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Venture Capital and Private Equity: A Course Overview

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Abstract. This paper describes a course exploring the private equity industry, "Venture Capital and Private Equity". The goals of this article are two-fold: to make the structure and content of the class available to a broader audience beyond the audience of MBAs and executives to whom it has been offered and to promote the development and diffusion of courses on private equity, both in the United States and abroad. The paper describes the course's objectives, structure and future directions.

Keywords: entrepreneurial finance, education, course development.

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1. Introduction

This paper describes a course exploring the private equity industry, "Venture Capital and Private Equity." The paper describes the course's objectives, structure and future directions.

The author introduced this course at Harvard Business School in the 1993-1994 academic year. Since that time, over 2000 students have enrolled in the course at Harvard.[1] In 2003, for instance, three full sections, each of approximately 100 MBAs and others[2], have signed up for the course, with a significant waiting list. In this academic year, as it earlier ones, this is one of the five largest elective courses at Harvard Business School. The cases in this course - or the casebook that collects them (Lerner (1999), Lerner and Hardymon (2001)) - have also been used in a variety of other settings,

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1. We have not compiled any comprehensive statistics on the career paths of the MBAs who have taken the class. From informal contacts, however, it is clear that graduates of the class have taken positions with many of the largest private equity groups, both within and outside the United States. A number of graduates have played key roles in founding pioneering private equity firms in Asia and Europe. In addition, many graduates interact with these investors while working at consulting, entrepreneurial, or investment banking firms.
2. Approximately 5% of the seats are reserved for cross-registrants from Harvard's medical, law, and other graduate schools, as well as from other local schools.

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including an annual executive education course on private equity organized by Paul Gompers and the author at Harvard Business School, and in entrepreneurship and private equity courses at a variety of schools, including Dartmouth College, London Business School, Northwestern University, the University of Chicago, and the University of Pennsylvania.[3]

The goals of this article are two-fold:

- First, I wish to make the structure and content of the class available to a broader audience beyond the audience of MBAs and executives to whom it has been offered.

- Second, I hope to promote the development and diffusion of courses on private equity, both in the United States and abroad.

Three primary pedagogical objectives motivate the design and structure of the course. First, and most fundamentally, the course seeks to deepen students' understanding of corporate finance. This course differs from some academic programs in entrepreneurship, which emphasize the uniqueness of private equity finance and the limited applicability of academic theory. By way of contrast, this course emphasizes the relevance of the intellectual frameworks used to analyze corporate finance problems (incomplete contracting theory, agency problems, etc.) for the private equity industry. Wherever possible, the links to other finance courses are emphasized. Thus, one goal is to review and apply the key concepts and tools of corporate finance in an environment that the students perceive as very interesting.

Second, the course seeks to build familiarity with the key institutional features of the private equity industry. Whether discussing fund structures, potential investments, or returns, participants in the private equity industry often describe phenomena in language that is somewhat different from other financial investors. Understanding the key frameworks employed by private equity investors, and relating them to traditional finance practice, is thus an important goal. Among the critical issues that students gain appreciation is the process of career management in the private equity industry.

Finally, a crucial objective is to build an appreciation of the valuation process in the private equity setting. Valuation issues are often the subject of contentious disputes. Industry practice, reflecting private equity's early state of

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3. The classes at the fifteen top-ranked business schools with significant content about the venture capital and/or private equity industries are listed in Table 1 in Appendix 2 (page 384). Private equity classes at other business schools have primarily followed two models. Some courses have focused fairly sharply on the private equity industry, as this course does. Others have include in the curriculum sessions on entrepreneurs and their challenges, material that is included in the "Entrepreneurial Finance" and "The Entrepreneurial Manager" classes at Harvard Business School.

evolution relative to many other financial sectors, can often appear to the outside observer as sloppy and not standardized. Skill in analyzing value is likely to be an increasingly important competitive skill in the private equity industry. This course consequently introduces a wide array of valuation methodologies. These include approaches commonly seen in practice (e.g., the use of comparables and the "venture capital" method) as well as those less frequently employed but likely to be useful nonetheless (the use of Monte Carlo simulations and option pricing techniques). The course emphasizes not only the mechanisms employed, but also how to clearly communicate the strengths and limitations of each approach.

The plan of this paper is as follows. Section 1 briefly reviews the changes in the private equity industry. Section 2 describes the course's objectives. Section 3 describes the organization of the class. Section 4 concludes the paper.

2. The Backdrop

Over the past two decades, there has been a tremendous boom in the private equity industry.[4] The pool of U.S. private equity funds - partnerships specializing in venture capital, leveraged buyouts, mezzanine investments, build-ups, and distressed debt - has grown from $5 billion in to about $300 billion at the beginning of 2003. Private equity's recent growth has outstripped that of almost every class of financial product.

While the growth in private equity has been striking, the potential for future development is even more impressive. Despite its growth, the private equity pool today remains relatively small. For every one dollar of professionally managed private equity in the portfolio of U.S. institutional investors, there are about $30 of publicly traded equities.

These patterns are even more dramatic overseas.[5] Recent rates of growth in many foreign private equity markets have outstripped the United States by a wide margin. At the same time, the size of foreign private equity pool remains far below the United States. This suggests considerable possibilities for future growth. The disparity can be illustrated by comparing the ratio of the private equity investment to the size of the economy (Gross Domestic Product). In 1998, this ratio was about 17 times higher in the United States

4. This section on the private equity industry is of necessity very abbreviated. For a much more detailed treatment, including references to the relevant academic finance, legal and practitioner literature, please see Lerner and Hardymon (2001).
5. These statistics are taken from the European Venture Capital Association (2000), Asian Venture Capital Journal (2000) and World Bank (2000).

than in East and South Asia, and almost three-and-a-half times higher in the United States than in Western Europe.

