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Preface

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1. Introduction

The private equity market is an important source of funds for start-up firms, private middle-market firms, firms in financial distress, and public firms seeking buyout financing. Over the past fifteen years it has been the fastest growing market for corporate finance, by an order of magnitude over other markets such as the public equity and bond markets and the market for private placement debt. Today the private equity market is roughly one-sixth the size of the commercial bank loan and commercial paper markets in terms of outstandings, and in recent years private equity capital raised by partnerships has matched, and sometimes exceeded, funds raised through initial public offerings and gross issuance of public high-yield corporate bonds.

Despite its dramatic growth and increased significance for corporate finance, the private equity market has received little attention in the financial press or the academic literature.¹ The lack of attention is due partly to the nature of the instrument itself. A private equity security is exempt from registration with the Securities and Exchange Commission by virtue of its being issued in transactions “not involving any public offering.” Thus, information about private transactions is often limited, and analyzing developments in the market is difficult.

This study examines the economic foundations of the private equity market, analyzes the market’s development and current role in corporate finance, and describes the market’s institutional structure. It examines the reasons for the market’s explosive growth over the past fifteen years and highlights the main characteristics of that growth. And it describes the important issuers, intermediaries, investors, and agents in the market and their interactions with each other. Drawing on data from trade journals, the study also estimates the market’s size. Finally, it provides data on returns to private equity investors and analyzes the major secular and cyclical influences on returns.

The study emphasizes two themes. One is that the growth of private equity is a classic example of how organizational innovation, aided by regu-

latory and tax changes, can ignite activity in a particular market. In this case, the innovation was the widespread adoption of the limited partnership as the means of organizing private equity investments. Until the late 1970s, private equity investments were undertaken mainly by wealthy families, industrial corporations, and financial institutions investing directly in issuing firms. By contrast, much of the investment since 1980 has been undertaken by professional private equity managers on behalf of institutional investors. The vehicle for organizing this activity is a limited partnership, with the institutional investors as limited partners and the investment managers as general partners.

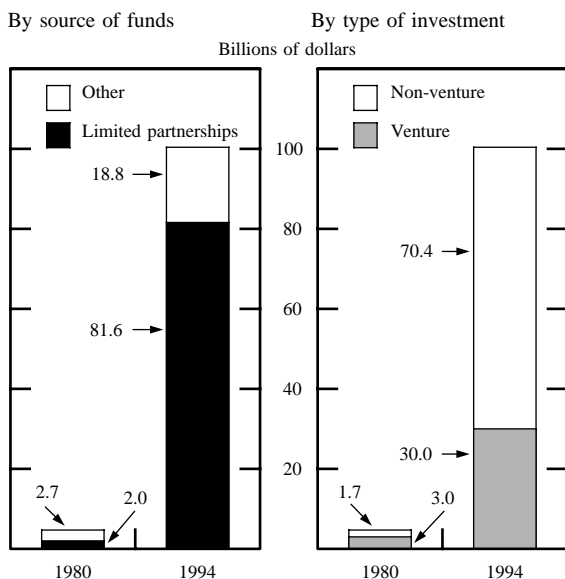
The emergence of the limited partnership as the dominant form of intermediary is a result of the extreme information asymmetries and potential incentive problems that arise in the private equity market. The specific advantages of limited partnerships are rooted in the ways in which they address these problems. The general partners specialize in finding, structuring, and managing equity investments in closely held private companies. Because they are among the largest and most active shareholders, partnerships have significant means of exercising both formal and informal control, and thus they are able to direct companies to serve the interests of their shareholders. At the same time, partnerships employ organizational and contractual mechanisms that align the interests of the general and limited partners.

The development of limited partnerships arose from the need for greater institutional participation in private equity. Few investors had the skills necessary to invest directly in this asset class, and those that did found it difficult to use their skills efficiently. Partnership growth was also fostered by regulatory changes that permitted greater private equity investment by pension funds. The results of these changes are telling: From 1980 to 1994, the amount of capital under management by the organized private equity market increased from roughly \$4.7 billion to about \$100 billion, and limited partnerships went from managing less than 50 percent of private equity investments to managing more than 80 percent (chart 1).² Most

1. Some studies have been made of particular sectors of the market, such as venture capital and leveraged buyouts of large public companies. For studies on venture capital, see Sahlman (1990) and special issues of *Financial Management* (Autumn 1994) and *The Financier* (May 1994). For a summary of the literature on leveraged buyouts, see Jensen (1994).

2. The emergence of limited partnerships is actually more dramatic than these figures indicate. As recently as 1977, limited partnerships managed less than 20 percent of the private equity stock.

1. Private equity capital outstanding, by source of funds and type of investment, 1980 and 1994



SOURCE. Venture Economics and staff estimates.

of the remaining private equity stock is held directly by investors, but even much of this direct investment activity is the result of knowledge that limited partners have gained investing in and alongside partnerships.

The second theme of the study is that the expansion of the private equity market has increased access to outside equity capital for *both* classic start-up companies *and* established private companies. Venture capital outstanding increased tenfold over 1980–94, from \$3 billion to \$30 billion (chart 1). Non-venture private equity outstanding, meanwhile, grew from less than \$2 billion to more than \$70 billion. Clearly, the growth of the private equity market has made it easier not only for start-up companies to acquire adequate financing through successive stages of growth, but also for middle-market private firms to acquire financing for expansion.

We argue that the increase in non-venture private equity investment has been due principally to an abundance of profitable investment opportunities. Others have characterized the growth of non-venture private equity as a shift away from traditional venture capital. They attribute the shift to a variety of factors, including the presence of large institutional investors that do not want to invest in small funds or small deals; risk-aversion and shorter investment horizons among these institutional investors; a shift in the culture of private equity firms as general partners who have backgrounds in investment banking replace general

partners who have entrepreneurial backgrounds; and a decline in venture opportunities.³ Although these factors may have played a role, it seems difficult to argue that non-venture private equity has driven out venture capital, as both have grown rapidly. Moreover, the available data on returns on private equity investments indicate that during the 1980s, non-venture investing generated higher returns than did venture investing. Although such data are tentative, they suggest that private equity capital has flowed to its most productive uses.

What Is the Private Equity Market?

Our study focuses on the *organized private equity market*—professionally managed equity investments in the unregistered securities of private and public companies.⁴ Professional management is provided by specialized intermediaries and, to a limited extent, by institutional investors. Private equity managers acquire large ownership stakes and take an active role in monitoring and advising portfolio companies. In many cases they exercise as much control as company insiders, or more.

Private equity encompasses other markets that are distinct from the organized market we examine. One is the market for *angel capital*—investments in small, closely held companies by wealthy individuals, many of whom have experience operating similar companies. Angel capitalists may have substantial ownership stakes and may be active in advising the company, but they generally are not as active as professional managers in monitoring the company and rarely exercise control. Many angel investments are arranged by informal matchmakers, such as lawyers or accountants, who only occasionally put deals together and are not full-time agents.⁵

Another distinct market is what we call the *informal private equity market*. In the informal market, in which unregistered securities are sold to institutional investors and accredited individuals, the number of investors in any one company typically is larger, and minimum investments smaller, than in either the organized private equity market or the angel capital market. Most impor-

3. See Bygrave and Timmons (1992), chap. 2, “Where is the Venture in Venture Capital?”

4. An equity investment is any form of security that has an equity participation feature. The most common forms are common stock, convertible preferred stock, and subordinated debt with conversion privileges or warrants.

5. For a more complete description of the angel capital market, see Wetzel (1983) and Freear and Wetzel (1990).

tant, ownership is not concentrated among outside investors; insiders remain the largest and only concentrated group of shareholders. Nor is there a lead investor that takes an active role in negotiating the terms of the investment. In certain respects, the informal private equity market operates more like the public market for small-cap stocks than like the private equity market. Indeed, equity issued in the informal private equity market is typically shopped around by an agent whose role is similar to that of an underwriter marketing securities on a best-efforts basis.

A final distinct market is the *Rule 144A private equity market*. Rule 144A, adopted in 1990 by the Securities and Exchange Commission, establishes rules and conditions under which private securities may be freely traded among certain classes of institutional investors. The rule has spawned a market for underwritten private equity offerings that are largely bought by the public trading desks of institutional investors. The vast majority of issues in the Rule 144A market are issued by public firms that want to issue quickly and avoid the delays associated with a registered offering. The market is structured much more like the public equity market than the private market.

By some estimates, the angel capital and informal private equity markets are several times larger than the organized private equity market, and angel capital in particular is regarded as a critical source of seed capital. However, the lack of an institutional infrastructure to support these markets makes it nearly impossible to obtain reliable and comprehensive information about them.

Overview of the Organized Private Equity Market

The organized private equity market has three major players and an assortment of minor players (diagram 1). The major players are private equity issuers, intermediaries, and investors.

Issuers

Issuers in the private equity market vary widely in size and their reasons for raising capital as well as in other ways. They do share a common trait, however: Private equity being one of the most expensive forms of finance, issuers generally are firms that cannot raise financing in the debt market or the public equity market.

Issuers of traditional venture capital are young firms, most often firms that are developing innovative technologies and are projected to show very high growth rates in the future. They may be early-stage companies, those still in the research and development stage or the earliest stages of commercialization, or later-stage companies, those that have several years of sales but are still trying to grow rapidly.

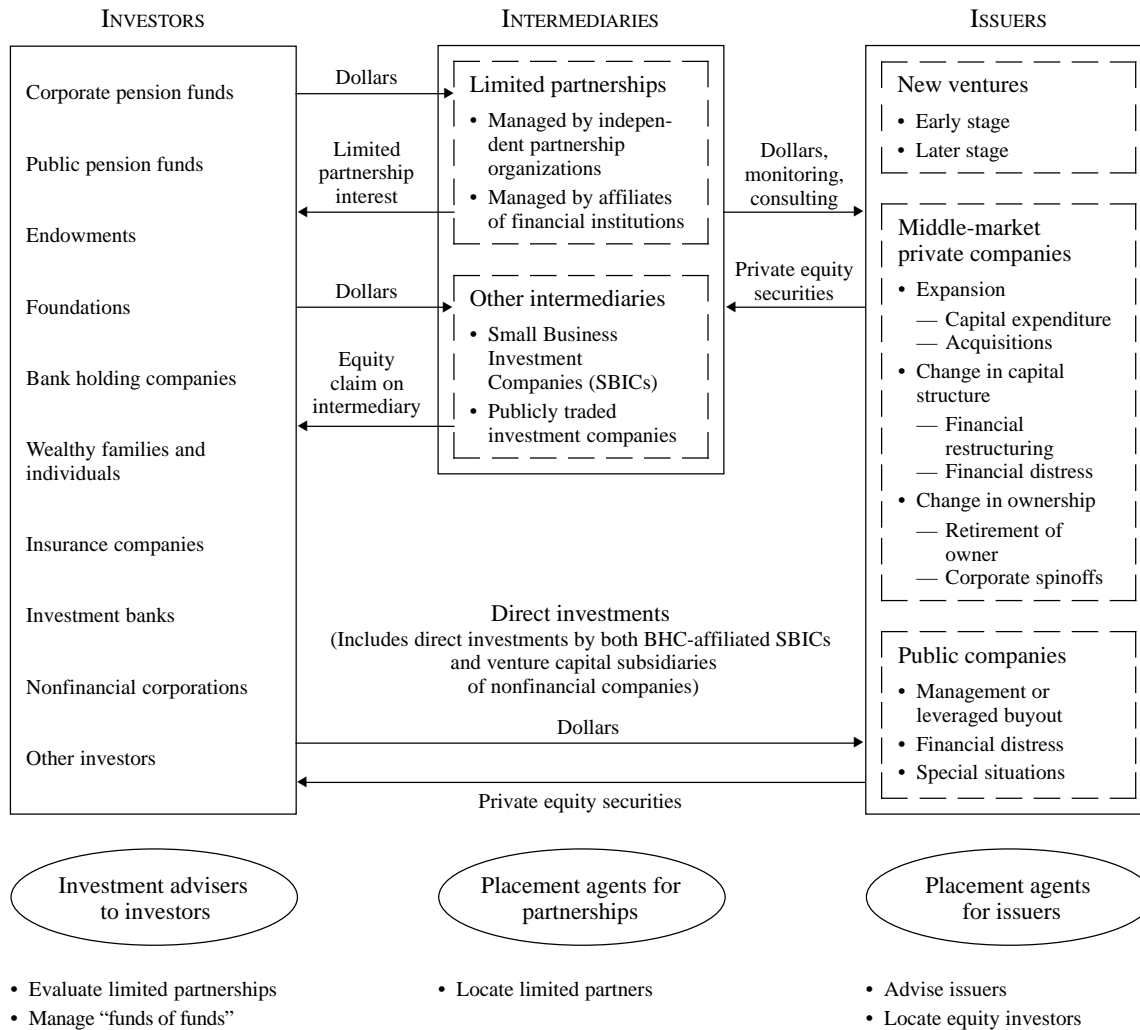
Since the mid-1980s, non-venture private equity investment has outpaced venture investment. Middle-market companies, roughly defined as companies with annual sales of \$25 million to \$500 million, have become increasingly attractive to private equity investors. Many of these companies are stable, profitable businesses in low-technology manufacturing, distribution, services, and retail industries. They use the private equity market to finance expansion—through new capital expenditures and acquisitions—and to finance changes in capital structure and in ownership (the latter increasingly the result of owners of private businesses reaching retirement age).

Public companies also are issuers in the private equity market. Public companies that go private issue a combination of debt and private equity to finance their management or leveraged buyout. Indeed, between the mid- and late 1980s such transactions absorbed most new non-venture private equity capital. Public companies also issue private equity to help them through periods of financial distress and to avoid the registration costs and public disclosures associated with public offerings.

Intermediaries

Intermediaries—mainly limited partnerships—manage an estimated 80 percent of private equity investments. Under the partnership arrangement, institutional investors are the limited partners and professional private equity managers, working as a team, serve as the general partners. In most cases the general partners are associated with a partnership management firm, such as the venture capital firm Kleiner, Perkins, Caufield, and Byers or the buyout group Kohlberg, Kravis, and Roberts. Some of the management firms are affiliates of a financial institution (an insurance company, bank holding company, or investment bank); the affiliated firms generally are structured and managed no differently than independent partnership management firms.

Diagram 1. Organized private equity market



Limited partnerships typically have a ten-year life, during which investors forgo virtually all control over the management of the partnership. This arrangement has the potential to create conflicts between investors and the partnership managers. Two characteristics of partnerships act to reduce these conflicts. If partnership managers are to raise new partnerships in the future, they must establish favorable track records. In addition, they receive a significant amount of their compensation in the form of shares of the partnership’s profits.

Intermediaries not organized as limited partnerships—Small Business Investment Companies (SBICs), publicly traded investment companies, and other companies—today play only a marginal role in the private equity market. SBICs, established in 1958 as a means of encouraging investment in private equity, can leverage their

private capital with loans from, or guaranteed by, the Small Business Administration. In the 1960s and 1970s they accounted for as much as one-third of private equity investment, but today they account for less than \$1 billion of the \$100 billion market. Their reduced role has resulted in part from their inability to make long-term equity investments when they themselves are financed with debt. Publicly traded investment companies also played a role in the past, but today fewer than a dozen such companies are active, and together they manage less than \$300 million. It has become apparent that the long-term nature of private equity investing is not compatible with the short-term investment horizons of stock analysts and public investors.

Two other types of private equity organizations are SBICs owned by bank holding companies and venture capital subsidiaries of nonfinancial cor-

porations. Organizations of both types were extremely important in the 1960s, and they still manage significant amounts of private equity. However, these organizations invest only their corporate parent's capital. In this sense, neither is really an intermediary, but rather a conduit for direct investments. We treat the investments by these organizations as direct investments, not as investments by intermediaries.

Investors

A variety of groups invest in the private equity market. Public and corporate pension funds are the largest investor groups, together holding roughly 40 percent of capital outstanding and currently supplying close to 50 percent of all new funds raised by partnerships.⁶ Public pension funds make up the fastest growing group and recently overtook private pension funds in terms of the amount of private equity held. Pension funds are followed by endowments and foundations, bank holding companies, and wealthy families and individuals, each of which holds about 10 percent of total private equity. Insurance companies, investment banks, nonfinancial corporations, and foreign investors are the remaining major investor groups. Over the 1980s the investor base within each investor group broadened dramatically, but still only a minority of institutions within each group (generally the larger institutions) hold private equity.

Most institutional investors invest in private equity for strictly financial reasons, specifically because they expect the risk-adjusted returns on private equity to be higher than the risk-adjusted returns on other investments and because of the potential benefits of diversification.⁷ Bank holding companies, investment banks, and nonfinancial corporations may also choose to invest in the private equity market to take advantage of economies of scope between private equity investing and their other activities.

6. These and other figures in this section are our estimates based on information from a variety of sources. Methods of estimation are discussed in the appendix.

7. Private equity is often included in a portfolio of "alternative assets" that also includes distressed debt, emerging market stocks, real estate, oil and gas, timber and farmland, and economically targeted investments.

Agents and Advisers

Also important in the private equity market is a group of "information producers" whose role has increased significantly in recent years. These are the agents and advisers who place private equity, raise funds for private equity partnerships, and evaluate partnerships for potential investors. They exist because they reduce the costs associated with the information problems that arise in private equity investing. Agents facilitate the search by private companies for equity capital and the search by limited partnerships for institutional investors; they also advise on the structure, timing, and pricing of private equity issues and assist in negotiations. Advisers facilitate the evaluation by institutional investors of limited partnerships in which to invest; they appear to be particularly valuable to financial institutions that are unfamiliar with the workings of the private equity market.

Sources of Data

Any analysis of the private equity market is handicapped by a lack of readily available information. Because private equity securities are not registered with the Securities Exchange Commission, only limited data about private equity offerings are publicly available. Further, many of the firms that issue private equity securities are private, and they do not disclose financial and operating data about themselves. In addition, relatively little has been written about the market.

To the extent possible we have relied on public sources of data, primarily organizations that collect data and publish newsletters and reports for the private equity community. We have also held extensive interviews with market participants. Our interviewees are active participants in the market and include staff members of corporate and public pension funds, life insurance companies, major endowments, investment banks, commercial bank holding companies, and a variety of private limited partnerships that cover the spectrum of private equity investing. Where publicly available data are lacking we rely heavily on the information obtained from these interviews, but our conclusions are not based on any single source of information.

2. Development of the Private Equity Market

This chapter describes the development of the organized private equity market from its origins as a small, informal market devoted exclusively to the provision of venture finance in the early post–World War II period to the much larger, more heterogeneous market of today. Also presented are data documenting the growth of the private equity market in the 1980s.

The Early Stages: 1946 to 1969

Organized and professionally managed investments in private equity can be dated to 1946 and the formation of the American Research and Development Corporation (ARD), a publicly traded, closed-end investment company. The formation of ARD grew out of the intense concern in the 1930s and early 1940s about the inadequate rate of new business formation and the unavailability of long-term financing for new ventures (Liles, 1977). Throughout the period there were repeated calls for government programs of various types, some proposing the use of existing New Deal agencies such as the Reconstruction Finance Corporation and others suggesting the creation of new agencies and programs.

A major goal of ARD's founders—who included Ralph Flanders, President of the Federal Reserve Bank of Boston, and General Georges Doriot, a Harvard Business School professor—was to devise a *private-sector* solution to the lack of financing for new enterprises and small businesses. The founders recognized that a growing proportion of the nation's wealth was becoming concentrated in the hands of financial institutions rather than individuals, who had traditionally been the major source of funds for small businesses. Thus, they hoped to design a private-sector institution that attracted institutional investors. A second major goal of ARD's founders was to create an institution that provided managerial expertise as well as capital to new businesses. This objective reflected their belief that management skill and experience were as critical as adequate financing to the success or failure of a new business. Finally, ARD sought to develop, among its own staff, professional managers of new venture investments. In this respect, the development of ARD paralleled the postwar creation of professional organizations to manage the venture capital investments

of wealthy families such as the Paysons, Rockefellers, and Whitneys.

However, ARD failed to attract much interest among institutional investors, despite persistent promotional efforts by its officers and directors. The company initially raised only \$3.5 million of the \$5 million it hoped to raise in 1946. It needed to raise additional funds in 1949 because its initial investments depleted its capital before its portfolio companies started to generate profits. Partly because investors did not fully appreciate the financing needs of new companies and partly because stock analysts focused on current earnings, ARD raised only \$1.7 million of the additional \$4 million it sought, and only in a private offering. In 1951, it finally succeeded in obtaining an underwriting and raised an additional \$2.3 million. However, over the next eight years ARD stock often sold at a discount of 20 percent or more, and the company had to rely on the sale of portfolio companies for liquidity rather than suffer dilution by issuing additional stock.

ARD eventually was profitable, providing its original investors with a 15.8 percent annual rate of return over its twenty-five years as an independent firm.⁸ It was also highly successful in providing firms with managerial assistance, as indicated by the small number of its investments that lost money.⁹ However, because the company was regarded as, at best, a modest success over its early life, there was no effort to imitate it. No other publicly traded venture capital companies were formed until the first publicly traded Small Business Investment Companies (SBICs) were organized thirteen years later.¹⁰

Some private venture capital companies were formed during the period. The largest of these were established to manage the venture capital investments of wealthy families and did not function as intermediaries investing institutional capital.¹¹ Many private equity investments in the 1950s were funded on an ad hoc, deal-by-deal

8. Excluding its \$70,000 investment in Digital Equipment Corporation—which accounted for less than 0.2 percent of its total investment of \$48 million—ARD's return was only 7.4 percent (Liles, 1977, p. 83). The return on the Dow Jones Industrial Average over the same period was 12.8 percent.

9. In its twenty-five years, ARD reported losses of only \$5.5 million, less than 12 percent of its total investment (Ibid., p. 84).

10. Ibid., p. 9.

11. Ibid., p. 3.

basis by syndicates of wealthy individuals, corporations, and institutional investors organized by investment bankers (Investment Bankers Association of America, 1955).

Partly because of the absence of a visible institutional infrastructure for financing new ventures, the impression that private equity capital was in short supply persisted throughout the 1950s.¹² This perception was reinforced by such events as the Soviet Union's launching of Sputnik in 1957. To remedy the situation, Congress took steps to promote venture capital investments by individuals. One of the steps was passage of section 1244 of the Internal Revenue Code to allow individuals who invested \$25,000 in small new businesses to write off any capital losses against ordinary income. The major piece of legislation, however, was the Small Business Investment Act of 1958, which established Small Business Investment Companies.

SBICs are private corporations licensed by the Small Business Administration (SBA) to provide professionally managed capital to risky companies. To encourage their formation, SBICs were allowed to supplement their private capital with SBA loans and were eligible for certain tax benefits. In return, SBICs were subject to certain investment restrictions, including limitations on the size of the companies in which they invested and restrictions on taking controlling interests in companies.

In response to the government's active promotion of SBICs and the availability of low-cost money, 692 SBIC licenses were granted during the program's first five years.¹³ These firms managed \$464 million of private capital and included forty-seven publicly owned SBICs that raised \$350 million through public offerings.¹⁴ By comparison, ARD raised only \$7.4 million in its first thirteen years. The SBIC program suffered from several defects, however.

First, not all SBICs provided equity financing to new ventures. In particular, SBICs that took advantage of the leverage provided by SBA loans were themselves required to make interest pay-

ments, and thus they concentrated on providing debt financing to small businesses that had positive cash flows. Second, SBICs attracted mainly individual rather than institutional investors, especially the publicly traded SBICs, which were among the largest in the program's early years. These individual investors did not fully appreciate the risks and difficulty of private equity investing. Indeed, bearish sentiment during 1963 caused public SBICs to trade at an average discount of 40 percent, making them attractive targets for takeovers and liquidations.¹⁵

A third defect of the SBIC program, and the most damaging, was that the program did not attract investment managers of the highest caliber. In June 1966, an outgoing deputy administrator of the SBA startled the venture capital community and the Congress by declaring that the SBA was likely to lose \$18 million because of the "wrong people who operate SBICs."¹⁶ He went on to estimate that, as a result of "dubious practices and self dealing," 232 of the nation's 700 SBICs were "problem companies." This revelation led to an SBA promise to audit all SBICs within a four-month period and to passage of legislation later that year giving the SBA broad new enforcement and supervisory powers.¹⁷ By 1977 the number of SBICs had fallen to 276.¹⁸

Despite their difficulties, SBICs channeled record amounts of equity financing to small, fast-growing companies. Among the larger SBICs that operated throughout the 1960s were about twenty-three that were subsidiaries of bank holding companies.¹⁹ These organizations used their SBIC licenses to invest their holding companies' capital in small companies, an activity that might otherwise have violated bank holding company regulations regarding equity investments.²⁰ On the whole, SBICs owned by bank holding companies were managed more soundly than were independent SBICs, and because they did not borrow funds from the SBA, they could make pure equity investments. Indeed, they provided a training ground for many venture

12. In 1958 the Federal Reserve conducted a comprehensive review of the existing research on small business finance (Board of Governors, 1958). On the basis of this review and its own surveys of potential institutional investors, the Board concluded that the availability of long-term loan and equity capital was inadequate. For dissenting views, see Schweiger (1958) and George and Landry (1959).

13. Liles, 1977, p. 4.

14. "SBICs After 25 Years: Pioneers and Builders of Organized Venture Capital," *Venture Capital Journal*, October 1983; Liles, 1977, p. 94.

15. Liles, 1977, p. 124.

16. *Ibid.*

17. *Ibid.*, p. 125-26. The SBA went on record saying that it intended to strictly enforce all regulatory requirements and that it aimed to pare the industry down to 250 good companies.

18. "SBICs After 25 Years."

19. *Annual Report of the Small Business Administration, 1967*. An additional sixty-one SBICs were affiliated with, but not wholly owned by, banks.

20. The Bank Holding Company Act of 1956 restricts a bank holding company's holding of voting equity shares in companies to less than 5 percent.

capitalists who would, upon leaving, manage their own private equity partnerships. Their principal drawback was that they were subject to the same investment restrictions that applied to independent SBICs.

