
Private Equity Investing

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INTRODUCTION

Since the mid-1990s, many institutional investors have been shifting a significant portion of their portfolios to an area of alternative investments known as private equity. Private equity investing involves taking ownership positions in private companies. The allure behind the investment in private equities is the potential for an increased return relative to traditional, publicly traded securities. However, this potential for increased return comes at the cost of exposure to additional risks not faced by holders of publicly traded securities. These risks must be carefully considered before investing in a private equity program.

In this Research Note, we discuss issues pertaining to private equity investing. Our hope is that it will help you decide whether private equity investing is appropriate for your portfolio.

PRIVATE EQUITY INVESTING

Private equity managers provide financing to private firms unable, or unwilling, to seek funding through public equity markets. Since private equity involves acquiring stakes in private companies, their investments are illiquid for a period of time and are, therefore, subject to greater risk. To compensate for this additional risk, private equity investors demand higher returns for their investment. While there are numerous strategies in the asset class, in this article, we concentrate on the two predominant forms of private equity—venture capital and buyouts. We also discuss distressed investing – a hybrid equity/debt strategy.

Venture Capital

Venture capital investing involves providing capital to emerging companies with a promising idea or innovation, often in high growth industries, including technology, telecommunications, and health care. In general, there are two stages of venture capital financing: early-stage financing and later-stage financing.

Candidates for early-stage financing range in size and age. The earliest type of candidate in this category is an entrepreneur in need of financing to determine the feasibility of an idea or new technology. Financing may be required to conduct further research or determine what market is available for a product. A more developed firm in the early-stage may have determined a business is feasible and has a market, but needs funding to establish the ability to commercially implement the idea. Naturally, because of their small size and unproven ability to generate profits, early-stage candidates are riskier. In addition, the holding period is generally longer. Accordingly, investors require a higher rate of return.

Candidates in the later-stage have already established the technology and market for their product, but require further financing to allow greater, or more rapid, growth. This financing may permit updating equipment to become more productive or expanding marketing efforts. Generally, firms at this stage are closer to the point where an initial public offering (“IPO”) is possible. For this reason, the investment is not as risky as one in early-stage firms, nor is the required holding period as long. Therefore, the required return is not as substantial as before. However, since the price paid for such investments is usually set with an eye towards a near-term liquidity event, there is a risk that market conditions will change and the timing of the exit or valuation of such an exit leads to a return that is lower than originally anticipated.

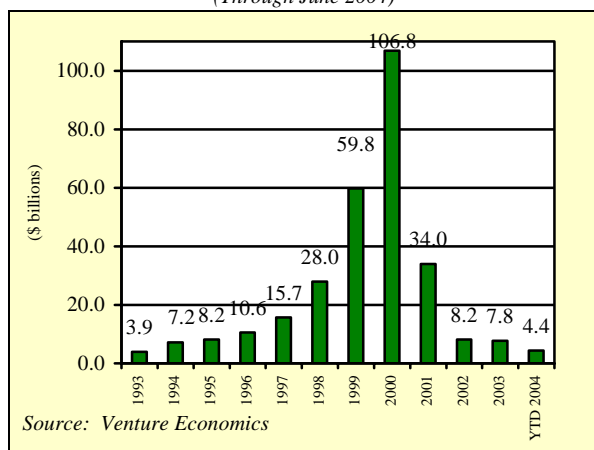
Venture capitalists typically not only provide financing for budding businesses, but also expertise in building businesses and developing viable products. Entrepreneurs may have a promising idea, but may not have the specialized knowledge required to fully exploit its potential. It is here that venture capitalists can add value beyond financing. Experienced venture capitalists have assisted other businesses in developing, and can lend that expertise to new investments.

The exit vehicle for successful venture capital investments is an IPO or sale to another company. The booming IPO market in the late 1990’s, particularly for technology

stocks, made this a lucrative route for harvesting gains. After the middle of 2000, however, the IPO market began to dry up, no longer providing an easy exit opportunity. Established companies are also buyers of developing companies. They are able to use their own stock to purchase young firms with promising technologies.

