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AN INTRODUCTION TO VENTURE CAPITAL

Introduction

Venture capital investing can be narrowly defined as investment in private equity or equity-like securities of developing companies. A broader, more commonly accepted definition is any high-risk, high-potential-return investment in illiquid, nonmarketable securities of any sort. Although this characterization excludes public companies, development real estate, oil and gas drilling, or exploratory mining, such areas often share venture characteristics and may be included in "venture capital" portfolios.

In a sense, venture capitalists mediate between two distinct constituencies. On the one hand, they are entrusted with the capital of their investors (typically limited partners), for whom they must attempt to earn an attractive rate of return. On the other hand, they provide both the capital and the experience that fledgling companies need in order to grow. As a result, venture capitalists serve both as investment managers and as economic catalysts and builders of companies.

Economic Basis of Returns

Venture investors are compensated for taking on the business risks associated with investments in companies in the early stages of their life cycles–principally the risk that the venture may fail and the risk inherent in the illiquidity of the investment. A successful company in the early stages of its life cycle typically experiences rapid sales growth, has low or negative earnings, and requires significant cash infusions to finance its growth. As the company matures, sales growth slows, earnings become positive, and the company generates excess cash flow. Returns come primarily from the sale of the company or its securities in a public offering. Interim earnings generated in the early stages of the company's life cycle are usually reinvested rather than paid out as dividends to investors.

The typical exit strategies, and the vehicles by which venture investors ultimately generate a real return for their limited partners, are sales to strategic or financial buyers and initial public stock offerings (IPOs). Ultimately, therefore, the return on any venture capital investment is largely a function of the initial price paid, the holding period, the economic success of the enterprise during the holding period, and the price at which the market values the company at the time of sale. Good timing of both entry and exit is critical to the investment's success. Because the market value of the equity must increase from the acquirer's purchase price and the investment return must be realized, either through private sale of the company or by taking the company public, the success of venture capital investing can be critically dependent on the health of the public markets. As such, venture capital investments are impacted negatively by the same economic forces that negatively impact the public markets and positively by the same forces that positively impact the public markets.

Venture Capital Firms

The majority of traditional venture capitalists may be grouped into five general categories: independent venture capital firms and institutions; investment banking and consulting groups; funds-of-funds; Small Business Investment Companies (SBICs) and Special Small Business Investment Companies (SSBICs, formerly referred to as Minority Enterprise Small Business Investment Companies, or MESBICs); and subsidiaries of operating companies. Another vehicle for venture investing, which can be structured in many different ways but typically takes the form of a quasi-public body, is so-called economically targeted investing. Private firms have been the dominant type of venture entity, accounting for over 90% of the total venture capital pool. A discussion of venture capital firm structures follows:

Independent Firms. Most venture capital investments are made through limited partnerships designed to be the primary vehicles of venture capital investing for pension funds, endowments, wealthy individuals, and a growing number of corporate and foreign investors. The independent firms generally have similar life cycles. First, the general partners must raise capital from limited partners. Once they have received sufficient commitments, they may begin screening prospective investments and calling down the limited partners' committed capital to fund those opportunities in which they are ready to invest. By the second or third year, the firm will have invested, or committed to invest, most of the partnership funds in portfolio companies. The focus then shifts to harvesting investments, by orchestrating IPOs or acquisitions of the portfolio companies, and distributing returns to the firm's investors. If the preliminary returns appear promising, the firm's principals may consider returning to the fund-raising circuit with a follow-on fund.

Investment Banking Firms. Investment banking firms are a traditional source of venture capital. Their interest derives in part from a desire to find investment outlets for risk-oriented partners' capital, and in part from a need to generate investment banking clients and fees. The participation of investment banks has been heavily cyclical, however, depending upon the prospects for the stock market. Several consulting firms have also recently become involved in venture capital activities for similar reasons.

Funds-of-Funds. Over the last decade, several insurance companies, major banks, and independent firms have begun to offer "funds-of-funds" designed to invest as limited partners in buyout and venture capital partnerships. These funds have become especially popular among smaller institutions and family groups as a means of affecting a diversified investment in this asset class. It should be noted, that some funds-of-funds might also deploy a portion of their assets in direct investments as well as providing performance measurement and monitoring of distributions.

Small Business Investment Companies. SBICs are investor corporations chartered by the Small Business Administration (SBA) that raise private equity capital for venture investments and are eligible for infusions of government capital which enable them to leverage their equity.

In the early years following the program's inception in 1959, a large proportion of SBICs were undercapitalized or staffed by inexperienced individuals. The program was also plagued by inherent structural flaws, principal among them a severe matching problem (SBICs incurred short-term debt obligations from the government with which they would make long-term equity investments). A spate of defaults among SBICs in the late 1980s and early 1990s (for the life of the program, there has been a staggering 44% failure rate reported) and the prospect of taxpayers having to cover as much as $800 million in SBIC losses ultimately resulted in a moratorium on new SBICs and, eventually, Congressional passage of the Small Business Enhancement Act of 1992 (the "Act").

Under the SBA's new regulations, equity, rather than debt, is the form of SBA infusions into licensed SBICs. SBICs can leverage their private capital with SBA funds up to a two-to-one ratio (government capital to private capital). The SBA receives a preferred return on its participating securities and also receives a share of the fund's profits. The definition of a "small business" was expanded from a company with a net worth of less than $6 million to one with a value of up to $18 million. Lastly, a more rigorous chartering process and stringent requirements regarding the monitoring of applied proceeds have been implemented to protect investors (private and the SBA) in SBICs.

Special Small Business Investment Companies. SSBICs and predecessor MESBICs are essentially SBICs for minority entrepreneurs and are governed by a more liberal version of the same SBA rules. Most have been formed since 1970. Interestingly, many independent firms have raised funds which are devoted to investing in minority-controlled enterprises without seeking an SSBIC charter. Based on anecdotal evidence, managers of these funds have been uncomfortable with investment restrictions and the SBA's preferred return under the SSBIC program (and the SBIC program generally) and are confident of their ability to raise sufficient capital without resorting to SBA leveraging.

Venture Capital Subsidiaries of Operating Companies. In the 1960s and early 1970s, a number of large industrial companies set up venture capital subsidiaries in an attempt to generate higher returns, to develop products and markets outside the normal corporate environment, to keep employees who might otherwise leave and start companies in related fields, and/or to keep current with developing technologies. Ford, Xerox, Exxon, Dow Chemical, Monsanto, and numerous others formed such groups, although several (Ford in particular) dropped out because

of disappointing returns and other problems. Today, a growing number of such venture capital subsidiaries may also be found among Japanese companies.

Economically Targeted Investment (ETI). The most popular forms of ETIs are venture pools capitalized in part by state or local governments, or their pension funds, and administered by public or quasi-public bodies. Typically, the funds are specifically charged with performing a catalytic function for the particular jurisdiction's economy or for a particularly vital industry in that economy–hence the moniker.

ETI is a controversial proposition for several reasons. The popular perception is that returns may be sacrificed for altruistic goals, which in turn incites debate over the appropriateness of the investment vehicle for pensions. On the other hand, ETI proponents look to the sheer volume of capital to be deployed by state pensions funds and see a remarkably plentiful source of capital for emerging companies, popularly viewed as the drivers of the new economy.

The advisability of a particular ETI program as an investment vehicle should depend on the same rigorous evaluation to which independent firms are subjected. To pass muster, an ETI should be structured in such a way as to insulate the investment decision makers from political influence–but the inherent problem with ETIs is that in practice this is probably impossible.

Typical Structure and Terms of Venture Capital Partnerships

Investors in venture capital parnterships become limited partners, which limits their liability to their actual investment. In most cases, the capital is used for the equity portion of financings. The typical partnership has a term of ten to twelve years.