Seeds for Future Growth: The 1970s and the Limited Partnership

A hot new-issues market in 1968–69 brought to a successful conclusion many of the new venture investments made during the 1960s. Though they had gained valuable experience and enjoyed modest personal rewards, private equity professionals saw an opportunity to improve upon existing arrangements. This provided the impetus for the formation of a significant number of venture capital limited partnerships.²¹

At Donaldson, Lufkin and Jenrette (DLJ), for example, a venture capital partnership management unit, Sprout Group, was formed to centralize and professionalize the firm's private equity activities. DLJ had been active in organizing individual deals in the 1960s, with the result that "people in every department were dabbling in venture capital."²² Limited partnerships also were attractive to many private equity professionals as a way of addressing the problem of compensation. Under the Investment Company Act of 1940, managers of publicly traded venture capital firms (including publicly held SBICs) could not receive stock options or other forms of performance-based compensation.²³ Even where there were no legal restrictions—at bank-affiliated SBICs and on the staffs of institutional investors, for example—most private equity professionals received only a salary.²⁴ These salaries seemed especially inadequate compared with the earnings of the general partners at the handful of existing venture

capital partnerships. Finally, limited partnerships were attractive as a way of avoiding SBIC-type investment restrictions and attracting investors more sophisticated than the retail shareholders of publicly traded SBICs.

In 1969, newly formed venture capital partnerships raised a record \$171 million.²⁵ In general, these partnerships were small (\$2.5 million to \$10 million) and raised money from individual investors; however, one, Heizer Corporation, raised \$80 million from thirty-five institutional investors. Between 1969 and 1975, approximately twenty-nine limited partnerships were formed, raising a total of \$376 million.²⁶ Organized venture capital financing through limited partnerships was beginning to be recognized as an industry, and in 1973 the National Venture Capital Association was formed.

Investment Activity

Ironically, soon after these early venture capital partnerships were formed, several factors converged to slow venture capital investment for nearly a decade. In the mid-1970s the market for initial public offerings virtually disappeared, especially for smaller firms.²⁷ Russell Carson, president of Citicorp's venture unit, noted: "Five or ten years ago, you could take a bright idea, build up a \$5 million-a-year business, and quickly take it public. Those days are over."²⁸ At the same time, a recession and a weak stock market dampened the investment and acquisition activities of corporations, shutting off acquisitions as an alternative means of cashing out private equity investments. Given the poor exit conditions, private equity managers became extremely reluctant to finance new ventures. Moreover, they were forced to invest additional time and funds in companies already in their portfolios, leaving fewer resources available for new investments.

21. Bygrave and Timmons (1992) credit Tommy Davis and Arthur Rock with developing the first limited partnership in 1961. According to Harvard Business School professor Josh Lerner, the firm Draper, Gaither, and Anderson was first in 1958. Another early partnership was Greylock's \$10 million fund, organized in 1965 by former ARD Senior Vice President William Elfers.

22. Ann M. Morrison, "The Venture Capitalist Who Tries To Win Them All," *Fortune*, January 28, 1980.

23. Liles, 1977, pp. 73–82. This restriction led to the departure of several key ARD staff members in the 1950s and again in the mid-1960s.

24. See Ned Heizer's discussion of his departure from Allstate in "I Remember 1969," *Venture Capital Journal*, December 1994. See also "Bank Venture Capital Groups—Ten Years of Changing Participants and Structures," *Venture Capital Journal*, March 1988.

25. Among the important organizations that formed first-time partnerships in 1969 were TA Associates (Advent I), Patricof and Company (Decahedron Partners), the Mayfield Fund (Mayfield I), and the Sprout Group (Sprout I). See Stan Pratt, "The Long Road From 1969: A 25 Year Rollercoaster," *Venture Capital Journal*, December 1994.

26. *Venture Economics* (1994b).

27. During 1973–75, only 81 IPOs raised \$5 million or less; in contrast, in 1969, 548 IPOs raised \$5 million or less (Ibbotson, Sindelar, and Ritter, 1988; and U.S. Small Business Administration, 1977).

28. Philip Revzin, "Fledgling Firms Find Risk Capital Still Flies Far Out of Their Reach," *Wall Street Journal*, November 9, 1976.

Another important factor slowing venture capital investment, according to industry participants, was a shortage of qualified entrepreneurs to run start-up companies.²⁹ Contributing to the shortage was a series of tax changes that made stock-based compensation less attractive: Capital gains tax rates increased sharply in 1969,³⁰ and the tax treatment of employee stock options was changed so that tax liabilities were incurred when options were exercised rather than when the stock was sold.³¹

As a result, relatively few start-ups were financed in the 1970s. For example, only one of five companies in which Institutional Venture Associates (IVA), a newly organized partnership, invested between mid-1974 and November 1976 was a true start-up.³² A survey by the National Venture Capital Association found that in 1974–75 only a quarter of its members' investments, or \$74 million out of \$292 million, went to start-ups and other first-round financings.³³ However, because only the start-ups with the greatest growth prospects were financed *and* because these companies received a great deal of attention from experienced venture capitalists, they yielded returns that were sometimes extraordinary and that on average were very high. Such returns helped pave the way for the industry's explosive growth in the 1980s.

Conditions during the 1970s not only discouraged investments in start-ups but also forced fund managers and other venture capitalists to develop strategies for non-venture private equity investing. Narragansett, a publicly traded SBIC, began acquiring divisions of large conglomerates after having spent the 1960s backing new ventures. Between 1971 and 1979, Narragansett made sixteen acquisitions through leveraged buyouts, and only two of the sixteen yielded disappointing results.³⁴ Many of the newly formed partnerships

followed a similar strategy: Between 1970 and 1979, only \$13 million of Sprout's \$62 million in investments were in start-ups; much of the remainder was in leveraged buyouts (LBOs).³⁵

In spite of the burst of fund raising in 1969, the organized private equity market grew little over the next eight years. Total capital, measured at cost, remained unchanged at about \$2.5 billion to \$3.0 billion between 1969 and 1977. Private equity investments ranged between \$250 million and \$450 million a year over the period, and, as suggested above, a large proportion of the funds went to larger, more established companies. Between 1970 and 1977, investors committed less than \$100 million a year in new funds to the private equity market, most of it to partnerships.³⁶

Regulatory and Tax Changes

By 1977, public concern had focused once again on the shortage of capital available to finance new ventures. In an SBA task force report (U.S. Small Business Administration, 1977) and in congressional testimony, members of the venture capital industry recommended changes in Employee Retirement Income Security Act (ERISA) regulations, taxes, and securities laws as a way of revitalizing the venture capital industry. Several of the recommendations were implemented during 1978–80 and appear to have been instrumental in fueling the rapid growth in venture capital and private equity that followed.

Without question the most significant change was the Department of Labor decision pertaining to the "prudent man" provision of ERISA governing pension fund investing. This provision requires that pension fund investments be based on the judgment of a "prudent man" and had been widely interpreted as prohibiting pension fund investments in securities issued by small or new companies and venture capital funds. The Labor Department ruled that such investments are permitted, provided they do not endanger an entire portfolio.³⁷ This interpretation, which was proposed in September 1978 and was adopted nine

29. See Gumpert (1979).

30. U.S. Small Business Administration (1977).

31. Testimony by Pat Liles before the Small Business Committee of the U.S. Senate. *Small Business Access to Equity and Venture Capital*, 95 Cong. 1 Sess., 1977.

32. "Fledgling Firms Find Risk Capital Still Flies Far Out of Their Reach."

33. National Venture Capital Association, "Emerging Innovative Companies—An Endangered Species," reproduced in *Small Business Access to Equity and Venture Capital*. Small Business Committee of the U.S. Senate, 95 Cong. 1 Sess., 1977.

34. Narragansett used debt-to-equity ratios as high as 14:1 and never less than 6:1. The company split its equity interest 50–50 with company managers, who had to pay cash for their shares and in many cases had to "hock their homes to make the ante." See Royal Little, "How I'm Deconglomerating the Conglomerates," *Fortune*, July 16, 1979.

35. Morrison, "The Venture Capitalist Who Tries To Win Them All."

36. Pratt (1982). The difference between new investments in portfolio companies, \$250 million to \$450 million a year, and new investor commitments to venture capital organizations, \$100 million a year, represents funds that were reinvested by existing venture capital organizations.

37. *Wall Street Journal*, June 21, 1979.

months later, almost immediately triggered a response in the market for small-company stocks and the new-issues market.³⁸ The reinvigorated new-issues market enabled partnerships to exit more of their investments, return funds to investors, and raise new partnerships. It also made investments in new ventures more attractive to partnership managers. Indeed, the National Venture Capital Association reported that in 1979, 80 percent of its members' investments were in venture capital rather than in leveraged buyouts or other established firms.³⁹

Although the Labor Department decision's initial impact was to reinvigorate the new-issues market, its long-run impact was to encourage investments by pension funds in private equity partnerships. Pension fund managers had long regarded venture capital investments as a potential violation of their fiduciary responsibilities. ERISA's passage in 1974 only reinforced this conservative attitude. Between 1976 and 1978, venture capital partnerships raised less than \$5 million a year from ERISA pension plans. In the first six months of 1979, by contrast, they raised \$50 million from such plans.⁴⁰

Before ERISA-plan investments increased further, several other regulatory hurdles were raised. In August 1979, the Department of Labor ruled that limited partnership investments are ERISA "plan assets." This ruling had significant implications because, under ERISA, outside managers of "plan assets" must be registered as advisers under the Investment Advisers Act of 1940. Registered advisers are prohibited from receiving performance-related compensation, a key feature of private equity limited partnerships. Moreover, under the ruling general partners would be considered fiduciaries of ERISA plan assets, subjecting them to "prohibited transactions" rules that would make structuring partnership investments more difficult.⁴¹

The venture capital community fought hard against the ruling. The following year, the Department of Labor reversed its ruling and granted partnerships, as venture capital operating companies, a "safe harbor" exemption from plan asset

regulations.⁴² However, during the ten months before the department reversed its ruling, partnerships raised no new funds from pension plans.⁴³

Finally, in 1980, Congress dealt with another threat to require general partners to register as investment advisers. According to congressional testimony, venture capital fund managers had never been compelled to register under the Investment Advisers Act because "the plain language of the Act distinguishes the activities of an investment adviser from those of a venture capital fund manager." Nonetheless, during the 1970s various members of the Securities and Exchange Commission suggested that venture capital fund managers may in fact be investment advisers, in which case "the advisee is not the limited partnership itself, but each of the limited partners." Because registration under the Investment Advisers Act is not required when an adviser has fourteen or fewer clients, many partnerships had restricted their size to fourteen limited partners. The Small Business Investment Incentive Act of 1980 rendered this limitation unnecessary by redefining private equity partnerships as business development companies, thus exempting them from the Investment Advisers Act.⁴⁴

These regulatory changes were critical in increasing the flow of venture capital. Congress also sought to increase the flow by reducing the capital gains tax. The maximum capital gains tax rate was cut from 49½ percent to 28 percent in 1978, and to 20 percent in 1981. Also, passage of the Incentive Stock Option Law in 1981 allowed the resumption of the earlier practice of using stock options as compensation by deferring the tax liability to when the stocks were sold rather than when the options were exercised.

Explosive Growth: The 1980s and 1990s

The evolution of the limited partnership in combination with the numerous favorable regulatory and tax changes spurred the flow of capital to the

38. See "Thank You, ERISA, Thank You May Day. . .," *Forbes*, October 2, 1978; and Gumpert (1979).

39. "Venture Capitalists Ride Again," *The Economist*, October 11, 1980.

40. Nick Galluccio, "Comeback for the Dream Merchants," *Forbes*, June 25, 1979.

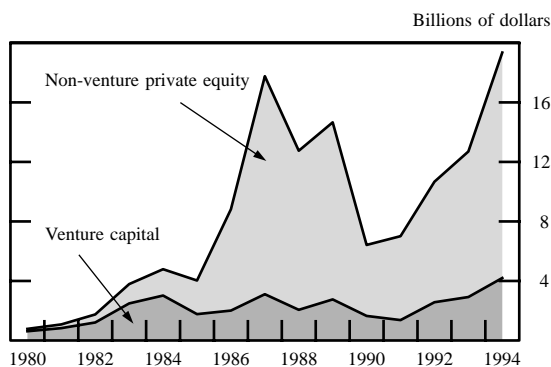
41. See Katherine Todd, "Labor Department Limits Initial Takedowns," *Venture Capital Journal*, October 1989, for a description of plan asset restrictions.

42. *Wall Street Journal*, June 6, 1980. Under the safe harbor exemption, pension plan investments in private equity partnerships are treated the same as investments in ordinary operating companies provided the partnership meets certain conditions. These conditions pertain mainly to a partnership having "management rights" in the firms in which it invests. As Todd notes in "Labor Department Limits Initial Takedowns," final adoption of these regulations did not come until 1986.

43. "Venturing into Limbo," *The Economist*, April 5, 1980.

44. U.S. Congress, House Committee on Interstate and Foreign Commerce, *Venture Capital Improvement Acts of 1980*, 96 Cong. 2 Sess., 1980.

2. New commitments to private equity partnerships, 1980–94



Billions of dollars

| Year | Total | Venture | Non-venture |
|----------------|---------------|--------------|--------------|
| 1980 | .78 | .62 | .16 |
| 1981 | 1.08 | .83 | .25 |
| 1982 | 1.75 | 1.21 | .54 |
| 1983 | 4.34 | 2.49 | 1.85 |
| 1984 | 4.79 | 3.02 | 1.77 |
| 1985 | 4.03 | 1.77 | 2.26 |
| 1986 | 8.82 | 2.01 | 6.81 |
| 1987 | 17.76 | 3.11 | 14.65 |
| 1988 | 12.75 | 2.06 | 10.69 |
| 1989 | 14.66 | 2.76 | 11.90 |
| 1990 | 6.42 | 1.65 | 4.77 |
| 1991 | 7.01 | 1.37 | 5.64 |
| 1992 | 10.67 | 2.57 | 8.10 |
| 1993 | 12.83 | 2.89 | 9.94 |
| 1994 | 19.35 | 4.20 | 15.15 |
| 1980–94 | 127.04 | 32.56 | 94.48 |

SOURCE: *The Private Equity Analyst*.

private equity market. Commitments to private equity partnerships during 1980–82 totaled more than \$3.5 billion (chart 2), two and one-half times the commitments to private equity during the entire decade of the 1970s.⁴⁵ Over the next three years, commitments surged to more than \$4 billion annually. In 1986 and 1987 commitments more than doubled each year, reaching a 1987 peak

45. Note that two-thirds of commitments during the 1970s were raised in 1978–79 (Pratt, 1982).

We rely on two sources of data for partnership commitments since 1980: *The Private Equity Analyst* (PEA) and Venture Economics Investor Services (VE), which is affiliated with the publishers of *Venture Capital Journal*. Both sources construct data on commitments to limited partnerships by collecting information from institutional investors and private equity firms. However, because commitments are private, the sources' estimates invariably differ. Their estimates also differ because they use different dating conventions: PEA records commitments to partnerships in the year in which the commitments are made, whereas VE records commitments in the year in which the partnerships are formed.

of \$17.8 billion. Since then, commitments have followed a cyclical pattern, reaching a low of \$6.4 billion in 1990 and a high of \$19.4 billion in 1994.

Although capital committed to venture capital partnerships increased at a healthy rate throughout the 1980s, the lion's share of the growth was in partnerships dedicated to non-venture financing. The growth of capital since 1980 in each of these sectors—venture and non-venture—is discussed below.

Venture Capital

In the early 1980s, the surge in private equity commitments was mainly toward venture capital partnerships. From 1980 to 1984 venture capital partnership commitments increased fivefold, from \$600 million to \$3 billion (chart 2). The increase was due in part to the success of several partnerships established in the 1970s. These partnerships were, by the late 1970s, reporting annual returns in excess of 20 percent, driven by successful investments in Apple Computer, Genentech, Intel, Federal Express, Qume Corporation, and Tandem Computers among other firms. These high returns attracted the attention of institutional investors, especially pension funds, many of which had experienced sluggish public equity returns throughout the 1970s. Commitments to venture capital partnerships also grew as investors in the original partnerships reinvested their gains when these partnerships were liquidated.

Following the 1980–84 surge, commitments to venture capital partnerships leveled off and fluctuated between approximately \$2 billion and \$3 billion over the next five years. Commitments fell during the 1990–91 recession, reflecting not only the reduced demand for venture capital but also the asset-quality problems of a number of large institutional investors, notably banks and insurance companies. Commitments rebounded during 1992–93, however, and in 1994 they reached a new high of \$4.2 billion.

This level of partnership commitments during the 1980s resulted in an eightfold increase in the venture capital stock, from \$4.5 billion in 1980 to \$36 billion in 1990 (table 1). As the venture capital stock grew, partnerships managed an increasing share. In 1980, partnerships managed only 40 percent of the \$4.5 billion in outstanding venture capital, while venture capital subsidiaries of financial and industrial companies (including bank-affiliated SBICs) managed 31 percent and independent SBICs 29 percent. By the late 1980s,

1. Amount of venture capital under management, and distribution by type of manager, 1980–94

| Year | Venture capital stock (billions of dollars) | Percentage of stock managed by— | | | |
|------------|---|---------------------------------------|----------------------------------|-----------------------------------|--------------------------------|
| | | Independent partnerships ¹ | Corporate–financial ² | Corporate–industrial ³ | Independent SBICs ⁴ |
| 1980 | 4.5 | 40 | | 31 | 29 |
| 1981 | 5.8 | 44 | | 28 | 28 |
| 1982 | 7.6 | 58 | | 25 | 17 |
| 1983 | 12.1 | 68 | | 21 | 11 |
| 1984 | 16.3 | 75 | 12 | 9 | 4 |
| 1985 | 19.6 | 75 | 13 | 8 | 3 |
| 1986 | 24.1 | 78 | 11 | 8 | 3 |
| 1987 | 29.0 | 81 | 11 | 7 | 2 |
| 1988 | 31.1 | 83 | 9 | 7 | 1 |
| 1989 | 34.4 | 79 | 14 | 7 | 0 |
| 1990 | 35.9 | 80 | 13 | 7 | ... |
| 1991 | 32.9 | 81 | 12 | 7 | ... |
| 1992 | 31.1 | 81 | 12 | 7 | ... |
| 1993 | 34.8 | 81 | 12 | 7 | ... |
| 1994 | 34.1 | 79 | 14 | 7 | ... |

1. Includes a few incorporated venture capital firms and, after 1989, independent SBICs.

2. Venture capital subsidiaries of financial corporations. Includes SBICs affiliated with bank holding companies and partnerships managed by affiliates of financial institutions.

3. Venture capital subsidiaries of industrial corporations, including affiliated SBICs.

4. Independent Small Business Investment Companies. After 1989, counted as independent partnerships.

SOURCE: *Venture Capital Journal*.

the proportion of capital managed by partnerships grew to more than 80 percent, largely at the expense of independent SBICs, which saw their share of capital fall to virtually nothing.

Table 2 provides some information on the activities of venture capital partnerships during 1980–93, including the number of new partnerships formed, average partnership size, and

2. Selected characteristics of venture capital partnerships formed in 1980–93

| Year | Number of new partnerships formed | Average partnership size (millions of dollars) | Distribution of partnerships, by investment focus ¹ (percent) | | Distribution of capital raised, by investment focus ¹ (percent) | |
|------------|-----------------------------------|--|--|--------------------------|--|--------------------------|
| | | | Early-stage | Balanced and later-stage | Early-stage | Balanced and later-stage |
| 1980 | 26 | 28.0 | 35 | 65 | 31 | 69 |
| 1981 | 40 | 24.3 | 43 | 57 | 33 | 67 |
| 1982 | 40 | 27.4 | 38 | 62 | 26 | 74 |
| 1983 | 76 | 39.1 | 32 | 68 | 15 | 85 |
| 1984 | 83 | 38.4 | 34 | 66 | 25 | 75 |
| 1985 | 59 | 32.8 | 37 | 63 | 28 | 72 |
| 1986 | 59 | 51.6 | 41 | 59 | 16 | 84 |
| 1987 | 78 | 43.7 | 32 | 68 | 18 | 82 |
| 1988 | 54 | 44.3 | 41 | 59 | 31 | 69 |
| 1989 | 64 | 47.6 | 50 | 50 | 42 | 58 |
| 1990 | 21 | 52.0 | 14 | 86 | 5 | 95 |
| 1991 | 21 | 50.8 | 48 | 52 | 45 | 55 |
| 1992 | 33 | 64.7 | 36 | 64 | 29 | 71 |
| 1993 | 37 | 78.9 | 24 | 76 | 19 | 81 |

1. Investment focus describes the type of companies the partnership targets for its venture capital investments—early-stage new ventures or later-stage new ventures. Balanced describes partnerships that divide their investments between early- and later-stage companies.

SOURCE: Venture Economics, *1994 Investment Benchmarks: Venture Capital*.

3. Selected characteristics of investments by venture capital partnerships, 1980–94

| Year | Total amount invested (billions of dollars) | Number of companies invested in | Average investment per company (millions of dollars) | Distribution of new venture investments, by investment focus ¹ (percent) | | MEMO: LBO ² |
|------------|---|---------------------------------|--|---|-------------|------------------------|
| | | | | Early-stage | Later-stage | |
| 1980 | .61 | 504 | 1.21 | ... | ... | ... |
| 1981 | 1.16 | 797 | 1.46 | ... | ... | ... |
| 1982 | 1.45 | 918 | 1.58 | ... | ... | ... |
| 1983 | 2.58 | 1,320 | 1.95 | 35 | 65 | 13 |
| 1984 | 2.73 | 1,410 | 1.96 | 34 | 66 | 12 |
| 1985 | 2.67 | 1,388 | 1.92 | 30 | 70 | 15 |
| 1986 | 3.22 | 1,512 | 2.13 | 35 | 65 | 19 |
| 1987 | 3.97 | 1,740 | 2.26 | 29 | 71 | 20 |
| 1988 | 3.85 | 1,530 | 2.52 | 29 | 71 | 27 |
| 1989 | 3.38 | 1,465 | 2.31 | 21 | 79 | 21 |
| 1990 | 2.30 | 1,176 | 1.96 | 30 | 70 | 15 |
| 1991 | 1.36 | 792 | 1.72 | 31 | 69 | 3 |
| 1992 | 2.54 | 1,093 | 2.33 | 24 | 76 | 7 |
| 1993 | 3.07 | 969 | 3.13 | 24 | 76 | 6 |
| 1994 | 2.74 | 1,011 | 2.71 | 37 | 63 | 3 |

1. Investment focus describes the type of companies the partnership targets for its venture capital investments—early-stage new ventures or later-stage new ventures.

2. Leveraged buyout investments by venture capital partnerships as a percentage of total investments; included in numbers for later-stage investments.

SOURCE: *Venture Capital Journal*.

investment focus.⁴⁶ Venture capital partnerships increased steadily in size over the 1980s, and by the early 1990s the average partnership was two and one-half times larger than the average partnership of a decade earlier. The percentage of new partnerships focusing on investments in early-stage companies exhibited no clear trend but fluctuated considerably around its long-run average (36 percent in terms of the number of funds, 26 percent in terms of dollars raised). The fluctuations were due partly to changes in the mix of partnerships (early-stage or later-stage) that happened to be beginning a new fund-raising cycle each year.

Many market participants suggest that as the size of partnerships increases, increasing the average size of investments is more efficient than increasing the number of investments. They also emphasize that later-stage investments require less work for the general partners than investments in start-up firms and early-stage new ventures. These observations underlie the widespread perception that the increase in average fund size has been accompanied by a shift toward larger and later-stage investments.

Somewhat surprisingly, data on investments suggest only moderate shifts toward larger investments and investments in later-stage new ventures (table 3). Average investment size increased 40 percent from the early 1980s to the early 1990s, significantly less than the increase in average fund size. Over the same period, the ratio of early-stage investments to total investments declined only slightly and remained near 30 percent even during 1987–88, peak years of LBO financing by venture capital partnerships. More recently, early-stage investments accounted for a record high 37 percent of total investments in 1994.

Non-Venture Private Equity

Until the early 1980s, funds for non-venture private equity investments came from venture capital partnerships and informal investor groups organized by investment banks and other agents. During the 1980s, however, a sizable number of large partnerships were created *specifically* to provide equity capital for non-venture financing needs. Non-venture partnerships received commitments of about \$1.8 billion in 1983, and roughly the same amount was raised in each of the next two years (chart 2). In 1986, however, non-venture partnerships raised more than \$6.8 billion, well

46. For tables 2 and 3, we use data from Venture Economics exclusively because that source provides data on the investment focus of venture capital partnerships and the actual investments made by those partnerships.

surpassing the \$2 billion raised by venture capital partnerships that year, and in 1987 non-venture partnership commitments soared to \$14.6 billion. Partnerships raised in 1987 included Kohlberg, Kravis, and Roberts' record \$5.6 billion fund, which by itself was almost twice the total commitments to all venture capital partnerships that year.

Fund raising for non-venture partnerships dropped substantially in 1990 and 1991 as public buyout activity slowed and the recession reduced the demand for new investment financing. Since 1992, however, fund raising has increased steadily as the economic recovery and the accompanying increase in activity in the IPO and junk bond markets has increased the demand for non-venture private equity. In 1994, non-venture partnership commitments reached a new high of \$15.1 billion.

Non-venture partnerships are generally much larger than venture partnerships, with a number exceeding \$1 billion. Partnerships of this size are especially attractive to public pension funds, which often invest in minimum amounts of \$10 million to \$25 million so as to reduce monitoring burdens on their limited staffs. Also, public pension funds typically operate under a restriction that their investment in any one limited partnership not constitute more than 10 percent of the partnership's total funds; a partnership in which a public pension fund invests \$15 million, for example, must raise at least \$150 million to accommodate the public pension fund investor. In 1994, the median size of non-venture partnerships was \$175 million, compared with \$61 million for venture partnerships.⁴⁷

As non-venture financing grew over the mid- and late 1980s, partnerships developed specialized investment practices. Among the largest and most publicized partnerships were those that specialized in leveraged buyouts of large public companies. Paralleling their growth was the formation of partnerships that provided mezzanine financing to firms undergoing leveraged buyouts. Mezzanine financing, which takes the form of subordinated debt with equity conversion privilege or warrants, was often provided in conjunction with equity from a related buyout partnership. Commitments to both LBO and mezzanine funds peaked in the late 1980s.