A significant concern with the present venture capital environment is the rapid expansion and subsequent contraction in the level of commitments. As Chart 1, below, shows, 1997-2000 witnessed an explosion in venture capital fund-raising that dropped significantly through 2003. In 1993, venture capital funds raised less than \$4 billion. By 2000, that figure had jumped to over \$100 billion. Though the pace of investments has been greater than the flow of new capital into venture capital funds for the last few years, the impact of the late 1990's fundraising surge will be felt for a few more years. The amount of money chasing venture capital deals may bode ominously for future returns, as the number of viable projects is theoretically limited. Nonetheless, the high level of capital available and near-term disappointing performance does not necessarily mean that the venture capital arena is no longer attractive.

Chart 1: Commitments to Venture Capital Funds by Year
(Through June 2004)



Buyouts

A second type of private equity strategy is buyouts. Buyouts differ from venture capital in that the companies purchased are usually mature. Buyouts are more likely to involve companies in "Old Economy" industries, such as manufacturing, rather than technology or life sciences. However, higher growth industries, such as technology, telecommunications, and health care, garner some investment for more mature enterprises.

Buyouts can come in a number of forms. Perhaps the most well known form is a leveraged buyout (LBO) or management buyout (MBO). An LBO involves purchasing a public or private firm, and recapitalizing it with a meaningful amount of debt. These deals were enabled by the growth of the junk bond market in the late 1980s.

In the early years of the private equity business, a typical candidate for an LBO was a company with weak growth prospects, but strong cash flow. High levels of debt, up to 90% of the enterprise value, were used to finance the deal. The hefty cash flow combined with asset sales was used to pay down the debt. With only token equity committed to the transaction, successful deals could generate healthy multiples of invested equity without improving the operating performance of the underlying enterprise.

The aggressive tactics of early buyout investors created a negative image of the LBO process. Many private equity firms would prefer to use the term management buyout (MBO) to describe what they do. This type of buyout is more commonly a closely held, private business in which the owners wish to cash out, or purchasing non-core or underperforming businesses from established companies, and implementing changes to improve profitability. The private equity investor is likely to be teaming up with incumbent management teams to purchase such businesses. The private equity firm as hostile takeover artist is no longer in evidence.

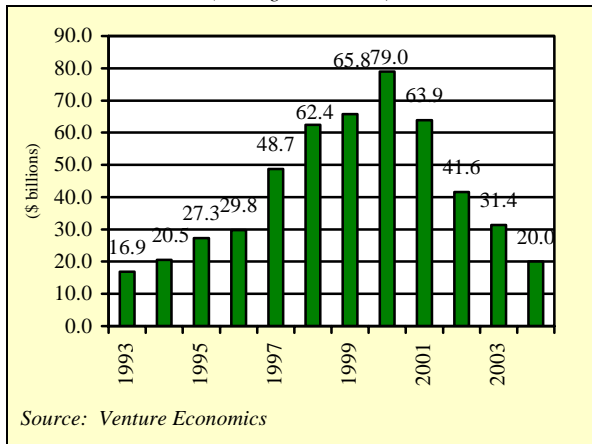
As with venture capital, buyout managers typically bring expertise to the companies they purchase. Experienced buyout managers can leverage their expertise in an attempt to turn around underperforming businesses, or improve profitable businesses. This may involve hiring new management teams or retooling strategies.

The buyout business has changed significantly over the past decade with respect to leverage. In the 1980's, deals were characterized by substantial amounts of debt. Many of the companies involved in such deals had difficulty meeting the debt servicing requirements when the economy stumbled in the early 1990's. As a result, bankruptcies were common, resulting in a turbulent junk-bond market. There has been a trend away from excessive leverage since then. In 1987, the average buyout deal incurred \$10 of debt for each \$1 of equity investment. In contrast, \$4 of debt was assumed for each \$1 of equity in 1998 and less than \$2 of debt for each dollar of equity by 2003.