The limited partnership agreement governs the complex relationship between investing limited partners and the general partners and the flows of funds from and between the two groups. The increasing sophistication and influence of venture capital fund investors and the realization of the dramatic impact some terms can have on fund returns have led to heightened scrutiny of the agreement terms. Since a complete exploration of partnership terms could fill volumes, the following notes highlight only the most critical terms and developments (in alphabetical order):

Advisory Board. The primary functions of an advisory board are to approve valuations of investments and to address conflicts of interest. Other responsibilities may include approval of distributions, review of operating budgets, and enforcement of the timely execution of audits of the partnership. The general partner will usually appoint the advisory board, which is typically

composed of three to nine of the limited partners (often those holding the largest interests), plus a specified number of general partners. Boards meet annually, biannually, or as necessary. The board's input with regard to investments is strictly advisory and nondiscretionary. Because advisory boards are so limited in their legal abilities and responsibilities, individual partnerships will weigh the value of such a mechanism differently.

Co-investment. Non pari-passu direct co-investment, or "cherry-picking," occurs when general or limited partners invest on their own account in entities that have received funds from the partnership. Conflicts of interest can arise if a co-investment is not made in the same type of security, with the same ownership rights, risks, and returns. Additionally, a secondary potential conflict can arise from the granting of exclusive co-investment rights to preferred limited partners. Crossover co-investment, where the partnership invests in a previous investment of the general partners, can also lead to conflicts of interest. Limited partners should consider restricting general partner co-investment, or allowing it only pari-passu, meaning that the general partner is allowed to co-invest only on a pro rata basis, at the same time, in the same form as the partnership.

Defaulting Limited Partner. This provision in partnership agreements relates to the situation of limited partners who fail to make full payment of their capital contribution when due, or where a majority of limited partners elect not to make full payment of a capital contribution. Limited partnership agreements usually give the general partner wide discretion to take action to enable the partnership to make the investment when the defaulting limited partner's contribution is required, including waiving the default, bringing legal action, borrowing from a commercial bank, offering the interest to a non-defaulted partner, or admitting new limited partners. The focus of the limited partners should always be on protecting their own rights and assets, especially in the event of another partner's default. In the event that a limited partner needs to dispose of its interest in the partnership, the penalties for such an early exit should be well understood.

Disclosure Information. General partners are typically asked to disclose information that provides insight into their commitment of capital and about any potential conflicts of interest or outside activities that might affect their management of the partnership. When conducting due diligence, limited partners should feel comfortable asking about time commitments to other business activities, other employment, board memberships, litigation or past violations of SEC regulations. Capital commitments as a percentage of net worth or capital commitment as a percentage of carried interest gains from prior funds should also be determined. Any further inquiries that could lead to disclosure of financial ties between members of the general partners, budgets, financials, or vesting schedules should also be considered important.

Distribution Policy. Limited partners receive income from their investments in the form of "distributions." The timing of these distributions is key, and should be clearly outlined in the Limited Partnership Agreement. Generally, the payout of distributions conforms to one of three methods:

- Both general and limited partners receive the distribution at the same time.
- Limited partners share profits on a predetermined date.
- The general partners' share is held in escrow until certain conditions are met. In this case, carefully drafted escrow agreements which clearly dictate the type, timing, and conditions of withdrawals are key.

Additionally, the distribution policy should address the partnership's policy of payment: "in kind" or in cash. "In kind" payments are typically securities which the limited partners may not be able to liquidate immediately, either because the securities are restricted or because to do so would depress the market value of thinly traded stock.

Indemnification. Indemnification provisions seek to protect general partners from personal liability or loss arising out of their activities in conducting partnership business. This protection can be extended, in some cases, to limited partners (for example, when the limited partners serve on an advisory board. These provisions are often lengthy and complicated, and should be reviewed by an investor's legal counsel.

Key-Man Provisions. Key-man provisions address the limited partners' concerns about potential turnover of certain named individuals within the general partnership or the retention of a specified percentage of the original general partners. Key-man provisions typically define what actions limited partners may take when faced with general partner turnover. Most often, such provisions outline the qualifications for "premature" dissolution of a partnership, while also allowing limited partners to elect to retain the life of the partnership, but desist from further capital commitments. The decision to enact a key-man provision must be voted on by the limited partners, under guidelines set forth in the limited partnership agreement. It is worth noting that key-man provisions have become more prevalent in recent years and, arguably, more important, as turnover among general partners has increased.

Most-Favored-Nation Clause. Limited partners often seek to ensure that no limited partner receives more favorable terms, or is granted other considerations in side agreements, that are not equally extended to all limited partners. This is called a most-favored-nation clause. Most general partners' stated policy is to treat all limited partners as equals, but the reality, especially during the fund-raising process, is often that larger commitments command more attention. A

carefully constructed most-favored-nation clause that addresses the issue of preferential treatment can provide limited partners with the necessary assurances either that participation in side agreements (e.g., co-investment opportunities) will be extended to all partners, or that such agreements will not prove detrimental to the interests of those limited partners not included.

No-Fault Divorce. A no-fault divorce clause is essentially a right to call for a vote of confidence at any time during the life of the partnership. The clause stipulates the conditions under which limited partners may stop contributing capital or even terminate the partnership. A no-fault divorce clause typically states that if a specified majority (typically 75% or more) of the limited partners decides it does not want to stay invested in the partnership, additional capital take-downs can be withheld. Generally, such votes occur after events of proven gross negligence. These agreements are difficult to negotiate but are a necessity for many larger limited partners, who can frequently leverage the general partners into some sort of agreement concerning the no-fault divorce clause. However, such clauses should be negotiated with caution, as general partners realize a no-fault divorce provision can impair their long-term investment strategy.

Number of Multiple Funds Being Raised. This issue relates to the distraction of attention and resources away from the partnership when the general partners are raising capital and marketing for more than one fund at a time. Most limited partners ask for measures that prevent or restrict the timing of successive fund raising by the general partner because they want the general partner's undivided attention to the business of investing the partnership's funds. On the other hand, the general partners have a legitimate interest in seeking to sustain an ongoing business operation, and so the end result of such negotiations is often that the general partner agrees not to launch successive funds until the current fund has reached, or nearly reached, a point of being fully invested. The positive side to this difficult compromise is that limited partners may be able to negotiate a right of first refusal for investment in any subsequent fund.

Subsequent Closing. Both general and limited partners would prefer to have a single closing, but the reality is often that the first closing passes without the partnership's fund-raising efforts being fully satisfied. Therefore, a subsequent closing agreement should be reached that limits the time frame in which a second closing can occur, generally to within six to nine months.

Term. The life of a partnership is typically ten years. Extensions, usually approved by the advisory board or a majority of limited partners, are often allowed for an additional two or three years. When negotiating the term of a partnership, the limited partners should realize that a shorter period is in their best interest, because the time of exposure to risk is minimized and an emphasis on exit strategy becomes paramount.

Termination of General Partner. Limited partnership agreements usually provide that the general partner may be removed for "cause" if that is the preference of a majority or supermajority of the limited partners. The necessary vote for removal is typically in the range of 75% to 90%, but the vote can be as low as 66%, or a simple majority of the advisory board. The definition of "cause" varies from agreement to agreement. Thus, negotiations on this point begin with the limited partner defining "cause" as a breach of fiduciary duties and the general partner defining "cause" as willful, wanton, or criminal behavior. A workable definition must be reached, and often reads something like, "substantial breach in the general partner's obligations under the Partnership Act or the agreement." In determining whether any such violations have occurred, many agreements provide for arbitration. Because venture capital investments are highly illiquid, the right of the limited partners to remove or replace a negligent general partner should be considered of the utmost importance.