At the same time, the private equity industry - both in the United States and internationally - has been quite turbulent. A strategy of investing in the average venture and buyout fund at a pace that tracked the U.S. market between 1980 and 1999 would have yielded returns below those from investments in most public equity markets (Venture Economics (2000)). Due to the illiquidity and risk of private equity, we would expect instead a *higher* return. These poor returns largely stemmed from funds begun in the 1980s, when a large number of private equity investors raised first funds, and established organizations aggressively expanded. Many of the new funds could not find satisfactory investments, while rapid growth created turmoil at some established organizations. The early 1990s saw far fewer funds raised and rising returns. With the recent growth in private equity fundraising, it is likely that the dynamics seen in the 1980s will be repeated.

This cycle of growth and disillusionment has created much instability in the industry. Understanding these patterns - and their impact on investor behavior - are critical whether students intend to work for, receive money from, underwrite the offerings of, or invest in or alongside private equity funds.

3. Course Objectives

Three primary pedagogical objectives motivate the design and structure of the course. (The course outline is listed in the Appendix.) First, and most fundamentally, the course seeks to deepen students' understanding of corporate finance. This course differs from some academic programs in entrepreneurship, which emphasize the uniqueness of private equity finance and the limited applicability of academic theory. For instance, one leading entrepreneurship text (Timmons (1994), p. 447) states:

> There are both stark and subtle differences, both in theory and practice, between entrepreneurial finance as practiced in higher potential ventures and corporate or administrative finance, which usually occurs in larger publicly traded companies. Further, there are important limits to some financial theories as applied to new ventures.

By way of contrast, this course emphasizes the relevance of the intellectual frameworks used to analyze corporate finance problems (incomplete contracting theory, agency problems, etc.) for the private equity industry. Wherever possible, the links to both First-Year Finance and many of the elective second-year finance courses at Harvard Business School are emphasized. Thus, one goal is to review and apply the key concepts and tools

of corporate finance in an environment that the students perceive as very interesting.

Second, the course seeks to build familiarity with the key institutional features of the private equity industry. Whether discussing fund structures, potential investments, or returns, participants in the private equity industry often describe phenomena in language that is somewhat different from other financial investors. Understanding the key frameworks employed by private equity investors, and relating them to traditional finance practice, is thus an important goal. A related objective is building an appreciation for the gradations inherent in the industry. Students often consider the private equity industry as an undifferentiated whole, without appreciating the very significant differences in the standards and practices that exist between these groups. An appreciation of the many important differences between these groups is an important lesson.

Three of the cases in the course - used in the introduction, middle, and conclusion of the class - focus on a particular institutional aspect: career management. The private equity industry has traditionally devoted limited resources to training new hires. These cases, which focus on the selection of a private equity group to work for, the early job responsibilities of a new associate, and the career path from new employee to general partner, help address this gap.

Finally, a crucial objective is to build an appreciation of the valuation process in the private equity setting. Valuation issues are often the subject of contentious disputes, whether the context is assessing the relative past returns of several private equity groups, determining the impact of a shift in a buyout fund's fee structure, allocating equity in a start-up to management and one or more private equity groups, or assessing the impact of a "sweetener" of warrants (a grant of warrants in addition to a block of equity) on the price paid per share by private equity investors. Industry practice, reflecting private equity's early state of evolution relative to many other financial sectors, can often appear to the outside observer as sloppy and not standardized. Skill in analyzing value is likely to be an increasingly important competitive skill in the private equity industry.

This course consequently introduces a wide array of valuation methodologies. These methodologies range from approaches commonly seen in practice (e.g., the use of comparables and the "venture capital" method) to those less frequently employed but likely to be useful nonetheless (the use of Monte Carlo simulations and option pricing techniques). The course emphasizes not only the mechanisms employed, but also how to clearly communicate the strengths and limitations of each approach. These discussions are facilitated by the use of Harvard Business School's electronic infrastructure. For a typical class, a spreadsheet containing the case problems is posted on the School's intranet prior to class, the class discussion includes

an analysis of the spreadsheet (with the spreadsheet simultaneously projected on the central screen), and the fully worked analysis is posted on the intranet immediately after class.

The intellectual origins of this course are two-fold. First, there has been a growing amount of both theoretical and empirical research into the private equity industry over the past decade, which seeks to apply the more general frameworks of corporate finance in these settings.[6] The course seeks to build drawn upon and illustrate these frameworks wherever possible.

Second, there has been a long tradition of entrepreneurship education at the Harvard Business School. These classes date back to the introduction of "Management of New Enterprises" by Myles Mace in 1947. "Venture Capital and Private Equity" complements a number of courses that focus on the perspective and experience of entrepreneurs, such as "Entrepreneurial Finance," "Entrepreneurial Management," and "Starting New Ventures."

4. Course Organization

This section reviews the structure of the modules in considerable detail, as well as the intellectual frameworks underlying them. For the reader who wishes to skip over these detailed descriptions, we first briefly summarize the four parts of the course.

The first module of "Venture Capital and Private Equity" examines how private equity funds are raised and structured. The structures of private equity funds have profound effects on the behavior of venture and buyout investors. The module seeks not only to understand the features of private equity funds and the actors in the fundraising process, but also to analyze 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.

The second module of the course considers the interactions between private equity investors and the entrepreneurs that they finance. The course approaches these interactions through a two-part framework, first identifying the critical factors that make it difficult for the types of firms backed by private equity investors to meet their financing needs through traditional mechanisms, and then considering the influence of the circumstances of the private equity organization itself.

The third module of "Venture Capital and Private Equity" examines the process through which private equity investors exit their investments. Successful exits are critical to insuring attractive returns for investors, but private equity investors' behavior around the exiting process can sometimes

6. Much of this research is reviewed in Fenn, Liang and Prowse (1995) and Gompers and Lerner (1999).

lead to severe problems for entrepreneurs. 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.