As the mix of investment opportunities has changed, so too has the investment focus of the specialized funds. Several prominent buyout partnerships, for example, have recently expanded their financing activities to include a "buy and

build" strategy in industries that are experiencing pressures to consolidate.⁴⁸ For the purpose of making strategic acquisitions, the partnership provides equity capital to a firm that has the potential to be a market leader in the newly structured industry. This investment strategy has taken hold in such diverse industries as publishing, cable TV, radio, and basic manufacturing.

More recent examples of specialization include partnerships that invest in firms in financial distress, take minority positions in middle-market firms, or invest in a single industry. As of 1993, for example, at least ten partnerships were focusing on financially distressed firms that managed about \$4 billion in capital.⁴⁹ Partnerships that specialize in taking minority interests typically target companies that have less than \$1 billion in market capitalization and equity capital needs of \$10 million to \$50 million; targeted companies include public middle-market firms that, for one of many reasons, do not wish to access public equity. Industry funds are formed to invest in industries in which a high level of activity is anticipated and in which industry expertise is thought to be especially important. Over the past several years such funds have been formed to invest in the insurance and communications industries.⁵⁰

Private Equity Outstanding Today

Cumulative commitments to private equity partnerships over 1980–94 totaled \$127 billion (chart 2). Of this total, \$33 billion was committed to partnerships dedicated to venture capital financing while a much greater amount, \$94 billion, was committed to partnerships dedicated to non-venture investments.

Private equity capital outstanding at year-end 1994 was \$100.4 billion.⁵¹ This amount is less than cumulative commitments over 1980–94 because some commitments made to partnerships have been distributed back to investors.⁵² The distribution of private equity holdings among major investor groups is described in chapter 5.

48. See "KKR, Forstmann Adapt Strategies to New Market," *The Private Equity Analyst*, March 1994.

49. *The Private Equity Analyst*, December 1992.

50. See "Media Strategies Come Into Focus," *The Private Equity Analyst*, March 1995.

51. Estimated private equity outstanding is at cost; details are provided in the appendix.

52. Offsetting these distributions are direct investments made by some of the more experienced investors, such as bank-affiliated SBICs and venture capital subsidiaries of nonfinancial corporations.

47. *The Private Equity Analyst*, January 1995.

3. Issuers in the Private Equity Market

Private equity is one of the most expensive forms of finance. Thus, firms that raise private equity tend to be those that are unable to raise funds in other markets such as the bank loan, private placement, or public equity market. Many of these firms are simply too risky to be able to issue debt. Also, investment in these firms may require a large amount of due diligence on the part of potential investors because little public information is available and because of the unique risks involved. The firms may also need investor guidance and expertise in developing their business. The private equity market, where a large investor can take the time and effort to understand precisely such risks and may exert some influence over management in return for its investment, may be the only viable alternative for these firms.

In this chapter we present a taxonomy of firms that issue in the private equity market based on such firm characteristics as age, size, and reason for raising capital. Our characterizations of groups of issuers are based primarily on evidence from interviews with market participants, because many firms that issue private equity are private corporations for which data are largely unavailable. We do, however, supplement the evidence from interviews with information on two groups of firms that issue private equity: firms that issued private equity before going public and firms that issue private equity through an agent.

A Taxonomy of Issuers

Our taxonomy lists the types of firm that issue private equity, their reasons for doing so, their major investors, and other characteristics (table 4). We do not claim that our taxonomy is exhaustive or that there is no overlap between the groups, but we do believe that the groups account for the bulk of the issuers of private equity and that the differences between groups are substantial enough to be meaningful.

Firms Seeking Venture Capital

The industry has no standard terminology for describing the different firms in the venture capital market. Plummer (1987) and Sahlman (1990) identify seven types of firms that seek venture

capital finance.⁵³ However, our interviews with market participants did not reveal enough precision or consistency in the classification of firms to justify a breakdown into seven neat categories. Most market participants we talked to made a distinction merely between “early-stage” and “later-stage” venture capital. Early-stage new ventures fit the conventional image of a firm seeking venture capital: They are firms that have a substantial risk of failure because the technology behind their production method or the logic behind their marketing approach has yet to be proved. Later-stage new ventures have a more proven technology behind their product and a more proven market for it; their risk comes less from uncertainties about the feasibility of their business concepts than from the myriad uncertainties that affect all small businesses. The groups do have a common objective, however: to grow fast enough that they will ultimately be able to go public or be sold to another company.

Early-Stage New Ventures

Early-stage firms vary somewhat in size, age, and reasons for seeking external capital. The smallest type of venture in this category is the entrepreneur who needs financing to conduct research and development to determine whether a business concept deserves further financing.⁵⁴ The concept may involve a new technology or merely a new marketing approach. Financing may be needed to build a prototype, conduct a market survey, or bring together a formal business plan and recruit management.

A somewhat more mature type of firm in the early-stage category already has some evidence that production on a commercial scale is feasible and that there is a market for the product. Such firms need financing primarily to establish operating companies, by setting up initial manufacturing and distribution capabilities, so they can sell their product on a commercial scale. Slightly more

53. These seven types range from firms seeking “seed” capital to determine the feasibility of a business idea to firms nearly mature enough to be sold to another company or to issue equity in the public markets.

54. Plummer (1987) terms this type of financing “seed capital.”

4. Characteristics of major issuers in the private equity market

| Characteristic | Early-stage new ventures | Later-stage new ventures | Middle-market private firms | Public and private firms in financial distress | Public buyouts | Other public firms |
|---|---|---|--|--|---|--|
| Size | Revenues between zero and \$15 million | Revenues between \$15 million and \$50 million | Established, with stable cash flows between \$25 million and \$500 million | Any size | Any size | Any size |
| Financial attributes | High growth potential | High growth potential | Growth prospects vary widely | May be over-leveraged or have operating problems | Under-performing High levels of free cash flow | Depend on reasons for seeking private equity |
| Reason(s) for seeking private equity | To start operations | To expand plant and operations To cash out early-stage investors | To finance a required change in ownership or capital structure To expand by acquiring or purchasing new plant | To effect a turnaround | To finance a change in management or in management incentives | To ensure confidentiality To issue a small offering For convenience Because industry is temporarily out of favor with public equity markets |
| Major source(s) of private equity | “Angels” Early-stage venture partnerships | Later-stage venture partnerships | Later-stage venture partnerships Non-venture partnerships | “Turnaround” partnerships | LBO and mezzanine debt partnerships | Non-venture partnerships |
| Extent of access to other financial markets | For more mature firms with collateral, limited access to bank loans | Access to bank loans to finance working capital | Access to bank loans For more mature, larger firms, access to private placement market | Very limited access | Generally, access to all public and private markets | Generally, access to all public and private markets |

mature firms may already have basic manufacturing and distribution capabilities but may need to expand them and to finance inventories or receivables. The most mature of the early-stage firms are those that are starting to turn profits but whose demand for working capital and capital for further expansion is rising faster than their cash flow.

Early-stage venture investments are by their nature small and illiquid. A typical early-stage investment might range from \$500,000 to fund the development of a prototype, for example, to \$2 million to finance the start-up of an operating company. Investors in early-stage ventures recognize that their investments are for the long term and that they may be unable to liquidate them for many years, even if the venture is successful.

Because of their high risk and low liquidity, early-stage venture investments carry high required returns. The discount rate that investors apply to such investments may range as high as 35 percent to 70 percent per annum.⁵⁵

55. The discount rates cited here and later in this section are from Plummer (1987) and from interviews with market participants. The rates are used to convert an estimated terminal value of the company after a certain period (say, five to seven years) to a present value. These discount rates may seem high compared with the actual returns reported by the venture capital partnerships analyzed in chapter 7. The differences have two explanations. First, these discount rates are gross rates of return to the partnership, not to the limited partners, as discussed in chapter 7; returns to limited partners are gross partnership returns, less management fees and the general partners' carried interest. Second, as discussed in chapter 4, these discount rates are required returns *conditional* on the success of an investment rather than required unconditional expected rates of return.

Early-stage new ventures obtain capital from early-stage limited partnerships. Angel capital is also important to this group of firms. As discussed in chapter 1, angel capital is provided somewhat informally, usually at the very early stages of the firm's development, by individuals who have high net worth. The most mature early-stage firms may also have access to bank finance to meet their liquidity needs, particularly if they are generating a profit on existing operations and have some collateral, such as inventories, receivables, or other fixed assets, that can be used to secure a loan.

Later-Stage New Ventures

Firms that need later-stage venture funds have less uncertainty associated with the feasibility of their business concept. They have a proven technology and a proven market for their product. They are typically growing fast and generating profits. Such firms need private equity financing to add capacity or to update their equipment to sustain their fast growth. If the firms' original investors (management, or venture capital limited partnerships) need liquidity before issuance of an IPO or sale to another company, such firms may also seek later-stage private equity financing to support a limited cash-out of the original investors or a restructuring of positions among the venture capital investors.

Generally, later-stage venture investments are larger than early-stage investments, ranging from \$2 million to \$5 million, and are held for a shorter term, simply because the firm is closer to being sold publicly or to another firm. Because the risk is generally lower and the liquidity higher, later-stage investments carry somewhat lower required returns than early-stage investments. The discount rate used to convert an estimated terminal value to a present value may be 25 percent to 40 percent.

Middle-Market Private Firms

Over the 1980s, middle-market private firms found increasing opportunities to raise private equity as the market looked beyond pure venture capital investment. These firms differ in a number of ways from firms seeking venture financing. First, they are generally well established, having been founded decades, rather than years or months, earlier. Second, with annual revenues ranging from \$25 million to \$500 million, they are typically much larger than early-stage new ventures and are

in most cases larger than later-stage new ventures. Third, they are typically not in high technology sectors, but are more often than not in basic retail and manufacturing industries.⁵⁶ Fourth, most have much more stable cash flows and much lower growth rates than firms seeking venture finance, and they are typically profitable, generating anywhere from \$5 million to \$25 million in annual operating earnings. Finally, they typically have a significant asset base to borrow against (such as inventories or receivables) and consequently almost always have access to bank loans. Some of the larger firms in this category may also have access to the private placement bond market.

These firms' reasons for seeking external equity financing are also quite different from those of firms seeking venture capital. Many are family-owned enterprises that have no desire to go public. Such firms generally seek private equity to achieve one of two objectives: to effect a change in ownership or capital structure, or to finance an expansion (an acquisition of another firm or the purchase of additional plant and equipment). Although these firms typically have access to bank loans, or even to private placements, they often cannot meet their financing needs entirely through such debt instruments.

Change in Ownership or Capital Structure. All family-owned and closely held private companies eventually face the issue of succession of the current management team or the liquidity needs of existing owners. Resolution of the issue typically requires that the company be sold to the heirs of the founding family or to a new management team. In either case, funds must be available to cash out the existing owners. Typically, a private equity limited partnership organizes the financing of an ownership change, in many instances with a combination of private equity and subordinated debt. Depending on the proportions of debt and equity used, a change in capital structure (a leveraged buyout) may accompany the ownership change. The new owners typically are the heirs, the new management, and the private equity limited partnership that provided the financing. Market participants have remarked that this reason for tapping the private equity market has become more common in recent years as the many private businesses that were started soon after World War II require a change of ownership from the founder to the heirs.

⁵⁶ Study by Pathway Capital Management, reported in *Venture Capital Journal*, June 1993, p. 7.

Expansion by Acquisition or Purchase of New Plant. Middle-market firms that want to expand their plant and equipment or to acquire related businesses appear to be an important class of issuer in the private equity market. The widespread move to consolidate a number of basic retail and manufacturing industries in the United States over the past decade has contributed to such acquisition activity. Market participants point particularly to the increasing tendency of large manufacturers to reduce the number of suppliers as a spur to consolidation among small manufacturers of intermediate goods. In addition, the pressure for large-scale consolidation in a number of end-product manufacturing industries has forced many middle-market private firms to consider making acquisitions in order to survive.

Non-venture partnerships are a major source of private equity for middle-market firms, although partnerships that specialize in later-stage ventures also appear to finance such deals on a regular basis. Just as the typical middle-market firm is somewhat larger than a firm seeking venture capital, the investments in middle-market firms are larger, typically ranging from \$10 million to \$100 million. Required returns are lower than for venture capital financing, reflecting the greater stability of the firms' cash flows and the businesses they are in. Discount rates for middle-market private equity investors may range from 15 percent to 25 percent.

Firms in Financial Distress

Private and public firms that are in financial distress make up another group of issuers in the private equity market.

Private Firms

For private firms in financial distress, most private equity is supplied by specialized "turnaround" partnerships that hope to restore the firm to profitability and then sell it. Reflecting this specialization, most limited partnerships that provide private equity to distressed firms do not also invest in venture firms or in other middle-market firms. Most turnaround partnerships target private firms that have already triggered a default provision on their outstanding loans. Firms are typically in the manufacturing or distribution

sector and have annual sales of \$25 million to \$200 million. In addition, most turnaround partnerships target firms with financial problems that arose simply from being overleveraged—that is, they show positive earnings before interest and taxes (EBIT); a smaller number also invest in firms with definable operating and management problems that are showing negative EBIT.

In return for its injection of new capital, the turnaround partnership usually receives controlling interest in the firm, with the former owners and current management making up the minority interest. The firm renegotiates terms with existing lenders, offering to restructure or pay off loans at a discount. Typically the firm's postacquisition debt-to-equity ratio ranges between 1 and 3. The turnaround partnership then uses its expertise to find new markets for the firm's product and to advise on cost cutting. If the firm's financial problems are due to current management rather than capital structure, new management is brought in.

Required returns are high, reflecting the risky nature of the activity, and discount rates vary from perhaps 30 percent to 35 percent.

Public Firms

Public firms in financial distress are unlikely to be able to issue public equity except at a large discount, and they are typically shut out of the debt markets (the bank loan, private placement, and public bond markets). For these firms the easiest course may be to persuade a large investor who has the time and resources to understand the risks to make a substantial private equity investment. In return, the investor may be given some control or influence over the direction of the firm.

Public Buyouts

Along with venture capital, buyouts of public firms are probably the most familiar, most publicized uses of private equity. This familiarity stems from the surge in leveraged buyout (LBO) activity in the 1980s. Whereas in the 1970s a few large insurance companies invested in small LBOs, in the mid-1980s limited partnerships managed by firms specializing in LBOs became major investors, and both transaction size and the amount of leverage employed increased dramatically. In 1988, for example, the total value of the 214 buyouts of public companies and divisions exceeded

\$77 billion—nearly one-third the value of all mergers and acquisitions in that year. In 1978, in contrast, total LBO activity was less than \$1 billion.⁵⁷

Companies that have undergone public buyouts typically have moderate or even slow growth rates, stable cash flows, and management that was misusing the discretionary cash flows for negative present value acquisitions or other activities. Opler and Titman (1993), for example, found that firms that have undergone LBOs tend to have less-favorable growth opportunities and higher levels of cash flow than firms that have not undergone LBOs. After an LBO, the need to pay out large amounts of cash to debtholders reduces the ability of management to misuse firm assets and results in an increase in firm value.

Other Public Firms

A number of public firms that issue equity in the private market apparently are not in financial distress. Their reasons for issuing in the private market seem to be many and varied. One is cost: Some public firms are issuing very small amounts of equity (less than \$5 million), and the all-in cost of such small issues may be less in the private market than in the public market.⁵⁸ Other public firms are raising funds to finance activities, such as planned acquisitions, that they want to keep confidential. Also, some are planning merger or acquisition activity involving complex business strategies that public retail investors would not be comfortable with and that require analysis by a large, sophisticated private investor. Other firms issue in the private market because it is convenient: Funds can usually be raised more quickly and with less paperwork than in the public market.

A final reason that some public firms issue in the private equity market is a temporary interruption of access to the public equity market. Market participants attribute such interruptions to the susceptibility of retail and institutional investors to a herd mentality in viewing the prospects of particular industrial sectors or even the entire market. For example, companies that service oil

fields found it almost impossible to issue equity publicly in 1989. Banks faced similar conditions in 1991, and cable television companies in 1992. Many firms in these industries would have been forced to turn to the private market to meet their needs.

Empirical Examination of Issuers of Private Equity

In this section we provide some empirical information on two types of firms that issue private equity: public firms that received private equity financing before going public, and firms that issue private equity through agents.

IPO Firms that Received Private Equity Backing

To examine IPO firms that received private equity backing before going public, we first identified firms that had made initial public offerings of at least \$1.5 million in 1991–93 listed in Security Data Company's (SDC) database of public equity issues. We then identified from that group two sets of firms: one set that had received venture financing (identified using *Venture Capital Journal's* list of IPO firms that had previously received institutional venture capital) and another set that had previously gone private in an LBO.⁵⁹ For each firm we collected balance sheet and income data from COMPUSTAT for the quarter just before the firm went public. COMPUSTAT data were available for 346 venture-backed firms and 125 reverse-LBO firms.

Venture-Backed New Firms

The 346 firms that had received venture financing are not representative of all firms that access venture capital. They are only the “success stories”—those venture-backed firms that succeeded in growing fast enough to make an IPO possible.⁶⁰ Indeed, they are only a portion of the

57. See Jensen (1989). Of course, these numbers measure the total value of the companies and divisions purchased in LBOs, not the amount of private equity used to finance the purchase, which was typically a small fraction of the total purchased value.

58. Although they may get a lower price for their shares in the private market, these firms are not burdened with the large fixed costs involved in a public market issuance.

59. The latter set of firms satisfied two criteria: They were identified in the SDC database as reverse-LBOs, and they were identified by Moody's Investor Service as public firms taken private.

60. Firms that go public likely represent a small fraction of all firms that receive seed and early-stage financing, as the success rate of these investments is estimated to be only 10 percent to 30 percent.

5. Distribution of new venture-backed and not-venture-backed IPO firms, by industry, 1991–93¹

| Industry | Venture-backed | | Not-venture-backed | |
|---|----------------|------------|--------------------|------------|
| | Number | Percent | Number | Percent |
| Computer-related | 102 | 30 | 48 | 11 |
| Software | 48 | 14 | 21 | 5 |
| Hardware | 54 | 16 | 27 | 6 |
| Medical and health | 122 | 35 | 62 | 15 |
| Biotechnology | 66 | 19 | 12 | 3 |
| Medical instruments .. | 35 | 10 | 21 | 5 |
| Health services | 21 | 6 | 29 | 7 |
| Manufacturing (not computer-related) .. | 28 | 8 | 65 | 15 |
| Retail and wholesale | 26 | 8 | 95 | 22 |
| Telecommunications | 16 | 5 | 18 | 4 |
| Other business services .. | 17 | 5 | 19 | 4 |
| Other | 35 | 10 | 133 | 30 |
| Total | 346 | 100 | 440 | 100 |

1. Venture-backed IPO firms are firms that received venture backing before issuing an initial public offering; not-venture-backed IPO firms are those that did not.

SOURCES. Securities Data Company and *Venture Capital Journal*.

success stories, as the group excludes venture-backed firms that succeeded but were sold to another company rather than taken public. Although private sales are not generally as important as IPOs as a means of exit for venture-backed firms, the numbers are significant. Of the 635 portfolio companies that venture capitalists exited successfully in 1991–93, merger and acquisition transactions accounted for 191 deals and IPOs for 444 deals.⁶¹

Table 5 shows the distribution of new IPO firms in 1991–93 by industry—the 346 venture-backed firms and 440 new firms that had not received venture backing. The venture-backed firms were concentrated in very different industries than the new firms that had not received venture backing. Approximately 65 percent of venture-backed firms were in the computer-related and medical and health sectors (particularly the biotechnology industry), compared with only 26 percent of the firms without previous venture backing. The not-venture-backed firms were especially concentrated in the manufacturing and retail and wholesale sectors. Consistent with our characterization, the venture-backed new firms tend to be concentrated in technology and research-intensive activities.

61. *Venture Capital Journal*, April 1995. Over a longer period, 1983–94, mergers and acquisitions of venture-backed firms accounted for half of all exits, 1,104 out of a total of 2,200.

Venture-backed firms also appear to have higher ratios of research and development expenditures to assets, and to have lower ratios of debt to assets and fixed assets to total assets, consistent with their technology-intensive orientation (table 6). Further, despite being smaller, venture-backed firms raised considerably more capital through the IPO. The greater proceeds could be indicative of these firms' higher growth potential.

The differences in firm size indicated by the data in table 6 are due largely to differences in industry concentration. Table 7 presents data on the financial characteristics of firms in the five industry sectors that make up the computer and medical-related categories. Biotechnology and medical instruments firms, which together accounted for 29 percent of venture-backed new IPO firms in 1991–93, typically had assets of only about \$8 million just before going public and almost no sales. These firms are considerably smaller than the typical IPO firm and bring down the size of the typical venture-backed firm. Other important distinctions remain after holding industry sector constant—namely, venture-backed

6. Median characteristics of new venture-backed and not-venture-backed IPO firms, 1991–93

| Characteristic | Venture-backed | Not-venture-backed ¹ |
|---|----------------|---------------------------------|
| Assets (millions of dollars) | 16.0 (34.4) | 23.3 ** (62.5)** |
| Sales (millions of dollars) | 6.4 (12.0) | 10.2 ** (22.7)** |
| Ratio of research and development expenditures to assets (percent) .. | 15.1 (26.8) | 1.3 ** (13.2)* |
| Ratio of debt to assets (percent) | 16.2 (34.9) | 41.5 ** (47.6)* |
| Ratio of fixed assets to total assets (percent) | 15.7 (22.6) | 23.5 ** (30.2)** |
| Ratio of operating income to assets (percent) | 4.4 (-3.6) | 4.8 (3.0)** |
| Proceeds from IPO (millions of dollars) | 22.5 (27.4) | 18.1 ** (29.3) |

NOTE. Data are for the quarter just before the firm went public. Sales, research and development expenditures, and operating income are at an annual rate. Numbers in parentheses are means.

1. * indicates that the difference between venture-backed and not-venture-backed firms is significant at the 5 percent level; ** indicates that the difference is significant at the 1 percent level. Significance tests of the differences between medians are based on *z*-statistics from the Wilcoxon two-sample ranked sum test, and tests of differences between means are based on *t*-statistics.

SOURCES. Securities Data Company and COMPUSTAT.

7. Median characteristics of venture-backed and not-venture-backed firms issuing IPOs in selected industries, 1991–93

| Characteristic | Computer software | | Computer hardware | | Biotechnology | | Medical instruments | | Health services | |
|--|-------------------|---------------------------------|-------------------|---------------------------------|----------------|---------------------------------|---------------------|---------------------------------|-----------------|---------------------------------|
| | Venture-backed | Not-venture-backed ¹ | Venture-backed | Not-venture-backed ¹ | Venture-backed | Not-venture-backed ¹ | Venture-backed | Not-venture-backed ¹ | Venture-backed | Not-venture-backed ¹ |
| Assets (millions of dollars) . | 14.3 | 8.9 | 26.4 | 10.9* | 8.2 | 5.6 | 8.3 | 8.2 | 22.0 | 16.5 |
| Sales (millions of dollars) .. | 8.3 | 4.8* | 11.5 | 4.8* | .4 | .0 | 1.7 | 2.0 | 11.8 | 8.2 |
| Ratio of research and development expenditures to assets (percent) | 16.0 | 6.7* | 12.3 | 11.1 | 26.5 | 18.0* | 12.9 | 7.4* | 7.6 | .0* |
| Ratio of debt to assets (percent) | 6.1 | 10.0 | 11.1 | 19.9* | 11.1 | 17.1 | 15.0 | 34.4 | 28.5 | 49.2 |
| Ratio of fixed assets to total assets (percent) ... | 13.3 | 10.7 | 16.6 | 18.8 | 13.7 | 17.6 | 14.6 | 16.2 | 25.1 | 23.2 |
| Ratio of operating income to assets (percent) | 8.3 | 1.8 | 4.5 | 7.7 | -16.4 | -18.9 | -7.5 | -3.6 | 4.0 | 8.4* |
| Proceeds from IPO (millions of dollars) ... | 23.2 | 9.4* | 25.1 | 14.0* | 25.8 | 9.2 | 16.1 | 12.1* | 16.4 | 13.8 |
| MEMO | | | | | | | | | | |
| Number of firms | 54 | 26 | 49 | 30 | 66 | 17 | 36 | 22 | 21 | 30 |

NOTE. Data are for the quarter just before the firm went public. Sales, research and development expenditures, and operating income are at an annual rate.

1. * indicates that the difference between venture-backed and not-venture-backed firms is significant at the 5 percent level.

Significance tests of differences between medians are based on z-statistics from the Wilcoxon two-sample ranked sum test.

SOURCES. Securities Data Company and COMPUSTAT.

firms continue to spend more on research and development relative to assets and to obtain larger amounts through their IPOs.

Reverse-LBOs

Because underperformance before going private and the ability to issue large amounts of debt set reverse-LBO firms apart from venture-backed new firms, we examined the former group separately. Reverse-LBO firms tend to be concentrated in mature industries (table 8). Almost 60 percent are in the retail and wholesale, manufacturing, and textile and apparel industries; fewer than 20 percent are in industries associated with technology and research, sectors that account for most venture-backed new firms.

Reverse-LBO firms, at the time of the IPO, also tend to be large, mature, and more capable than venture-backed new firms of carrying high debt loads: The typical (median) firm had assets of roughly \$200 million and annual sales of \$68 million, about ten times the sales of the typical venture-backed new firm. The reverse-LBO firms also spend less on research and development, relative to assets, and have a greater proportion

of fixed assets; their debt-to-asset ratios are high, above 60 percent, and are two to four times those of venture-backed firms. The amount raised by the median reverse-LBO firm through the IPO, \$49 million, is about 25 percent of total assets, quite modest compared with the ratio of IPO proceeds to total assets for venture-backed new firms, which in many cases exceeds 100 percent. The lower proportion of proceeds relative to assets likely is a reflection of the most common use of proceeds from IPO: Reverse-LBO firms often use them to reduce debt, whereas new firms use them to fund growth.

Firms that Issue Agented Private Equity

Data on firms that use agents to issue private equity were obtained from Securities Data Company (SDC), which bases its data on reports submitted by agents. Because many agents assist only one or two deals a year and do not report their transactions to SDC, and because agents are used mainly in non-venture private equity deals—and then primarily in the largest deals—the SDC data exclude many non-venture investments and virtually all venture investments.