Unrelated Business Taxable Income. A concern for non-taxable limited partners is the generation of Unrelated Business Taxable Income (UBTI) if investment activity appears to be in the nature of running a business rather than passively investing in a business. A standard agreement between the limited and general partners is that the general partners should use their "best efforts" to avoid investments that would trigger UBTI. There are valid reasons for mandating this policy, because the return may be unacceptable after the realization of taxes and because the limited partners may believe that any recognition of taxable income could trigger an audit of their entire portfolio. It should be noted, however, that no public fund is publicly known to have been audited or forced to pay taxes on investments due to UBTI.

Vesting Schedules for General Partners. The vesting schedule refers to the period of time from the fund start-up date that partners of the general partnership are eligible to receive their share of the carried interest. In general, vesting percentages tend to be about 20% after one year, 35% after two years, and 85% after five years. In negotiating, it may also be logical to align the vesting schedule with the entire term of the partnership (usually ten years).

Winding Down the Partnership. Winding down provisions refer to the process of liquidating all remaining assets at the end of the term or effective date of dissolution. These provisions should address the process for payment of all creditors and the distribution of remaining proceeds or assets. Special attention needs to be paid to the valuation of investments and the limitation of distributions "in-kind" during this period. The process must be laid out completely, including the handling of assets, provisions for reserve or escrow accounts, and selection of a liquidator in the absence of a general partner.

Financing Stages

Venture investments are typically new company investments, which have traditionally focused on technological innovation not only in the industrial and manufacturing sectors of the economy, but also in the medical and consumer sectors. Venture investments may be differentiated according to the financing stage in which they are concentrated:

Seed Financing. Financing an entrepreneur (the "inventor in the garage") with an idea but usually neither a business plan nor a management team. Seed financing is used to turn a concept into an actual product or service.

Start-Up Financing. Financing companies that have completed or are close to completing product development, but as yet have no revenue. Start-up financing is used to demonstrate product viability and market acceptance, often through beta site testing with selective customers.

First-Stage Financing. Financing companies that are producing products or selling services, but not showing a profit. Profitable operations may still be several years away. First-stage financing is needed to initiate or to expand sales.

Expansion (or Second-Stage) Financing. Financing companies that are breaking even or projecting profits within a year and have a product or concept that is generally proven. Additional capital will typically be applied to expanding the market, the product line, production capacity, etc.

Mezzanine Financing. Financing companies that are still private but have operating profit histories. This is generally the last stage before shares are sold to the public, although depressed market conditions for small businesses may delay the process indefinitely. Alternatively, the company may be an operating division of a larger corporation and may be for sale to another corporation.

The start-up and first stages are also referred to as "early stages" and the expansion and mezzanine stages as "later stages."

Venture Capital Firm Investment Strategies

Venture capitalists employ a number of strategies. In fact, in today's marketplace, a successful venture capitalist is likely to have developed a competitive advantage through effective pursuit of a

strategic focus. In addition, diversification across strategies now makes it possible for investors to mitigate some of the risks inherent in venture investing by constructing diversified venture portfolios.

Industry. Venture capital firms often tend to favor certain industries with a particular business cycle or with a predisposition to technological innovation or service of a certain type. Investors must be wary, however, of partnerships that proclaim themselves "specialists" during their marketing effort, but fail to maintain their focus thereafter.

Geography. The venture capital business tends to be geographically concentrated both with regard to the location of venture firms and to the regions in which they invest. This is particularly important if the financing focus of a firm is on seed and early-stage investments since General Partners must maintain a close relationship with all of their portfolio companies, but is less important if the firm makes later-stage investments.

Investment Stage. While many partnerships cover a variety of investment stages, some focus on seed investments and others only on later-stage, pre-public financing. An argument for selecting a combination of partnerships by financing stage is that investors can thereby control the risk-return profile of the venture portion of their portfolios as they would with common stocks or other types of investments. On the other hand, venture capital investments should be made primarily for enhanced returns, not for diversification; pricing attractiveness of a particular investment stage may outweigh any benefits that diversification might offer.

Fund Size. The size of a partnership is important in that it tends to predetermine the size and stage of investments to be made. For example, a $600 million fund is not likely to invest that sum successfully in seed financing, nor is a $50 million fund likely to be able to invest in a significant number of follow-on or pre-public investments.

Secondary Market for Interests in Venture Capital Funds

The transfer of a limited partnership interest from the original investor to another (once extremely rare) has become increasingly common and has produced an emerging secondary market in limited partnership interests. This has occurred largely because of the increased participation of institutional investors. When the venture capital community was supported mainly by high-net-worth individuals, transfers were usually the result of estate settlements. Today, however, corporate mergers and acquisitions may result in the dissolution and consolidation of pension plans and the need to dispose of partnership interests, or financial distress may force a company to sell its partnership interests to raise cash. The buyers are the general partners, other limited partners, or new investors, and the transactions are effected

directly or through an emerging group of agents active in placing secondary interests. Funds-of-funds are also purchasers of these secondary interests; indeed, some have been established specifically to make such investments. As investment vehicles, secondary interests generally have three advantages:

- the acquirer is able to analyze an existing portfolio rather than investing in a typical blind pool;
- the interests are usually purchased at a discount to the general partner's carrying value; and
- the holding period is shorter before the investor begins to receive meaningful distributions.

Angel Investors

Long before the advent of institutional funding of venture capital firms in the 1970s, high-net-worth individuals and families represented the original investor groups in venture capital. Even with the growth of an institutionalized venture capital industry during the past two decades, wealthy individuals and family groups have continued to fund entrepreneurs. Indeed, with the enormous wealth generation spawned in recent years by the development of new computer technologies, the number of successful entrepreneurs seeking to invest directly in new ventures has increased significantly, to the point that these investors have been identified in the industry as a distinct investor group–"angel investors."

The supply of "angel" capital is actually far greater than the total venture capital pool, but is extremely difficult to measure. The Center for Venture Research at the University of New Hampshire has estimated the number of angel investors to be about 250,000. The Center also estimates that this group invests between $10 billion and $20 billion in 30,000 ventures each year, compared to the estimated $16.7 billion invested in 3,115 companies by venture capital firms in 1998.

In many ways, angel investors have clear advantages over venture capitalists. Without the bureaucracy of a partnership to contend with, they are typically faster moving and are able to make more timely investment decisions. Entrepreneurs also note that angels tend to make fewer stipulations and often pursue a less formal approach to the process, which is usually preferable to entrepreneurs. In addition, an angel that understands a particular industry or business may be more willing to take on the risk of an unproven concept and management team than would a venture capitalist.

The increasing prevalence of angel investors has resulted in their emergence as significant competition to venture capital firms. This is especially true for venture investors who target seed and start-up opportunities. In some cases, however, angels represent pre-venture money and prepare companies for institutional investment, and so venture capitalists focused on later-stage investments tend to see

them as a source of deal flow and view them in a more favorable light. In an industry already undergoing consolidation, the growth of the influence of angel investors is certainly an interesting phenomenon which may stimulate this trend, since angels represent the greatest competitive threat to smaller firms without clear track records.

Historical Background

The venture capital industry has ridden a roller coaster since its inception after World War II. In its first phase, from the late 1940s through 1969, economic conditions generally favored such investing: interest rates and inflation remained relatively low, steady economic growth was interrupted only once by a major recession (1958-59), the stock market was persistently healthy, the government was increasing its funding of research and development, and private sector research and technological innovation were resurgent. All these conditions helped generate attractive returns for venture capital investors.

However, the years following 1969 were the most difficult period for venture capital investors and entrepreneurs in the entire post-World War II era. The increasing volatility of equity markets (marking the end of the upward trend in stock prices), the rise of inflation and interest rates, the slowed growth of government funding of research and development, and the decline and then virtual collapse of the new-issue market fostered conditions inimical to the creation of, or investment in, new technology companies.