Commitments to buyout funds have increased over the past several years, but not nearly to the extent of venture

capital funds. In 2000, \$79 billion was committed to buyout funds, a nearly five-fold increase over the 1993 level of \$16.9 billion. As of 2004, the rate of new capital flows is trending back to levels of the mid 1990s, with commitments of about \$40-\$50 billion per year. Time will tell whether the amount of capital is too great.

Chart 2: Commitments to Buyout Funds by Year
(Through June 2004)



Distressed Investing

Another strategy utilized by private equity managers is distressed investing. Often referred to as “distressed debt” or “distressed securities,” distressed investing involves the purchase of securities or obligations of companies that are currently, or may become, insolvent. The difficulty may be due to a wide range of financial, operating, economic, or market-related events, causing the securities to trade at a substantial discount to face value. The company’s situation will be resolved through a workout and reorganization either consensually or through the bankruptcy code. If the situation is resolved successfully, a considerable gain can be realized.

Different approaches that a manager may take include the control and the non-control approaches. With a non-control approach, the manager may invest in distressed securities with the intention of simply selling later. With the control approach, the manager will invest with the intention of gaining control of the company or reorganization process to maximize the eventual payout.

The process can be very complicated and time consuming demanding a broad, multi-disciplinary, range of expertise to be successful. The process may include issues such as creditors committees, court procedures, company specific operating and financial issues, negotiations with shareholders and other creditors, and bankruptcy

proceedings. A manager must possess analytical, financial, negotiation, and legal expertise to successfully manage the reorganization process.

The success of the strategy is highly dependent upon manager skill. However, macro factors, such as the supply of distressed debt available, also will affect returns. Difficult economic times bring on a larger supply of distressed opportunities meaning that pricing might become more attractive, offering the possibility of higher future returns. However, such environments also present greater risks, as the economy might become even worse, or the recovery might take longer to come about, than anticipated.

The robust returns from distressed investments in 2003 was largely due to a collapse and subsequent rebound in the prices of the distressed debt of large scandal-plagued issuers such as WorldCom and Enron.

STRUCTURE

Private equity investments are usually structured as private limited partnerships, with a general partner acting as the manager and several limited partners investing their own capital. General partners have the responsibility of managing the partnership and handling day-to-day operations. Limited partners, on the other hand, simply invest in the partnership, with little or no influence on the management of their funds once in the partnership.

A limited partnership arrangement permits the manager wider investing latitude because they are often subject to less oversight from government securities regulators than other investment formats (e.g., open-end mutual funds). Managers of limited partnerships are also able to place restrictions on withdrawals, which is a crucial aspect for private equity managers. Naturally, the lack of government oversight also creates greater potential for fraud.

The typical life cycle of a private equity partnership will vary by the investment style of the partnership and the market environment. However, a typical private equity partnership has a life cycle of ten years or more.

When a partnership forms, the limited partners commit to provide an amount of capital to the partnership. There is typically a several month window when investors are able to commit capital. Once there is a final close, investors cannot commit additional dollars.

Between years one and five, committed capital is typically called from investors and invested as the manager finds investment opportunities. This is referred to the “draw-

down” period. As investments are divested through IPOs or sales to other companies, capital is returned to investors. The distributions are made in the form of cash or publicly traded stocks. For instance, if a company is taken public, the managers may distribute the stock of the company to limited partners (common for VC funds), rather than selling the stock and distributing cash (typical of buyout funds). In this way, limited partners have the ability to time the realization of capital gains on the investments. Distributions will usually begin a few years after the first capital call and will continue until all the investments are liquidated, which could take ten years or more.

Performance Measurement

Since it is difficult to accurately value private equity on a regular basis, it is not possible to generate accurate monthly performance figures as we would liquid securities. Instead of using time-weighted return, private equity funds present performance based on internal rate of return (“IRR”). Linking time-weighted returns is not a good measure since the returns on small amounts of invested capital count equally with the returns on large amounts of capital. Because the money flows into and out of a partnership are significant over the life of an investment, an IRR is more accurate measure of performance.

