

VENTURE CAPITAL & PRIVATE EQUITY

A Casebook



Fifth Edition

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*To Oliver and Bella—the dynamic duo.
To Hank and Nell, and those who follow behind them.
To Ginny, who kept me walking.*

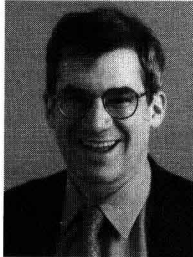
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The writing of a case study is an activity that involves many people. From the initial conception of a case to its publication and revision involves practitioners, students, and colleagues at one's own and other schools. Thus, the problem with the acknowledgments section of a casebook is not deciding whom to include, but rather worrying about those one has left out!

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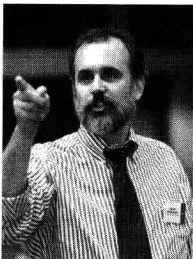
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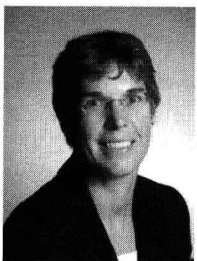
Much of his research, which is collected in *The Venture Capital Cycle* (1999 and 2004), *The Money of Invention* (2001), and the *Boulevard of Broken Dreams* (2008), focuses on the structure and role of venture capital organizations. He founded the Entrepreneurship and Innovation Policy and the Economy Groups at the National Bureau of Economic Research. He is a founder and director of the Private Capital Research Institute, a nonprofit body that seeks to encourage research into venture and buyout activity.

In the 1993–1994 academic year, he introduced an elective course for second-year MBAs on private equity finance. In recent years, “Venture Capital and Private Equity” has consistently been one of the top electives at Harvard Business School. In addition, he chairs and teaches private equity executive education courses, teaches several doctoral classes, and plays a variety of administrative roles at the University.



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Table of Contents

ACKNOWLEDGMENTS	vi
ABOUT THE AUTHORS	vii
INTRODUCTION	
1 Private Equity Today and Tomorrow	1
2 Iris Running Crane: December 2009	13
MODULE 1: FUND-RAISING	28
3 Yale University Investments Office: August 2006	33
4 Altoona State Investment Board: December 2008	58
5 Note on Private Equity Partnership Agreements	66
6 Grove Street Advisors: September 2009	77
7 Note on the Private Equity Fund-Raising Process	98
8 The Canada Pension Plan Investment Board	105
MODULE 2: INVESTING	130
9 Firm Strategy Vignettes	135
10 Hardina Smythe and the Healthcare Investment Conundrum	141
11 Avid Radiopharmaceuticals and Lighthouse Capital Partners	154
12 Metapath Software: September 1997	169
13 Note on Valuation in Private Equity Settings	181
14 Note on European Private Equity	201
15 Investcorp and the Moneybookers Bid	219
16 Note on Private Equity in Developing Countries	235
17 Hony, CIFA, and Zoomlion: Creating Value and Strategic Choices in a Dynamic Market	259
18 Gobi Partners and DMG	283
19 Note on Private Equity Securities	305
MODULE 3: EXITING	313
20 Warburg Pincus and <i>emgs</i> : The IPO Decision (A)	318
21 Motilal Oswal Financial Services, Ltd.: An IPO in India	338
22 Note on the Initial Public Offering Process	359
23 Between a Rock and a Hard Place: Valuation and Distribution in Private Equity	366
MODULE 4: NEW FRONTIERS	395
24 Village Ventures	401
25 Microsoft's IP Ventures	425

x Table of Contents

26	Abraaj Capital	447
27	Actis: January 2008	479
28	The Blackstone Group's IPO	500
APPENDIX Note on Private Equity Information Sources		527
GLOSSARY		545
INDEX		553

Private Equity Today and Tomorrow

During the past three decades, a tremendous boom has occurred in the private equity industry. The pool of worldwide private equity funds—partnerships specializing in venture capital, leveraged buyouts, mezzanine investments, build-ups, distressed debt, and related investments—has grown from under \$10 billion in 1980 to roughly \$2.5 trillion at the end of 2010.¹

Despite this growth, many questions about private equity remain unanswered, and many of its features continue to be mysterious. How do venture capital (VC) and buyout funds create value? What explains the tremendous growth in these funds? What explains the process of boom and bust: the rapid increases in fund-raising in the late 1960s, mid-1980s, late 1990s, and mid-2000s, and the precipitous declines in the 1970s, early 1990s, and early and late 2000s? To what extent is the model developed and refined over the past several decades likely to be translated successfully into other countries and types of investments? This volume explores these exciting and important questions.