By the mid-1970s, venture investors had reacted to this difficult climate by focusing on more mature companies rather than on start-ups or early-stage financing and by increasing the number of co-ventures in any one deal in an attempt to diversify their portfolios. In addition, investors sought liquidity in cash or securities exchange buyouts of their companies, especially in the technology area.

In retrospect, 1974 represented the nadir for the venture capital industry. As sources of venture capital dried up, the quality of deals available to remaining investors improved correspondingly. Bargaining power also shifted away from the entrepreneur and made possible increasingly favorable terms for the investor. The returns derived from a number of the great venture capital success stories of this period (e.g., Federal Express and Tandem Computers) were as much the result of the cheapness of the deals for the initial investors as they were of exit price. Other interrelated factors that contributed to the resurgence of venture capital after 1974 were the gradual rediscovery of smaller marketable stocks by institutional investors, the reduction of maximum capital gains tax rates in 1978 from 49% to 20% (since raised to 28%), reduced SEC regulation of small unregistered (Reg. A) and registered (S-18) public offerings, and strong corporate acquisition activity.

However, the pendulum swung back too far in the opposite direction. Tales of phenomenal returns and a torrent of IPOs in 1983 (a then-record year in terms of dollar volume and number of offerings) lured droves of unsophisticated and inexperienced managers and capital into the market. In 1983 and 1984, $6.6 billion in new venture commitments was added to the total pool of venture capital invested or available for investment, nearly doubling the size of the capital pool available at the end of 1982. The IPO window was tightly shut by mid-1984 (except for a two-year spike in 1986 and 1987), yet money and practitioners continued to pour into the field, peaking with 1987's astronomical and unmatched total of $4.2 billion in capital commitments.

Not so surprisingly, venture capital performance suffered dramatically in the mid- to late 1980s, and the industry underwent a calamitous consolidation and shakeout that lasted at least until the robust IPO market of 1991. Subsequently, through 1999, funding and disbursements, as well as performance levels, have rebounded with a vengeance, paradoxically injecting renewed vigor into the industry while at the same time prompting some observers to fear an imminent and repetitive turn for the worse. Notably, however, and in sharp contrast to the 1980s, seasoned and successful venture capital performers have been capturing the influx of capital and now represent the majority of the venture pool.

Historical Data on Venture Capital Performance

Historical returns for past venture investment pools have been difficult to obtain, partly because of the private nature of a business in which there is little publicly reported data and partly because of the lack of sophisticated and standardized performance measurement techniques. Cambridge Associates has dedicated considerable resources to this effort and has developed a proprietary database, today tracking more than 480 venture capital fund managers. As a result of these efforts, Cambridge Associates is able to provide the most extensive verification of recent historical and current benchmark statistics on the industry (1972-98).

The most comprehensive public source of information regarding performance during the industry's infancy has been American Research and Development (ARD), a public company that invested in venture capital from 1946-72. ARD's returns for the period were higher both nominally and after risk adjustment than those of the S&P 500. While this return series has merit as a historical performance yardstick, its relevance as an indicator of future expected returns is limited due to the extensive changes in the venture capital investing environment.

Apart from ARD, the principal sources of public performance data for early venture investments have been Small Business Investment Corporations (SBICs), which leverage their equity capital with government funding and invest in private companies across a range of developmental stages. In light of

the later rash of SBIC failures, it is notable that, with the exception of a period of widely fluctuating returns in the early 1970s, SBICs consistently outperformed the S&P 500 well into the 1980s: a representative sample shows a 12-year average annual compound return of 38.5% over the 1973-84 period compared with a 7.8% return for the S&P 500. However, the large, liquid SBICs have become a negligible factor in the total venture capital investment pool, and their returns are therefore no longer representative of private venture capital potential.

Performance data from private firms have historically been difficult to obtain or to verify. Studies undertaken by organizations and institutions including Harvard, Stanford, General Electric Pension, Horsley Keogh, and First Chicago Investment Advisors (now Brinson Partners) indicate that venture capital rates of return have ranged from 23%-35% over various periods between the mid-1960s and the mid-1980s. The First Chicago performance study, developed in collaboration with Ibbotson Associates, Inc., linked two different return series. The return series from 1970 to 1983 represented the mean return of publicly traded venture capital companies. Because some of these were SBICs, there may be some overlap between these data and the SBIC returns discussed above. However, as a result of changes in the tax code all but a few of these companies were either liquidated or reorganized as privately held partnerships after 1983, and the universe for the Ibbotson series diminished accordingly. After 1983, therefore, the returns were based on data supplied by First Chicago. Of this, 70% of the return calculation reflected the change in the capital accounts of partnerships in which First Chicago was a Limited Partner, while the remaining 30% reflected returns of the stocks of all publicly traded companies with capitalizations of $10 million to $100 million and was more representative of post-venture investments.

A widely quoted, but misleading and largely irrelevant measure of returns is the Venture Capital 100 Index of new venture-backed public companies compiled by Venture Economics. This index is the unweighted stock price of companies meeting the following criteria: each must have been public for less than ten years; early financing must have been provided by professionally managed venture funds; and the venture capitalist must still be involved. Because it is an index of publicly traded issues, the Venture Capital 100 does not measure partnership performance. In addition, the index has a strong, positive "survivor" bias in that it represents only those venture capital investments successful enough to have been brought to the public market.

The Cambridge Associates, Inc. Nonmarketable Alternative Assets Database has been established to monitor the investments made by venture capital and other alternative asset partnerships with the cooperation of partnership sponsors and member investors. Unlike other performance measurement systems, the Cambridge Associates data are based upon actual quarterly and annual reports to Limited Partners. As of June 30, 1999, the database tracked the performance of over 480 U.S. venture funds accounting for nearly 85% of the capital U.S. venture funds have raised in the last decade. Vintage year

median returns have ranged from 7.5% to 29.7% in mature vintage years (1984 - 1994). The Cambridge Associates' database and methodology are more fully described in the exhibits that follow.

Investing in Venture Capital

Institutions experienced in investing in this asset class have found the process complicated and labor intensive. Returns have often failed to match expectations. Anecdotal evidence suggests that the most successful venture capital investment programs have coherent investment policy guidelines, and pursue a disciplined implementation strategy developed by qualified and experienced experts. In general, institutions which have not developed a strategic framework for their venture capital investing, but have taken a purely bottom-up, ad hoc approach, have experienced only moderate success.

The following sections discuss key issues investors should consider in the course of developing and implementing a venture capital investment program.

Rationale

Having acquired a greater understanding of venture capital investing in the past decade, institutional investors have been attracted to this asset class primarily by its potential for generating high returns, and secondarily by its diversification benefits vis-à-vis a portfolio of marketable securities.

The two main reasons why one should expect venture capital investments to generate returns higher than those from publicly traded equities are risk and efficiency. Obviously, investors would not make investments in venture capital if they did not anticipate appropriate compensation for the additional risk. Furthermore, the market for private equity is much less efficient than that for publicly traded securities and consequently offers greater scope for success or failure based on investment management skill. Not surprisingly, this leads in turn to a huge dispersion in manager returns, as some funds have clearly outperformed their peers by a significant margin over the long term.