The internal rate of return on private equity partnerships will often be negative in early years. Cash is called to invest in companies and pay management fees, but investments are often carried at cost. As companies are sold or upwardly revalued, profits begin to emerge. This phenomenon is known as the “J curve”.

For their ability to locate and develop private companies, general partners typically receive an incentive fee as well as a management fee. The management fee varies from 1% to 3%, and most management fees are close to 2%. In addition, incentive fees of 20% to 30% of profits are charged, which are designed to motivate the general partner to perform. The majority of buyout firms and venture capital firms receive 20% of profits. A select group of high performing managers actually receive 30% of the profits on their funds. These fees can create a significant drag on performance. As a result, managers must demonstrate the ability to add considerable value to their investments.

SOURCES OF RISK

Before investing in private equity, it is critical to carefully evaluate the risks present with such strategies. Private

equity presents investors with many risks, some faced by investors in traditional asset classes and others that are unique. When evaluating these investments, it becomes necessary to consider these additional risks, rather than expected volatility alone. Below, we outline the additional risks associated with most of these investments.

Liquidity

Lack of liquidity is one of the key risks faced by investors in private equity. For example, when a venture capital firm purchases shares in a private company, their goal is to hold these securities until they are sold for profit, which may take 3-7 years on average. Therefore, investors in a venture capital fund would have difficulty in recouping their investment during the period between investing of the funds and the eventual sale of all the underlying company investments. It is possible to sell shares in a partnership to a third party, but it will often be at a significantly discounted price. For these reasons, investors in private equity should carefully evaluate their need for liquidity before funds are committed.

Investment theory holds that investors require a premium for purchasing illiquid securities. Investors should be willing to pay higher prices (or receive a diminished return) for liquid securities because they can quickly convert these securities into cash at a low cost. The lack of liquidity, therefore, represents additional risk for which a return premium (in the form of a reduced initial price or higher eventual payback) is required. An investment in a private equity partnership, which may need to hold its acquisitions for several years or more, should result in a significant liquidity premium. Investors capable of committing a portion of their assets to illiquid investments, without infringing on operating capabilities, may find the liquidity premium well worth the additional risk.

Dependence on Key Personnel

Private equity funds are often dependent on the general partners and a relatively small staff for all key investment decisions. Furthermore, private equity managers often take an active approach in the management of companies in which they invest, including participation on the company’s board of directors. For this reason, the inability of one or more of the key personnel to carry out their duties could have a significant, adverse effect on a partnership. While traditional management firms depend on key personnel as well, unlike traditional investments, investors in private equity funds may find it costly or impossible to exit these investments due to the liquidity issues discussed above.

Conflicts of Interest

There are several areas where conflicts of interest can arise between the general partner and the limited partners. One such area is the size of the capital base. A smaller fund might be more efficiently deployed and yield a higher return than a larger fund. However, the manager may wish to grow the fund size and his firm even if it means that the eventual returns to the investors will be lower. There is no way to prove what would have happened if a manager had raised less money, so it is an unresolved area of tension as successful managers grow their assets.

Another potential conflict of interest is the incentive for managers to take on excessive risk. Incentive fees are used to reward managers when the fund does well, but there are no “punishments” when the manager performs badly—the manager holds a call option on the performance of the fund. Therefore, the more risk a manager takes, the greater the upside potential, with little immediate downside impact from losses. The long-term impact is a reduced ability to raise new capital.

The place where we may be seeing this come into play is in buyout and venture funds of the late 1990s that are currently experiencing negative returns. The manager may continue to invest more capital in risky situations in the hope that a big win will bail out the performance of the fund. Other firms are holding onto investments much longer than was ever anticipated by investors in the hope that the remaining investments will grow enough to get the portfolio to positive returns and the manager into incentive fee territory.