The final module reviews many of the key ideas developed in the course. Rather than considering traditional private equity organizations, however, the two cases examine organizations with very different goals, examining funds established by a large corporation and a non-profit organization. These cases allow us not only to understand these challenging initiatives, but also to review the elements that are crucial to the success of traditional private equity organizations.

4.1. Module 1: Private Equity Fundraising and Partnerships

The first module 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 important to understand these issues, whether the students intend to work for, receive money from, or invest in or alongside private equity funds.

The module seeks not only to understand the features of private equity funds and the actors in the fundraising process, but also to analyze them. We map out which institutions serve primarily to increase the profits from private equity investments as a whole, and which seem designed mostly to shift profits *between* the parties. We seek to understand the functions of and reasons for each aspect of private equity fundraising. In this way, students develop their ability to analyze a wide variety of contractual arrangements.

4.2.1. Why This Module?

The structuring of venture and buyout funds may initially appear to be a complex and technical topic, one better left to legal specialists than general managers. Private equity partnership agreements are complex documents, often extending for hundreds of pages. Practitioner discussions of the structure of these firms are rife with obscure terms such as "reverse claw-backs."

But the subject is an important one. For the features of private equity funds - whether management fees, profit sharing rules, or contractual terms - have a profound effect on the behavior of these investors. It is clearly important to understand these influences if one works for a private equity fund. But an

understanding of these dynamics is also valuable for the entrepreneur financing his company through these investors, the investment banker underwriting a firm backed by private equity funds, the corporate development officer investing alongside venture capitalists in a young company, and the pension fund manager placing her institution's capital into a fund.

An example may help to illustrate this point. Almost all venture and buyout funds are designed to be "self-liquidating": *i.e.*, to dissolve after ten or twelve years. The need to terminate each fund imposes a healthy discipline, forcing private equity investors to take the necessary-but-painful step of terminating underperforming firms in their portfolios. (These firms are sometimes referred to as the "living dead" or "zombies.") But the pressure to raise an additional fund can sometimes have less pleasant consequences. Young private equity organizations frequently rush young firms to the public marketplace in order to demonstrate a successful track record, even if the companies are not ready to go public. This behavior, sometimes known as "grandstanding," can have a harmful effect on the long-run prospects of the firms dragged prematurely into the public markets (Gompers (1996)).

Second, the study of these arrangements can provide insights into a wide range of contractual frameworks. An extensive literature, spurred by the formalization of "incomplete contracting" theory by Sanford Grossman, Oliver Hart, John Moore, and others, has in recent years examined the contractual relationships between principals and agents in a wide variety of settings.[7] The negotiations of private equity partnership agreements is a particular stark setting, which makes it suitable for examining many of these issues. In particular, the structuring of private equity partnerships and their investments into portfolio firms provide insights into the parallels to and limitations of the approaches to corporate governance taken by investors in publicly traded firms.[8]

A final rationale for an examination of the concerns and perspectives of institutional investors and intermediaries is that they provide an often-neglected avenue into the private equity industry. Many students diligently pursue positions at the traditional private equity organizations, but neglect other routes to careers as private equity investors. A position evaluating private equity funds and putting capital to work in these organizations is likely to lead to a network of relationships with private equity investors that may eventually pay handsome dividends.

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7. These are reviewed, for instance, in Hart (1995) and Tirole (1989).
8. This point is emphasized, for instance, in Jensen (1993) and Shleifer and Vishny (1997).

4.1.2. The Framework

There are a wide array of actors in the private equity fundraising drama. Investors - whether pension funds, individuals, or endowments - each have their own motivations and concerns. These investors frequently hire intermediaries. Sometimes these "gatekeepers" play a consultative role, recommending attractive funds to their clients. In other cases, they organize "funds-of-funds" of their own. Specialized intermediaries concentrate on particular niches of the private equity industry, such as buying and selling interests in limited partnerships from institutional investors. In addition, venture and buyout organizations are increasingly hiring placement agents who facilitate the fundraising process.

This module examines each of these players. Rather than just describing their roles, however, we highlight the rationales for and impacts of their behavior. Some institutions and features have evolved to improve the efficiency of the private equity investment process, while others appear to be designed primarily to shift more of the economic benefits to particular parties.

Many of the features of private equity funds can be understood as responses to this uncertain environment, rife with many information gaps. For instance, the "carried interest" - the substantial share of profits that are allocated to the private equity investors - helps address these information asymmetries by insuring that all parties gain if the investment does well. Similarly, pension funds hire "gatekeepers" to ensure that only sophisticated private equity funds with well-defined objectives get funded with their capital. Investing in a private equity fund is in some respects a "leap of faith" for institutional investors. Most pension funds and endowments typically have very small staffs. At the largest organizations, a dozen professionals may be responsible for investing several billion dollars each year. Meanwhile, private equity funds undertake investments that are either in risky new firms pursuing complex new technologies or in troubled mature companies with numerous organizational pathologies and potential legal liabilities.

At the same time, other features of private equity funds can be seen as attempts to *transfer* wealth between parties, rather than efforts to increase the size of the overall amount of profits generated by private equity investments. An example was the drive by many venture capital funds in the mid-1980s - a period when the demand for their services was very strong - to change the timing of their compensation. Prior to this point, venture capital funds had typically disbursed all the proceeds from their first few successful investments to their investors, until the investors had received their original invested capital back. The venture capitalists would then begin receiving a share of the subsequent investments that they exited. Consider a fund that had raised capital of $50 million, whose first three successful investments yielded $25 million each. Under the traditional arrangement, the proceeds from the first two

offerings would have gone entirely to the institutional investors in their fund. The venture capitalists would have only begun receiving a share of the proceeds at the time that they exited the third investment.