A secondary objective of many venture capital investors is portfolio diversification. Although venture valuations are correlated with those prevailing in the public markets, venture capital investments have a completely different time horizon from that of public equities and therefore do provide some measure of portfolio diversification over time. However, prospective investors should cast a skeptical eye on correlation statistics that "prove" the portfolio diversification benefits of venture capital investing: first, because there does not exist a time series long enough to derive reasonable generalizations about venture capital investing; second, because there is little validity in statistical comparisons of a liquid asset

class that is marked-to-market each day to one that is illiquid and for which accurate pricing is available only at intervals of several years; third, because the institutionalization of venture capital investing is changing its fundamental characteristics in significant ways; fourth, because investors only reap the benefits of diversification if they rebalance their portfolios, re-allocating funds from those asset classes that have performed best to those that have performed worst in order to maintain their target allocations– but it is difficult to rebalance an illiquid asset class; and finally, the main point of diversification is to truncate downside returns and under economic conditions which cause U.S. stocks to perform badly, most venture capital investments will probably perform as poorly or worse.

Venture investors may also have strategic objectives unique to their own situation. State pension funds, for example, may support local business growth by investing in economically targeted funds. Alternatively, corporations may use their venture capital investing as a way to access attractive technology or business acquisition opportunities. Other examples include universities and individuals that may see potential benefits from developing relationships with certain venture groups.

Investment Considerations

The compelling reasons for investing in venture capital are offset to some extent by a number of disadvantages:

Unrealistic Expectations. Most investors participate in venture capital to maximize returns. In fact, many invest in this asset class with the goal of achieving returns comparable to those realized by many venture capital managers in recent years. These investors are likely to be disappointed. Even mediocre managers have been able to exploit the recent strong IPO and mergers and acquisitions markets to achieve stellar returns, and this is unlikely to continue.

High Level of Risk. The high potential returns of venture capital come at a cost of high levels of risk. The risk of potential capital loss is real and should not be disregarded. For example, a successful venture capital fund might make money on roughly 65% of its investments, and break even or lose money on the remaining 35%. However, very few of the highly successful venture capital managers lose 100% of the capital invested in a portfolio company.

Illiquidity. The investment vehicle most commonly used by venture capital managers is a limited partnership in which the investors are limited partners and the manager is the general partner. Committed funds are typically invested in non-marketable securities for three to seven years with little or no opportunity for exit. The legal life of most venture capital partnerships is ten years and there is little opportunity for a limited partner to liquidate an investment prior to the fund's dissolution.

Time Necessary to Become Invested. Most venture capital managers raise new funds only once every two to three years or so, and take three to six years to draw down from investors the full amount they have committed. Consequently, investors attempting to build a venture capital investment program from scratch often take from two to five years to reach their target allocations. In addition, they must deal with the coincident issue of what to do with the funds allocated to the program but not yet invested.

Unpredictable Cash Flows. Venture capital funds typically take from two to six years to become fully invested, and most have adopted just-in-time drawdown policies, calling investors for additional slices of their commitments at short notice, as needed. This enables managers to maximize the dollar-weighted return of their funds, but makes cash planning more difficult for limited partners. Although a tentative drawdown schedule, based on an average of previous buyout or venture funds, may be used to estimate future cash outlays, this is imperfect at best. At the other end of the pipeline, it is equally difficult to predict the timing of distributions.

Deferred Return. Substantial amounts of capital are required within the first few years of a venture capital fund's life, but capital gains are not usually distributed for three or more years. In addition, few venture capital funds generate current income. The net result is negative cash flow (and negative returns) for the initial years of a venture capital investing program.

Difficult to Evaluate. The actual total return on an investment in a venture capital fund is difficult to ascertain until the end of the partnership's life (ten years or more) because interim valuations of non-marketable securities are unreliable. Portfolio investments are typically valued at cost until a capital event (e.g., a second round of financing) results in revaluation. In addition, experienced venture capital managers attempt to recognize their failures early, and liquidate or write these down long before their successful investments have borne fruit. Hence the "J-curve" effect common to venture investments, which is the probability that investors will experience negative returns in the early years of their investment in a venture capital fund.

High Fees. Investing is expensive, with management fees and carried interest eating heavily into returns to limited partners. Management fees for venture capital funds are typically about 2.5% of committed capital. However, this is increasingly giving way to a sliding fee structure that (at least with respect to the larger funds) tends to peg management fees in the 2.0-2.5% range in the funds' opening (and active investing) years, with that percentage gradually decreasing during the latter half of the funds' lives. In addition, 20% of realized gains are typically allocated to the general partner in the form of carried interest. However, as the demand for venture capital funds has been especially high recently, a number of firms have introduced "premium carry," setting the carried interest percentage above this standard-all the way up to 30%.

Resources Required to Manage a Successful Venture Capital Program

The first step towards ensuring the success of a venture investment program is to understand the resources required for its management. Investors lacking adequate resources should either outsource the investment process or abandon the idea of investing in venture capital–they should not fall into the trap of allocating 80% of their time and resources to an asset class that will comprise only 5%-10% of their total portfolio if this results in their neglecting the other 90%-95% of their invested assets. In addition, investors must recognize how long it takes to implement a fully funded venture investment program and assess the extent of their tolerance for illiquid investments likely to return nothing or less over a period of several years.

Time. It takes many years to invest in and harvest the returns of a successful venture program. An imprecise, but useful guideline is that such a program should have a minimum time horizon of 15-20 years. Since most venture partnerships have ten-year terms and a start-up program would almost certainly take several years to complete all its intended commitments, a program with multiple fund managers will require considerably longer than ten years to mature.

After they have developed a coherent strategy, but before any commitments can be made, investors must go through the time-consuming process of manager identification, evaluation, and selection. Then the commitments to individual funds will likely be spread out over several years, following each of which the managers will take from four to six years to draw down and invest all the money committed to them. Several years later, investors will start receiving the first distributions from their earliest investments. In general, therefore, one should assume that it will take at least seven to ten years to determine how well a program is progressing.

Venture managers prefer investors with whom they are likely to develop long-term relationships to those inclined to make one-off investments. Because access to top-tier managers has become so difficult in today's marketplace, prospective Limited Partners may need to demonstrate a long-term commitment to their venture program to access a fund. The long-term perspective of most endowments and foundations has historically made this group of investors attractive to venture managers.

Capital. Determining an appropriate allocation to a venture program depends on the individual investor and is part of a larger investment-planning process not discussed in this primer. However, investors should consider the following issues in the process of determining their allocation to this asset class:

- The minimum amount necessary to develop a meaningful program.

- What a given allocation to non-cash generating and high-risk investments does to alter the cash-flow characteristics and the risk profile of the total portfolio.
- Whether the illiquidity of the prospective investments in venture capital is of any consequence.
- Whether the probability of negative returns in the early years of the program will create problems (e.g., by placing a pension fund's funded status in jeopardy).
- The trade-off between the potential benefit of a venture program and the cost of the resources required to run it.
- How the program will be funded–where will the money come from?

Given that minimum commitment requirements for most venture partnerships range from $1 million to $10 million, and that diversification across multiple funds is desirable, investors unable to commit at least $20 million or so to a self-directed venture program should think about their alternatives very carefully.

Because a venture program results in negative cash flows for several years, little or no current return, a total return that is deferred for many years, and the potential for capital loss, a prudent guideline is that the investor should be able to do without the funds deployed to the venture capital program. Furthermore, an investor may be required after a few years to make follow-on commitments to maintain existing relationships–even before receiving any evidence of attractive returns.

Because *commitments* to venture capital funds do not immediately translate into investments, pending the draw down of the commitments by the managers, investors may find that they are already receiving distributions from their earliest investments before they have reached their target allocation to the asset class. Consequently, it is advisable to commit more than the target allocation level in order to reach that allocation in a timely manner–a useful rule of thumb is that commitments should amount to 150%-170% of the target allocation.

Personnel. Effective venture capital investing typically requires more staff and committee time and effort than do many other types of investments. For this reason, a venture capital program must be tailored to the resources available for ongoing identification, due diligence analysis, and monitoring of investments.

There is no single investment office structure appropriate for effecting venture capital investments. Generally, the fewer resources available to staff the venture capital program, the more an institution/investor must outsource portions of the program. The structure of the program should be consistent with the investor's resources.