These conflicts of interest and agency risks may be reduced if the manager has a significant portion of his personal wealth in the fund, since it will tend to align the interests of the manager with the investors.

Leveraged Capital Structure

Another risk presented by private equity investing, particularly in the buyout arena, is that partnerships’ underlying investments tend to have a more leveraged capital structure than companies with publicly traded securities. This means that companies are more susceptible to downturns in the economy.

Indeed, during the recent recession many of the companies involved in the buyouts in the late 1990’s experienced extreme financial difficulties, resulting in junk-bond defaults and bankruptcies. As a result, buyout partnerships

that formed in the late 1990’s have generally experienced disappointing returns.

Down Market Performance

A reason often cited for investing in private equity is diversification. While private equity will provide some degree of diversification, as small-cap stocks provide diversification benefits to large-cap stocks, many of the diversification benefits are illusory. Partnerships are often valued at cost, which results in the artificial dampening of the standard deviation and correlation.

During down markets, we would expect private equity to perform worse than traditional equity investments. This is because private equity partnerships often have a more leveraged capital structure, which results in higher risk. In the event of an economic downturn, a leveraged capital structure makes bankruptcy more likely.

In addition, private equity investments tend to be smaller companies. In times of market distress, small-caps in public markets tend to perform worse than large-caps. Likewise, we would expect private equity investments to perform worse than small-caps during an extended bear market. However, due to the valuation lag, it may be several years before the true nature of losses are evident.

Competition for Deals

A concern that has been gaining prominence among institutional investors in recent years is that too much money is chasing too few deals. Indeed, the committed capital to private equity programs, as demonstrated earlier, has increased exponentially over the past decade. The concern is that the high degree of competition is forcing partnerships to pay higher prices for attractive companies, thereby lowering future expected returns. In the buyout space, the use of auctions is now common for ever smaller companies. The role of the auction is to drive the highest price. The trend is obviously better for sellers than buyers.

The long-term nature of private equity investing means that the results from making a commitment to a particular fund will not be known for 5-7 years. While the competitive environment has already led many private equity firms to temper their return expectations, it will be a few more years to determine what the impact of the competition for deals will do to results.

**PERFORMANCE AND
EXPECTATIONS**

Arriving at reasonable return and risk forecasts for private equity presents a challenge. It is more difficult to attain reliable data on the historical performance of private equity partnerships than on traditional money managers. There are few private equity index providers, and their data are limited.

It is widely agreed that the returns from investing in the median private equity funds will not generate a significant return premium to investing in the S&P500. A successful private equity program requires that one invests in some funds that fall into the first quartile of returns. A few successful funds can make up for a lot of mediocrity in the rest of one’s program. Because of the wide dispersion of returns across funds, and the difficulty in selecting good partnerships, it is difficult to have expected returns. We tend to think about the asset class in terms of required returns. The returns required to compensate for the illiquidity and higher risks of private equity investing.

Historical Returns

Table 1, below, details the performance of Venture Economics Private Equity Index, along with Venture Capital and Buyouts sub-components, against the performance of the S&P 500 index and the Russell 2000 index.

Table 1: Comparison of Trailing Returns (At 03/31/04)

	<i>Venture Economics Private Equity</i>	<i>Venture Economics Venture Capital</i>	<i>Venture Economics Buyouts</i>	<i>S&P 500</i>	<i>Russell 2000</i>
1 Year	23.4	15.7	28.8	35.1	63.8
3 Years	-3.6	-13.3	0.1	0.6	10.9
5 Years	6.8	22.0	2.6	-1.2	9.7
10 Years	12.8	26.0	8.1	11.7	10.5
20 Years	13.7	15.7	12.4	13.2	10.9

Source: Venture Economics

As Table 1 shows, the Venture Economics Private Equity index has performed fairly well against the S&P 500 and the Russell 2000 index over the long-term. Over the last 10 years, a period in which private equity has been institutionalized, the Venture Economics Private Equity index has returned 12.8%, annualized, outperforming both the S&P 500 index and the Russell 2000 index, but not by a wide margin.