8. Number and characteristics of firms for which reverse-LBOs were completed in 1991-93

| Item | Number | Percent |
|--|------------|------------|
| <i>By industry</i> | | |
| Retail and wholesale | 29 | 23 |
| Manufacturing (not computer-related) | 33 | 27 |
| Textile and apparel | 11 | 9 |
| Health services | 9 | 7 |
| Telecommunications | 8 | 6 |
| Computer-related | 8 | 6 |
| Other | 27 | 22 |
| Total | 125 | 100 |
| | Median | Mean |
| <i>By selected characteristics</i> | | |
| Assets (millions of dollars) | 202.1 | 462.4 |
| Sales (millions of dollars) | 67.9 | 145.9 |
| Ratio of research and development expenditures to assets (percent) | 0.6 | 2.5 |
| Ratio of debt to assets (percent) .. | 64.2 | 63.2 |
| Ratio of fixed assets to total assets (percent) | 22.3 | 27.0 |
| Ratio of operating income to assets (percent) | 4.5 | 5.0 |
| Proceeds from IPO (millions of dollars) | 49.2 | 91.4 |

NOTE. Data are for the quarter just before the firm went public. Sales, research and development expenditures, and operating income are at an annual rate.

SOURCES. Securities Data Company and COMPUSTAT.

The SDC data cover 256 agent-assisted private equity transactions in 1992 and 1993 totaling \$7.9 billion (chart 3).⁶² Average issue size was \$30.9 million, and median issue size was almost \$10 million. Common stock was the most prevalent type of security issued, accounting for just over 60 percent of the total number of issues; preferred stock accounted for about 12 percent, and convertible preferred stock 24 percent. Issuers were in all types of industries; 89 percent were nonfinancial firms (36 percent were manufacturing firms).

To get an idea of the types of firms that issue private equity through an agent, we combined information on issuers from the SDC database with information on corporations from COMPUSTAT. As most publicly quoted firms are listed in the COMPUSTAT database, this approach provides a rough estimate of the proportions of private equity issuers that were public firms and private

corporations. Of the 256 firms that issued private equity in 1992 and 1993, we were able to obtain matches with COMPUSTAT on 89 firms, roughly one-third of the total; we assume that the remaining two-thirds were private corporations. Issue size was lower for the private firms than for the public firms, but the frequency of common stock issuance and the distribution of firms across industry groups did not differ substantially.

3. Agent-assisted private equity issues, all issuers, 1992-93

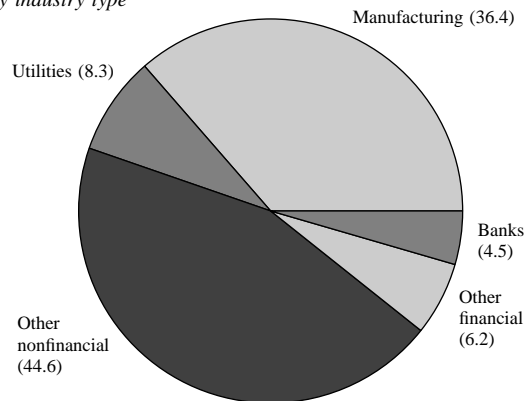
Volume issued
Millions of dollars

| | |
|------------------|---------|
| Total | 7,918.1 |
| <i>Per issue</i> | |
| Median | 9.7 |
| Mean | 30.9 |

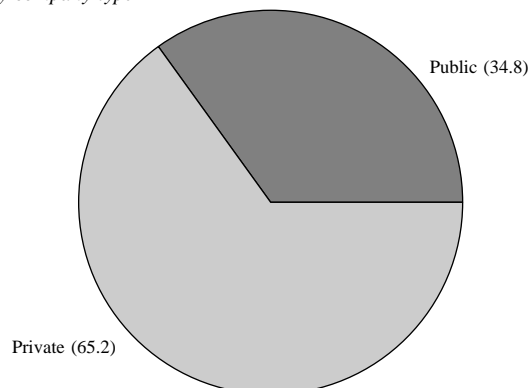
Companies that issued

Percent, based on number of companies

By industry type



By company type



Based on 256 agent-assisted private equity transactions.
SOURCE. Securities Data Company.

62. Six firms issued private equity twice, once in 1992 and once in 1993. The data presented treat each issue as a separate observation.

For the eighty-nine *public* firms that used agents to issue private equity, we have balance sheet and income statement data from COMPUSTAT. The typical (median) firm had assets of \$54 million, annual sales of \$26 million, and a market capitalization of equity of \$96 million (chart 4).⁶³ These are small public firms. In contrast, the median firm in the COMPUSTAT universe had assets of \$166 million, annual sales of \$111 million, and a market capitalization of equity of \$116 million.

To discover why these public firms issued in the private equity market rather than in other, generally cheaper markets, we looked at other characteristics. One such characteristic was financial distress. We classified a firm as being in financial distress if it reported an interest coverage ratio of less than 1 in the year it made a private equity issue.⁶⁴ Forty-six of the eighty-nine firms satisfied this criterion, suggesting that more than half were in financial distress at the time they issued private equity. These firms likely were forced to raise funds privately because their financial condition made it impossible, or very costly, to issue public equity.

What motivated the forty-three firms not in financial distress to issue equity privately? One factor may have been the size of their issues, ten of which were for \$5 million or less. These firms may have found it less costly to issue in the private market; though they may have gotten a lower price for their small issues, they avoided the higher fixed costs associated with the public market. Another factor prompting these firms to issue private equity may have been a desire for privacy: They did not have to reveal private information or business plans, as they would have with a public issue. Six firms had sought funds specifically to finance a planned acquisition.

Why the remaining twenty-seven firms issued equity privately instead of publicly is not clear. Some, of course, may have been in financial distress or wanted to protect the confidentiality of their business in ways not discerned by our simple measures. For other firms, special legal or regulatory circumstances may have prompted them to issue privately.

63. Mean asset size was considerably larger, \$3.8 billion, because one public firm that issued private equity during the period, Chrysler Financial Corporation, had assets (\$213 billion) an order of magnitude larger than the next largest firm in the sample.

64. An interest coverage ratio below 1 means that a firm's earnings after all expenses (except interest payments) is less than the interest payments owed on its debt.

4. Agent-assisted private equity issues, public companies, 1992–93

Volume issued
Millions of dollars

| | |
|--------------|---------|
| Total | 3,647.3 |
| Per issue | |
| Median | 12.0 |
| Mean | 40.9 |

Companies that issued

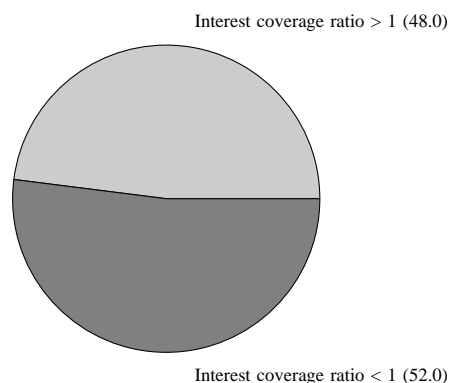
Millions of dollars

| | |
|------------------------|---------|
| Assets | |
| Median | 54.0 |
| Mean | 3,838.8 |
| Annual sales | |
| Median | 26.1 |
| Mean | 1,655.9 |
| Market value of equity | |
| Median | 95.9 |
| Mean | 1,468.2 |

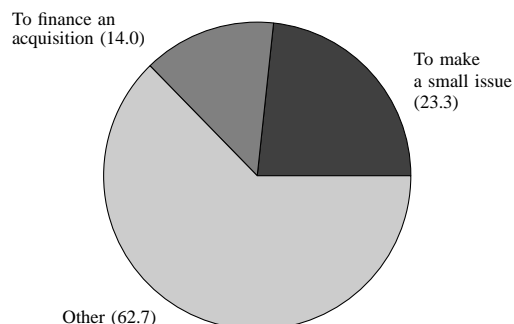
Companies that issued

Percent, based on number of companies

Financial condition
(All companies)



Reason for issuance
(Companies not in financial distress)



Based on 89 agent-assisted private equity transactions.
SOURCES. Securities Data Company and COMPUSTAT.

4. Intermediaries in the Private Equity Market: The Role of Partnerships

Accompanying the growth of the private equity market in the 1980s was the rise of professionally managed limited partnerships as intermediaries. In certain respects, the success of limited partnerships is paradoxical. Interests in such partnerships are illiquid over the partnership's life, which in some cases runs more than ten years. During the period, investors have little control over the way their funds are managed. At the same time, partnership management fees and performance-based compensation raise the cost of private equity to issuers above the already high rates of return required by investors as compensation for risk and illiquidity. Nevertheless, the increasing dominance of limited partnerships suggests that they benefit both investors and issuers.

In this chapter we examine the organizational structure of partnerships and the ways in which they permit the private equity market to function more efficiently. We begin by discussing the reasons some form of specialized intermediary is indispensable to the private equity market. Next we examine the reasons limited partnerships are an especially effective form of intermediary: We look at the ways general partners manage the sorting and incentive problems that arise between themselves and the managers of their portfolio companies, and then describe the special organizational and contractual features of private equity partnerships and the means of aligning the interests of the limited and general partners. We conclude the chapter by examining the role of direct investments in the private equity market.⁶⁵

Rationale for Intermediation in the Private Equity Market

Until the late 1970s, private equity investments were undertaken mainly by wealthy families,

65. Our discussion closely follows Sahlman's (1990) but differs in several respects. First, we emphasize the adaptability of the limited partnership structure to all segments of the private equity market, venture and non-venture capital alike. Second, we place greater emphasis on the role of reputation in the private equity market. In emphasizing the role of reputation and the importance of establishing a favorable track record, we also focus on the problems of performance measurement. Finally, we emphasize that private equity partnerships remain a relatively recent development and that the terms of the partnerships—especially those pertaining to general partner compensation—continue to evolve. Here we are able to benefit from recent research in this area, especially that by Gompers and Lerner (1994a, 1994b, 1995).

financial institutions, and industrial corporations investing *directly* in the securities of issuing firms. Today, about 80 percent of private equity investments flow through specialized *intermediaries*, almost all of which are in the form of limited partnerships.⁶⁶ Before describing the specific advantages of this organizational form, we discuss the reasons intermediaries are used at all in the private equity market.

Two types of problems frequently arise when outsiders finance the investment activity of a firm—sorting problems and incentive problems. *Sorting problems* arise in the course of selecting investments: Firm owners and managers typically know much more about the condition of their business than outsiders, and it is in their interest to accent the positive while downplaying potential difficulties. Sorting problems and their implications for corporate finance were first analyzed by Leland and Pyle (1977) and Ross (1977). Their papers stress that firms minimize their information advantage by issuing debt; higher-quality firms rely more heavily on debt than on equity for external financing.

Incentive problems arise in the course of the firm's operations. Firm managers have many opportunities to take actions that benefit themselves at the expense of outside investors. In their pioneering treatment of this issue, Jensen and Meckling (1976) stress that a combination of methods is usually needed to align the incentives of firm managers and investors; these methods include the selection of an appropriate capital structure, the use of collateral and security covenants, and direct monitoring. Diamond (1991) highlights the role of reputation in mitigating incentive problems. However, these and many subsequent studies view debt as central to providing incentives to those who control businesses.

Financing situations in which private equity is used are those in which the sorting and incentive problems are especially severe *and* in which

66. As explained in chapter 1, we treat the direct private equity investments of bank-affiliated SBICs (Small Business Investment Companies) and venture capital subsidiaries of nonfinancial companies as direct investments rather than as investments by non-partnership intermediaries. That is how we arrive at the statement that almost all *intermediated* private equity finance now flows through limited partnerships.

issuance of debt is impractical.⁶⁷ Resolving the extensive sorting and incentive problems in such situations requires that investors engage in intensive *pre-investment due diligence* and *post-investment monitoring*. These activities are not efficiently performed by large numbers of investors; there can be too much of both types of activities because investors duplicate each others' work, or too little of each owing to the tendency of investors to free-ride on the efforts of others. Thus, delegating these activities to a single intermediary is *potentially* efficient.

The efficiency of intermediation depends on how effectively the sorting and incentive problems between investors and intermediaries can be resolved.⁶⁸ In the private equity market, *reputation* plays a key role in addressing these problems because the market is composed of a small number of actors that interact with each other repeatedly. For example, partnership managers that fail to establish a favorable track record may subsequently be unable to raise funds or participate in investment syndicates with other partnerships.

The importance of delegated monitoring in explaining the emergence of private equity intermediaries is suggested by the remarks of an insurance company executive who had managed a small *direct* private equity portfolio in the 1960s. By 1982, the company was investing exclusively through limited partnerships. The company official explained: "The results [of direct investing] were not bad at all when the returns were in . . . [but we were] annoyed by the amount of time everybody ended up spending on little companies. We were persuaded that [direct] venture investing is inherently awkward."⁶⁹

Intermediaries are also important because selecting, structuring, and managing private equity investments requires considerable expertise.

Gaining such expertise requires a critical mass of investment activity that most institutional investors cannot attain on their own. Managers of private equity intermediaries are able to acquire such expertise through exposure to and participation in a large number of investment opportunities. They refine their skills through specialization—focusing on companies in specific industries and at specific stages of business development. Although institutional investors could also specialize in this way, they would lose the benefits of diversification.

Finally, intermediaries play an important role in furnishing business expertise to the firms they invest in. Reputation, learning, and specialization all enhance an intermediary's ability to provide these services. For example, a reputation for investing in well-managed firms is valuable in obtaining the services of underwriters. Likewise, specialization allows an intermediary to more effectively assist its portfolio companies in hiring personnel, dealing with suppliers, and carrying out other operations-related activities.

Overview of Private Equity Partnerships

Private equity partnerships are limited partnerships in which the senior managers of a partnership management firm serve as the general partners and institutional investors are the limited partners.⁷⁰ Well-known management firms include Kleiner, Perkins, Caufield, and Byers, a traditional venture capital firm, and Kohlberg, Kravis, Roberts, a buyout group. The general partners are responsible for managing the partnership's investments and contributing a very small proportion of the partnership's capital (most often, 1 percent); the limited partners provide the balance of the investment funds.

67. Firms that need venture capital, for example, have no cash flow, few physical assets to serve as collateral, and little capital in the form of reputation. Any debt issued by such firms would be extremely difficult to price owing to the riskiness of the firm's activities and uncertainty among investors about how great the true level of risk was. Middle-market firms encounter similar difficulties: They have either exceeded their debt capacity or are undertaking an expansion that is too risky, or whose risks are too uncertain, to finance with debt. Firms that are undergoing leveraged buyouts have already taken on a large debt load.

68. If, for example, investors must investigate the intermediary to the same extent that they would investigate the investments that the intermediary makes on their behalf, using an intermediary may be *less* efficient rather than *more* efficient (see Diamond, 1984).

69. See Thomas P. Murphy, "The Odd Couple," *Forbes*, April 26, 1982.

70. For tax and liability reasons, the actual arrangement is more complicated. Typically, a second limited partnership serves as the general partner of the private equity limited partnership. The partnership management firm is the general partner of the second partnership, and the senior managers of the partnership management firm are the limited partners of the second partnership.

The senior managers of the partnership management firm are often referred to as "general partners" of the private equity partnership, even though in a legal sense they are employees of the partnership management firm and limited partners of the second partnership. As employees of the partnership management firm, they manage the private equity partnership; as limited partners of the second partnership, they provide the general partner's share of capital to the private equity partnership and receive the general partner's share of profits. Throughout this study we adopt the convention of referring to these senior managers as general partners.

Each partnership has a contractually fixed lifetime, generally ten years, with provisions to extend the partnership, usually in one- or two-year increments up to a maximum of four years. During the first three to five years the partnership's capital is invested. Thereafter, the investments are managed and gradually liquidated. As the investments are liquidated, distributions are made to the limited partners in the form of cash or securities. The partnership managers typically raise a new partnership fund at about the time the investment phase for an existing partnership has been completed. Thus, the managers are raising new partnership funds approximately every three to five years and at any one time may be managing several funds, each in a different phase of its life. Each partnership is legally separate, however, and is managed independently of the others.

Private equity partnerships vary greatly both in the total amount invested and in the number of limited partners. Some early-stage venture capital partnerships and regionally focused non-venture partnerships are as small as \$10 million. At the other extreme, some leveraged buyout partnerships are as large as \$1 billion or more. A partnership typically invests in ten to fifty portfolio companies (two to fifteen companies a year) during its three- to five-year investment phase. The number of limited partners is not fixed: Most private equity partnerships have ten to thirty, though some have as few as one and others more than fifty.⁷¹ The minimum commitment is typically \$1 million, but partnerships that cater to wealthy individuals may have a lower minimum and larger partnerships may have a \$10 million to \$20 million minimum.

Most partnership management firms have six to twelve senior managers who serve as general partners, although many new firms are started by two or three general partners and a few large firms have twenty or more. Partnership management firms also employ associates—general partners in training—usually in the ratio of one associate to every one or two general partners. Many private equity professionals argue that an apprenticeship is essential to success as a general partner. However, general partners also have backgrounds as entrepreneurs and senior managers in industries in which private equity partnerships invest and, to a lesser extent, in investment and commercial

banking. A partnership management firm evolves as associates are promoted, younger general partners split off to form their own firms, and the more senior general partners retire.

Relationship between a Partnership and its Portfolio Companies

A partnership's investment activities are divided into four stages. The first is *selecting investments*, which includes obtaining access to high-quality deals and evaluating potential investments. This stage involves the acquisition of a large amount of information and the sorting and evaluation of the information. The second stage is *structuring investments*. "Investment structure" refers to the type and number of securities issued as equity by the portfolio company and to other substantive provisions of investment agreements. These provisions affect both managerial incentives at portfolio companies and the partnership's ability to influence a company's operations. The third stage, *monitoring investments*, involves active participation in the management of portfolio companies. Through membership on boards of directors and less formal channels, general partners exercise control and furnish the portfolio companies with financial, operating, and marketing expertise as needed. The fourth stage is *exiting investments*, which involves taking portfolio companies public or selling them privately. Because partnerships have finite lives and investors expect repayment in cash or marketable securities, an exit strategy is an integral part of the investment process.

Selecting Investments

Access to information about high-quality investment opportunities—deal flow—is crucial to a private equity partnership. General partners rely on relationships with investment bankers, brokers, consultants, lawyers, and accountants to obtain leads; they also count on referrals from firms they successfully financed in the past. Economies of scale apparently play an important role in deal flow: The larger the number of investments a partnership is involved in, the larger the number of investment opportunities it is exposed to.

Partnerships compete directly with agents to locate candidate firms. Deals brought to partnerships by agents are less attractive than deals partnerships locate themselves because agent-arranged deals involve additional fees and tend

71. Many partnerships that have a single limited partner have been initiated and organized by the limited partner rather than by the general partner. Such limited partners are in many cases nonfinancial corporations that want to invest for strategic as well as financial reasons—a corporation that wants exposure to emerging technologies in its field, for example.

to get bid up in price by competing investors.⁷² Nonetheless, a portion of partnership investments are generated by agents (see chapter 6).

Due Diligence

Partnership managers receive hundreds of investment proposals. To be successful, they must be able to select efficiently the approximately 1 percent of these proposals that they invest in each year.⁷³ Efficient selection is properly regarded as more art than science and depends on the acumen of the general partners acquired through experience operating businesses as well as experience in the private equity field.

Investment proposals are first screened to eliminate those that are unpromising or that fail to meet the partnership's investment criteria. Private equity partnerships typically specialize by type of investment as well as by industry and location of the investment.⁷⁴ Specialization reduces the number of investment opportunities considered and also reflects the degree of specialized knowledge required to make successful investment decisions.

This initial review takes only a few hours and results in the rejection of up to 90 percent of the proposals a partnership receives. In many cases, the remaining proposals are subjected to a second review, which may take several days. Critical information included in the investment proposal is verified and the major assumptions of the business plan are scrutinized. As many as half the proposals that survived the initial screening are rejected at this stage.

Proposals that survive these preliminary reviews become the subject of a more comprehensive due diligence process that can last up to six weeks. This phase includes visits to the firm; meetings and telephone discussions with key employees, customers, suppliers, and creditors; and the

retention of outside lawyers, accountants, and industry consultants. For proposals that involve new ventures, the main concerns are the quality of the firm's management and the economic viability of the firm's product or service (see Premus, 1984; Silver, 1985; and Gladstone, 1988). For proposals involving established firms, the general objective is to gain a thorough understanding of the existing business. The precise focus of the investigation, however, varies with the type of investment: In the case of distressed companies, efforts are focused on discussions with the company's lenders; in the case of a buyouts of family-owned businesses, management succession issues warrant greater attention; and in the case of highly leveraged acquisitions, efforts focus on developing detailed cash flow projections.

Extensive due diligence in the private equity market is needed because little, if any, information about issuers is publicly available and in most cases the partnership has had no relationship with the issuer. Thus, the partnership must rely heavily on information that it is able to produce *de novo*.⁷⁵ Moreover, managers of the issuing firm typically know more than outsiders about many aspects of their business. This information asymmetry, combined with the fact that issuing private equity is very expensive, has the potential to create severe adverse selection problems for investors.⁷⁶ In the private equity market, the problem of adverse selection is mitigated by the extensive amount of due diligence conducted and by the fact that alternative sources of finance for private equity issuers are limited.

Syndication

Though partnerships compete intensely to locate potential investment opportunities, they also

72. There is a general perception among partnerships that the winning bid on an agent-placed deal suffers "the winner's curse."

73. Silver (1985) suggests that venture capital firms invest in one deal for every one hundred business plans they receive. Our discussions with fund managers indicate that this ratio is equally valid for non-venture partnerships. Interestingly, the ratio was roughly the same for the first organized private equity firm, American Research and Development Corporation (ARD). In its first four years (1946–49), ARD received 3,000 applications for financial assistance. Half were eliminated in the course of a preliminary review, the remaining 1,500 were examined in detail, and 16 were eventually funded (Schmidt, 1951).

74. Types of investments include early- and later-stage venture capital and the entire range of non-venture private equity.

75. Due diligence is more extensive in the private equity market than in either the public securities or private placement debt market, in part because the information problems are more severe. Also, due diligence in the private equity market is performed by those who have a direct stake in the outcome of the investment: the private equity partnership. By contrast, due diligence in the public securities market is performed by the underwriter. In the private placement debt market, due diligence is performed by the issuer's agent or financial adviser in the course of preparing the offering memorandum; potential investors then perform due diligence of a more limited sort, essentially verifying the information furnished by the agent (see Carey and others, 1993).

76. Adverse selection problems arise when investors *systematically* invest in companies that have undisclosed problems and risks because "better" companies either obtain less-expensive financing elsewhere or forgo financing altogether.

cooperate with one another, most often through syndication.⁷⁷ The most common reasons for syndication are deal size and location. Partnerships team up to finance larger deals because of restrictions on the percentage of a partnership fund that may be invested in a single deal. The geographic rationale for syndication is related to the value of local monitoring. A third, less common, reason for syndication is that it permits the validation of one partnership's judgment by another. Finally, by allowing other partnerships to participate in its deals, a partnership informally obliges others to return the favor in the future, thereby increasing its access to profitable deals.

When deals are syndicated, the lead investor—generally the partnership that finds and initiates the deal—structures the deal and performs the lion's share of the due diligence. In return, it can set terms and conditions that more closely meet its needs, although it rarely gets preferential terms. It appears that because of their size, the majority of later-stage venture capital and middle-market buyout investments are syndicated. Conversely, early-stage new ventures are more likely to be financed entirely by a single partnership, reflecting not only the more manageable size of early-stage investments but also the greater value of the services performed by the lead investor.⁷⁸ The largest buyouts also tend to involve a single investor, a mega-buyout fund; the managers of these funds appear to be less collaborative and less willing to share information than the managers of other types of funds, and the funds are large enough to finance large deals entirely by themselves. There may also be a secular trend at work: As the size of new partnership funds has grown over time, reliance on syndication apparently has diminished.

Structuring Investments

If after due diligence the partnership remains interested in investing in a firm, the partnership and the firm begin negotiating an investment agreement setting forth the financial and gover-

nance aspects of the deal. The main financial issue is the amount of ownership the partnership will acquire; two main governance issues are managerial incentives at the portfolio company and the partnership's ability to exert control over the company, especially in the event that its performance suffers.

The Partnership's Ownership Stake

The partnership's ownership share is determined in essentially the same manner regardless of the type of equity issued—by projecting the company's value on some future date and backing out the percent ownership that provides the partnership with its required rate of return.⁷⁹ The value is typically based on multiples of projected after-tax earnings, earnings before interest and taxes, or cash-flow. Required rates of return vary by investment type: Venture capital partnerships report required returns of 50 percent on early-stage investments and 25 percent on later-stage investments, whereas required returns on most non-venture investments are in the range of 15 percent to 25 percent. Because riskier investments generally require more attention and monitoring, their higher required rates of return reflect both a risk premium and compensation for the general partners' time and effort.

"Required" rates of return on private equity investments of 15 percent to 50 percent are much higher than average partnership returns, which are in the mid-teens (see chapter 7). The discrepancy suggests that partnerships consistently fail to earn their required rates of return or that private equity is systematically overpriced. The more likely explanation is that the "required" rate of return is the return the partnership expects to earn if the investment is a success.⁸⁰ In other words, it is a conditional expected return.

This conditional expected return approach to pricing deals reflects the fact that returns on private equity investments are highly skewed: More than half of all investments produce below-average returns, and a small number of investments yield extraordinarily high returns that raise

77. To a lesser extent, partnerships refer deals to each other when an attractive investment opportunity located by one partnership does not meet its investment criteria.

78. Nonetheless, Lerner (1994a) reports that the average number of venture capitalists participating in first-round financings of biotechnology firms during 1978–89 was more than two, suggesting that a significant percentage of early-stage investments are syndicated. Lerner does not report the percentage, however.

79. The three principal types of private equity securities are common stock, convertible preferred stock, and subordinated debt with conversion privileges or warrants. For pricing purposes, it is generally assumed that the conversion privilege or warrants will be exercised.

80. This possibility is suggested by Kenneth Froot in Baty and others (1992).

the average.⁸¹ Under such a distribution of outcomes, the investment's return if it is a success will largely determine its unconditional expected rate of return. It is therefore natural for a partnership and an issuing firm to focus on a conditional return in pricing a deal.