Investment Implementation

Construction of a Venture Capital Portfolio

Theoretically, investors could maximize the returns to their venture programs by selecting the best-performing manager in the highest returning strategy. In practice, however, manager selection is an uncertain art, and accurate timing is extremely difficult given the duration of the typical investment vehicles. Consequently, prudence dictates diversification across venture capital strategies, by manager, and over time. However, to the extent that leading valuation indicators suggest that the environment for a particular strategy is more or less favorable both in absolute terms and relative to other strategies, investors should over- or underweight their commitments accordingly.

The most reliable way to capture the return potential of venture capital is to maintain a relatively stable allocation over time. Returns have been sporadic and in many cases sensitive to unpredictable circumstances, such as the receptivity of the public IPO market. A stable presence also enhances the investor's knowledge of the investment management community and ability to develop relationships with superior advisors, which is a critical ingredient to achieving above-average returns. However, investors should continually adjust their strategies to reflect the continuous evolution of the investment environment.

Although a coherent asset allocation plan is important to a successful venture investment program, *manager* availability is still key and may periodically conflict with efforts to implement a coherent strategy. Investors must be prepared to seize opportunities when and as they are presented–which speaks again to the question of the resources required to maintain expert knowledge of the environment and of the managers raising funds at more or less opportune times.

Evaluation of Venture Capital Managers

In an asset class for which no passive, investable benchmark exists–which consists entirely, in other words, of the collective decisions of active managers–manager skill is the overwhelming determinant of return. Manager selection is therefore the name of the game. There are several key elements to an evaluation of investment opportunities, including the General Partners' experience; the profile of prior partnerships; the origination of deals; the dollars under management; and the investment focus and strategy.

Additionally, although past performance is not necessarily the best indicator of future performance, prospective investors need to understand how a given manager's track record compares to that of its relevant competition. Of particular importance are comparisons to other venture funds with the same

strategy and vintage year. The manager's funds should also be benchmarked against the overall venture capital industry performance by vintage year to indicate whether the group's strategy has been successful. It is also useful to consider whether the manager's past performance has been consistent over time (as compared to that of the industry as a whole). An up-and-down, good fund-bad fund history should act as a red flag–especially if the fluctuations do not follow industry trends. Above all, investors should resist the temptation merely to follow on the coattails of the last spectacular fund. Rather, they should understand the fundamentals that produced the performance and be persuaded that these are repeatable.

Venture Capital Manager Access

In recent years, manager selection is the first step in what has become a battle for access to top-performing firms. In order to improve the odds of gaining access to premiere firms, investors should develop a "watch list" of interesting firms with potential investment opportunities and "court" these managers proactively. Given that venture capital is a relationship-oriented business, investors should seek to establish relationships with key firms. Each firm of interest should be contacted by the potential investor, regardless of its fund-raising status, in order to indicate an interest in becoming a Limited Partner. General Partners favor investors who can enhance deal flow, and help with due diligence, marketing, or liquidation efforts. Therefore, potential investors should consider how they might contribute to the partnership in these or other ways.

Negotiating Partnership Terms

An important part of the selection process is partnership terms evaluation and negotiation. Potential Limited Partners should carefully review the terms of the partnership agreement in conjunction with the partnership structure. A single stipulation that appears innocuous may actually prove to be onerous when in conjunction with other conditions.

Until recently, investor terms and conditions for U.S. investments had been gradually moving in favor of Limited Partners. However, this trend has reversed as top-performing groups have taken advantage of their popularity to dictate unfavorable terms, reversing some of the progress that had been made during the last decade.

Only in cases where potential Limited Partners have been able to register dissatisfaction with proposed terms with a unified voice have terms been altered to align the General Partners' interests more nearly with those of the Limited Partners. Investors should seek to mitigate some of the risk of investing in venture capital by negotiating the terms and should seek to identify like-minded institutions with

which to collaborate on such negotiations. Investors must also be prepared to walk away from investments that are otherwise appealing when the terms imposed on Limited Partners appear onerous.

Changing Terms

More recently, the venture capitalists have gained the upper hand in dictating the terms of venture capital partnerships. Many firms recognize that the tide will likely turn in the future and have exercised self-restraint to avoid alienating investors. However, several groups have taken advantage of current market conditions to negotiate more attractive terms for themselves.

Perhaps the most controversial and widely publicized has been the introduction of a "premium carry" by several recent funds. The industry standard for the General Partner's share of net profits (or "carried interest") is 20%, and any percentage above this standard-usually 25% but in several cases, 30%-is considered a "premium carry." In general, only premiere firms have been able to increase their share of net profits and still attract investors.

Less acknowledged, but more prevalent, is the deterioration in terms as they relate to the allocation of expenses. Historically, the traditional 80/20 carry split was based on a fund's net profits (after management fees and expenses). Under this arrangement, General Partners effectively paid 20% of the fund's expenses. Today, however, a growing number of firms are taking the 80/20 split up front, out of the fund's revenues. Fees and expenses are then allocated according to capital commitments, which are generally split 99/1 (i.e., Limited Partners generally commit 99% of the capital and General Partners 1%). As a result, Limited Partners typically pay 99% of the fund's expenses and General Partners pay only 1%. The difference is not insignificant. We estimate that approximately 50% of the venture capital funds raised in the past 18 months have instituted this new expense schedule.

Also worth mentioning are adjustments being made to "givebacks" or "clawbacks" typically included in partnership agreements. A "giveback" ensures that General Partners who have received carried interest from the fund are liable to return or give back any amount to the extent that the carry split has not been maintained (i.e., upon dissolution of the fund if the General Partners' carry has exceeded 20%, they must return the difference to their Limited Partners). Historically, standard givebacks have been "joint and several" so that all the General Partners were jointly and individually "on the hook." This is important in cases where a General Partner leaves a firm prior to a fund's dissolution. Recently, several venture groups have instituted several-only givebacks (rather than joint and several), so that each General Partner is only liable for his/her percentage of the carry. This is clearly less attractive from a Limited Partner's perspective.

In evaluating a particular fund, investors should consider all the terms of the partnership structure as a total package.

Changing Partnership Structures

During the 1995 and 1996, an increasing number of venture capital General Partnerships changed their legal structure to Limited Liability Companies (LLCs) in order to avoid the potential liability faced by General Partners. According to Testa, Hurwitz and Thibeault, a law firm with a specialty in venture capital, investors should be aware of several issues in relation to these structures. The most important include possible restrictions on the transferability of Limited Partnership interests, the potential need for a protective "clawback," and the guaranteed responsibility of fund managers for breaches of fiduciary duty.

Traditionally, venture capital funds have been structured as Limited Partnerships, in which the investors are the Limited Partners and the managers the General Partners. Typically, the General Partners organize themselves as a Limited Partnership (GPLP) of which the individuals who manage the fund are the General Partners. This structure allows the "flow through" of income from the partnership to the Limited Partners and General Partners on a tax-free basis. However, as General Partners, the managers of the fund are subject to potential liabilities incurred by the operations of the fund. As a result, an increasing number of GPLPs have been structured as (or have maintained the option to switch to) LLCs. Under this new structure, General Partners enjoy the protection of a "corporate shell" from potential liabilities arising from the fund's activities.

Even if structured as an LLC, a fund can still maintain its partnership status for tax purposes if it meets certain IRS requirements. To avoid jeopardizing its tax-free standing, it must not possess more than two of the following corporate characteristics: (1) continuity of life, (2) free transferability of interests, (3) centralized management, and (4) limited liability. Traditional venture partnerships meet these requirements as they do not have continuity of life or limited liability characteristics. However, by adopting limited liability, LLCs must remove one of the other characteristics in order to maintain a preferential tax status. Typically, they institute restrictions on free transferability of interests, to the detriment of the investors.