The Venture Capital index has performed particularly well, returning 26.0%, annualized, over the past ten years. The more recent returns exhibited in venture capital have been poor due to the burst in the technology bubble (down

13.3% over the last 3 years), but the phenomenal returns leading up to the crash have been enough to keep the longer term returns buoyed. The improved returns over the last 12 months have reaffirmed many investors’ faith in the space. Over twenty years, the Venture Capital index has beaten the S&P 500 by 2.5 percentage points, annualized.

The Buyout Index has shown good absolute returns over the last year and over 20 years, but has not outperformed the S&P 500 or Russell 2000. Given the relatively mundane performance of buyout funds over the last two decades, one could wonder why so much capital has flowed to the sector. The answer likely lies in the spread between the top quartile performance and the median returns.

The average spread between the 25th percentile fund and the median fund raised from 1984-2001 is 8.9%. The spread between the 25th percentile fund and the cap weighted average return is 5.1%. That is generally the difference between outperformance and underperformance. One should also remember that the returns from funds raised since 1997 are still a work in progress and have been steadily improving over the last year.

Volatility and Correlations

In addition to the concerns over the short data set for estimating returns, two other inputs necessary in asset allocation modeling—standard deviation and correlations—are even more difficult to estimate based on historical data. Examining returns of private equity indices yields suspect results in these two areas because of valuation smoothing. Investments are often valued at cost, which results in the artificial dampening of the volatility of the month-to-month and quarter-to-quarter market values. This means that both volatility and correlation relative to public equities appear falsely lower.

For that reason, we examined public market indices to proxy the private equity asset class in estimating standard deviation and correlations. As a proxy for buyouts, we examined the CRSP 9-10 index, which contains the very smallest stocks in the U.S. market. For venture capital, we used the H&Q Growth index. The H&Q Growth index includes rapidly growing, small-cap stocks, many of which are technology-oriented. As such, we believe that this index is an appropriate proxy for venture capital.

These proxy indexes likely understate the volatility associated with these investments. Companies involved in buyouts usually have a more highly leveraged capital

structure than publicly traded securities and, therefore, are more exposed to economic weakness. Venture capital investments, since they are generally unestablished companies with questionable future prospects, contain additional systematic risk relative to companies that have already met the scrutiny required to go public.

Table 2, below, shows the standard deviation of the two proxy indexes compared to the S&P 500 index and the Russell 2000 index. The CRSP 9-10 index, our proxy for buyouts, over the twenty year sample has experienced higher volatility (as measured by standard deviation) than the S&P 500 index, and similar volatility as the Russell 2000. The H&Q Growth Index, the venture capital proxy, had experienced more than twice the volatility of the S&P 500 index over twenty years.

Table 2: Standard Deviation

	CRSP 9-10 Index	H&Q Growth Index	S&P 500	Russell 2000
3 Years	26.3	50.3	21.0	23.7
5 Years	23.0	44.5	17.5	20.6
10 Years	20.8	38.1	15.6	19.4
15 Years	20.6	36.0	17.4	20.7
20 Years	21.0	37.2	17.2	21.2

Table 3, below, shows the correlation of the two proxy indices to traditional indices. Both the CRSP 9-10 index and the H&Q Growth index exhibit moderate correlation to the S&P 500 index and relatively high correlation to the Russell 2000 index.

Table 3: Correlation Analysis (20 Years)

	CRSP 9-10 Index	H&Q Growth Index
S&P 500	0.69	0.74
Russell 2000	0.94	0.85
MSCI EAFE	0.38	0.34
Lehman Aggregate	0.10	0.11

The correlation statistics suggest that venture capital and buyouts can provide diversification benefits relative to a portfolio that does not contain small-cap stocks. The diversification benefit of adding private equity to a portfolio that already contains a small-cap allocation is marginal. **In general, the goal of introducing an allocation to venture capital and private equity should be return enhancement, rather than diversification.**

Expectations

A diversified portfolio of private equity, including both venture capital and buyouts, should provide a return

premium of 5.0 percentage points above the S&P 500, net of all fees, going forward. The return premium reflects the required compensation for additional systematic risk and the lack of liquidity. Based on our compound expected return of 7.5% on the S&P 500, the required return on a private equity portfolio is 12.5%, which is below that which has been experienced over the past 20 years, but still attractive relative to our expectations for publicly traded securities.¹ Our expected annual standard deviation on a private equity portfolio is $\pm 27\%$, versus $\pm 17\%$ for the S&P 500.