Not surprisingly, agreeing on the future value of the firm is difficult. It is in the firm's interest to project a high future value, as a high future value means that the firm will have to give less stock to the partnership. On the other hand, it is in the partnership's interest to adopt a more conservative forecast. This conflict is often resolved by offering the firm's managers the opportunity to increase their share holdings if certain performance objectives are met (see next section). Besides addressing what may be genuine differences of opinion, such an approach may also prompt firm managers to present a more realistic view of the firm's future earnings potential and provides strong performance incentives.⁸²

Managerial Incentives

Information asymmetries between investors and managers of the issuing firm give rise to a potential "moral hazard," whereby management pursues its own interests at the expense of investors. Private equity partnerships rely on various mechanisms to align the interests of managers and investors, including the level of managerial stock ownership, the type of private equity issued to investors, and the terms of management employment contracts.

Managerial Stock Ownership. Unlike the situation at many public corporations, senior managers of companies in which private equity partnerships invest typically own a significant share of their company's stock, and stock ownership in many cases accounts for a large part of managers' total

compensation.⁸³ A common provision in both venture and non-venture financing is an equity "earn-out" (see Golder, 1983). This arrangement allows management to increase its ownership share (at the expense of investors) if certain performance objectives are met. Performance objectives can be stated in terms of earnings, the market value of the firm, or a combination of the two.

Type of Equity Issued to Investors. Convertible preferred stock is the type of private equity security most frequently issued to investors. The major difference between convertible preferred stock and common stock is that holders of preferred stock are paid before holders of common stock in the event of liquidation. From the partnership's standpoint, the issuance of preferred stock offers two advantages. First, it reduces the partnership's investment risk. Second, and more important, it provides strong performance incentives to the company's management, because management typically holds common stock, or warrants to purchase common stock; if the company is only marginally successful, its common stock will be worth relatively little. Subordinated debt with conversion privileges or warrants also provides a liquidation preference to investors, and thus a performance incentive to management.⁸⁴

Management Employment Contracts. In principle, management's equity position in the firm could induce excessive risk-taking. However, management compensation can be structured to include provisions that penalize poor performance, thereby offsetting incentives for risk-taking. Such provisions often take the form of employment contracts that specify conditions under which management can be replaced and buyback provisions that allow the firm to repurchase a manager's shares in the event that he or she is replaced.

81. Sahlman (1990) reports the results of one survey of portfolio returns for venture capital investments showing that 34.5 percent of invested capital resulted in a loss and another 30 percent resulted in returns in the low to middle single digits. Conversely, less than 7 percent of invested capital resulted in payoffs of more than ten times the original amount invested, and the payoff on these investments accounted for more than 50 percent of the total ending value of all the investments.

82. Another response to overvaluation of the firm by firm insiders is to raise the required rate of return on the investment (see Sahlman, 1990).

83. Few data are available on managerial share ownership. With venture capital, the share varies widely depending on management's financial resources, the company's financing needs, and the company's projected future value. It also depends on the number of rounds of financing, as the share typically is diluted with each round. Even in later-stage companies, however, management ownership of 20 percent is not unusual. For non-venture companies, managerial share ownership in many cases is between 10 percent and 20 percent.

84. In addition to eliciting managerial effort, convertible preferred and convertible debt can also mitigate excessive risk taking (see Gompers, 1993).

Mechanisms of Control

Although managerial incentives are an important means of aligning the interests of management and investors, a private equity partnership also relies on its ability to exercise control over the firm in order to protect its interests. Mechanisms of control include the general partners' representation on the firm's board of directors, the allocation of voting rights, and control of access to additional financing.

Board Representation. General partners can be extremely influential and effective outside directors. As large shareholders, they have an incentive to incur the expense necessary to monitor the firm. Moreover, they have the resources to be effective monitors—their own staff members, information acquired during the due diligence process, and expertise acquired while monitoring similar companies.

Private equity partnerships in many cases dominate the boards of their portfolio companies. Lerner (1994c) reports that general partners hold more than one-third of the seats on the boards of venture-backed biotechnology firms—more than the number held by management or other outside directors.⁸⁵ Baker and Wruck (1989) describe a buyout firm whose partnerships typically control a majority of the board seats at their portfolio companies. Even if it is a minority investor, a private equity partnership usually has at least one board seat and is able to participate actively in a company's management, with timely access to information.

Allocation of Voting Rights. For early-stage new ventures, leveraged buyouts, and financially distressed firms, a partnership's investment is often large enough to confer majority ownership. In other situations, the partnership may obtain voting control even if it is not a majority shareholder. Even if the partnership lacks voting control, however, it is generally the largest nonmanagement shareholder. Thus, it has a disproportionate degree of influence on matters that come to a shareholder vote.

In general, a partnership's voting rights do not depend on the type of stock issued. For example, holders of convertible preferred stock may be allowed to vote their shares on an as-converted basis. Similarly, subordinated debt can be designed

so that investors have voting rights. The issue of voting control can also be addressed by creating separate classes of voting and nonvoting stock.

Control of Access to Additional Financing. Seating on boards of directors and voting control are not the only ways partnerships can exercise control within their portfolio companies. Their ability to provide a company with continued access to funds is also a powerful lever. This is especially the case for new ventures. Venture capital is typically provided to portfolio companies in several rounds at fairly well defined development stages, generally with the amount provided just enough for the firm to advance to the next stage of development. Even if diversification provisions in the partnership agreement prevent the partnership itself from providing further financing, the general partners have the power, through their extensive contacts, to bring in other investors. Conversely, if the original partnership is unwilling to arrange for additional financing, it is unlikely that any other partnership will choose to do so; the reluctance of the original partnership is a strong signal that the company is a poor investment.

Non-venture capital is also provided in stages, though to a lesser extent. For example, middle-market firms that embark on a strategy of acquisitions periodically require capital infusions to finance growth; that capital is not provided all at once. Similarly, companies that undergo leveraged buyouts are forced to service debt out of free cash flow and subsequently must justify the need for any new capital (see Palepu, 1990).

Other Mechanisms. Other mechanisms by which partnerships control and monitor the activities of the companies in which they invest include covenants that give the partnership the right to inspect the company's facilities, books, and records and to receive timely financial reports and operating statements. Other covenants require that the company not sell stock or securities, merge or sell the company, or enter into large contracts without the partnership's approval.

Managing Investments

After investments are made, general partners are active not only in monitoring and governing their portfolio companies but also in providing an array of consulting services. Private equity partnerships argue that their ability to "add value" by furnishing managerial assistance is a defining characteris-

85. Barry and others (1990) report similar findings for venture-backed firms in other industries.

tic of their enterprise that distinguishes them from other outside investors.⁸⁶

In their monitoring and governance role, general partners help design compensation packages for senior managers, replace senior managers as necessary, and stay abreast of the company's financial condition through regular board meetings and interim financial reports. They also remain informed through informal contacts with second- and third-level managers that they established during the due diligence process. General partners provide assistance by helping companies arrange additional financing, hire top management, and recruit knowledgeable board members. General partners also may become involved in solving major operational problems, evaluating capital expenditures, and developing the company's long-term strategy.

Naturally, the degree of involvement varies with the type of investment. Involvement is greatest in new ventures—for which the quality of management is viewed as a key determinant of success or failure—and in certain non-venture situations—for which improving managerial performance is one of the primary purposes of the investment (for example, leveraged buyouts). For these two types of firms, private equity investors typically are also majority owners, so the investors have even greater incentive, as well as authority, to become involved in the company's decision-making. Gorman and Sahlman (1989) report that venture capitalists on average visit each portfolio firm for which they are the lead investor nineteen times a year and spend more than one hundred hours a year with each firm. Baker and Wruck (1989) suggest a similar level of involvement by the buyout firm they examine.⁸⁷ Even when the degree of partnership involvement is lowest—for example, when a partnership is a minority investor in large private or public companies—general partners may spend as much as a third of their time with portfolio companies. A partnership rarely is a completely passive investor; an exception is the case of syndication, when other partnerships may allow the lead investor to take the active role.

86. The joint production of ownership and consulting services distinguishes partnerships not only from other outside investors, but also from other management consultants; unlike other management consultants, partnerships are paid exclusively for performance (through carried interest paid to general partners).

87. For every deal, the partnership designates one of the general partners who has a background in operations to be a liaison to the firm. This general partner is in touch with the firm daily and visits regularly.

Because venture investments require intensive oversight, venture capital partnerships tend to specialize by industry and geographic area to a greater extent than other private equity partnerships. Industry focus permits the partnership to benefit from the expertise acquired assisting similar companies, while geographic proximity is necessary to permit frequent visits to the company. Indeed, Lerner (1994c) documents that geographic proximity is an important determinant of board membership for venture partnerships, and it presumably is an important determinant of managerial oversight as well. Lerner also documents that the number of general partners serving as company directors increases when the CEO lacks entrepreneurial experience and increases around the time of CEO turnover, amplifying the point that partnership involvement in management is most extensive where the need for its participation is greatest. The high level of general partner participation in the management of young companies—along with the more demanding nature of the due diligence process for these companies—is thought by some to account for the progression of some partnership management firms from venture investments to non-venture investments after one or two funds as the partnership managers succumb to venture capital “burnout.”

Exiting Investments

An important element of limited partnerships is the contractual agreement to end the partnership and repay the limited partners within a specified period of time. Though repayment of the limited partners with illiquid securities of the portfolio companies is sometimes unavoidable, it is highly undesirable, as the limited partners then have neither liquidity nor control. Consequently, there must be a clear route for the partnership to exit the firm. The three possible exit routes are a public offering, a private sale, and a share repurchase by the company.

Each exit route has different ramifications for the limited partners, the general partners, and the company's management. A public offering generally results in the highest valuation of a company and, thus, is often the preferred exit route. In addition, company management favors an IPO because it preserves the firm's independence and provides it with continued access to capital by creating a liquid market for the firm's securities. However, a public offering, unlike a private sale, usually does not end the partnership's involvement

with the firm. The partnership may be restricted from selling any or a portion of its shares in the offering by Rule 144, which requires that private placements be held for an initial period of two years. The partnership may also be restricted from selling its shares by agreement with the underwriter of the IPO. As a result, following a public offering there may be very little change in the number of shares or board seats held by the partnership (see Barry and others, 1990; and Muscarella and Vetsuypens, 1990). Gompers and Lerner (1994b) suggest that in many cases general partners remain actively involved with portfolio firms until the company's stock is eventually sold or distributed to the limited partners.

A private sale has very different consequences. For the limited and general partners, a private sale is attractive, as it provides payment in cash or marketable securities and ends the partnership's involvement with the firm. For the company's management, in contrast, a private sale is potentially unwelcome, to the extent that the company is merged with or acquired by a larger company and cannot remain independent.

The third exit route is a put of stock back to the firm, in the case of common stock, or a mandatory redemption, in the case of preferred shares. With puts of common stock, a valuation algorithm is agreed to in advance. For minority investments, a guaranteed buyout provision is essential, as it is the only means by which the partnership firm can be assured of liquidity. For many investments, however, buybacks by the firm are considered a backup exit route and are used primarily when the investment has been unsuccessful.

Partnerships add value to investments by choosing how and when to exit and by obtaining the maximum value for the firm in connection with any given exit strategy. Several studies document the valuable role that partnerships play in connection with public offerings. Megginson and Weiss (1991) find that companies backed by venture capital are underpriced by a smaller amount than companies that are not venture backed; similarly, Barry and others (1990) find that the degree of underpricing of venture-backed firms is negatively related to the size of the venture capitalists' ownership stake, the age of the lead partnership management firm, and the length of time the lead partnership has served on the firm's board. Less underpricing may reflect a certification premium—reputable partnerships do not bring lemons to market—as well as the value of the partnership's ongoing management activities. As noted earlier, partnerships in many cases

retain their ownership stake and board positions for some period after companies are taken public. Less underpricing has also been found in the case of reverse leveraged buyouts (see Muscarella and Vetsuypens, 1989), possibly also a result of their affiliation with private equity partnerships.

Also of value in the process of going public is a partnership's ability to time the market. Lerner (1994b) examines the behavior of prices of biotechnology shares around the IPO issue dates for venture-backed biotechnology firms. He documents a strong run-up in share prices before the offering date and a fall in prices after the offering date, with more experienced general partners showing a greater ability to time the market peak. Although the partnership sells few, if any, shares at the offering—and therefore does not benefit directly from the higher prices—it benefits indirectly by suffering less dilution.

Relationship between the Limited Partners and the General Partners

By investing through a partnership rather than directly in issuing firms, investors delegate to the general partners the labor-intensive responsibilities of selecting, structuring, managing, and eventually liquidating private equity investments. However, limited partners must be concerned with how effectively the general partners safeguard their interests. Among the more obvious ways in which general partners can further their own interests at the expense of the limited partners are spending too little effort monitoring and advising portfolio firms; charging excessive management fees; taking undue investment risks; and reserving the most attractive investment opportunities for themselves and their associates.

Resolution of these problems lies in the nature of partnerships themselves and in the structure of the partnership agreement. First, partnerships have finite lives; to remain in business, private equity managers must regularly raise new funds, and fund raising is less costly for more reputable firms. Second, the general partners' compensation is closely linked to the partnership's performance.

Fund Raising and the Role of Reputation

Because partnerships have finite lives, the private equity managers who serve as general partners

must regularly raise new funds in order to stay in business. In fact, to invest in portfolio companies on a continuing basis, managers must raise a new partnership once the funds from the existing partnership are fully invested, or about once every three to five years.

The raising of partnerships is very time consuming and costly, involving presentations to institutional investors and their advisers that can take from two months to well over a year depending on the general partners' reputation and experience.⁸⁸ A favorable track record is important because it conveys some information about ability and suggests that partnership managers will take extra care to protect their reputation, and because experience itself is regarded as an asset.

To minimize their fund-raising expenses, partnership managers generally turn first to those that invested in their previous partnerships—assuming, of course, that their previous relationships were satisfactory. In addition, funds are often raised in several stages, referred to as “closings.” This approach appears to be primarily a device for communicating to the investment community that a fund is being successfully raised, implying a favorable evaluation of the fund by those that have already committed.

Because of the difficulties of raising partnerships, general partners are not indifferent to the type of investors that invest with them; they prefer investors that have a long-term commitment to private equity investing.⁸⁹ Because past investors are most familiar with a general partner's ability, general partners face greater difficulties when experienced investors withdraw from the market. The instability of institutional investors has been demonstrated several times recently. For instance, insurance companies drastically reduced their commitments to private equity and other illiquid and risky classes of assets in 1990 owing to

concerns among the public about insurance companies' financial condition. More recently, IBM, a major corporate pension fund investor, withdrew from the private equity market as part of a broad reduction in pension staff. Looking ahead, there is concern that the interest of public pension plans, currently the largest investor group in terms of amount of private equity held, will not prove to be stable; for this reason, some general partners regard public pension plans as less desirable investors and may avoid them if possible.⁹⁰

Performance Measurement

Because reputation plays such a critical role in private equity markets, reliable methods for measuring the past performance of partnerships and their managers are essential. Market participants use a variety of quantitative and qualitative methods to measure performance.

The most commonly used performance measure is internal rate of return. Internal rates of return can be calculated at any stage of a partnership's life. However, the internal rate of return of a “young” partnership depends on the accounting methods used to value the partnership's illiquid assets. Venture capitalists have developed a fairly standard set of accounting principles, but the accounting methods used to value non-venture investments are reportedly less uniform. In the case of venture capital, investments are recorded at cost unless they have been marked down at the discretion of the general partner or marked up as a result of a significant third-party transaction (for example, a subsequent round of financing involving a third party). In the case of non-venture investments, the appropriate markups are more difficult to determine because there are typically fewer follow-on investments from which investment values can be updated. For both types of investments, more weight is given to the cash return of a mature fund than to the accounting return of a younger fund.

Investors rely only partly on internal rates of return to measure past performance, not only because the accounting returns of younger partnerships are difficult to verify and interpret but also because partnership returns are highly variable. An exceptional return on a single investment can

88. The industry press frequently offers accounts of fund-raising efforts, both successful and unsuccessful. In spring 1994, for example, the \$225 million seventh fund of Kleiner Perkins Caufield & Byers (KPCB) was oversubscribed when it was launched despite the above-average profit share (30 percent) retained by its managers. KPCB had to ration commitments among its existing limited partners and was extremely selective about taking on new ones. Around the same time, Hamilton Robinson and Co. scrapped its \$100 million second fund after nearly *two years* of unsuccessful fund raising efforts. Among its difficulties was an inability to secure commitments from investors in its first fund (*Venture Capital Journal*, August/September 1994).

89. Wealthy individuals, university endowments, and foundations are regarded as among the most stable investors in private equity.

90. A corollary is that general partners that rely on public pension funds could be less interested in accumulating reputational capital, and thus have somewhat weaker performance incentives.

significantly boost the performance of an entire fund. Consequently, high cash returns on earlier partnerships may reflect good luck more than good judgment and thus may be an unreliable indicator of the general partners' skills.

Potential investors and their advisers often conduct a detailed empirical analysis of partnership returns. Among the factors that can be examined are the *distribution* of individual investment returns. For example, to address the possibility that one stellar investment masks many poor ones, partnership returns based on all but the highest-yielding investment can be calculated. Even more important than an examination of the distribution of returns is an analysis of the relationship, if any, between individual investment returns and investment characteristics, such as the industry, size, and location of the portfolio companies. Such an analysis is relevant, for example, if a partnership is raising funds to invest in specific industries. Finally, investors can examine the relationship between investment returns and the general partners responsible for managing the investments; this is especially important if the partnership management firm has recently lost some key personnel.

Another approach to measuring past performance is to make a purely qualitative assessment of a partnership management firm's skills. In some instances potential limited partners have co-invested alongside an earlier partnership, and this experience has given them an opportunity to observe how the general partners structure and manage their investments, providing insights into the general partners' management skills. Potential limited partners that have not co-invested alongside an earlier partnership may consult others that have and may even contact companies in which the general partners have invested.⁹¹

Gathering and analyzing information on partnerships and their returns is costly. As the private equity market expanded in the 1980s, a market for investment advisory services developed, and institutional investors, especially those new to the market, increasingly rely on private equity advisers to evaluate partnerships. Advisers have played an important role in devising new approaches to measuring partnership performance.

91. The possibility of using information gathered from co-investments to evaluate partnership managers illustrates an important complementarity between partnership and direct investing. This is discussed in the section on direct investments later in this chapter.

Transparency of the Partnership Structure

Certain features of the structure of a partnership enhance the ability of the general partners to establish a reputation. These features essentially make both the partnership's performance and the managers' activities more transparent to investors than might be the case for other financial intermediaries.

One such feature is segregated investment pools, whereby the investments of each partnership are kept separate. By comparing one partnership's investment returns with the returns on other partnerships raised at the same time, it is easier to account for factors that are beyond the control of the general partners, such as the stage of the business cycle or the condition of the IPO market and the mergers and acquisitions markets. If private equity intermediaries did not maintain segregated investment pools, earnings would represent a blend of investment returns that occur at different stages of the business cycle or under different market conditions.

Another important feature of the partnership structure is the separation of management expenses and investment funds. In a limited partnership, management fees are specified in the partnership agreement (see next section), so the amount of investment capital that can be consumed in the form of manager salaries and other perquisites is capped. The transparency of such expenses makes comparisons of expenses across partnerships easier. Other types of financial intermediaries pay expenses and finance investments out of the same funds raised from investors; although expenses are reported, they are difficult to control before the fact and not always transparent after the fact.

Sahlman (1990) and Gompers and Lerner (1994a) note that some partnerships do not set management fees in advance; rather they negotiate an expense budget with the limited partners annually. This arrangement provides flexibility but preserves most of the desirable features of prearranged management fees—investor control and transparency.

The Partnership Agreement

The general partners' need to establish a favorable track record with investors and their advisers mitigates, but does not eliminate, potential conflicts between the limited and general partners. The effectiveness of reputation as an incentive to

safeguard the limited partners' interests is especially uncertain when general partners are near the beginning or end of their careers. In the former case, a general partner's "reputational capital" may be insufficient to deter him or her from opportunistic behavior; in the latter case, the value of that capital may be diminished by the prospect that the general partner will not be raising another partnership fund.

The provisions of the partnership agreement itself also offer protection for limited partners. The agreement sets forth not only the broad terms of the general partners' compensation structure—such as their share of the profits—but also important details on how management fees and profit shares are calculated. Such details can significantly affect the general partners' incentive to engage in behavior that does not maximize value for investors. The partnership agreement also includes covenants that restrict the general partners from engaging in certain activities and provides the limited partners with limited oversight over the general partners.

General Partner Compensation

General partners earn a management fee and a share of a partnership's profits, the latter referred to as carried interest. For a partnership that yields average returns, carried interest may be several times larger than the management fees (Sahlman, 1990).⁹² This arrangement—providing limited compensation for making and managing investments and significant compensation in the form of profit sharing—lies at the heart of the partnership's incentive structure.

Management Fees. In setting annual management fees, the general and limited partners must agree on both the fee percentage and the base on which the fee is assessed. Management fees are frequently set at a fixed percentage of committed

92. Sahlman's (1990) calculations assume that the general partners receive only half of all management fees—the other half are used to pay expenses—and that the general partners use the same discount rate to value management fees and carried interest. Gompers and Lerner (1994a) use the actual terms of 441 venture capital partnership agreements and more conservative discounting assumptions to simulate the composition of the general partners' compensation structure. Their simulations indicate that carried interest accounts for more than half of the general partners' total compensation, even if carried interest is discounted at twice the rate of management fees (assuming, as Sahlman does, that the general partners receive half of all management fees.)

capital and remain at that level over the partnership's life. Fee percentages range from 1 percent to 3 percent; the majority of venture funds charge 2 percent to 2.5 percent (Sahlman, 1990; Gompers and Lerner, 1994a), but some larger venture partnerships as well as many non-venture partnerships charge less, owing, perhaps, to economies of scale.⁹³

In recent years there has been a trend toward lower and variable management fees. Investors argue that management fees ought to reflect more closely the activities of the general partners. The general partners are usually busiest in the early and middle years of the partnership as they screen potential investments, structure deals, and oversee portfolio companies. Their involvement declines in the partnership's later years as portfolio companies are taken public or sold and as the general partners turn toward raising their next partnership. To reflect the different degrees of involvement, many partnership agreements now specify higher fee percentages in years two through five of the fund and lower fee percentages thereafter. In many cases the general partners are paid no management fees after the partnership's original termination date, even if the limited partners vote to extend the partnership's life. This fee structure encourages the general partners to get money back to investors quickly and to start raising a new partnership.

The trend toward lower fees and a more "hump shaped" fee structure is also reflected in changes in the fee base. Fees during the investment period are now often quoted as a percentage of *invested* capital rather than *committed* capital.⁹⁴ This

93. Gompers and Lerner (1994a) find strong evidence that management fees, as a percentage of committed capital, decrease with venture fund size, but they interpret the relation differently. Their model indicates that older, more reputable firms should receive more variable compensation and less fixed compensation because such firms are not motivated by the need to establish reputation. Because the oldest partnership organizations in their data set raised the largest funds, they interpret the negative relation between fund size and management fees as consistent with their model's predictions. However, because fund size and organization age are so highly correlated in their sample, they cannot accurately distinguish size and age effects.

Few data are available on the terms of non-venture private equity partnerships. Our conversations with partnership sponsors, and occasional references to partnership terms in the trade press, suggest that the larger non-venture partnerships charge substantially less than 2.5 percent, regardless of the organization's age. See, for example, *The Private Equity Analyst*, March 1992, which discusses three buyout partnerships, each approximately \$1 billion in size, that charge management fees averaging around 1 percent.

94. Committed capital is the full amount that investors have committed to a partnership fund; invested capital is the amount of committed capital that the partnership has invested in portfolio companies.

practice both results in lower fees and encourages the general partners to invest committed capital as soon as possible; it also lessens the general partners' incentive to obtain more commitments than can be profitably invested, as excess commitments will not result in higher management fees. The practice of basing fees on the current value of the partnership's investments rather than on their original cost—which can result in steadily increasing fees until near the end of a partnership's life—has been virtually eliminated; it enabled general partners to earn higher fees merely by inflating investment values.⁹⁵

Finally, although partnership agreements generally treat all limited partners identically, it is not uncommon for the largest limited partners to negotiate separately to reduce their management fees. The rationale for special treatment is that by investing large amounts, large investors reduce the costs of fund raising. Moreover, because certain institutional investors are widely acknowledged as having developed expertise in private equity investing, their investment serves as a positive signal to other institutional investors, further reducing fund-raising costs; indeed, their investment may carry more weight with other investors than an endorsement by a third-party investment adviser.

The recent trend toward lower management fees and the adoption of new methods of calculating them to some extent reflect the competitive conditions in the private equity market in the early 1990s, when many of these changes were initiated. Disappointing partnership returns in the late 1980s were followed by a lower level of partnership commitments in the early 1990s. The resulting competition for funds put downward pressure on management fees and, to a lesser extent, on carried interest. Many of these changes persisted into 1993–94 despite the record level of fund raising, however, suggesting that they evolved partly because limited partners were becoming more sophisticated in negotiating with general partners.⁹⁶

95. Gompers and Lerner (1994a) document the near elimination of such fee arrangements from venture capital partnerships. In their sample, 21 percent of the funds established during 1978–83 had fees based on current asset value; the percentage declined to 8 percent for funds established during 1984–89 and 2 percent for funds established during 1990–92. They also find some evidence that such arrangements resulted in more aggressive valuations of fund assets by the general partners.

96. Gompers and Lerner (1994a) address this possibility. They make the point that because private equity partnerships are a relatively recent development, and because returns are realized over a long period of time, it is sensible to view such organizations in an evolutionary framework.

Carried Interest. Carried interest—the general partners' share of a partnership's profits—is most often set at 20 percent of the partnership's net return. Gompers and Lerner (1994a) report a striking degree of uniformity in the carried interest for venture capital partnerships: More than 80 percent of their sample use an "80/20 profit-sharing rule." Carried interest among non-venture partnerships appears to be somewhat less uniform.