WHAT IS PRIVATE EQUITY?

A natural first question is what constitutes a private equity fund. Many start-up companies require substantial capital. A company's founder may not have sufficient funds to finance these projects alone, and therefore must seek outside financing. Entrepreneurial companies that are characterized by significant intangible assets, expect years of negative earnings, and have uncertain prospects are unlikely to receive bank loans or other debt financing. Similarly, troubled companies that need to undergo restructurings may find external financing difficult to raise. Private equity organizations finance these high-risk, potentially high-reward projects. They protect the value of their equity stakes by undertaking careful due diligence before making the investments and by retaining powerful oversight rights afterward.

Typically, these investors raise the bulk of their funds from institutions and individuals rather than investing their own capital. Large institutional investors, such as pension funds and university endowments, are likely to want illiquid long-run investments that promise above-market returns—such as private equity—in their portfolios. Often, these groups have neither the staff nor the expertise to make such investments themselves.

In its initial decades, the private equity industry was a predominantly American phenomenon. It had its origins in the family offices that managed the wealth of high-net-worth individuals in the last decades of the nineteenth century and the first decades of the twentieth. Wealthy families such as the Phippses, Rockefellers, Vanderbilts, and Whitneys

invested in and advised a variety of business enterprises, including the predecessor entities to AT&T, Eastern Airlines, McDonnell Douglas, and W.R. Grace. Gradually, these families began involving outsiders to select and oversee those investments.

The first formal private equity firm, however, was not established until after World War II. American Research and Development (ARD) was formed in 1946 by MIT President Karl Compton, Harvard Business School Professor Georges F. Doriot, and Boston business leaders. A small group of venture capitalists made high-risk investments into emerging companies that were based on technology developed for World War II. The success of the investments ranged widely: almost half of ARD's profits during its 26-year existence as an independent entity came from its \$70,000 investment in Digital Equipment Company in 1957, which grew in value to \$355 million. Because institutional investors were reluctant to invest, ARD was structured as a publicly traded, closed-end fund and marketed mostly to individuals. The few other venture organizations begun in the decade after ARD's formation were also structured as closed-end funds.

The first VC limited partnership, Draper, Gaither and Anderson, was formed in 1958. Imitators soon followed, but limited partnerships accounted for a minority of the venture pool during the 1960s and 1970s. Most venture organizations raised money either through closed-end funds or small business investment companies (SBICs), federally guaranteed risk-capital pools that proliferated during the 1960s. While the market for SBICs in the late 1960s and early 1970s was strong, incentive problems ultimately led to the collapse of the sector. The annual flow of money into private equity during its first three decades never exceeded a few hundred million dollars and usually was substantially less. During these years, while a few funds made a considerable number of investments in buyouts and other transactions involving mature companies, private equity organizations were universally referred to as VC funds.

The activity in the private equity industry increased dramatically in late 1970s and early 1980s. Industry observers attributed much of the shift to the U.S. Department of Labor's clarification of the Employee Retirement Income Security Act (ERISA) "prudent man" rule in 1979. Before that year, the legislation limited the ability of pension funds to invest substantial amounts of money into venture capital or other high-risk asset classes. The Department of Labor's clarification of the rule explicitly allowed pension managers to invest in high-risk assets, including private equity. Numerous specialized funds—concentrating in areas such as leveraged buyouts, mezzanine transactions, and such hybrids as venture leasing—sprang up during these years. Another important change in the private equity industry during this period was the rise of the limited partnership as the dominant organizational form.

The subsequent years saw both very good and trying times for private equity investors. On the one hand, the 1980s saw venture capitalists back many of the most successful high-technology companies, including Cisco Systems, Genentech, Microsoft, and Sun Microsystems. Numerous successful buyouts—such as Avis, Beatrice, Dr. Pepper, Gibson Greetings, and McCall Pattern—garnered considerable public attention during that period. At the same time, commitments to the private equity industry during this decade were very uneven. The annual flow of money into VC funds increased by a factor of ten during the first half of the 1980s but steadily declined from 1987 through 1991. Buyouts underwent an even more dramatic rise through the 1980s, followed by a precipitous fall at the end of the decade.

Much of this pattern was driven by the changing fortunes of private equity investments. Returns on VC funds had declined sharply in the mid-1980s after being exceedingly attractive in the 1970s. This fall was apparently triggered by overinvestment in a few industries, such as computer hardware, and the entry of many inexperienced

venture capitalists. Buyout returns underwent a similar decline in the late 1980s, due largely to the increased competition between groups for transactions. As investors became disappointed with returns, they committed less capital to the industry.