In the mid-1980s, venture capitalists began demanding - and receiving -. the right to start sharing in even the first successfully exited investments. The primary effect of this change was that the venture capitalists began receiving more compensation early in their funds' lives. Put another way, the net present value of their compensation package increased considerably. It is not surprising, then, that as the inflow into venture capital weakened in the late 1980s, institutional investors began demanding that venture capitalists return to the previous approach of deferring compensation.

This twin tension - between behavior that increases the size of the "pie" and actions that simply change the relative sizes of the slices - runs through this module. We attempt to both understand the workings of and the reasons for the key features of these funds using this framework.

4.1.3. The Structure of the Module

The first half of the module introduces the key elements of the private equity fundraising process. We begin with a case that looks at the Yale endowment, which has allocated much of its capital to private equity funds (with an allocation of nearly 25% in mid-2000) and generated huge returns from this strategy over the past decades. Among the actors whose structure and concerns we examine are institutions, private equity investors, "funds-of-funds," and "gatekeepers." We put particular emphasis on the agreements that bring these parties together into limited partnerships.

Because they play such an important role in shaping behavior, compensation terms are an especial focus. For instance, in the Acme case, we consider the decision of Warburg, Pincus to cut its carried interest (the share of the profits it receives) and raise its management fees. The financial impact of this move, the signaling implications, and the likely effect on incentives are all considered.

The second half of the module looks at the raising of a variety of funds by private equity organizations. We look at private equity organizations of very different maturities and with varied investment targets. The funds that emerged from these circumstances reflected not only the differences between the investments that each fund promised to make, but also each group's ability to persuade - or demand - a better deal from its investors. For example, in the Francisco Partners case, we consider a first-time fund seeking to raise a multi-billion fund to do leveraged buyouts of technology firms. The fundraising strategy, the assessment of the fund as a potential investment, and the terms of the proposed fund are among the issues considered.

4.2. Module 2: Private Equity Investing[9]

The second module of the course considers 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 approach these interactions through a framework that highlights the particular challenges that portfolio firms pose to private equity investors, as well as how the circumstances of the private equity group itself affects the investments.

4.2.1. Why This Module?

It is easy to build a case that the financing and guidance of dynamic private businesses lie at the heart of the private equity process. Nonetheless, addressing the frequently complex interactions between investors and the firms in their portfolios in eight class sessions is a somewhat daunting challenge. To thoroughly examine how venture and buyout investors assess, fund, control, and shape the strategy of firms would certainly be enough to fill several courses!

We approach the cases in this module through a framework that helps us organize these complex interactions. First, we categorize the reasons why the types of firms backed by private equity investors find it difficult to meet their financing needs through traditional mechanisms, such as bank loans. These difficulties can be sorted into four critical factors: uncertainty, asymmetric information, the nature of firm assets, and the conditions in the relevant financial and product markets. At any one point in time, these four factors determine the choices that a firm faces. As a firm evolves over time, however, these factors can change in rapid and unanticipated ways.

We also highlight the manner in which the circumstances of the private equity group can affect the investment decision. In some cases, the need to soon return to limited partners for capital - or an approaching decision as to whether an investment professional is to be promoted to partner - may lead to the rejection of an otherwise attractive transaction. In other cases, concerns about competition from within and outside the private equity industry are leading groups to undertake substantial investments in the services they provide entrepreneurs. These company- and private equity organization-level issues will help organize our analyses of the complex interactions between private equity investors and the firms in their portfolios.

9. The frameworks are explicated in more detail in Gompers and Lerner (2001).

4.2.2. The Framework: the Financing Challenge

Entrepreneurs rarely have the capital to see their ideas to fruition and must rely on outside financiers. Meanwhile, those who control capital - for instance, pension fund trustees and university overseers - are unlikely to have the time or expertise to invest directly in young or restructuring firms. It might be thought that the entrepreneurs would turn to traditional financing sources, such as bank loans and the issuance of public stock, to meet their needs. But a variety of factors are likely to lead to some of the most potentially profitable and exciting firms not being able to access these financing sources.

Private equity investors are almost invariably attracted to firms that find traditional financing difficult to arrange. Why are these firms difficult to finance? Whether managing a $20 million seed investment pool or a $5 billion leveraged buyout fund, private equity investors are looking for companies that have the potential to evolve in ways that create value. This evolution may take several forms. Early-stage entrepreneurial ventures are likely to grow rapidly and respond swiftly to the changing competitive environment. Alternatively, the managers of buyout and build-up firms may create value by improving operations and acquiring other rivals. In each case, the firm's ability to change dynamically is a key source of competitive advantage, but also a major problem to those who provide the financing.

As mentioned above, the characteristics of these dynamic firms are analyzed using a four-factor framework. The first of these, uncertainty, is a measure of the array of potential outcomes for a company or project. The wider the dispersion of potential outcomes, the greater the uncertainty. By their very nature, young and restructuring companies are associated with significant levels of uncertainty. Uncertainty surrounds whether the research program or new product will succeed. The response of firm's rivals may also be uncertain. High uncertainty means that investors and entrepreneurs cannot confidently predict what the company will look like in the future.

Uncertainty affects the willingness of investors to contribute capital, the desire of suppliers to extend credit, and the decisions of firms' managers. If managers are adverse to taking risks, it may be difficult to induce them to make the right decisions. Conversely, if entrepreneurs are overoptimistic, then investors want to curtail various actions. Uncertainty also affects the timing of investment. Should an investor contribute all the capital at the beginning, or should he stage the investment through time? Investors need to know how information-gathering activities can address these concerns and when they should be undertaken.

The second factor, asymmetric information, is distinct from uncertainty. Because of his day-to-day involvement with the firm, an entrepreneur knows more about his company's prospects than investors, suppliers, or strategic partners. Various problems develop in settings where asymmetric information

is prevalent. For instance, the entrepreneur may take detrimental actions that investors cannot observe: perhaps undertaking a riskier strategy than initially suggested or not working as hard as the investor expects. The entrepreneur might also invest in projects that build up his reputation at the investors' expense.