Although the percentage devoted to carried interest has been remarkably stable, the rules for calculating net return have recently evolved in favor of the limited partners. Under earlier agreements, particularly those for LBO partnerships, carried interest was based on the returns on individual investments; now it is typically based on the return on the partnership's entire portfolio. Other things equal, this change favors the limited partners when a single investment results in a loss. More important, it harmonizes the investment objectives of the partnership's managers with those of the limited partners. Under the earlier arrangement, partnership managers were less concerned with total returns than with maximizing the returns of the most successful individual investments. It was in their interest to concentrate their resources on the partnership's emerging "home runs" while neglecting investments whose performance was average or below average.

To implement the change in calculating carried interest, it has been necessary to adopt "clawback" provisions. Distributions of cash and securities to the limited and general partners are made as the partnership's investments are liquidated and may begin as early as the second or third year; later, the limited partners' return may become negative owing to losses on remaining investments. Clawback provisions preserve the limited partners' right to recover their capital and management fees before the general partners receive carried interest by requiring the general partners to give back their earlier distributions. Without such provisions, the general partners could augment their returns by distributing gains early and holding on to losing investments.

Other factors that affect the limited and general partners' profit shares are the partnership's accounting and distribution policies. In the past, partnerships typically valued the stock of IPO firms that they distributed at the current market price and based carried interest on this valuation. However, given that many IPO shares have limited liquidity, the limited partners may drive the stock's price down against themselves when they

attempt to sell the stock for cash. Many limited partners have attempted to insert into their partnership agreements clauses forcing general partners to distribute cash instead of stock or to discount the value of their stock distributions.⁹⁷

Finally, some general partners offer limited partners priority returns of 5 percent to 10 percent. This provision requires that investors receive a priority return before the general partners begin to receive a share of the partnership's profits. In some cases, the general partners simply receive a fixed percentage of all returns in excess of the priority return. In other cases, the general partners receive all returns in excess of the priority return up to 20 percent of the partnership's cumulative profits (assuming an 80/20 profit sharing rule); at that point they receive 20 percent of all additional returns. In either case, the priority return provision ensures that the general partners realize a gain *only* if the fund outperforms traditional investments. In this respect, it links general partner compensation to the investment objectives of private equity investors.⁹⁸

97. The latter requirement may seem both unnecessary and unreasonable. If shares of stock are distributed pro rata among the limited and general partners, the valuation of those shares should not matter. Furthermore, general partners will experience the same difficulties selling their shares on the open market as the limited partners. Valuation will matter, however, if their initial investments have not been returned to the limited partners; in that case, the higher the valuation of a stock distribution, the closer it will bring the general partners to drawing their carried interest. Moreover, even if the general partners are already drawing their carry and the securities are distributed pro rata, the general partners may have an opportunity to sell their shares before the limited partners do, and at higher prices. Preliminary evidence reported by Gompers and Lerner (1994b) suggests that general partners time their distributions to take advantage of high market valuations: Cumulative abnormal returns over the two days following a distribution—the approximate length of time it takes the shares to reach the limited partners—are negative and statistically significant. However Gompers and Lerner do not address the issue of whether general partners actually sell their shares immediately. Finally, it may simply be the case that limited partners do not feel comfortable managing these stock distributions and believe that general partners could do a better job.

98. Priority return provisions have become especially common in LBO funds and other large non-venture partnerships (*The Private Equity Analyst*, July 1991), possibly a consequence of the similarity of returns on non-venture partnerships and the returns available on traditional investments. For such partnerships, it is especially important that fund managers have a strong incentive to outperform these benchmarks. In contrast, venture capital partnerships tend to perform either much better than or significantly worse than traditional investments, and giving venture capital managers additional incentives to outperform the market is not as critical.

Partnership Covenants

Partnership agreements also protect the interests of the limited partners through covenants that place restrictions on a partnership's investments and on certain other activities of the general partners.⁹⁹ Restrictions on investments are especially important because a significant portion of the general partners' compensation is in the form of an option-like claim on the fund's assets. This form of compensation can lead to excessive risk-taking (see Jensen and Meckling, 1976); in particular, it may be in the interest of the general partners to maximize the partnership's risk—and hence the expected value of their carried interest—rather than the partnership's risk-adjusted expected rate of return. As Sahlman (1990) notes, recent innovations such as offering investors priority returns can, in principle, increase the incentives for risk-taking, as they place the general partners' stake farther “out of the money.”

To address the problems of excessive risk-taking, partnership covenants usually set limits on the percentage of the partnership's capital that may be invested in a single firm or on the aggregate size of the partnership's two or three largest investments. Covenants may also specifically preclude investments in publicly traded and foreign securities, derivatives, and other private equity funds and private equity investments that deviate significantly from the partnership's primary focus (for example, LBO investments in the case of venture capital funds). Finally, covenants usually restrict the fund's use of debt and in many cases require that cash from the sale of portfolio assets be distributed to investors immediately. Each of these restrictions is intended primarily to limit the general partners' ability to undertake greater risk in ways that benefit themselves at the expense of the limited partners.

Besides taking excessive risks, general partners can further their interests at the expense of investors in other ways. For example, the general partners may make investments in order to generate fee income for themselves or their affiliates; invest in companies in which other partnerships that they manage have equity stakes in order to boost the valuation of those companies; or use personal funds to co-invest in only the partnership's most attractive investments. Partnership agreements address these potential problems

99. The following discussion of partnership covenants and their economic motivation is based largely on Sahlman (1990), Weinberg (1994), and Gompers and Lerner (1995).

by limiting deal fees (fees paid to general partners upon completion of individual investments) or requiring that deal fees be offset against management fees; by restricting co-investment with the general partners' earlier or later funds; and by restricting the ability of general partners and their associates to co-invest selectively in the partnership's deals.

In an examination of the evolution of covenants in venture capital partnerships, Gompers and Lerner (1995) find that investment restrictions, both general and specific, increased markedly after 1988, roughly the same time new methods for determining management fees and carried interest were evolving. Both developments can be viewed as resulting from greater investor understanding of the way partnerships operate.

Oversight and Control Rights

Finally, partnership agreements protect limited partners by allowing them some degree of oversight over the partnership. Most partnerships have an advisory board composed of the largest limited partners. These boards are intended to help resolve such matters as conflicts involving deal fees and conflict-of-interest transactions. They typically do so by approving exemptions from partnership covenants. Special committees are also created to help determine the value of the partnership's investments. However, these two types of bodies do not provide the kind of management oversight that a board of directors can provide for a corporation; indeed, their power is limited by the legal nature of the partnership, which prohibits limited partners from taking an active role in management.

Another other form of control sometimes available to investors is the ability to vote on such matters as removing a general partner or ending the partnership before its termination date. These decisions usually require a supermajority vote (Sahlman, 1990). Weinberg (1994) maintains that only "an organized and determined group of limited partners" can obtain such provisions, as general partners strongly resist such terms.

Direct Investment

We conclude this chapter by examining the role of direct investments in the private equity market. Limited partnerships account for 80 percent of private equity investments and virtually all

investments by intermediaries. However, approximately 20 percent of private equity investments are made *directly* by institutional investors. This section describes the benefits of direct investment and the complementarity between direct and partnership investments. We note that direct investing is feasible for institutional investors in part because partnerships generate a high level of investment activity, which provides opportunities for institutional investors, and because institutional investors are able to learn of these opportunities through their relationships with general partners.

Co-investment

Co-investments are direct investments in portfolio companies by limited partners alongside private equity partnerships. In the usual case, limited partners acquire the securities on the same terms as the partnership but pay no management fee or carried interest. Co-investors essentially obtain the benefits of the general partners' management activities at no cost. If it were possible to assemble a well-diversified portfolio of co-investments, co-investing would dominate partnership investing. In practice, however, co-investment opportunities are limited and are outside the control of institutional investors.

Co-investment opportunities arise when general partners need additional investors to close a deal. For this reason, co-investments are viewed by investors as a means of enhancing partnership returns rather than as an alternative to partnership investments. Many institutional investors regard the opportunity to co-invest as a key factor in deciding which partnerships to invest in.

Some institutional investors view co-investment as an entree to direct investing. Their ultimate objective is direct investment in private equity, and for them co-investing is an opportunity to gain exposure and acquire expertise in private equity investing—in effect, a form of apprenticeship normally provided by the position of associate within a partnership management firm. For such investors, a primary reason for continuing to invest in partnerships is to retain access to co-investments.

To general partners, limited partners that stand ready to co-invest represent a flexible source of funds for closing deals. In this respect, syndication and co-investment are substitutes. The benefits of syndication to the general partners were noted earlier: One is that the general partners of other partnerships in the syndicate are active investors

capable of critically reviewing a deal beforehand and of providing valuable post-investment monitoring and advisory services; another is that syndication represents a favor that other general partners may feel obliged to return, improving the originating general partners' future investment opportunities. Co-investment, on the other hand, creates goodwill with limited partners, improving the chances that they will commit promptly to the general partners' next fund. Also, limited partners are less demanding co-investors than are other partnerships, as the latter usually have a voice in how deals are structured. Thus, the choice between syndication and bringing in limited partners as co-investors depends on (1) the ability and willingness of limited partners to co-invest, (2) the value of reciprocal future benefits that limited partners and other general partners can offer, and (3) the general partners' primary need—funds only or value-added investment services (for example, local monitoring).¹⁰⁰

Direct Investment Other than Co-investment

In contrast to co-investments, other direct investments require institutional investors to perform all the activities normally performed by the general partners of a private equity partnership: originating deals and structuring, monitoring, and exiting investments. To become a direct investor, an institution must have on its staff individuals who perform the same functions as the staff of a partnership management firm. Moreover, to maintain sufficient diversification, adequate deal flow, and ties with other private equity investors (including private equity partnerships), a direct investor must invest continuously, unlike the co-investor, who invests only as the opportunity arises. In many ways, a direct investor behaves like a private equity partnership.

We observed earlier that, other things equal, expected returns on co-investments exceed expected returns on partnership investments. This is not true for direct investments. Although a

direct investor avoids the expense of management fees and carried interest, it bears the investment expenses normally incurred by general partners. Thus, the return on direct investments depends on the skill and efficiency of the investment staff. In many instances, it is the belief that their staffs have superior skills that motivates institutions to invest directly.

Even if an institutional investor has highly skilled individuals on its staff, the institution may not benefit directly. If the compensation of these individuals is the same as the compensation they would receive as general partners, the individuals, and not the institution, will earn excess profits.¹⁰¹

There are several other reasons, however, why direct investing may be more profitable to an institution than investing through an independent intermediary. First, because the institution is investing only its own funds, it has no fund-raising expenses; unlike a private equity partnership, the staff can focus on its investments. Second, investment decisions are not constrained by restrictions normally imposed by partnership agreements. Third, there may be gains to risk-sharing between the institution and its staff: The staff's compensation may be tied to the performance of the portfolio firms, but not to the same extent as for independent private equity fund managers; because the staff bears less risk, it may require less in (expected) remuneration.¹⁰²

Financial institutions occasionally sponsor and invest in their own private equity partnerships. They do so primarily to take advantage of complementarities between private equity investing and their other activities (underwriting in the case of investment banks, for example, and lending in the case of commercial banks). Also, sponsoring a partnership may generate some of the cost savings of direct investing: Because financial institutions are frequently large investors in their own partnerships, their partnerships may have lower fund-raising costs than independent partnerships of the same size.

100. We noted earlier that general partners prefer limited partners with whom they can establish a long-term relationship. These are the limited partners to whom general partners are most likely to offer co-investments. There are, however, other factors that influence the suitability of a limited partner for co-investing. One is the limited partner's ability to make a quick decision. Public pension plans are not well suited to co-investing, as their investments typically are subject to a slow and cumbersome approval process.

101. If the individuals are not compensated at the same level as the general partners of a private equity partnership, they will most likely leave and form their own private equity firm.

102. This last point was suggested to us by several institutional investors. They indicated that their compensation structure was *similar* to that of an independent private equity organization, although the base salary and bonus given to investment staff members was somewhat higher, and the carried interest somewhat lower.

Simultaneous Direct Investment and Partnership Investment

Most private equity investors that invest directly also invest through partnerships. In part, this can be understood as the result of diminishing marginal returns to each activity where the two forms of investment compete directly for a share of the investors' portfolios. Like private equity partnerships, institutional investors that invest directly must specialize by type and stage of investment, industry, and region, as it is not economical to maintain a staff of private equity specialists that have expertise in all areas. Partnership investments allow an investor to diversify. A common arrangement, for example, is direct investment in later-stage venture capital combined with partnership investments in early-stage venture capital.

Simultaneous direct investment and partnership investment is also a result of complementarity between the two areas. Partnership investment, on the one hand, permits an investor to personally meet with many private equity fund managers and to co-invest with them. These relationships build a bridge to the private equity community and help the investor gain access to syndicated deals. In venture capital, these deals are frequently later rounds of equity financing to firms in the portfolios of venture capital partnerships. Direct investment, on the other hand, provides an opportunity for an institutional investor to invest alongside a private equity manager and to observe firsthand the manager's effectiveness. Among institutional investors, such firsthand experience is an important source of information used in deciding which partnerships to invest in.¹⁰³

103. Insurance companies are a particularly interesting example of directing investing leading to partnership investing. Unlike most institutional investors, which first invest in private equity funds and then progress up the learning curve to co-investments and direct investments, many insurance companies began investing in private equity directly in the form of mezzanine debt. Because they were accustomed to making their own investment decisions, they were initially reluctant to invest in partnerships. Eventually, they found themselves investing in mezzanine debt alongside private equity partnerships; on the basis of relationships forged in these investments they began to invest in private equity funds.

Conclusion

Among the most interesting aspects of the private equity market is the manner in which the extreme sorting and incentive problems are resolved. Because little information about firms that issue private equity is publicly available, outside investors must engage in a significant amount of due diligence and post-investment monitoring. These activities are not efficiently performed if the outside equity is widely held; consequently, most outside equity is held by private equity intermediaries. Such intermediaries specialize in finding, structuring, and managing private equity investments in private companies, in which they are among the largest and most active shareholders. However, this arrangement gives rise to equally severe information and incentive problems between institutional investors (the investors that provide the intermediary with its funds) and the intermediary's managers. Private equity limited partnerships have emerged as the best organizational form for addressing these problems, and many current features of the private equity market can be viewed as resulting from the evolution of this organizational structure.

Sahlman (1990) emphasizes the similarities of the mechanisms used to resolve the sorting and incentive problems between a partnership and its portfolio companies, on the one hand, and between the partnership and its investors, on the other. Although the similarities are numerous and important, especially regarding the compensation structure for portfolio company managers and general partners, the differences are also important. General partners provide extensive oversight over the companies they invest in. Majority investors, in particular, are able to intervene quickly, should company performance suffer, through positions on boards of directors and, to a lesser extent, through voting control. In this sense, they are able to keep portfolio companies on a "short leash." The provision of capital in stages amplifies their control. Limited partners are not—and indeed cannot be—similarly empowered. Instead, they rely heavily on the mechanism of reputation, which derives from the general partners' knowledge that they will need to raise money from these institutions on a regular basis, and on incentives in the partnership agreement that encourage general partners to maximize returns to limited partners.

5. Investors in the Private Equity Market

The number of institutions that invest in private equity has grown substantially since the 1970s. The growth has been particularly strong among pension funds and endowments and foundations, which are the largest investors: One recent survey indicates that 54 percent of large pension funds and endowments and foundations committed capital to private equity in 1992, compared with only 11 percent in 1975.¹⁰⁴ It is still generally the case, however, that only the largest institutions hold private equity.

In this chapter we describe the investment patterns of the major investor groups. For each major group, the largest institutions tend to invest both directly and through limited partnerships. Investors generally begin investing in private equity through limited partnerships. Those that broaden their activities to direct investment may begin by co-investing alongside partnerships to gain experience in structuring, monitoring, and exiting deals. For example, corporate pension funds and endowments, among the first investors in limited partnerships, are large co-investors. The continued development of a direct investment program then depends on an institution's ability to generate, select, and manage investments on its own. Public pension funds, with limited access to deal flow and little experience, are the least likely to invest directly.

Corporate Pension Funds

Corporate pension funds began investing heavily in private equity limited partnerships in the early 1980s. Their reasons for investing are almost purely financial: They are attracted by the market's high returns and diversification benefits and are, market participants note, effectively prohibited by ERISA laws from making strategic investments that benefit their parent companies. Since the early 1980s corporate pension funds have consistently provided roughly one quarter of total commitments to private equity partnerships (table 9).

104. 1992 survey of alternative investments conducted by Goldman, Sachs & Co. and Frank Russell Co. Survey results are based on 194 investors that had collective assets of \$1.5 trillion.

Although most corporate pension funds, like other investor groups, invest mainly through partnerships, some of the largest funds have

9. Amounts committed to private equity partnerships, by source, selected periods

| Source | Amount, 1992-94 (billions of dollars) | | Distribution | |
|--|--|--------------|--------------|------------|
| | 1980-85 | 1986-92 | 1980-85 | 1986-92 |
| ALL PRIVATE EQUITY PARTNERSHIPS | | | | |
| Pension funds | 21.28 | | 49 | |
| Corporate | 9.65 | | 23 | |
| Public | 11.63 | | 26 | |
| Endowments and foundations | 5.19 | | 12 | |
| Bank holding companies and insurance companies | 7.30 | | 17 | |
| Wealthy families and individuals | 4.05 | | 9 | |
| Investment banks and nonfinancial corporations | 1.51 | | 4 | |
| Other ¹ | 3.63 | | 9 | |
| Total | 42.96 | | 100 | |
| VENTURE CAPITAL PARTNERSHIPS ONLY | | | | |
| Pension funds | 3.78 | 9.85 | 31 | 45 |
| Corporate | 3.13 | 5.91 | 26 | 27 |
| Public | .65 | 3.94 | 5 | 18 |
| Endowments and foundations | .94 | 2.57 | 8 | 12 |
| Bank holding companies and insurance companies | 1.50 | 2.49 | 13 | 12 |
| Wealthy families and individuals | 2.11 | 2.33 | 18 | 11 |
| Investment banks and nonfinancial corporations | 1.59 | 2.11 | 13 | 10 |
| Other ¹ | 1.97 | 2.33 | 17 | 11 |
| Total | 11.90 | 21.68 | 100 | 100 |

NOTE. Totals differ from amounts reported in chart 2 because of different sources, and components may not sum to totals because of rounding.

1. Primarily foreign investors.

SOURCES. *Venture Capital Journal* and *The Private Equity Analyst*.

become quite active in direct investment and co-investment. These funds consider themselves sophisticated investors and tend to use advisers less than other investors do. They rely, instead, on their own staff of experienced investment professionals to evaluate investment strategies and manage their investments. General partners in limited partnerships consider corporate pension funds valuable investors because their commitment to a partnership often conveys to other potential limited partners a positive message about the quality of that partnership. Experienced corporate pension funds can sometimes exploit their “lead” investor status by negotiating slightly lower management fees or carried interest.

A survey by *The Private Equity Analyst* of the fifty largest private pension funds that invest in private equity suggests that at the end of 1992 these funds, on average, had approximately 4.3 percent of their assets allocated to private equity.¹⁰⁵ The eight largest investors (table 10) had allocations of between \$500 million and more than \$2 billion, representing about 6 percent or 7 percent of each fund’s total assets.

Corporate pension funds likely will continue to invest in private equity as they receive distributions from previous investments, but the amount of commitments probably will not grow as quickly as the overall market. Contributing to the relatively slower growth is the ongoing shift at many corporations from defined benefit pension plans to defined contribution pension plans, which generally must invest in assets that are more liquid than private equity; defined benefit plans may also focus more on liquid assets, owing to corporate restructurings and other events that could increase layoffs and early retirements.

Public Pension Funds

Public pension funds are relative newcomers to private equity investing. Over the course of the 1980s, public pension fund commitments to private equity partnerships increased sharply, and in recent years they have displaced corporate pension funds as the largest investor group (table 9). Like corporate pension funds, their motive is almost purely financial; some, however,

105. See “Private Pensions Prepare To Recycle Gains from Prior Investments,” *The Private Equity Analyst*, November 1992.

10. Largest investors in private equity

| <i>Corporate Pension Funds</i> | <i>Public Pension Funds</i> |
|---|--|
| AT&T General Motors General Electric IBM GTE Ameritech Bell Atlantic NYNEX | New York State Common Retirement Fund Washington State Retirement System CalPERS CalSTERS Wisconsin Investment Board Oregon Public Employee Retirement Fund Michigan Retirement System Minnesota Investment Board Virginia Retirement System |
| <i>Endowments</i> | <i>Bank Holding Companies</i> |
| Harvard University Yale University Princeton University | Chemical Venture Partners First Chicago Venture Capital BankAmerica Venture Capital Group J.P. Morgan Capital Corporation Norwest Venture Capital |

NOTE. Investors are listed in descending order of volume of private equity investments, based on 1991 data except corporate pension funds, which are based on 1992 data.

SOURCE. *The Private Equity Analyst*.

may be under pressure to invest in firms in their own region.¹⁰⁶

Public pension funds that invest in private equity are, on average, larger than corporate pension funds that do so. As of 1991, the average assets of the ten largest public funds with private equity investments was \$32.3 billion, while the average size of the ten largest corporate funds was \$21.3 billion.¹⁰⁷ Although they are larger, public pension funds operate under tighter budgets than their private counterparts and employ fewer investment professionals. This combination of characteristics—limited staffs and large sums of capital to invest—has the effect of raising the minimum investment size, in many cases to between \$10 million and \$25 million. Because they generally operate under the additional constraint that they not account for more than 10 percent of the capital of a single partnership, public pension funds tend to invest in larger partnerships.

Owing to their nature, public pension funds and their investment decisions are likely to be held up to public scrutiny; indeed, elected officials often

106. Both the California Public Employees Retirement System (CalPERS) and the Pennsylvania School Employee Retirement Program have recently initiated programs of direct investment in firms in their states. The programs are managed by private equity advisers.

107. “Public Funds Earmark \$9.3 Billion for Investment in Private Equity,” *The Private Equity Analyst*, February 1992.

serve on fund boards of trustees and investment committees. The funds may be especially concerned about the public's reaction to losses on investments that the public is unfamiliar with, such as private equity. They may also require evidence of satisfactory investment performance on a more regular basis than is possible with private equity investments.¹⁰⁸ As a result, public pension funds tend to be somewhat more risk averse and to have shorter time horizons than corporate pension funds. Although aversion to risk and illiquidity has not stopped public funds from becoming a major investor group in the private equity market, it *has* influenced the types of partnerships in which public funds invest. In particular, public pension funds apparently strongly prefer later-stage venture and non-venture partnerships over early-stage venture partnerships because the former may be somewhat less risky and tend to generate returns more quickly.

Public pension funds tend to rely on outside advisers to evaluate and "certify" potential partnership investments. They undertake fewer direct investments and co-investments than corporate funds, for several reasons. One is that outside advisers, on whom the funds rely, generally do not evaluate potential direct investments. Also, the lengthy process of reviewing investment decisions limits the ability of public funds to respond quickly to investment opportunities, which, market participants stress, is a key to successful direct investing and co-investing.

According to a *Private Equity Analyst* survey of the fifty-six largest public pension funds investing in private equity, public funds, as of year-end 1991, had allocated approximately 4.3 percent of total assets to private equity. Nine public pension funds had allocations to private equity of between \$800 million and \$2 billion (table 10).

Endowments and Foundations

Endowments and foundations were among the earliest investors in venture capital. Most invest through partnerships, but some of the largest university endowments also have active direct investment programs that were started in association with research programs at their own universi-

ties. Currently, they provide about 12 percent of total commitments to private equity partnerships (table 9).

The typical endowment or foundation is small relative to pension funds, and only a few commit substantial amounts to private equity. Of the fifty largest college and university endowments, only nine had nonmarketable investments of more than \$60 million as of 1991 (the investment class includes oil and gas partnerships as well as private equity partnerships).¹⁰⁹ However, the three university endowments with the largest private equity investments (table 10) had a total of more than \$1 billion in such investments. Overall, nonmarketable investments account for about 5.3 percent of all financial assets managed by the fifty largest endowments. Little information is available on private equity investments by foundations and other types of endowments; however, some of the larger foundations are reported to make significant investments.¹¹⁰

Bank Holding Companies

Bank holding companies (BHCs) were also early investors in venture capital, and they are estimated to be the largest direct investors in the private equity market. Although they have, as a group, been active in private equity investing since the 1960s, the specific BHCs involved have varied considerably, in many cases because the parent holding company lacks a strong commitment to such activity. Some of the BHCs with the largest private equity investments are relative newcomers, having entered the market when the affiliated banks set up subsidiaries to manage equity received in exchange for developing country debt in the mid- to late 1980s. In addition, many BHCs have become involved in the market to take advantage of economies of scope between private equity investing and the provision of other commercial bank products, especially loans: As lenders to small and middle-market companies, BHCs have contact with a large number of firms in which they might make private equity investments; conversely, by investing in a private equity partnership, they may be able to generate lending

108. The problem of performance measurement is exacerbated by the way some public funds measure internal rates of return on private equity partnerships. They do so strictly on a cash basis; thus, investments register large negative internal rates of return until distributions are made.

109. See "Endowments Moving into Limelight as Other Institutions Withdraw," *The Private Equity Analyst*, August 1992.

110. See, for example, "Ford Foundation Raises Venture Commitment," *Venture Capital Journal*, September 1993, p. 7; and "Rockefeller Foundation Quickens Pace, Diversifies Portfolio," *Venture Capital Journal*, December 1994, p. 29.

to portfolio companies in which the partnership invests.¹¹¹

Because their equity ownership of commercial enterprises is restricted, BHCs invest in private equity through separately capitalized bank holding company subsidiaries. Direct investments are made through licensed Small Business Investment Companies (SBICs), and investments in limited partnerships are made through separate subsidiaries. A *Private Equity Analyst* survey suggests that of the twenty BHCs with the largest private equity investments, the five largest (table 10) accounted for two-thirds of the total.¹¹²

Wealthy Families and Individuals

Wealthy families and individuals still invest a substantial amount in private equity, but the growth of investment by pension funds and endowments has reduced this investor group's relative importance in the market. In addition to the wealthy families that were among the first venture capital investors, the group includes former CEOs and executives recruited by partnerships as limited partners for their business acumen as well as their money. The group also includes wealthy clients of commercial and investment banks.¹¹³ According to market participants, wealthy individuals make commitments of between \$50,000 and \$1 million, amounts generally smaller than commitments made by institutional investors.