The 1990s saw these patterns repeated on an unprecedented scale. Much of the decade saw dramatic growth and excellent returns in almost every part of the private equity industry. This recovery was triggered by several factors. The exit of many inexperienced investors at the beginning of the decade ensured that the remaining groups faced less competition for transactions. The healthy market for initial public offerings during much of the decade meant that it was easier for all investors to exit private equity transactions. Meanwhile, the extent of technological innovation—particularly in information-technology-related industries—created extraordinary opportunities for venture capitalists. New capital commitments to both venture and buyout funds rose in response to these changing circumstances, increasing to record levels by the late 1990s and 2000.

But as is often the case, the growth of private equity increased at a pace that could not be sustained. Institutional and individual investors—attracted especially by the tremendously high returns enjoyed by venture funds—flooded money into the industry. In many cases, firms staggered under the weight of capital. In other cases, firms that should not have raised capital succeeded in garnering considerable funds. Excessive growth led to overstretched partners, inadequate due diligence, and in many cases, poor investment decisions. The first years of the twenty-first century saw the VC industry address this legacy, and appropriately “scaling” the firm has become a major topic of concern.

Meanwhile, the buyout sector underwent a tremendous boom between 2004 and 2007. Fueled by the increased appetite of institutional investors for alternative investments; a greater willingness of boards of directors and managers to sell to private equity groups, primarily buyout firms; and—last but not least—a wave of debt on generous terms and with few protective covenants; the industry experienced explosive growth. As in many earlier booms, as the influx in capital continued, valuations rose and standards for undertaking deals in many cases fell. It was not surprising to industry observers, then, that the financial crisis of 2007–2008 triggered a major downturn in the market. Even more surprising was the speed of recovery: by 2011, many of the troubled investments had been restructured, and a considerable number of transactions were exited through secondary buyouts or initial public offerings. “Covenant-lite” lending from banks had returned with a vengeance.

But while the booms and busts in private equity investment have attracted the bulk of public attention, private equity funds themselves have undergone a number of changes. Private equity organizations, while in the business of funding innovation, have been remarkably steadfast in retaining the limited partnership structure since the mid-1960s. In recent years, however, a flurry of experimentation has taken hold in the industry as firms try to resolve the question of structure and scale. Among the changes have been the establishment of affiliate offices or entire funds in different regions and the expansion of the products offered by buyout firms to include real estate, mezzanine, distressed debt, and bond funds.

What explains these sudden changes on the part of the major private equity groups in recent years? We believe that they reflect a more fundamental shift in the industry, as private equity groups struggle to address the increasing efficiency of their investing. Facing increased competition, they are seeking new ways to differentiate themselves.

Evidence of the increased efficiency of the private equity industry can be seen in many places. While private equity for most of its first decades had the flavor of a cottage

industry with a considerable number of relatively small firms working alongside one another, today it is much more competitive.

Given this changed competitive environment, the leading firms are increasingly seeking to differentiate themselves from the mass of other investors. They are employing a variety of tools to build up and burnish their “brands,” which will help distinguish themselves from other investors. These steps include the strategic partnerships, the international operations, the provision of additional services, and the aggressive fundraising described earlier, as well as many other initiatives to extend their visibility in the United States and abroad.

To be sure, private equity is not unique in this transformation. For instance, the investment banking industry underwent a similar evolution in the 1950s and 1960s as the leading “bulge bracket” firms solidified their leadership positions. The gap between the leading banks and the following ones greatly increased during these years, when the leading groups greatly enhanced their range of activities and boosted their hiring of personnel. The management of these major banks was similarly transformed during these years, as procedures were systematized and management structures formalized.

WHY IS PRIVATE EQUITY NEEDED?

Private equity plays a critical role in the American economy, and increasingly elsewhere around the globe as well. The types of companies financed by private equity organizations—whether young start-ups hungry for capital or ailing giants that need to restructure—pose numerous risks and uncertainties that discourage other investors.

In this section, we first review the risks that these companies pose. We then consider briefly how private equity organizations address these problems. Finally, we discuss why other financiers, such as banks, often cannot address these problems as effectively as private equity firms.

The financing of young and restructuring companies is a risky business. Uncertainty and informational gaps often characterize these organizations, particularly in high-technology industries. These information problems make it difficult to assess these companies and permit opportunistic behavior by entrepreneurs after the financing is received.