Asymmetric information can also lead to selection problems. The entrepreneur may exploit the fact that he knows more about the project or his abilities than investors do. Investors may find it difficult to distinguish between competent entrepreneurs and incompetent ones. Without the ability to screen out unacceptable projects and entrepreneurs, investors are unable to make efficient and appropriate decisions.

The third factor affecting a firm's corporate and financial strategy is the nature of its assets. Firms that have tangible assets - e.g., machines, buildings, land, or physical inventory - may find financing easier to obtain or may be able to obtain more favorable terms. The ability to abscond with the firm's source of value is more difficult when it relies on physical assets. When the most important assets are intangible, such as trade secrets, raising outside financing from traditional sources may be more challenging.

Market conditions also play a key role in determining the difficulty of financing firms. Both the capital and product markets may be subject to substantial variations. The supply of capital from public investors and the price at which this capital is available may vary dramatically. These changes may be a response to regulatory edicts or shifts in investors' perceptions of future profitability. Similarly, the nature of product markets may vary dramatically, whether due to shifts in the intensity of competition with rivals or in the nature of the customers. If there is exceedingly intense competition or a great deal of uncertainty about the size of the potential market, firms may find it very difficult to raise capital from traditional sources.

4.2.3. The Framework: the Circumstances of Private Equity Investors

While the circumstances of the firm are important, so too are those of the private equity group itself. Three classes of circumstances are among the most influential in shaping private equity organizations' strategies.

In some cases, actions taking in previous fundraising cycles can profoundly shape private equity investments. For instance, a private equity group may commit to investing in certain types of industries or stages at the time that the fund is raised, and consequently be hesitant to deviate from the stated plan. In a similar manner, the allocation of responsibility and compensation at the time that a fund closes may have a substantial impact on the investment decisions made, even if in hindsight the private equity organization would have been far better off with an another arrangement.

In other instances, it is the concerns about the raising of subsequent funds that are critical. For instance, the fact that the venture capital organization will soon be in the market with a new fund may drive it to refinance a troubled portfolio company, in order to avoid a write-off that might lead potential investors to question their performance. Similarly, groups may worry about a series of large failures endangering a private equity organization's "franchise" with limited partners. As a result, they may seek to balance the portfolio between highly risky investments offering the potential for large returns and a number of more modest but safer investments (for instance, syndicated investments in the latter financing rounds of transactions originated by other private equity groups). These concerns are at work not only the organization level, but also among individuals: worries about promotion and relative compensation can also have a profound effect on private equity professionals' decisions.

Finally, concerns about the group's success in persuading top-flight entrepreneurs to choose their capital are important as well. During the early days of the industry, established private equity organizations had the upper hand in bargaining with entrepreneurs: there were relatively few alternatives to venture financing. The pool of private equity was also quite small. As a consequence, when groups found themselves interested in the same transaction, they often chose to share (or "syndicate") the transaction rather than to compete with each other. Today, the situation has changed dramatically. Not only has the amount of private equity expanded sharply, but groups are facing increasing competition from sophisticated angel investors, incubators, and groups of high-net worth investors organized by investment banks and other intermediaries. As a result, leading private equity groups today are increasingly engaging in what might be termed "branding": seeking to dramatically expand the range of services provided to and their visibility among entrepreneurs. Through such steps, the organizations seek to differentiate themselves from competitors within and outside the private equity industry.

4.2.4. The Structure of the Module

This module illustrates these frameworks with examples from a wide variety of private equity funds and industries. We carefully identify the types of problems that emerge in different types of private equity transactions. Another important aspect of this module is to explore the institutional and legal aspects of each type of private equity transaction: venture capital, buyouts, build-ups, and venture leasing. We highlight how private equity organizations employ these mechanisms and react to these regulations to promote success.

Among the specific issues raised in private equity transactions that we consider are:

- The investment criteria and approaches of venture investors. For instance, we consider the situation of Adams Capital Management, a fund that has developed a systematic approach to the assessment and management of transactions. We ask whether such an approach is sustainable in an industry as unpredictable as private equity.

- The alternative criteria and approaches employed by later-stage investors, as well as the associated providers of debt financing to these firms. For instance, in the Metapath case, the differing perspectives of the initial and the follow-on investors lead to a clash about the terms of the transaction.

- The nature of transactions that incorporate elements both of venture capital and buyouts, such as venture leasing and leveraged build-ups.

- The extent to which deal structures can be translated into overseas markets.[10] For instance, in the New Business Investment case, the efforts of the Japanese government to encourage new venture capital firms are considered in the context of a particular transaction.

- The various ways in which valuation issues are addressed, including many of the methodologies specific to the private equity industry and the opportunities for the application of new valuation techniques (including Monte Carlo simulations and option pricing analyses).

- The relationship between financing choices and firm strategy.

- The structure and implementation of relationships with strategic co-investors.

- The restructuring of entrepreneurial ventures in distress.

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10. This course has traditionally had a strong emphasis on the United States, reflecting the fact that the industry originated in that nation and has historically been much more important there. As the private equity industry has grown in Europe and Asia, however, we have sought to place increasing emphasis on these markets. It is our hope to increasingly give the course an international focus in the next few years.

4.3. Exiting Private Equity Investments

The third module of "Venture Capital and Private Equity" examines the process through which private equity investors exit their investments. Successful exits are critical to insuring attractive returns for investors and, in turn, to raising additional capital. But private equity investors' concerns about exiting investments - and their behavior during the exiting process itself - can sometimes lead to severe problems for entrepreneurs.