Like the other groups, this investor group is attracted to private equity by its high returns. Wealthy families and individuals may have longer time horizons than investors in some other groups and thus may seem more suited to investing in illiquid assets such as private equity. Market participants also note that individuals seem to be more willing to fund first-time partnerships.

Unlike pension funds and endowments, which are tax exempt, wealthy families and individuals may be affected by changes in tax codes. Market participants argue that the numerous changes in

the capital gains tax since 1969 have affected investments by this investor group.

Insurance Companies

Insurance company involvement in the private equity market grew out of the companies' private placement debt activities. For many years, insurance companies financed their riskier client firms by purchasing debt that had an equity feature. They also provided mezzanine debt to finance some of the earliest leveraged buyouts, before the emergence of the public junk bond market. As they developed expertise, insurance companies, to generate deal flow for their mezzanine financing activities, began investing in limited partnerships involved in the private equity market. Thus, some insurance companies provided equity through a limited partnership and directly provided mezzanine financing to the same firm. Through the early 1980s, however, insurance companies restricted most of their private equity activities to their own mezzanine financing, because of resistance to "blind pool" investing associated with private equity partnerships. In addition, several insurance companies formed their own private equity partnerships to invest their own funds alongside money raised from outside investors. Since the mid-1980s, insurance company investments have been weighted more toward outside partnerships as insurance companies have become more comfortable with partnership investing.

Investment Banks

Investment banks most often participate in the private equity market through partnerships in which they themselves serve as general partners. Raising partnerships became popular in the mid-1980s as part of merchant banking activities that were aimed at providing financing and services to assist large buyouts. It remains the case today that investment bank-sponsored partnerships are directed toward later-stage venture and non-venture investments in established companies, and that financings by these partnerships share economies of scope with other investment banking services. For example, an investment bank-sponsored partnership may make a bridge or mezzanine equity investment in a firm prior to its going public, in anticipation of the bank underwriting the IPO and providing other financial services to the firm. In the case of large buyout

111. According to market participants, these economies may not be exploited in practice because, for example, account officers of commercial banks are not trained to identify good private equity clients. Further, a commercial bank is unlikely to be a large enough investor in a fund to direct the lending business toward itself.

112. "Bank Venture Groups Regain Footing as Woes of Parent Firms Subside," *The Private Equity Analyst*, September 1992.

113. For example, 25 percent of JP Morgan's \$1 billion Corsair fund came from JPM's clients.

transactions, the investment bank may also provide underwriting services and merger and acquisition advice. Direct investment other than through the partnership is uncommon.

Nonfinancial Corporations

Nonfinancial corporations, like bank holding companies, were significant backers of venture capital during the 1960s, often setting up special subsidiaries to carry out these activities. Many nonfinancial companies remain active investors. Venture Economics estimated in 1993 that there are 73 corporate venturing programs. They invest mainly through their own direct venture capital programs rather than through limited partnerships.

Nonfinancial corporations typically invest in risky early-stage developmental ventures that may fit into their competitive and strategic objectives. Almost three-quarters of the firms they invest in are in the medical and health care, industrial products and chemicals, and electronics and communications industries.¹¹⁴

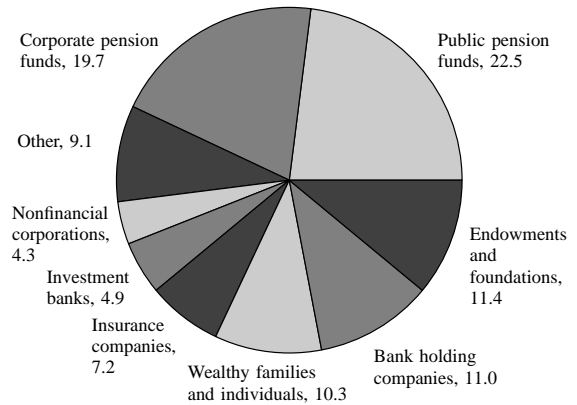
Private Equity Holdings of Major Investor Groups

As noted in chapter 2 and described in the appendix, we estimate that private equity capital

114. "The State of Corporate Venturing," *Venture Capital Journal*, June 1993.

5. Estimated holdings of private equity at year-end 1994, by investor group

Billions of dollars



Total outstanding, \$100.4 billion

outstanding at year-end 1994 was \$100.4 billion. Despite their relatively recent entry into private equity investing and their lack of direct investing, public pension funds were the largest investor group, with estimated holdings of \$22.5 billion (chart 5). Corporate pension funds were the second largest investor group, with holdings of almost \$20 billion, followed by endowments and foundations, with about \$11 billion. The remaining private equity stock was divided about equally between financial institutions—bank holding companies, insurance companies, and investment banks—and other investor groups.

6. The Role of Agents and Advisers

Because of the market's rapid growth during the 1980s and the entry of large numbers of new partnerships and investors, participants in the private equity market in many cases have not had dealings with one another. This lack of direct experience has increased search and evaluation costs for participants on both sides of the market. Investors may have difficulty evaluating new partnerships, partnerships may not be familiar with the decisionmaking processes of potential new investors, and firms seeking finance, though they may have a larger pool of potential investors, may have difficulty finding those willing to invest on the most favorable terms. The situation has created a market for agents and advisers, whose role is to mitigate these information problems.

We look at three major groups of agents and advisers in the private equity market, defined by the type of client they serve: Those that help portfolio firms raise private equity from limited partnerships or directly from institutional investors; those that help limited partnerships raise funds from institutional investors; and those that advise institutional investors on the placement of the funds they have allocated to the private equity market. The number of agents and advisers in the latter two groups has grown severalfold over the past decade, and the expanding market for their services is one of the more dynamic aspects of the private equity market.

Agents for Portfolio Firms

Agents for portfolio firms help raise equity capital from limited partnerships or directly from institutional investors, and negotiate terms with potential investors on behalf of portfolio firms. These agents, mainly investment and commercial banks, were prominent in the deal-by-deal private equity financing that preceded the development of limited partnerships; with an increasing share of private equity funding going through limited partnerships, they now play a more modest role. Agents are used most frequently by larger non-venture firms, in part because agent fees (as a percentage of issue size) decrease as the size of the issue increases, making the use of an agent relatively more expensive for smaller issuers, and also because larger firms are more likely to have established relationships with commercial and

investment banks that provide agent services. No quantitative evidence is available, but remarks by market participants suggest that agents assist in 20 percent to 35 percent of non-venture private equity issues.

What Do Agents for Portfolio Firms Do?

Agents for portfolio firms perform two functions. First, they provide search and evaluation services: They identify firms that are potential candidates for a private equity investment, compile information about the firm, and distribute it to potential investors. Second, agents provide negotiating services: They negotiate terms with potential investors on behalf of their client firms and use their knowledge of current market conditions to obtain better terms.

Search and Evaluation

Investment banks generate most of their private equity clients through relationship officers and equity analysts. Relationship officers obtain clients from a bank's existing client base in the course of reviewing a client's financing needs. Equity analysts, by contrast, obtain clients in the course of searching for potential IPO candidates in the industry in which they specialize. Among the firms they evaluate they occasionally identify one that is not quite ready to go public but has a need for equity financing. Investment banks are keen to act as agents for such firms in hopes of underwriting their IPOs in the future. Commercial banks generate a large number of leads from commercial loan officers, especially those involved in lending to small businesses.

Once a firm has been identified as a possible candidate for a private equity issue, the agent discusses the advisability of such financing with the firm. The managers of some firms know little, if anything, about the private equity market and need information about the likely cost in terms of both the price their shares might sell for and the influence investors will expect to exert over the firm's general policies. Although many firms may regard the cost as high, many will have already tried and failed to secure other types of financing.

At this point, the agent conducts an initial evaluation of the firm's operating and financial characteristics to determine whether an offering would be successful. This initial evaluation, which lasts three to five days, is critical to the agent's success because agents are paid only a nominal retainer fee unless a private equity offering is completed successfully. If the evaluation is favorable and the firm is comfortable with the idea of issuing private equity, the agent is given a mandate to conduct further due diligence and to begin marketing the issue.

Having won an issuer's business, the agent begins the labor-intensive process of compiling information about the firm and distributing it to potential investors. The first step is writing an offering memorandum—often called a “book”—for the firm. The book contains information on the nature of the firm's business, its financial and operating history, and its management gathered during visits to and extensive discussions with management. It also contains detailed five-year projections of operating earnings, cash flows, and market valuation (based on standard multiples of forecast earnings before interest and taxes) and a description of the securities being offered and the intended use of the proceeds. The book often takes as long as six weeks to prepare and may be two hundred pages long. Because it is written for a private offering of securities, the book differs somewhat from a prospectus issued for a public offering. In particular, it contains projections and forecasts, which are prohibited in descriptions of public offerings.

The book is distributed to twenty to one hundred potential investors. Identifying potential investors is an important part of the agent's work. Most agents maintain a large database in which potential investors are listed by preference for industry, location, type of securities, and stage of investment. The majority of potential investors are private equity limited partnerships, but a number of institutional investors, such as pension funds and endowments, may also be on the agent's list. For some firms seeking private equity, corporate buyers are also among the potential investors.¹¹⁵

After the books are distributed, the agent and the firm's senior managers typically prepare a

“road show” and visit potential investors, one at a time, to discuss the proposed offering in detail. The visits are an opportunity for investors and investment advisers to question firm managers in detail about the contents of the offering memorandum and to size up management quality and character. The road show typically goes to cities where investors are concentrated, such as New York, Hartford, Boston, and Chicago, and may last three or four weeks.

Negotiation

After the road show, interested investors often conduct additional due diligence before submitting terms sheets to the agent. These sheets state the terms under which the investor will invest, including price, the stake the investor will take at that price, covenants, and other terms, such as whether the investor will be the lead investor in the deal. The agent then negotiates with these interested investors. Once the client is comfortable with the terms of the bids, including the non-price-related terms covering such matters as the control the investor will have over the firm's policies, a deal can be struck. The process of negotiating price and non-price terms often takes a month. Typically, fewer than half a dozen investors are in on the deal at the close, and in many cases only one or two.

Private equity deals typically take three months from start to finish, but more complicated issues may take as long as a year. The considerable time and effort expended on behalf of the client is reflected in the agent's fee, which typically is 5 percent to 6 percent of the gross funds raised. Fees as a percentage of issue size increase as issue size decreases, reflecting the agent's large fixed costs. Fees for agents that match buyers and sellers but do not negotiate or place securities are somewhat lower and may follow the Lehman formula.¹¹⁶ In general, agent fees are much higher than those in the market for privately placed debt, which average less than 1 percent of issue size. The charge for private equity is higher because potential equity investors need much more information than potential lenders when they

115. Indeed, market participants indicate that corporate buyers are often preferred over all other types of investors because they generally are willing to pay a higher price for the firm, in anticipation of synergies between the two firms' operations.

116. The Lehman formula for calculating fees gives the agent a declining percentage for successive tranches of the issue, for example, 5 percent on the first \$1 million issued, 4 percent on the second, 3 percent on the third, 2 percent on the fourth, and 1 percent on the remaining amount of the issue above \$4 million.

evaluate investment opportunities.¹¹⁷ The typical private equity placement fee is generally somewhat lower than the 7 percent to 8 percent charged by an investment bank to underwrite an IPO, but the investment bank also provides formal underwriting services, which are subject to market price risks.

Although private equity agents do not bear underwriting risks, they do bear other risks. First, apart from a small retainer fee paid by issuers at the beginning of the process, agents are paid only for successful placements; thus, their investment in a particular transaction in terms of staff time and other resources is at risk until closing. The agent's reputation with investors also is at risk: Investors spend considerable time evaluating offering memorandums, and if they find those from a particular agent to be materially incomplete or inaccurate, they will be less likely in the future to evaluate offering memorandums from that agent. Agents control these risks through careful examination of a client's business and financial standing during the initial evaluation and the writing of the offering memorandum.

Limited partnerships and agents both overlap and compete in the services they provide to issuers of private equity. Indeed, competition between agents and limited partnerships in finding suitable portfolio firms appears to be intense. However, limited partnerships, unlike agents, are investors themselves and act on their own behalf, and thus they are unlikely to share their knowledge of other potential investors or prevailing market conditions with portfolio firms. Because they have less information, portfolio firms that issue equity directly to a limited partnership may obtain a lower price than they would have had they used a formal agent; however, they recoup some of that loss by not having to pay a formal agent fee.

Who Are the Agents for Portfolio Firms?

According to a database supplied by Securities Data Company (SDC), a total of 81 agents arranged 256 private equity deals in 1992 and 1993.¹¹⁸ Table 11 lists the top twenty agents in

117. Lenders are interested mainly in a borrower's ability to service the debt, whereas equity investors are concerned about the growth potential of revenue and earnings.

118. The numbers exclude agent-assisted fund raising for limited partnerships and Rule 144A issues. Agent-assisted limited partnership fund raising is discussed in the next section. As discussed in chapter 1, we do not consider Rule 144A private equity issuers part of the private equity market.

11. Selected characteristics of major agents that place private equity, 1992–93

| Agent | Number of deals arranged | Total deal volume (millions of dollars) | Average deal size (millions of dollars) | Rank by number of IPOs underwritten |
|--------------------------------|--------------------------|---|---|-------------------------------------|
| JP Morgan* | 24 | 651 | 27.1 | ... |
| DH Blair | 12 | 30 | 2.5 | ... |
| PaineWebber | 11 | 321 | 29.2 | 7 |
| Josephthal | 11 | 33 | 3.0 | ... |
| CS FirstBoston | 10 | 1,267 | 126.7 | 9 |
| Lehman | 10 | 638 | 63.8 | 2 |
| Donaldson, Lufkin and Jenrette | 10 | 409 | 40.9 | 8 |
| Kidder Peabody | 10 | 314 | 31.4 | 16 |
| Continental* | 9 | 150 | 16.7 | ... |
| Chase Manhattan* | 9 | 74 | 8.2 | ... |
| Goldman, Sachs | 8 | 711 | 88.9 | 5 |
| NatWest* | 8 | 244 | 30.5 | ... |
| Chemical* | 6 | 90 | 15.0 | ... |
| Salomon | 5 | 138 | 27.6 | 10 |
| Montgomery | 5 | 91 | 18.2 | 6 |
| Dean Witter | 5 | 83 | 16.6 | 15 |
| Merrill Lynch | 4 | 663 | 165.8 | 1 |
| Smith Barney | 4 | 111 | 27.8 | 12 |
| Vector | 4 | 34 | 8.5 | ... |
| First Chicago* | 3 | 89 | 29.7 | ... |

* Denotes commercial bank; all others are investment banks.

... Not in top twenty.

SOURCES. Securities Data Company and *Investment Dealers' Digest*.

terms of the number of deals they arranged in 1992 and 1993. These twenty agents accounted for almost two-thirds of the deals arranged by agents and nearly four-fifths of the total volume arranged by agents; the top five arranged 26 percent of all deals arranged by agents. Among agents that are continuously competing for clients the concentration is even higher, as a large number of agents apparently operate in the market only infrequently. The SDC database lists more than fifty firms that were involved in only one or two deals during 1992 and 1993.

Of the top twenty agents, fourteen are investment banks. The predominance of investment banks is consistent with the notion that there are significant economies of scope between arranging private equity issues and other investment banking activities, such as underwriting public equity issues (particularly IPOs). These economies of scope appear to be focused in the prospecting stage of the agenting business: Investment banks

The SDC data are likely very incomplete. In particular, the total number of deals arranged by agents is unknown because many small agents do not report their transactions to SDC.

that develop relationships with small firms by acting as agents for their private equity issues may be more likely to be chosen by the firm to underwrite any future public offerings of securities. Indirect evidence of these economies of scope can be seen in the rankings of the top twenty private equity agents according to number of IPOs underwritten: Of the fourteen investment banks among the top twenty private equity agents, eleven are also among the top twenty IPO underwriters.

The remaining top twenty private equity agents are commercial banks. Their presence on the top-twenty list may also reflect some economies of scope, in this case between arranging private equity issues and providing loans to small businesses. Commercial banks that have substantial small-business-loan operations are likely to come into contact with a large number of firms that are potential candidates for private equity issues and can take advantage of their contacts by having a private-equity-agenting operation.

Agents appear to vary widely in the size of private equity deals in which they specialize, reflecting the wide variation in the size of firms that issue in the private equity market. Among the top agents, some—such as JP Morgan, DH Blair, Paine Webber, and Josephthal—specialize in small issues (less than \$50 million) by smaller firms, while a number of the larger investment banks—such as CS First Boston, Goldman Sachs, and Merrill Lynch—specialize in large deals.

Agents for Limited Partnerships

A different set of agents help limited partnerships raise funds. Although most limited partnerships do not use agents to raise funds, those that are attempting to raise very large sums (\$1 billion or more), that have no track record, or that specialize in investments that are less familiar to institutional investors than traditional venture capital investing often turn to agents for help. Agents' activities in this sector of the market are thus naturally confined to large partnerships that are dedicated to non-venture investments such as buyouts and distressed debt. Such partnerships often target as principal investors public pension funds. The decisionmaking process at public pension funds involves investment officers, trustees, and pension advisers ("gatekeepers"), and relationships with these individuals must be carefully developed. Thus, even a limited partnership that has experienced and well-respected general partners may prefer to take advantage of an agent's contacts and

experience in raising money from large pension funds rather than do the fund raising itself. Some partnerships may also use agents for fund raising simply to avoid diverting the general partners' time from investment activities.

Agents are rarely used to raise money for traditional venture capital partnerships whose general partners have an established track record. Indeed, market participants observe that potential investors would not look favorably on general partners using an agent to raise money for a follow-on fund, as such a move would indicate that they were having trouble raising money from investors in earlier funds.

Agents for limited partnerships are a fairly recent phenomenon. Before 1985 there were only five established limited partnership agents. Since then the number of agents has more than tripled, to sixteen in 1994.¹¹⁹ Of these, seven have each helped raise more than \$1 billion of private equity for partnerships.

Agents for partnerships perform activities similar to those performed by agents on behalf of portfolio firms, though they do not need to put much effort into looking for clients because they regularly receive a large number of proposals from limited partnerships that are looking for help in raising money. They provide extensive evaluation (or certification) services for potential investors. Because their success appears to rest critically on a reputation among institutional investors for consistently bringing them high-quality offerings, they are very selective about which funds they raise money for.¹²⁰ Once they have agreed to assist a particular partnership, agents prepare the offering memorandum for the fund and distribute it to potential investors, organize a road show, and conduct one-on-one meetings with potential investors. On average, partnership funds take around nine months to raise. Drawing on their knowledge of current market conditions, agents for partnerships also negotiate terms on behalf of funds.

Agents for limited partnerships charge high fees, reflecting the specialized nature of the task of raising money from public pension funds and perhaps the limited number of agents that compete in this market. The current rate appears to be about 2 percent of funds raised and a carried

119. See "Placement Agents Multiply as Market for Funds Swells," *The Private Equity Analyst*, April 1994.

120. One agent we talked to receives as many as five proposals a week but chooses to raise money for only four or five partnership funds a year.

interest in the partnership. Thus, an agent's fees on a \$1 billion fund, not counting the carried interest, may amount to \$20 million. Attracted by such returns, several investment banks have recently created fund-raising groups. Market participants expect the market to become more competitive as a result of these new entrants. They expect the role of fund-raising agents to diminish somewhat over the longer term as public pension funds become more familiar with the market and as the large limited partnerships become more familiar with the individuals who have discretionary power over the pension fund assets that are allocated to private equity.

Advisers to Institutional Investors

Advisers to institutional investors make up the final group of agents in the private equity market. Advisers specialize in evaluating and recommending partnership investments for institutional investors, but they evaluate some co-investment opportunities in portfolio firms as well. Advisers have a somewhat longer history than do agents for limited partnerships, some having been advising institutional investors on the placement of their funds among venture capital partnerships since the early 1970s. In 1985, nine such advisers were in operation. As the number of institutional investors that allocate capital to the private equity market has grown, so too has the number of advisers. In 1994, twenty-six advisory firms were in operation; in the 1990s alone, ten new firms entered the field.¹²¹

Advisers' major clients are pension funds, endowments, and foundations. These institutions value the services provided by advisers mainly because they either have little experience in investing in the private equity market and need some guidance or do not have the staff resources to adequately evaluate investment opportunities. In 1994, the twenty-six advisory firms had discretionary power over at least \$9.7 billion and non-discretionary power over another \$8.6 billion.¹²²

The structure of an advisory firm varies. Some operate within a full-service money management firm, while others are independent. Advisers in the former group tend to have discretionary power over assets, while those in the latter do not. Increasingly, advisory firms operate as a "fund

of funds" in which advisers function as general partners of a limited partnership that invests in other limited partnerships. Of the twenty-six advisory firms operating in 1994, nine operated a fund of funds and another five were in the process of raising their first fund of funds.

Because advisers direct, or influence the direction of, such large sums of money, they routinely receive a large number of offering memorandums from private partnerships that are in the process of raising funds. Thus, like agents for limited partnerships, they need not expend many resources to find investment opportunities but do perform extensive screening and evaluation services for their clients.

Their screening and evaluation involve extensive review of the partnership managers' track record: Advisers typically request the audited financial statements of all of the partnership managers' previous partnerships and a large amount of supplemental information, including the cash flows from *each* of the investments in the managers' previous partnerships. From this information, rates of return for each investment are calculated and used to verify the previous partnerships' overall rates of return.¹²³ Information is also obtained on the region and industry of each investment, the percent ownership held by the partnerships in each portfolio company, the number of board seats held by the partnerships, and other investment characteristics. From this information the advisory firm attempts to infer whether the managers' previous record reflects predominantly skill or luck. For example, if a partnership is raising a new fund to invest in the health care industry and the general partners tout their expertise in this industry, the advisory firm investigates whether earlier health care investments were successful. Similarly, if partnership managers attribute their earlier successes to their positive influence, through board seats, on the operations of the partnership's portfolio companies, the advisory firm investigates whether there is a positive correlation between returns on earlier investments and the number (or percentage) of board seats held.

123. Although partnerships of all types are evaluated in basically the same way, partnerships dedicated to non-venture investments, especially those that are only several years old, can be more difficult to evaluate because there often are not subsequent rounds of financing upon which to establish new investment values. Advisory firms sometimes compare the valuation assumptions used by different partnership management firms to determine whether a particular set of assumptions is reasonable.

121. See "As Competition Increases, Gatekeepers Expand Range of Services," *The Private Equity Analyst*, October 1994.

122. *Ibid.*

The organizational structure and incentives within the proposed partnership are also examined. Of critical importance is whether the general partners who generated the past returns are still with the partnership. Also of interest are compensation arrangements. Arrangements that insufficiently compensate younger general partners who are expected to carry the workload, for example, may signal future problems. Some advisers are concerned with whether a partnership is affiliated with an institution and, if so, whether the general partners' compensation is tied to the performance of the fund or is a drawn salary.

Another focus of attention is partnership size. Some growth over the managers' previous partnerships is normal and can be justified if the number of general partners has increased, if the partnership is taking larger stakes in the companies in which it invests, or if the partnership is syndicating fewer deals. However, advisory firms are alert for situations in which the partnership may be investing in more projects than the general partners can effectively monitor. Of a more subtle nature, having a greater amount under management may simply result in higher valuations on the initial investments: When an issuer knows that a partnership has a large amount to invest, it may be able to negotiate a more favorable price.

Advisers also typically provide negotiation services for their clients. They evaluate the terms of the offering (such provisions as general partner fees and rules regarding the calculation of carried interest) in the context of current market condi-

tions. In deciding whether to recommend investing in the partnership, the advisory firm takes into account other partnership investment opportunities that might arise in the near future; it may recommend against investing in a partnership that appears fairly attractive, for example, if it knows that an outstanding partnership will be raising funds in six months.

Until a few years ago, the standard annual fee charged for advisory services was 1 percent of assets under discretionary management. However, pricing has come under pressure from new entrants to the field, and fees today are generally between 50 and 70 basis points, and sometimes lower. Increased competition has also forced many advisory groups to expand the range of services they provide to their clients. New services include evaluating international limited partnership offerings, direct investments in portfolio firms, and secondary offerings of limited partnership interests. Advisory firms have also expanded into advising institutional investors on managing the securities that are distributed by limited partnerships. This activity has been spurred by the growing volume of stock distributions as partnerships are maturing and winding down. Many investors, lacking the expertise or resources to evaluate these securities, direct the partnership to distribute the securities to an advisory firm, which then decides whether the investor should hold, sell, or even purchase additional shares, a service that shares scope economies with money managers that specialize in small-capitalization stocks.

7. The Returns on Private Equity Investments and their Determinants

A major reason for the explosive growth of the private equity market since 1980 has been the anticipation by institutional investors of returns substantially higher than can be earned in alternative markets. Of course, private equity investments are regarded as substantially more risky and more illiquid than other assets. For those institutional investors that can bear such risk and illiquidity, however, the high expected returns are a major attraction. In this chapter we use publicly available data on the returns to the limited partners of private equity limited partnerships to examine returns to private equity over the past two decades.

The data indicate that returns to private equity have at times substantially exceeded returns in the public market. To a certain extent, returns are driven by capital availability: For both venture and non-venture investments, returns have been greatest on investments made during periods when relatively small amounts of capital were available, though other factors can also explain the high returns during these periods. Conversely, there is concern, if not a large amount of evidence, that periods of greater capital availability depress future returns. The data also indicate that returns generally have been higher for non-venture and later-stage venture capital partnerships than for early-stage partnerships, a pattern that may partly explain the faster growth of the later-stage and, particularly, non-venture sectors of the private equity market over the past fifteen years.

Data from Venture Economics

The most comprehensive information on returns to venture and non-venture partnerships is available from the commercial firm Venture Economics Investor Services, which provides summary information on returns to limited partners in organized venture capital partnerships formed in 1969–89 and in organized non-venture partnerships formed in 1980–89. Returns are measured by the internal rate of return (IRR).¹²⁴ IRRs for each partnership are based on capital contributions

124. Venture Economics constructs internal rates of return using cash flow information from the audited financial statements of partnerships provided to Venture Economics by partnership management companies and limited partners.