IMPLEMENTATION OF A PRIVATE MARKETS PROGRAM

Once it is decided to allocate funds to private equity, the next step is to generate a commitment schedule and select managers to implement the program. The uncertainty surrounding cash flows to and from private equity funds creates difficulty in maintaining a target allocation. The lag between commitments and calls means that it will likely take several years to fully fund a private equity allocation. In order to reach a target allocation to private equity, commitments, as a percentage of the portfolio value, will need to exceed the target allocation. This is because at any moment in time, the average partnership either will have not yet called all the commitments or have already started to return capital to investors, such that committed capital almost always exceeds invested capital.

The difficulty in valuing existing investments exacerbates the problem of maintaining a target allocation. Investments in public securities can be readily valued. When there is a deviation from the target weight, transactions are easily executable to bring the allocation in line with the target allocation. In private markets, however, it is often difficult to ascertain the fair market value of the existing investment. It is even more difficult to fine-tune the allocation to get it closer to policy when a difference exists. For this reason, it is necessary to tolerate deviation from the policy weight.

Vintage Year Diversification

When starting a private equity program, we suggest that the initial commitments be spread over three to five years. In this way, vintage year diversification is achievable. A partnership's vintage year refers to the year in which the

¹ See "What's Next for the S&P 500?" Hammond Associates Research Note, May 2000 (available at www.haicf.com under "Articles")

fund begins investing. It is desirable to invest across a number of vintage years because of the cyclicity in private equity performance. The returns to private equity partnerships formed in some years are depressed relative to returns in other years, with general returns trending upwards and downwards over longer periods.

Manager Diversification

It is critical to diversify private equity investments across a number of managers. There are two characteristics of private equity investing that make diversification critical: (1) there is an extremely wide range in performance between the top performing and worst performing partnerships, and (2) the distribution of managers' returns curve is highly, positively skewed.

In public equity markets, there is usually a relatively narrow range between the top and bottom performing investment managers. For instance, in the Mobius® Universe of Broad Large Cap managers, there was only a 6.4 percentage point difference between the top quartile cutoff and the bottom quartile cutoff over the last five years. Over the last ten years, the difference was only 3.9 percentage points. In private equity, however, this is not the case. Table 4, below, shows the returns for venture capital partnerships for a number of vintage years, as reported by Venture Economics.

Table 4: IRR for Venture Capital Partnerships by Vintage Years (Through 12/31/03)

<i>Vintage Year</i>	<i>Median (%)</i>	<i>Upper Quartile (%)</i>	<i>Bottom Quartile (%)</i>	<i>Difference (%)</i>
1990	13.7	25.7	(0.3)	26.0
1991	17.1	25.7	4.4	21.3
1992	14.8	31.7	10.9	20.8
1993	12.2	34.4	-0.6	35.0
1994	19.4	41.8	4.6	37.2
1995	26.1	62.1	4.0	58.1

Source: Venture Economics

As the table shows, there is a wide divergence between the upper quartile and the bottom quartile in each vintage year. For vintage year 1990 partnerships, there is a 26 percentage point difference between the top quartile and the bottom quartile. While such a wide divergence may provide an opportunity to do extremely well by selecting the top performing managers, it also exposes the portfolio to a high degree of underperformance risk. If an institution is unlucky enough to pick a bottom quartile manager, the returns will likely prove to be extremely disappointing. By selecting a number of managers, the

chance that a single, unlucky pick will lead to disappointing returns is diminished.