We employ an analytic framework very similar to that used in the first module of the course. We not only seek to understand the institutional features associated with exiting private equity investments in the United States and overseas, but also to analyze them. We map out which features are designed primarily to 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 the process, we draw on the extensive insights into and studies of the going-public process by financial economists.[11]

4.3.1. Why This Module?

At first glance, the exiting of private equity investments may appear outside the scope of "Venture Capital and Private Equity." It might seem that such issues are more appropriate for courses that focus on public markets. But since the need to ultimately exit investments shapes every aspect of the private equity cycle, this is a very important issue for both private equity investors and entrepreneurs.[12]

Perhaps the clearest illustration of the relationship between the private and public markets was seen during the 1980s and early 1990s. In the early 1980s, many European nations developed secondary markets. These sought to combine a hospitable environment for small firms (e.g., they allowed firms to be listed even if they did not have an extended record of profitability) with tight regulatory safeguards. These enabled the pioneering European private equity funds to exit their investments. A wave of fundraising by these and other private equity organizations followed in the mid-1980s. After the 1987 market crash, initial public offering activity in Europe and the United States dried up. But while the U.S. market recovered in the early 1990s, the European market remained depressed. Consequently, European private equity investors were unable to exit investments by going public. They were required either to continue to hold the firms or to sell them to larger corporations at often-

11. Much of this literature is summarized in Ritter (1998).
12. For a discussion of these relationships, see Black and Gilson (1998) and Aghion, Bolton, and Tirole (2000).

unattractive valuations. While U.S. private equity investors - pointing to their successful exits - were able to raise substantial amounts of new capital, European private equity fundraising during this period remained depressed. The influence of exits on the rest of the private equity cycle suggests that this is a critical issue for funds and their investors.

Concerns about exiting may also adversely affect firms once private equity investors finance them. Less scrupulous investors may occasionally encourage companies in their portfolio to undertake actions that boost the probability of a successful initial public offering, even if they jeopardize the firm's long-run health: e.g., increasing earnings by cutting back on vital research spending. In addition, many private equity investors appear to exploit their inside knowledge when dissolving their stakes in investments. While this may be in the best interests of the limited and general partners of the fund, it may have harmful effects on the firm and the other shareholders.The exiting of private equity investments also has important implications for entrepreneurs. As discussed in the first module, the typical private equity fund is liquidated after one decade (though extensions of a few years may be possible). Thus, if a private equity investor cannot foresee how a company will be mature enough to take public or to sell at the end of a decade, he is unlikely to invest in the firm. If it was equally easy to exit investments of all types at all times, this might not be a problem. But interest in certain technologies by public investors seems to be subject to wide swings. For instance, in recent years "hot issue markets" have appeared and disappeared for computer hardware, biotechnology, multimedia, and Internet companies. Concerns about the ability to exit investments may have led to too many private equity transactions being undertaken in these "hot" industries. At the same time, insufficient capital may have been devoted to industries not in the public limelight.

4.3.2. The Framework of the Analysis

The exiting of private equity investments involves a diverse range of actors. Private equity investors exit most successful investments through taking them public. A wide variety of actors are involved in the initial public offering. In addition to the private equity investors, these include the investment bank that underwrites the offering, the institutional and individual investors who are allotted the shares (and frequently sell them immediately after the offering), and the parties who end up holding the shares.

Few private equity investments are liquidated at the time of the initial public offering. Instead, private equity investors typically dissolve their positions by distributing the shares to the investors in their funds. These distributions usually take place one to two years after the offering. A variety of other intermediaries are involved in these transactions, such as distribution

managers who evaluate and liquidate distributed securities for institutional investors.

This module examines each of these players. Rather than just describing their roles, however, we highlight the rationales for and impacts of their behavior. We again employ the framework of the first module. We assess which institutions and features have evolved to improve the efficiency of the private equity investment process, while which have sprung up primarily to shift more of the economic benefits to particular parties.

Many of the features of the exiting of private equity investments can be understood as responses to these uncertainties. An example is the "lock up" provisions that prohibit private equity investors from selling their shares at the time of the offering. This helps avoid situations where directors exploit their inside knowledge that a newly listed company is overvalued, dumping shares while new investors are buying them.

At the same time, other features of the exiting process can be seen as attempts to transfer wealth between parties. An example may be the instances where private equity funds distribute shares to their investors that drop in price immediately after the distribution. Even if the price at which the investors ultimately sell the shares is far less, the private equity investors use the share price *before* the distribution to calculate their fund's rate of return and to determine when they can begin profit sharing.

4.3.3. The Structure of the Module

This module examines this important topic over several class sessions. We begin by exploring the need for avenues to exit private equity investments. To do this, we examine Europe's private equity markets. We consider the difficulties encountered by Investitori Associati, a young buyout fund that is trying to undertake its first initial public offering. As described above, the inability to exit investments has historically been a major stumbling block to the development of the European private equity industry.

We then examine the exiting of private equity investments in the United States. We examine the efforts of RogersCasey Alternative Investments to address the inefficiencies of the stock distribution process. We explore both the rationales for stock distributions and the implications for private equity investors, entrepreneurs, firms, limited partners, and the specialized distribution managers that they hire. Once again, we seek to assess which behavior increases the size of the "pie" and which actions simply change the relative sizes of the slices.

4.4. Module 4: Course Review

The final module reviews many of the key ideas developed in the course. Rather than considering traditional private equity organizations, however, the cases examine organizations with very different goals and structures from the ones we have considered previously. Large corporations, government agencies, and non-profit organizations are increasingly emulating private equity funds. Their goals, however, are quite different: e.g., to more effectively commercialize internal research projects or to revitalize distressed areas. Meanwhile, publicly traded venture funds face a unique set of challenges. These cases allow us not only to understand these exciting and challenging initiatives, but also to review the elements that are crucial to the success of traditional venture organizations.