(negative cash flows), distributions to limited partners (positive cash flows), and a valuation of the assets that remain in the partnership (terminal value). Distributions to limited partners, and hence IRRs, are net of management fees and other partnership expenses. We present a capitalization-weighted IRR, which weights the partnership IRR by the size of the partnership, as well as a median IRR.

It should be noted that returns to partnerships that have not yet been liquidated—a group that includes the majority of partnerships formed since 1980—reflect the valuation of a residual component comprising investments whose market values are unknown but are often reported at cost. The inclusion of such a valuation presents less of a problem for funds formed in the early 1980s, which have a relatively low residual value component, than for funds formed in the late 1980s. Even for the younger funds, however, the “interim” IRRs reported may still be good indicators of final IRRs, particularly given that the IPO market in 1991–93 was hot, allowing for successful exits by some of the more promising portfolio companies.

Returns data are reported separately for three groups of funds: 30 venture capital partnerships formed between 1969 and 1982 that had been liquidated by year-end 1993; 351 venture capital partnerships at least four years old and still in existence at year-end 1993; and 86 active non-venture equity partnerships formed between 1980 and 1989.¹²⁵

IRRs of Liquidated Funds

Despite a partnership’s scheduled life of ten years, only 30 of 139 venture capital partnerships formed between 1969 and 1982 in Venture Economics’s sample had been liquidated by year-end 1993.¹²⁶ Of these, twelve were formed during 1969–75,

125. The venture funds together accounted for \$18.8 billion of the estimated total of \$23.6 billion raised by venture capital limited partnerships over 1969–89; the non-venture funds accounted for only 36 percent of the estimated non-venture partnership universe.

126. Most of these funds were dissolved between years 10 and 14, with a range of 8 to 19. At least one fund formed during 1969–75 is still outstanding and continues to invest realized gains.

12. Average internal rates of return for liquidated venture capital partnerships

| Year of formation of partnership | Return (percent) | Number of partnerships |
|---|------------------|------------------------|
| All partnerships formed in 1969–82 | 18.2 | 30 |
| 1969–75 | 17.8 | 12 |
| 1976–79 | 29.7 | 10 |
| 1980–82 | 13.1 | 8 |

NOTE. Rates are simple average IRRs of liquidated venture capital partnerships included in the Venture Economics database.

SOURCE. Venture Economics, *1994 Investment Benchmarks: Venture Capital*.

ten during 1976–79, and eight during 1980–82. The average IRR for the thirty funds was 18.2 percent, but the return varied considerably with period of partnership formation and ranged from a high of 29.7 percent for partnerships formed during 1976–79 to a low of 13.1 percent for those formed during 1980–82 (table 12). The latter were dragged down by six funds formed during 1982 that had an average IRR of only 1.6 percent.

With the exception of the partnerships formed in 1982, limited partners in these venture capital partnerships earned returns that substantially exceeded those in the public equity market. For example, whereas the IRRs on venture capital partnerships formed during 1976–79 averaged nearly 30 percent, the average annual return on a portfolio of small-company stocks over the ten-year period 1979–88 was approximately 18.9 percent.¹²⁷

This group of liquidated partnerships, especially those raised before 1980, were formed at a time when general partners were highly selective, financing only start-up firms with the most promising growth prospects—those expected to grow to more than \$20 million in annual sales. Although partnerships formed in both the early and late 1970s benefited from this selectivity, partnerships formed in the latter period were able to exit investments more quickly (through the hot IPO markets of 1981 and 1983) and thus showed even higher returns. The experience of the 1970s

127. Ibbotson (1994). Partnerships formed during 1976–79 invested most of their capital during 1976–82, with peak investment likely occurring between 1979 and 1981. Most of their distributions had occurred by 1988. Thus, 1979–88 corresponds to the period during which partnerships earned returns on most of their capital.

shows that, at times, private equity offers returns that substantially exceed those available from publicly traded securities.

IRRs as of 1993 of Active Venture Capital Partnerships

The preceding section examined the returns to liquidated partnerships. A much larger number of venture capital partnerships are still active. As of 1993, the capitalization-weighted average IRR of 351 active venture capital partnerships formed during the 1980s was 9.4 percent (table 13).¹²⁸ The median IRR was only 6.3 percent, with a lower-quartile rate of –0.3 percent and an upper-quartile rate of 12.5 percent. The residual value as a proportion of total value is large—almost 50 percent—reflecting the long investment periods for private equity. To the extent that residual value is biased downward because some investments are recorded at cost and because investments exited through the public market are discounted 20 percent to 30 percent, total returns are underestimated.¹²⁹

Returns to active partnerships formed during the 1980s were substantially lower than returns to partnerships formed during the 1970s. Judged against the returns on publicly traded small stocks, however, the returns do not seem quite so low. For example, the returns on small stocks over the ten year period 1984–93 averaged only 10 percent.¹³⁰

IRRs as of 1993 by Year of Formation

Like the partnerships formed during the 1970s, the sixteen partnerships formed during 1980 and still active had a capitalization-weighted average IRR as of 1993 of nearly 20 percent (table 13). Returns for partnerships formed after 1980 were sharply lower; for example, capitalization-weighted average IRRs for active partnerships formed between 1981 and 1984 were in the mid-single

128. IRRs for an additional sixty partnerships raised during 1990–93 are not included in the data because the partnerships are less than four years old and very few of their investments have been exited.

129. Partnerships generally discount the value of assets exited through the public market because they do not believe they could sell their substantial stakes in these firms without depressing the price.

130. Again, we choose the period over which we measure returns on publicly issued stock to conform to those years during which the partnerships earned their returns.

13. Internal rates of return as of 1993 and selected characteristics of active venture capital partnerships, by year of formation

| Item | Year of formation of partnership | | | | | | | | | | |
|---|----------------------------------|------|------|------|------|------|------|------|------|------|------|
| | 1980-89 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| <i>Internal rate of return (percent)</i> | | | | | | | | | | | |
| Capitalization-weighted average | 9.4 | 19.8 | 7.7 | 5.2 | 6.3 | 5.4 | 8.3 | 9.4 | 10.0 | 15.6 | 10.8 |
| Median | 6.3 | 13.2 | 1.6 | 2.2 | 5.0 | 5.2 | 7.2 | 5.7 | 7.4 | 9.1 | 4.0 |
| Upper quartile | 12.5 | 16.1 | 13.7 | 8.2 | 9.5 | 10.7 | 16.2 | 13.5 | 11.9 | 18.6 | 11.1 |
| Standard deviation .. | ... | 13.5 | 9.0 | 8.1 | 7.5 | 8.9 | 11.9 | 10.2 | 8.4 | 12.5 | 12.8 |
| <i>Characteristic</i> | | | | | | | | | | | |
| Ratio of residual value to paid-in capital ¹ | .70 | .58 | .20 | .30 | .45 | .51 | .77 | .80 | .86 | 1.05 | 1.04 |
| Ratio of total value to paid-in capital ² | 1.52 | 2.66 | 1.60 | 1.39 | 1.51 | 1.40 | 1.68 | 1.40 | 1.32 | 1.47 | 1.20 |
| Ratio of residual value to total value | .46 | .26 | .13 | .22 | .30 | .36 | .46 | .57 | .65 | .71 | .87 |
| MEMO | | | | | | | | | | | |
| Number of partnerships | 351 | 16 | 17 | 21 | 43 | 51 | 35 | 42 | 50 | 34 | 42 |

1. Residual value is the reported value of investments that remain in the partnership.

2. Total value is residual value plus cumulative distributions by the partnership.

SOURCE: Venture Economics, *1994 Investment Benchmarks: Venture Capital*.

digits. Although these partnerships still have investments that have not been liquidated, their final IRRs will not differ significantly from their IRRs as of 1993 unless the remaining assets are sold for substantially more than their current book value—an unlikely scenario, as many of these investments are more than ten years old. Partnerships formed during 1985 and later were, as of 1993, earning higher returns than those formed during 1981-84. The final IRRs for these partnerships are more difficult to predict. They will depend on the performance of small-capitalization stocks as well as on the condition of the IPO market and other exit markets over the next several years.

IRRs as of 1993 by Investment Focus and Size

The IRRs as of 1993 for later-stage and larger funds were higher, on average, than those for early-stage and smaller partnerships (table 14). Note, however, that the performances of later-stage and larger partnerships are not independent, as later-stage partnerships tend to be larger than other

venture partnerships. Further, the larger funds were more likely to have been formed in the late 1980s, making it difficult to distinguish the effects of size and other factors that may have led to higher returns on funds formed during this period. If in fact the observed differences represent a true superiority of returns to larger and later-stage partnerships over this period, one explanation may be that these partnerships represent follow-on funds raised by experienced general partners, whereas smaller and early-stage funds are managed by less-experienced general partners.

IRRs as of 1993 of Active Non-Venture Capital Partnerships

As of 1993, the capitalization-weighted average IRR for Venture Economics's sample of eighty-six active non-venture private equity partnerships formed during the 1980s was 14.4 percent (table 15).¹³¹ The median IRR was 11.2 percent, and the IRRs for the lower-quartile and the upper-quartile

131. The reported returns for these partnerships are based on a residual value-to-total value ratio of 42 percent.

14. Internal rates of return as of 1993 and selected characteristics of active venture capital partnerships, by investment focus and size

| Item | By investment focus ¹ | | | | By size of partnership | | | |
|---|----------------------------------|----------|-------|------|---|---|---|--------------------------------------|
| | Later | Balanced | Early | Seed | Megafund (greater than \$100 million) | Large (\$50 million– \$100 million) | Medium (\$25 million– \$50 million) | Small (less than \$25 million) |
| <i>Internal rate of return (percent)</i> | | | | | | | | |
| Capitalization-weighted average | 13.4 | 9.0 | 9.3 | 8.4 | 13.4 | 8.6 | 5.5 | 4.7 |
| Median | 9.7 | 6.6 | 3.4 | 7.9 | 10.9 | 7.2 | 5.2 | 3.5 |
| Upper quartile | 14.0 | 11.7 | 13.6 | 13.6 | 16.5 | 13.3 | 11.9 | 11.9 |
| <i>Characteristic</i> | | | | | | | | |
| Ratio of residual value to paid-in capital ² | .83 | .67 | .69 | .82 | .83 | .76 | .68 | .65 |
| Ratio of total value to paid-in capital ³ | 1.89 | 1.52 | 1.44 | 1.47 | 1.60 | 1.61 | 1.37 | 1.57 |
| Ratio of residual value to total value | .44 | .44 | .48 | .56 | .52 | .47 | .50 | .41 |
| MEMO | | | | | | | | |
| Number of partnerships | 26 | 212 | 80 | 40 | 39 | 84 | 103 | 132 |

NOTE. Covers 358 active venture capital partnerships formed between 1976 and 1989.

1. Investment focus describes the type of companies the partnership targets for its venture capital investments—early-stage new ventures or later-stage new ventures. Balanced describes partnerships that divide their investments between early- and later-stage companies.

2. Residual value is the reported value of investments that remain in the partnership.

3. Total value is residual value plus cumulative distributions by the partnerships.

SOURCE. Venture Economics, *1994 Investment Benchmarks: Venture Capital*.

were 6.4 percent and 17.4 percent respectively. These returns are considerably higher than the returns to venture capital partnerships formed during the 1980s.

Looking at IRRs by year of formation, the returns as of 1993 to non-venture partnerships formed during the early 1980s exceeded those to partnerships formed during the later half of the

15. Internal rates of return as of 1993 and selected characteristics of active non-venture equity partnerships, by year of formation

| Item | Year of formation of partnership | | | | | | | |
|---|----------------------------------|---------|------|------|------|------|------|------|
| | 1980–89 | 1980–83 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| <i>Internal rate of return (percent)</i> | | | | | | | | |
| Capitalization-weighted average | 14.4 | 16.7 | 29.3 | 32.7 | 14.8 | 6.7 | 11.6 | 5.3 |
| Median | 11.2 | 18.1 | 10.6 | 14.4 | 12.6 | 12.1 | 9.8 | 4.8 |
| Upper quartile | 17.4 | 29.8 | 30.5 | 35.1 | 15.2 | 17.3 | 13.0 | 23.2 |
| Standard deviation | 25.5 | 8.8 | 39.9 | 50.4 | 13.4 | 21.5 | 11.0 | 25.1 |
| <i>Characteristic</i> | | | | | | | | |
| Ratio of residual value to paid-in capital ¹ | .82 | 1.49 | .56 | .89 | .77 | .73 | .79 | .81 |
| Ratio to total value to paid-in capital ² | 1.95 | 3.64 | 2.82 | 2.80 | 2.01 | 1.50 | 1.21 | 1.22 |
| Ratio of residual value to total value | .42 | .41 | .20 | .32 | .38 | .49 | .65 | .66 |
| MEMO | | | | | | | | |
| Number of partnerships | 86 | 7 | 9 | 7 | 19 | 18 | 13 | 13 |

1. Residual value is the reported value of investments that remain in the partnership.

2. Total value is residual value plus cumulative distributions by the partnership.

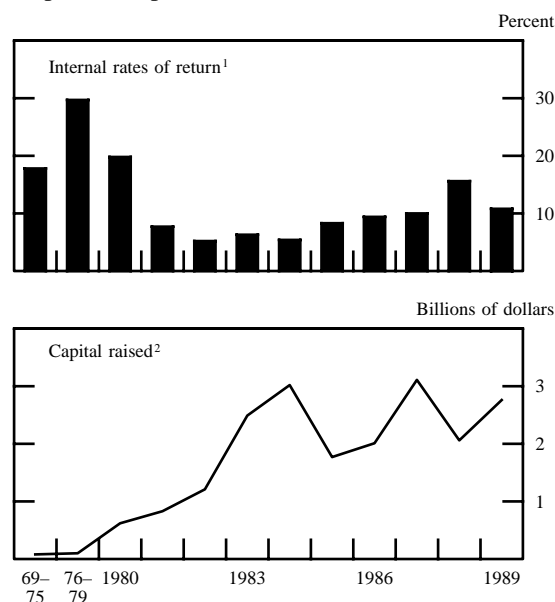
SOURCE. Venture Economics, *1994 Investment Benchmarks: Buyouts and Other Private Equity*.

1980s. Capitalization-weighted average IRRs for funds formed through 1986 exceeded the composite average of 14.4 percent, while those for funds formed after 1986 were below the average. The decline in rates of return is consistent with studies that find that LBOs undertaken during the late 1980s underperformed those undertaken in the early 1980s (see Kaplan and Stein, 1993). The lower returns on the later deals have been attributed to breakdowns in both buyout pricing and structure.

Determinants of Private Equity Returns

The highest returns to venture capital partnerships were those to partnerships formed during periods when small amounts of capital were raised (chart 6). For example, returns to venture capital partnerships formed during the late 1970s, when little capital was raised, were relatively high. Conversely, returns to partnerships formed during the early 1980s, when greater amounts of capital were raised, fell to single digits. The pattern of returns for non-venture partnerships is similar: Non-venture partnerships formed during the early

6. Venture capital partnerships: Internal rates of return as of 1993 and capital raised, by year partnership was formed



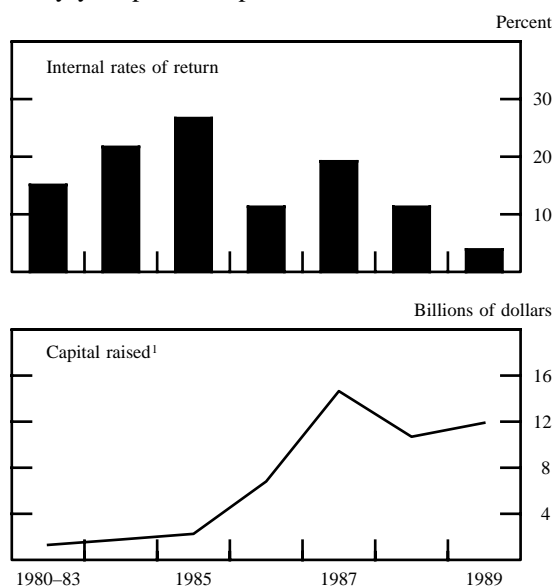
NOTE. Internal rates of return are capitalization-weighted IRRs to private venture capital partnerships included in the Venture Economics database.

1. IRRs for 1969–75 and 1976–79 are for liquidated partnerships; IRRs for 1980–89 are for partnerships still active as of 1993.

2. Figures for capital raised in 1969–75 and 1976–79 are at an annual rate.

SOURCE. Venture Economics, 1994 *Investment Benchmarks: Venture Capital*.

7. Non-venture capital partnerships: Internal rates of return as of 1993 and capital raised, by year partnership was formed



NOTE. Internal rates of return are capitalization-weighted IRRs to private non-venture capital partnerships included in the Venture Economics database.

1. Figures for capital raised in 1980–83 are at an annual rate.

SOURCE. Venture Economics, 1994 *Investment Benchmarks: Venture Capital*.

1980s, years during which little capital was being directed to non-venture partnerships, registered higher IRRs than partnerships formed during the second half of the 1980s, when large amounts of new capital were flowing to partnerships of this type (chart 7).

The limited availability of capital was not, however, the only factor that contributed to the high returns on venture capital partnerships formed during the 1970s and non-venture partnerships formed during the early 1980s. As discussed previously, general partners of venture capital partnerships were very selective in the mid-1970s about their investments in new ventures out of concern that only firms that grew to a certain size could be taken public. The development of new investment strategies—for example, non-venture investments by venture capital partnerships in the 1970s (see chapter 2)—also temporarily boosted returns. A more striking example were the leveraged buyouts of public companies, such as Gibson Greetings, by non-venture partnerships in the early 1980s.¹³²

132. Gibson Greetings was taken private in January 1982 at a purchase price of \$80 million. Sixteen months later the company was taken public at a value of \$290 million. The partnership backing the deal—Wesray, headed by former treasury secretary William Simon—earned a profit of \$210 million on an equity investment of only \$1 million.

Market participants are concerned that returns to partnerships formed during periods of high commitments, such as 1994, will fall below the level needed to compensate investors for the risk and illiquidity of private equity investments. For various reasons, greater capital availability could lead to a breakdown in discipline in deal pricing and structuring and, hence, to lower returns. During periods of high commitments, the competition for locating deals intensifies, and deals that are found may also have been found by other partnerships eager to invest. This intense competition makes it more likely that general partners will pay a higher price to reduce the risk of losing the deal. Thus, under conditions of intensified competition for a limited supply of investment opportunities, the incentive to put capital to work may outweigh the incentive to invest in only fairly priced deals.

In conjunction with the possible incentive to make overpriced investments, general partners may have less information on which to base valuations during periods of intensified competition because deals close more quickly than usual. The quick closure does not allow time for sufficient due diligence and careful deal structuring, which are considered the heart of private equity investing, increasing the likelihood of investing in ventures that yield lower returns.

Finally, when commitments to partnerships are ample, less experienced general partners manage larger amounts of capital. These general partners may have both fewer concerns about reputation and less ability, making them especially likely to overpay for deals, and by greater amounts.

Given that periods of high commitments could be associated with lower returns, why would limited partners commit capital at times when other limited partners are also investing large amounts? One explanation is that the high level of commitments is triggered by favorable exit conditions, such as a hot IPO market or a robust mergers and acquisitions market, which substantially increases returns on earlier partnerships. Such periods, especially those associated with hot IPO markets, produce returns to private equity that are not only high for this asset class, but also high compared with returns on other assets.¹³³ There is evidence that even in the public market investors

allocate funds on the basis of recent performance (see Lakonishok, Shleifer, and Vishny, 1992). In the case of private equity investments, the pattern of allocating funds to private equity on the basis of recent performance may be amplified by other factors: When exit conditions are favorable, investors receive distributions in cash or stock, reducing some uncertainty about returns; returns reported at this time provide new information about the valuation of existing assets. General partners, recognizing that limited partners are more inclined to invest when exit conditions are good, may time their fund raising accordingly. Being approached by general partners, in turn, gives limited partners another reason to invest, as the opportunity to invest with any specific set of general partners comes only once every three to five years.

Outlook for Future Returns

Capital commitments to both venture and non-venture partnerships reached new highs in 1994. The increase followed higher reported returns to private equity, which got a lift from the receptive IPO market in 1991–93. Lagging returns to public equity may also have prompted some investors to reallocate funds to private equity.

The high levels of commitments raises the question of whether low returns will follow. The risks arising from greater capital availability are apparent to market participants, as evidenced by the frequent reporting of investment activity and deal prices.¹³⁴ At least one major public pension fund abruptly curtailed its commitments to non-venture partnerships as result of the apparent surplus of capital, and general partners have reportedly detected heightened caution among other investors.¹³⁵ If more institutional investors allocate investment funds to private equity on the basis of factors other than recent performance, the risk of a cycle of high commitments followed by lower returns will decrease. Moreover, to the extent that general partners continue to develop new investment strategies, competition for deals is reduced, making it less likely that general partners will invest in overpriced deals.

133. A study by Venture Economics of 442 investments made over 1970–82 shows that gains realized through IPOs were five times greater than gains realized through private sales. See “Exiting Venture Capital Investments,” *Venture Capital Journal*, October 1988.

134. See, for example, “Buy-out Funds Put Money To Work at Steady Pace, Despite Big Inflow,” *The Private Equity Analyst*, March 1995, and “Pricing Discipline Appears To Weaken in Venture Market,” *The Private Equity Analyst*, April 1995.

135. See “Oregon Steps Back from Alternatives,” *Venture Capital Journal*, December 1994.

The way private equity returns evolve over the longer term will depend, we believe, on the relative importance of two secular influences on returns. One is the degree to which limited partners move up the learning curve in terms of selecting and funding partnerships and negotiating terms with general partners. Today's private equity market is still not very mature: Many institutional investors have been dealing with the limited partnership, a fairly complex organizational structure, for little more than ten years. Market participants note that as investors have gained experience, they have become much more sophisticated in their performance of these functions. Moreover, limited partners now have greater access to independent advisers. These develop-

ments should benefit institutional investors in terms of the returns on their private equity investments.

The second secular influence on future returns is the degree to which the private equity market becomes more efficient, less risky, and less illiquid in the future. The expected returns investors earn in this market are intended to compensate them for illiquidity and greater risk. As the market develops, however, and investors are able to make investments through a greater number of partnerships, idiosyncratic risks will be diversified away. Further, development of a secondary market for partnership interests, though limited to date, could reduce somewhat the liquidity premium.

Appendix. Estimation of Private Equity Capital

This appendix presents an estimate of the total amount of capital held by the professionally managed private equity market at the end of 1994, both commitments to limited partnerships and direct investments.

Basic Estimation Method

The total amount of capital held was estimated by summing the estimated amounts contributed by each investor group. To estimate capital held in limited partnerships, we began with data on cumulative commitments to partnerships by each investor group during 1986–94, as reported by the *The Private Equity Analyst (PEA)*, and then adjusted the amount down 25 percent to reflect that some capital had been returned to investors as investments were exited.¹³⁶ Our adjustment was based on *PEA* surveys of corporate and public pension fund holdings of private equity as of 1992; the ratio of pension fund holdings of limited partnership interests at the end of 1992 to cumulative commitments by pension funds to limited partnerships over 1986–92 was 0.75.¹³⁷

Our estimate of direct investment by each investor group made use of qualitative information about the investment process typical of the group. Generally, for investor groups in which a few large investors have direct investment or active co-investment programs, such as corporate pension funds, we assumed that 80 percent of the total capital committed to private equity by the group was through limited partnerships and 20 percent was through direct investments and co-investments (table A.1).¹³⁸ For the most experienced investors, such as bank holding companies, we assumed that 60 percent of their private equity capital was invested directly. For the other investor groups, such as public pension funds and investment

136. We assumed that all capital committed to partnerships before 1986 had been returned to investors.

137. This adjustment assumed that 75 percent of new commitments in 1993–94 represented *net* additions to partnerships.

138. We used the 80/20 assumption as our benchmark because available data on venture capital outstanding indicate that 80 percent of total capital is managed by limited partnerships. Our benchmark assumption also conforms closely to market participants' own estimates of the fraction of commitments made through partnerships.

A.1. Estimated capital outstanding in limited partnerships and direct private equity investments, by investor group, year-end 1994

Billions of dollars except as noted

| Investor group | Total | Capital held in— | | Percentage held in partnerships |
|--|--------------|----------------------|--------------------|---------------------------------|
| | | Limited partnerships | Direct investments | |
| <i>Pension funds</i> | | | | |
| Corporate | 19.7 | 15.8 | 3.9 | 80 |
| Public | 22.5 | 22.5 | .0 | 100 |
| Endowments and foundations | | | | |
| Bank holding companies | 11.4 | 9.1 | 2.3 | 80 |
| Wealthy families and individuals | 11.0 | 4.4 | 6.6 | 40 |
| Insurance companies .. | 10.3 | 8.3 | 2.0 | 80 |
| <i>Corporations</i> | | | | |
| Investment banks | 7.2 | 5.8 | 1.4 | 80 |
| Nonfinancial | 4.9 | 4.9 | .0 | 100 |
| Other ¹ | 4.3 | 1.7 | 2.6 | 40 |
| Total | 9.1 | 9.1 | .0 | 100 |
| Total | 100.4 | 81.6 | 18.8 | 81 |

1. Primarily foreign investors.

banks, we assumed that 100 percent of investments were through partnerships.

Summary: Estimates of Total, Venture, and Non-Venture Private Equity Capital

Our estimate of total private equity holdings at the end of 1994 is \$100.4 billion. Of that amount, \$81.6 billion was invested through limited partnerships and \$18.8 billion was invested directly.

Venture Economics estimates that venture capital outstanding at year-end 1994 was \$34.1 billion—a figure that likely overstates venture capital investment because several of the larger venture capital partnerships that Venture Economics tracks have shifted toward mainly non-venture investments. Alternatively, commitments to venture capital partnerships accounted for 26 percent of commitments to all private equity partnerships during 1980–94 (see chart 2), implying venture capital outstanding of \$26 billion—

a figure that likely understates venture capital investment because commitments to such partnerships are likely to be distributed less quickly than commitments to non-venture partnerships owing to the longer time horizons of venture capital investments. We pick the midpoint to approximate venture capital holdings—\$30 billion—leaving \$70 billion allocated to non-venture capital.

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