To briefly review the types of conflicts that can emerge in these settings, conflicts between managers and investors (“agency problems”) can affect the willingness of both debt and equity holders to provide capital. If the firm raises equity from outside investors, the manager has an incentive to engage in wasteful expenditures (e.g., lavish offices) because he may benefit disproportionately from these but does not bear their entire cost. Similarly, if the firm raises debt, the manager may increase risk to undesirable levels. Because providers of capital recognize these problems, outside investors demand a higher rate of return than would be the case if the funds were internally generated.²

Additional agency problems may appear in the types of entrepreneurial companies in which private equity firms invest. For instance, entrepreneurs might invest in strategies, research, or projects that have high personal returns but low expected monetary payoffs to shareholders: consider a biotechnology company founder who chooses to invest in a certain type of research that brings him great recognition in the scientific community but provides little return for the venture capitalist. Similarly, entrepreneurs may receive initial results from market trials that indicate little demand for a new product, but they may want to keep the company going because they receive significant private benefits from managing their own firm.

Even if the manager is motivated to maximize shareholder value, information gaps may make raising external capital more expensive or even preclude it entirely. Equity

offerings of companies may be associated with a “lemons” problem: if the manager is better informed about the company’s investment opportunities and acts in the interest of current shareholders, then he will issue new shares only when the company’s stock is overvalued. Indeed, numerous studies have documented that stock prices decline upon the announcement of equity issues, largely because of the negative signal sent to the market. This lemons problem leads investors to be less willing to invest in young or restructuring companies, or even to invest in the stock market at all. Similar information problems have also been shown to exist in debt markets.³

More generally, the inability to verify outcomes makes it difficult to write contracts that are contingent upon particular events. This inability makes external financing costly. Many economic models⁴ argue that when investors find it difficult to verify that certain actions have been taken or certain outcomes have occurred—even if they strongly suspect the entrepreneur has acted in a way that was counter to their original agreement, they cannot prove it in a court of law—external financing may become costly or difficult to obtain.

If the information problems could be eliminated, these barriers to financing would disappear. Financial economists argue that specialized intermediaries, such as private equity organizations, have developed skills to address these problems. By intensively scrutinizing companies before providing capital and then monitoring them afterward, they can alleviate some of the information gaps and reduce capital constraints. Thus it is important to understand the tools that private equity investors use in this difficult environment and that enable companies ultimately to receive the financing that they cannot raise from other sources. The nonmonetary aspects of private equity are critical to its success. These tools—the screening of investments, the use of convertible securities, the syndication and staging of investments, and the provision of oversight and informal coaching—are highlighted in the second module of this book.

What prohibits other financial intermediaries (e.g., banks) from undertaking the same sort of monitoring? While it is easy to see why individual investors may not have the expertise to address these types of agency problems, it might be thought that bank credit officers could undertake this type of oversight. Yet even in countries with exceedingly well-developed banking systems, such as Germany and Japan, policymakers today are seeking to encourage the development of a private equity industry to ensure more adequate financing for risky entrepreneurial companies.

The limitations of banks stem from several of their key institutional features. First, because regulations in the United States limit banks’ ability to hold shares, they cannot freely use equity to fund projects. Taking an equity position in the company allows the private equity firm to share proportionately in the upside, guaranteeing that the investor benefits if the company succeeds. Second, banks may not have the necessary skills to evaluate projects with few tangible assets and significant uncertainty. In addition, banks in competitive markets may not be able to finance high-risk projects because they are unable to charge borrowers rates high enough to compensate for the company’s riskiness. Finally, private equity firms’ high-powered compensation schemes give these investors incentives to monitor companies more closely because their individual compensation is closely linked to the company’s success and thus to their firms’ returns. Banks, corporations, and other institutions that have sponsored venture funds without such high-powered incentives have found it difficult to retain personnel, once the investors have developed a performance record that enables them to raise a fund of their own.⁵

At the same time, it is important to highlight that private equity—especially the role of buyout funds—has stirred considerable fear and uncertainty. This has been manifested in the numerous proposals to tax and regulate the industry that have been enacted or are being considered today by legislators worldwide the Alternative

Investment Fund Manager directive, enacted by the European Parliament in late 2010, is the most visible example. In some cases, this legislation is being prompted by reasonable concerns about an increasingly influential and opaque financial intermediary that existing rules are not designed to handle. In other cases, however, initiatives seem motivated by the desire of entrenched actors to protect an inefficient status quo.

ABOUT THIS VOLUME

This volume is based on a course introduced at Harvard Business School in the 1993–1994 academic year. The Venture Capital and Private Equity course has attracted students interested in careers as private equity investors, as managers of entrepreneurial companies, or as investment bankers or other intermediaries who work with private equity firms and the companies that they fund. These cases have also been used in a variety of other settings, such as executive education courses at Harvard and graduate and undergraduate entrepreneurship courses at many other business schools. This fifth edition has been extensively revised to reflect the many changes in the industry in recent years.

