ask questions, and require data and analysis on their VC portfolios can avoid these pitfalls.

The Foundation has been an active VC investor for more than twenty years, and, in the past, we've invested in funds without strong performance or aligned terms. We have come to believe that it's a mistake to continue to do so. As recently as 2007, we had more than sixty GPs and more than 100 funds in our portfolio. Over the past few years, through attrition and select sales on the secondary market, we've reduced our portfolio to thirty GPs and sold about sixty funds that were underperforming and/or significantly misaligned with our interests. We've walked away from investments in emerging managers and re-ups in existing partnerships that were not willing to enter into better-aligned terms. We know we may need to continue to walk away, even from some of our current favorite VCs who, if they continue to be successful, may succumb to the pressure and incentives to raise bigger funds.

In the meantime, we've taken our fee savings from our reduced partnerships and have deployed the newly available capital into building a concentrated portfolio of larger commitments in our top-performing, better-aligned funds, re-allocating some capital into less-risky liquid public equities, and initiating a small program to make direct, early-stage equity investments financed entirely by management fee savings.

The Foundation and other LPs will continue to invest in venture capital funds. There are still existing and emerging funds that are committed to taking risk, building companies and realizing great returns. Venture capital isn't going away, and we're not suggesting that it should. But we are arguing strongly that LPs who invest in VC need to rethink how they invest. As investors, we need to require more transparency, better performance metrics, and a lot more alignment. Investment staff can't do this by themselves. Investment committees need to help, by moving beyond asset allocation and exercising meaningful fiduciary oversight around the performance, structure, and economics of the VC investments they approve.

Our plan at the Foundation is to continue to invest in VC, but with a different approach than in the past. Most significantly, we will be smaller, more disciplined, and much more selective investors than we have been historically. We anticipate having a long-term portfolio of only five to ten VC partnerships. Our focus is to choose relationships with VCs whose performance offers a significant return over a public market equivalent and who are open to structuring aligned partnerships. What we seek is a transparent and accountable partnership relationship with our funds, on terms that make economic and fiduciary sense.

APPENDIX A SAMPLE PME CALCULATION

Our database of venture capital funds contains both capital account balances and cash flows into and out of the various partnerships. For every partnership, we define a public index as a benchmark. We then create an index portfolio (IPF) by investing the cash inflows affiliated with a partnership into a hypothetical portfolio that tracks the defined index. We also throw off cash flows from this hypothetical portfolio in accordance with the cash outflows for the particular fund under consideration. The investments into the index portfolio grow according to the total return characteristic of the index where dividends are reinvested into the IPF, and we assume that all IPF transactions take place with zero cost.

Here is an example of an index portfolio calculation for a partnership with two cash flows. Suppose a partnership calls capital of \$1M on 03/9/2009 and returns capital of \$2M on 4/29/2011, and that we define the Russell 2000 as the benchmark for this partnership. The value of the index portfolio through time is directly related to the cash in and out, and the appreciation of the index. These values are shown in the table below.

Date	Cash Flow	Raw Index NAV	Index Portfolio Value
3/9/2009	1,000,000	1495.64	1,000,000
4/28/2011		3861.00	2,581,504
4/29/2011	-2,000,000	3877.79	592,730
6/30/2011		3717.36	568,208

Note that the index portfolio has appreciated to a value greater than the distribution that takes place on 4/29/2011. When the \$2M leaves the IPF, we are left with a residual that continues to move with the index. We may encounter a circumstance where the cash outflow required is greater than the value of the IPF. In this case, we cannot compute performance measures on the IPF, and we must seek other comparisons.

When we aggregate many partnerships and either align the cash flows historically or use a time-zero methodology, we simply add up all of the IPF values of all the constituent partnerships. Thus, each partnership may have a distinct index associated with it, and the aggregate result gives an indication of the entire partnerships class relative to individual benchmarks.

An IPF has a cash flow data history, as well as a history of portfolio values. This data can be used to compute an IRR and TVPI on the index portfolio (as long as the portfolio values remain positive), and those performance measures may be compared directly against those of the partnership. We also may compute a PME by dividing the investment multiple of the partnership by the investment multiple of the IPF.