4.4.1. Why This Module?

Since corporate venture funds, social venture capital initiatives, and publicly traded funds are so different from traditional private equity funds, one may wonder why these cases are included in this volume. There are three main reasons. First, this arena is the focus of intensive activity of late. These funds today are important investors. Second, it is difficult to examine the issues faced in adapting the private equity model without thinking about the rationales for the key features of traditional private equity funds. Thus, this section of the course allows us to review and revisit many of the issues we have considered in the previous three modules. Finally, corporate venture capital programs, in particular, provide an interesting alternative way to break into the private equity field that few students consider.

Interest in adopting the private equity model has exploded in recent years. In an era when many large firms are questioning the productivity of their investments in traditional R&D laboratories, venture organizations represent an intriguing alternative for corporate America. Much of the interest has been stimulated by the recent success of the independent venture sector. While total annual disbursements from the venture industry over the past two decades have never exceeded the R&D spending of either IBM or General Motors, the economic successes of venture-backed firms - such as Intel, Microsoft, Genentech, Netscape, and Cisco Systems - have been profound. The impact of these powerful examples can be seen in the estimates that direct venture capital investments by U.S. corporations increased almost 15-fold in number (and 44-fold in dollar volume) between 1995 and 1999.[13] Meanwhile, several leading

13. Venture Economics, "Corporate Venture Capital Activity," Unpublished tabulation, 2000.

private equity organizations - including Kleiner, Perkins, Caufield & Byers and Advent International - have begun or expanded funds dedicated to making strategic investments alongside corporations.

The growth of venture funds organized by public and non-profit bodies has been even more striking. Recent estimates suggest that close to 40% of venture or venture-like disbursements in the United States - and more than half of early-stage investments - came in 1995 from "social" sources: those whose primary goal was not a high economic return. Nor has this activity been confined to the United States. Governments in dozens of countries have established significant public venture programs. In recent years, non-profit organizations have also become increasingly active in encouraging and overseeing venture funds. Some of America's largest and most prestigious foundations, such as the Ford and McArthur Foundations, have been particularly active backers of community development venture funds. An interesting new trend has been the involvement of successful private equity investors, most notably Henry Kravis and his former colleague George Roberts, as investors in and advisors to community development funds.

A second reason for the inclusion of this module is that it allows us to review and think about the key features of independent private equity firms. In particular, in adopting the private equity model, features of independent funds have been adjusted or altered. In some cases, these changes have been benign; but in others, the consequences have been disastrous. By reviewing successful and failed modifications of the private equity model to serve the goals of corporate, public, and non-profit organizations, we will gain a deeper understanding of how traditional funds work. During discussions, we return repeatedly to the frameworks developed in the earlier modules of the course.

Finally, corporate venture capital programs represent an interesting avenue for entry into the private equity field that relatively few students consider. The intense competition for jobs in traditional private equity organizations allows many funds to demand that new hires already have a demonstrated investment track record. Yet it is difficult to develop such a track record without a job in the industry. Corporations are often much more willing to hire candidates directly out of school. If one can successfully make one's way into a corporate venture group, it can provide valuable experience and serve as a stepping-stone to a position at an independent private equity firm.

4.4.2. The Structure of the Module

Reflecting the fact that this is a review module, the cases do not seek to develop new conceptual frameworks. Rather, the emphasis will be on drawing together the themes and frameworks that have appeared earlier in the course. Among

the situations that we consider are Intel's effort to develop a corporate venture capital fund that combines strategic and financial objectives, the struggle to steer a publicly traded venture fund (CMGi) through the boom and bust of the late 1990s and early 2000s, and the privatization of CDC Capital Partners, the British government's development fund devoted to making private equity investments in the developing world.

In this module, it is appropriate to consider where the same issues have surfaced earlier in the course. For instance, students are encouraged to consider where have similar incentive problems to the ones faced by Intel and CDC emerged? Has the challenge of multiple investment objectives emerged elsewhere in the course? While the reporting issues that public venture funds such as CMGI face are partially a consequence of their special circumstances, how have similar issues affected the behavior of private equity groups elsewhere?

The course concludes with a final lecture. Prior to the lecture, we review the decisions that the Yale endowment faced in deciding how much of the endowment to allocate to private equity and how to structure its portfolio. The students reflect how the insights gained to the course have led them to shift their recommendations regarding the allocation of funds to private equity, or reinforced their existing convictions.

4.5. Assignments and Grading

The students in "Venture Capital and Private Equity" are evaluated on three criteria. First is class participation. The classes have a similar structure. First, the instructor presents a brief review of the previous day's session, typically through a PowerPoint presentation, emphasizing the key quantitative and qualitative insights. Next, the case discussion is held. Students are expected to participate actively, and to engage each other in resolving the key points of the case study. Finally, if any case protagonists have attended as class guests, they are asked to briefly respond to the key points made in the classroom discussion, and to answer questions from the students.

A second component of the course assignments is the final paper. Whether students intend to work for a private equity organization or to accept money from one, careful due diligence is essential. Private equity funds jealously guard their privacy, and distinguishing between top-tier organizations and less reputable concerns is not always easy. The final paper offers an opportunity to become better acquainted with the available resources, including trade magazines, legal handbooks, academic articles, and on-line databases. Important resources in completing the project are the VentureOne and VentureXpert databases of private equity financings, which the firms have generously made available to the class.[14]

Finally, there are a number of shorter assignments. While these vary from year to ear, students may be asked to negotiate a term sheet, prepare a presentation that a case protagonist needed to make, or undertake an analysis. These assignments are typically due early in the morning of class, so that the instructors can review and analyze the replies before class. Often, selected assignments are used as a springboard for class discussion the next morning.

5. Future Directions

This course is very much still a work in progress. This reflects the dynamic nature of the private equity industry, which - as Section 2 suggested - has undergone dramatic changes over the past few decades.

This dynamism makes it difficult it to predict the course's future directions: its future evolution will reflect the changes in the private equity industry itself. Some thoughtful observers believe that the industry will stay narrowly focused on growth and restructuring opportunities in the United States. Others believe that the recent wave of international expansion will continue unabated. Another open question is whether the efforts of some private equity groups to transform themselves into more general asset managers, for instance, also managing hedge funds and private real estate partnerships, will be sustained. If these trends continue unabated, a broader look at asset management may become a necessary feature of the course.