The free transferability characteristic can be circumvented by restricting at least 20% of the interests in a fund and subjecting their transfer to the sole discretion of the fund managers. Traditionally, General Partners did not exercise control over transfer of Limited Partnership interests. However, with the advent of LLCs, these limitations are becoming more prevalent in partnership agreements. Although a General Partner would probably not find any reason to inhibit transfers, all potential Limited Partners

should be aware of the firm's legal right to do so. However, it should also be noted that IRS is currently revamping its tax regulations on partnerships and this situation will likely be eliminated within the next one to two years.

With an LLC structure, potential investors should also be careful to ensure that the fund either has a "back-end-loaded carried interest" or a substantial "clawback" provision. Until recently, funds were structured so that General Partners did not receive any carry until Limited Partners had at least received their capital back. Today, however, more funds are allowing current-pay carried interest. Under an LLC structure with current pay, Limited Partners have little recourse if the General Partners mishandle capital and the LLC has no net worth to recover. Therefore, investors should insist that there is a meaningful "clawback" or "giveback" provision in the partnership agreement. Finally, investors should also ensure that senior managers are held responsible for breaches of fiduciary duty even under an LLC legal structure.

Monitoring Investments

Once commitments have been deployed, the investor should establish a mechanism to measure the ongoing success of each investment in the overall program. A successful investment monitoring and evaluation system would report on the implementation of the investor's policies as investments are selected over time; act as an early-warning system if there is a problem; and anticipate the liquidation of certain holdings.

The most appropriate method for determining the total return achieved from an investment in a partnership is to calculate the internal rate of return (IRR) over the life of the partnership once all distributions have been made and the fund has been liquidated.

Unfortunately, this does not provide any insight into the progress of the investment during the life of the partnership. As a result, most investors attempt to calculate an interim IRR, based on actual cash flows to date and some estimation of the remaining portfolio investments' fair market value. It is important to note that any interim calculation is only a proxy for investment progress and may bear little relation to the actual IRR at liquidation. Nevertheless, an interim IRR should provide a reasonable assessment of the progress to date, particularly relative to other funds that were formed about the same time and employ similar investment strategies.

In addition, it should be emphasized that the distribution of returns within successful partnerships is usually highly skewed. Many marginal or even losing investments are more than offset by a few exceptional winners. Moreover, an experienced manager should identify and liquidate losing investments early in the life of a partnership in order to cut losses. Distributions of more successful investments, on

the other hand, may not occur until later in the partnership when the investments have had time to mature. This is the main reason the managers caution against attaching any great significance to a partnerships results in its earliest years.

Valuation of Private Companies

Most institutional investors accept the valuations provided by the general partner during the life of a partnership if the methodology adheres to the following standards and is consistently applied.

At Cost. Unless there have been any transactions subsequent to investment, most valuations reflect the initial cost of investment.

Revalued Cost Based on Additional Financings. Most partnerships value private companies based on the most recent financing, to the extent and provided that an outside investor was involved in the financing. This could result in either a markup or markdown. It is also important to note whether contingent aspects of the follow-on, such as warrants or debentures, are included in the revaluation; conservative treatment excludes such contingent values. Of course, revaluations based on subsequent financings are more typical in the case of venture capital investments than of buyouts.

Revalued Cost Based on Company Progress. Many partnerships subjectively mark down the initial valuation of companies that are failing to "meet plan" in terms of revenues, earnings, cash flow generation, or even pace of investing capital. These markdowns result in somewhat arbitrary valuations, but are usually accepted by the limited partners as a fairly accurate reflection of the investment's current valuation.

However, it would be highly unusual for a company's value to be marked up solely on the basis of internal valuations without external verification. If a partnership does revalue in this way, it would be appropriate for limited partners to dismiss this markup. Of course, for estimates of the future prospects of companies, it may be appropriate to consider other valuation methodologies such as multiples of cash flow, earnings, or revenues, based on multiples of comparable public companies, if any exist.

Revaluation Based on the Sale of the Company. Portfolios are always revalued to reflect the proceeds from investments sold for cash. Such proceeds may or may not be distributed at once, depending on individual partnership terms. If investments are sold for stock and the stock is held in the partnership, the valuation is treated by one of several methods noted below.

Valuation of Public Companies

Liquid Stock. For liquid stock, the valuation generally reflects the actual price of the stock. It is usually marked to market if the security remains in the partnership and valued at the date of distribution if the security is distributed.

Illiquid Stock. If the stock is illiquid (restricted or closely held), the valuation usually reflects the actual price discounted by a predetermined percentage ranging from 0% to 50%, with 25% to 30% most typical.

Some institutions take a more conservative approach to valuation than the fund managers and adopt some combination of these valuation methods. For example, most institutional investors discount any markups based on internal valuations and any illiquid stock holdings not marked down by the general partners. A few institutions ignore interim valuation altogether and value partnership investments at cost for the life of the partnership. Finally, a handful of institutions value partnership investments at the lower of cost or value, if discounted, for the life of the partnership. Obviously, this is the most conservative methodology, and may completely fail to reflect the investments' potential for realized returns at the end of the partnership.

All investors should review the valuation methods used by the general partners with whom they invest (or intend to invest) to determine whether these are consistent with the approaches described above. Applied consistently, such methods should result in a reasonable assessment of each investment's success to date. However, it is worth repeating that the final returns from a partnership may be poorly correlated with interim net asset values and internal rates of return.

Handling Venture Capital Distributions

Venture capitalists make distributions over the life of a fund as companies within the portfolio are taken public or sold. Distributions to Limited Partners may be in the form of cash or securities. During the early to mid-1980s, venture capital funds tended to distribute cash since it was easier for investors to manage. However, in recent years, the strength of the IPO market and the increasing sophistication of Limited Partners have caused fund managers to distribute a greater percentage of securities in-kind when portfolio companies are listed.

In-kind distributions typically represent the securities of extremely small-capitalization companies. The market for such securities is under-researched and illiquid and therefore less efficient than the market for larger-capitalized stocks. As a result, there are significant opportunities to add value through thoughtful

disposition of these securities. Accordingly, in-kind distributions may be considered an integral part of an investor's venture capital program, and by selectively holding distributed stock, it may be possible to enhance the return on the original venture capital investment.

There are four broadly defined strategies which may be employed with respect to in-kind distributions.

Sell Securities Immediately. This strategy assumes that the market collectively has more information regarding the security than does an individual manager. Once the sale is complete, the Limited Partners will no longer be exposed to the risk of owning a relatively illiquid security which may experience significant volatility. In addition, Cambridge Associates' research suggests that there may be a systematic downward trend in most stocks following distribution. The drawback of the strategy is that it limits the upside potential of holding distributed "winners."

Manage Securities Internally. This strategy is occasionally pursued by institutions with large, sophisticated, in-house investment staffs. Such an approach requires significant research efforts, expertise, and trading capacity, and therefore is not appropriate for most investors.

Hire a Small-Capitalization Equity Manager. This is attractive from an administrative point of view, alleviating the need for internal staff. However, the investor would have to arrange a separate account with a small-cap manager possessed of the necessary expertise in illiquid, extremely small-cap securities, and be willing to bear the incremental research burden.

Appoint a "Distribution Manager." A distribution manager is a specialist in post-venture public securities, and makes all the hold/sell decisions for the investor. For most investors, this is clearly the most attractive option since there is a significant probability that a competent distribution manager can add value, net of fees, relative to most investors' only viable alternative, which is to sell distributed securities as they are received.