A natural question for a reader to ask is what he or she will learn from this volume. This casebook makes four major points:

1. *The private equity industry is complex.* Participants in the private equity industry make it even more complicated by using a highly specialized terminology. These factors often make the world of venture capital and buyout investing appear impenetrable to the uninitiated. Understanding the ways in which private equity firms work—as well as the key distinctions between these organizations—is an important goal.
2. *Private equity investors face the same problems that other financial investors do, but in extreme form.* An understanding of the problems faced in private equity—and the ways that these investors solve them—should provide more general insights into the financing process. Thus, a second goal is to review and apply the key ideas of corporate finance in this exciting setting.
3. *The process of valuation is critical in private equity.* Disputes over valuation—whether between an entrepreneur and a venture capitalist or between a private equity firm raising a new fund and a potential investor—are commonplace and stem from the fact that valuing early-stage and restructuring companies can be very challenging and highly subjective. This casebook explores a wide variety of valuation approaches, from techniques widely used in practice to methods less frequently seen in practice today but likely to be increasingly important in the future years.
4. *The private equity industry is on the cusp of enormous change.* Buyout firms are raising funds of close to \$15 billion; the sizes of venture funds are rising again toward the \$1 billion mark. Private equity firms have established international operations on levels previously unprecedented. This casebook explores different approaches that firms are using to manage portfolios and offices that are global in scope and imply flows of funds on an international scale that was unthinkable even 3 years ago.

The volume is divided into four modules. The organization of Modules 1 through 3 mirrors that of the private equity process, which can be viewed as a cycle. The cycle starts with the raising of a private equity fund; proceeds through investing in, monitoring, and adding value to companies; and continues as the private equity firm exits successful deals and returns capital to its investors and the cycle renews itself with the seeking of

additional funds. Module 4 considers the challenges facing private equity firms as they try to institutionalize and expand the private equity model internationally. Each module begins with an overview presenting the themes and approaches of the section. Different classes, however, may choose to use this volume in different ways.⁶ Thus it may be helpful to summarize the organization of the volume briefly at the outset.

Module 1 of *Venture Capital and Private Equity* examines how private equity funds are raised and structured. These funds often have complex features, and the legal issues involved are frequently arcane. But the structure of private equity funds has a profound effect on the behavior of venture and buyout investors. Consequently, it is as important for the entrepreneur raising private equity to understand these issues as it is for a partner in a fund. The module seeks not only to understand the features of private equity funds and the actors in the fund-raising process but also to analyze them. We map out which institutions serve to increase the profits from private equity investments as a whole, and which seem designed mostly to shift profits *between* the parties.

In Module 2 of the volume, we consider the interactions between private equity investors and the entrepreneurs that they finance. These interactions are at the core of what private equity investors do. We seek to understand these interactions through two perspectives.

We first consider how the activities undertaken by private equity organizations are a response to the challenges posed by the companies in their portfolios. We highlight how companies in a private equity portfolio typically present three critical problems that make it difficult for them to meet their financing needs through traditional mechanisms, such as bank loans. Module 2 illustrates these approaches with examples from a wide variety of industries and private equity transactions.

Next we emphasize the influence of the context in which the private equity organization finds itself. There is typically no one “right” investment decision. Rather, the proper response to any given situation reflects the circumstances of the private equity firm, such as the extent to which successful fund-raising in the future can be assured, the composition of the current portfolio, and the experience of the individual investment professionals. Portfolio management itself has become a more significant concern recently as the market becomes more transparent and the ability to structure deals becomes more of a commodity.

Module 3 of *Venture Capital and Private Equity* examines the process through which private equity investors exit their investments. Successful exits are critical to ensuring attractive returns for investors and, in turn, to raising additional capital. But private equity investors’ concerns about exiting investments—and their behavior during the exit process itself—can sometimes lead to severe problems for entrepreneurs. In this module, we employ an analytic framework very similar to that used in the first module. We seek to understand which institutional features associated with exiting private equity investments increase the overall amount of profits from private equity investments, and which actions seem to be intended to shift more of the profits to particular parties.

In Module 4, the final module, we consider the future of the private equity industry. We highlight several examples of firms that are grappling with the changing competitive environment, whether by reorganizing their structure or creating affiliates, especially in light of international expansion. We also consider efforts to transplant the venture model into other settings, and finally, we look at how private equity firms make decisions. These cases allow us not only to explore the future of the private equity industry but also to review the key themes developed during the course.

At the same time, it is important to emphasize the many opportunities for learning about venture capital and private equity outside of this volume. The four module notes—