Despite these uncertainties, one observation can be made confidently. Whatever the future evolution of the industry and the course, it is likely to be both surprising and intellectually stimulating!

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14. Within a few broad guidelines, a broad range of final projects is encouraged. In previous years, final projects have ranged from traditional papers analyzing trends in private equity markets to case studies of particular investments and funds to draft private placement memorandums for new private equity funds. We assign grades based on the understanding of the private equity industry displayed and the originality of the analyses.

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Appendix 1:

Cases and Notes

Introduction

Martin Smith: January 2000 (9-298-076)
Private equity today and tomorrow*

The Private Equity Cycle: Fundraising

Module I introduction (9-297-040)
Yale University Investments Office: July 2000 (N9-201-048)
Acme Investment Trust (9-296-042)
Note on private equity partnership agreements (9-294-084)
University Technology Ventures (N9-201-043)
Note on the private equity fundraising process (N9-201-042)
Columbia Capital Corporation (9-899-255)
Francisco Partners (9-200-063)

The Private Equity Cycle: Investing

Module II introduction (9-297-041)
Adams Capital (9-899-256)
Martin Smith: May 2000 (9-200-046)
Apax Partners and Dialog Semiconductor (N9-201-044)
Note on valuation in private equity settings (9-297-050)
Note on European private equity (9-299-017)
Securicor Wireless Networks (N1-899-134)
Metapath (9-899-160)
Note on private equity securities (9-200-027)
Venture Capital Case Vignettes (N9-801-408)
New Business Investment Co. (9-299-025)

The Private Equity Cycle: Exiting

Module III introduction (9-297-042)
Investori Associati: Exiting the Savio LBO (A) (9-299-048)
Note on the initial public offering process (9-200-018)
RogersCasey Alternative Investments (9-296-024)

The Private Equity Cycle: New Frontiers

Module IV introduction (9-297-043)
Intel 64 Fund (N9-800-351)
Note on corporate venture capital (9-201-036)
CMGI (9-200-064)
CDC Capital Partners (N9-801-333)
Note on private equity in developing countries (9-297-039)

Career Issues and Wrap-up

Joe Casey (9-801-155)
Note on private equity information sources (9-299-031)
Glossary*

* All materials are available through HBS Publishing (http://www.hbsp.harvard.edu), except those marked with an asterisk, which are only available through Lerner and Hardymon (2001). The numbers in parentheses refer to the Harvard Business School Publishing course material identification scheme.

APPENDIX 2:

Table 1: MBA Courses with Significant Content on the Venture Capital and Private Equity Industries at the Top 15 Business Schools Worldwide

No.	FT Ranking	School	Course Title
1.	1	University of Pennsylvania (Wharton)	Venture Capital and Private Equity
2.	2	Harvard Business School	Venture Capital and Private Equity
3.	3	Columbia Graduate School of Business	Entrepreneurial Finance
4.	3	Stanford Graduate School of Business	Entrepreneurship and Venture Capital
5.	3	University of Chicago Graduate School of Business	Entrepreneurial Finance and Venture Equity
6.	6	INSEAD	Entrepreneurial Finance and Venture Capital
7.	6	Massachusetts Institute of Technology (Sloan)	Entrepreneurial Finance
8.	8	New York University (Stern)	Private Equity Finance
9.	8	London Business School	Private Equity Finance
10.	10	Northwestern University (Kellogg)	Venture Capital and Private Equity Investing
11.	11	Dartmouth College (Tuck)	Private Equity Finance
12.	12	Yale School of Management	Venture Capital and Private Equity Investing
13.	13	Cornell University (Johnson)	The Venture Capital Industry and Private Equity Market
14.	14	IMD	*

Table 1: MBA Courses with Significant Content on the Venture Capital and Private Equity Industries at the Top 15 Business Schools Worldwide

15.	15	University of California at Berkeley (Haas)	Venture Capital and Private Equity

No.	On-Line Information
1.	http://finance.wharton.upenn.edu/~metrick/syllabus2502002.pdf
2.	http://www.people.hbs.edu/jlerner/vcpe.html
3.	http://www3.gsb.columbia.edu/courses/selection/describe.cfm?WHATCOURSE=B8399-006&GSB=YES&Term=20031
4.	http://www.gsb.stanford.edu/academics/catalog/mbaele3.html#S354
5.	http://gsbwww.uchicago.edu/fac/luigi.zingales/teaching/B338/pak_sy.htm
6.	http://www.insead.edu/entrepreneurship/courses.htm#Financing
7.	http://entrepreneurship.mit.edu/entre_courses.php#15431
8.	http://stern.nyu.edu/ei/ei/academic/mbaprogram/coursedescriptions.htm#B40.3165
10.	http://www1.kellogg.nwu.edu/dpco/catdtl.asp
11.	http://mba.tuck.dartmouth.edu/pef/
12.	http://www.som.yale.edu/students/courses/elective/Entrepreneurship-and-Venture-Capital-Electives-2000-01.asp#MGT635
13.	http://cuinfo.cornell.edu/Academic/Courses/CoSdetail.phtml?college=JGSM&number=559&prefix=NBA&title=THE+VENTURE+CAPITAL+INDUSTRY+PRIVATE+EQUITY+MARKET

NOTES:
The ratings of MBA programs were prepared by the Financial Times for 2002 (posted at http://specials.ft.com/spdocs/FT31UUB8MWC.pdf). Only courses with significant materials on the venture capital and/or private equity industries are listed. In some cases, there may be classes or multiple versions of the same class offered at a school: I chose the most relevant class and the detailed and recent relevant public accessible syllabus.

* Course under development.