DESCRIPTION OF PERFORMANCE MEASUREMENT METHODOLOGY

Cambridge Associates, Inc. has established a database to monitor the investments made by alternative asset partnerships. As of June 30, 1999, 482 U.S. venture capital funds from the years 1981 through 1998 were included in the sample. Users of the analysis may find the following description of the data sources, our classification process, and the calculation techniques helpful.

1. Partnership financial statements and narratives are the primary sources of information concerning partnership cash flows, portfolio company investments, and investor transactions.

2. The performance calculation solves for the discount rate or internal rate of return (IRR) that makes the net present value of an investment equal to zero. The calculation is based on cash-on-cash returns over equal periods, modified for the residual value of the partnership's equity or portfolio company's net asset value. The residual value attributed to each respective group being measured is incorporated at its ending value. The database accounts for transactions on a quarterly basis, but adopts annualized values for reporting purposes.

3. Recognizing the venture capital community's sensitivity to the distribution of information pertaining to individual fund investments, as a matter of policy, Cambridge Associates only releases aggregated figures in its benchmark report.

4. Vintage year is defined as the legal inception date as noted in a fund's financial statement.

5. Definitions:

   a) The **pooled mean** aggregates or "pools" all cash flows and ending net asset values to calculate a dollar-weighted return.

   b) The **arithmetic mean** is the average of the discrete returns of each fund for a particular vintage year.

   c) The **median** is the middle fund return of the group of funds included in a vintage year.

   d) The realization ratios described below are measures of return or contributed capital. Ratios are based on actual dollar values and not averages.

      1. **Distribution to paid-in capital** measures the cumulative investment returned relative to contributed capital.

      2. **Residual value to paid-in capital** measures the amount of contributed capital still tied up in the equity of the fund.

      3. **Total value to paid-in capital** measures the residual value and distributions received to date relative to contributed capital.

TIME-WEIGHTED VERSUS DOLLAR-WEIGHTED RATES OF RETURN

The time-weighted return shows the value of one dollar invested in a portfolio sector for the entire period.

The dollar-weighted return shows an average return of all the dollars in the portfolio or the portfolio sector for the period.

The dollar-weighted return reconciles the beginning dollar amount of the fund plus the cash contributions with the ending value of the fund.

The time-weighted return ignores the fact that money is contributed to or removed from the fund and only looks at the money in the fund during each period.

Consider an investment cycle in which a fund has high returns for one period and negative returns for the next period. If the portfolio has more dollars working when the return is low, the return on the average dollar will be low; in this case the time-weighted return will be higher than the dollar-weighted return. On the other hand, if more dollars are in the fund when the returns are high, the return on the average dollar will be high; consequently, the dollar-weighted return will exceed the time-weighted return. In both cases, the time-weighted return will be the same.

The time-weighted return and dollar-weighted return will be identical when there are no cash inflows or outflows or when the return earned during the period is constant.

The time-weighted return is calculated by measuring the rate of return during a number of subperiods (presumably quarterly or monthly) and "linking" or "chaining" the interim returns.

The dollar-weighted rate of return is calculated on an "iterative" basis. The dollar-weighted rate calculation answers the question: "What is the rate of return which can be multiplied by the beginning value and the interim cash flows in order to equal the ending value?" Thus, dollar-weighted return takes into account both performance and the impact of the timing of cash flows on performance.

DISCUSSION OF INTERNAL RATE OF RETURN

A dollar-weighted basis (Internal Rate of Return or IRR) is the standard computation methodology used in the venture capital and asset play investment industry. This calculation is based on cash-on-cash returns over equal periods, modified for the residual value of the investment. Under this methodology, results are measured relative to the amount of funds under management. Practitioners of this methodology argue that dollar weighting cash flows appropriately accounts for the alternative asset investment managers' ability to draw down capital at their discretion.

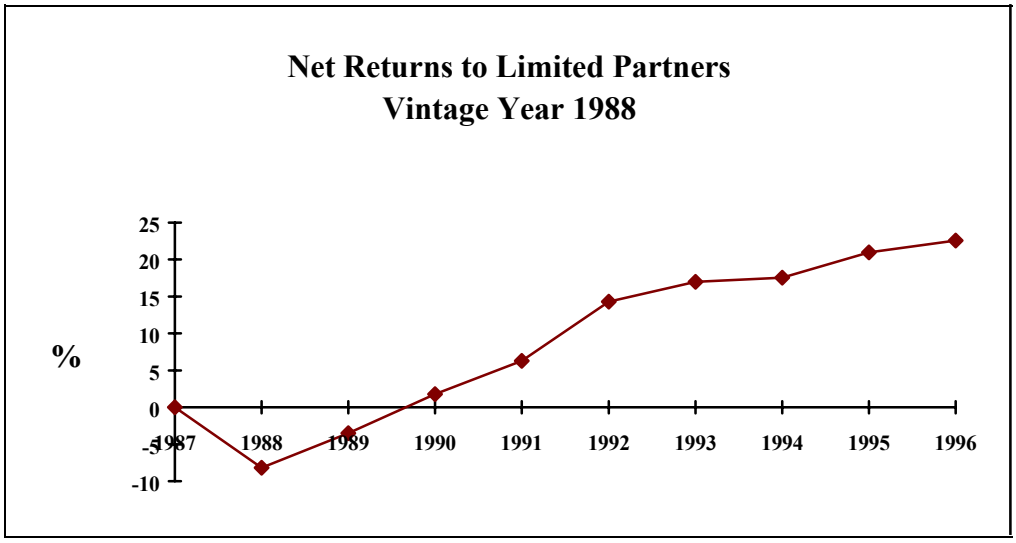
The components of cash flow are tracked from the perspective of the investor in a fund. On this basis, capital paid by the investor to a fund is treated as a cash outflow (negative cash flow). This amount includes payments specifically to fund investment activities as well as payments to fund operating expenses and organizational fees.

Conversely, capital received by the investor from an investment is treated as a cash inflow (positive cash flow). These inflows consist of capital received by an investor as a return of capital and/or gain on portfolio investments, payments from investment interest or dividends, non-investment interest/income, fees, or other non-investment related income sources.

The third component to the IRR calculation is the Net Asset Value. The Net Asset Value is equal to the assets of the fund net of current liabilities.

In most instances, the first two years of cash flows in a fund are cash outflows. The fund managers require funding to pay organizational fees and operating expenses. Portfolio company investments are identified and cash is needed to fund these investments. As for cash inflow, there is no expectation that funds in the first two years should be making distributions. Finally, with regard to the net asset value, most fund managers hold portfolio investments at cost until there is a significant event, i.e. a second round of financing at a higher valuation, an acquisition or a public offering. As a result, the net asset value will more than likely be stated at cost minus any liabilities (expenses and fees).

Given the large cash outflows, no cash inflows and the low net asset value of the fund usually results in a two-year period of negative returns. By year three, most funds begin to see some portfolio activity and revalue the portfolio, as well as return some income through distributions. At this point, returns moderate and turn upward. An example of this cycle is illustrated through a J-curve, the standard used to track the returns cycle of venture capital investments. The following is an example based on 9/30/96 returns on domestic venture capital funds incepted in 1988:


Net Returns to Limited Partners
Vintage Year 1988
%
25
20
15
10
5
0
-5
-10
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996

EXAMPLE OF VENTURE CAPITAL LIMITED PARTNERSHIP RETURNS

Total Fund Invested:	1,000,000
Total Fund Returns:	2,000,000

	Limited Partner	**General Partner**
Capital Committed:	990,000 *99%*	10,000 *1%*
Carry Split:	80%	20%
Return of Original Investment:	990,000	10,000
Split of Profits:	800,000	200,000
Total Gross Returns:	1,790,000	210,000
Fees Paid:	14,850 1.5%	
Net Returns:	1,775,150	
Gross Returns as a Multiple of Original Investment:	1.8	21.0