A second reason to diversify among several managers is that the distribution of managers' returns for a particular vintage year shows a great deal of skewness. Skewness is a statistical concept describing the shape of a return distribution curve. A skewed curve differs from a normal, bell-shaped curve, in that there is an abnormal amount of large returns, either positive or negative. A curve with an abnormal amount of large positive returns exhibits positive skewness. Positive skewness results in the mean (or average) return being higher than the median (or middle) return.

For instance, let's assume that five partnerships in a universe of funds formed in 1990 experienced IRRs of -20%, 10%, 15%, 50%, and 200%, respectively. In this distribution, the median return was 15% (half the observations are above and half are below this number); however, the mean (average) return was 51% $[(-20+10+15+50+200)/5]$. In a normal, bell-shaped curve, the median return equals the mean return. If given the choice of: (1) *randomly* selecting a single manager from the distribution, or (2) investing equally in all of the managers, the prudent choice would be to invest in all the managers. When selecting a single manager from this distribution, the expected return is 15% (with a wide standard deviation), compared with a 51% expected return for selecting *all* of the managers.

The positive skewness exhibited by private equity managers has important implications for investors. A few number of partnerships perform extremely well, lifting the mean (average) of the whole universe above the median (middle). This is because a good (and/or lucky) private equity manager can return the initial investment several times over, while a poor manager can lose no more than the initial investment.

The effect of skewness is observable in Table 4, above. The pooled mean for each vintage year is substantially higher than the median return. In fact, in about 50% of vintage years, the pooled mean's return is good enough to place it in the top quartile. In other words, if it were possible to invest in every single partnership formed in a given year, the IRR of the portfolio would have beaten more than 75% of the individual partnerships that comprised the portfolio. It should be the goal of a private equity investing program to match the pooled mean return of a universe of private equity managers, rather than the median return.

In order to increase the likelihood of enjoying returns at least equal to the mean, rather than the median, selecting multiple managers is necessary. When randomly selecting a single manager from a universe of managers, there is an even chance that the return of that manager will be above or below the median return. However, when selecting several managers, there is a better than even chance that the portfolio's returns will be above the median return. In addition, there is a higher probability that the return of the overall portfolio will be closer to the pooled mean return, because there is a higher chance of picking a top performing manager. The practical limitation on this process is that many managers with top track records are not accepting new clients.

Fund of Funds

For private equity allocations less than \$20 million, we typically suggest utilizing "fund-of-funds," as core holdings. Many of the top private equity managers have minimum initial investments of \$10 million. Though many will lower this figure for select investors, it is difficult to gain adequate diversification with smaller allocations. Promising individual partnerships could still be held as satellite holdings.

The main advantage to using a fund of funds, other than it being a practical necessity, is the ability to access "closed" managers with whom the fund of funds manager already has an established relationship. Buying access by hiring the fund of funds may be the only means of working with such managers. The fund of funds easily earns its fees if such managers continue to provide top tier performance.

Using a fund of funds allows for the reduction in internal staff time required to invest in private equity. The fund of funds manager assumes the labor-intensive due diligence process. In addition, using a fund of funds can reduce the legal and administrative headaches of investing in a number of limited partnerships.

The primary disadvantage to a fund of funds is, of course, the additional layer of costs. In addition to paying the management fees and incentive fees of the underlying managers, fund of funds charge management fees. Management fees charged by fund of funds providers can range anywhere from 0.35% to 1.0%. Some fund of funds providers also charge incentive fees.

CONCLUSION

In this research note, we have discussed investing in private equity. Private equity should offer enhanced returns relative to publicly traded securities. However,

investing in illiquid instruments raises other issues that that require consideration. Nonetheless, for an institution with a long time horizon and minimal cash requirements, the lack of liquidity may be worth accepting for the additional expected return.

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REFERENCES

Barry, Christopher B., "Venture Capital," *Alternative Investing*, AIMR 1998.

Nesbitt, Stephen, "Return and Risk Assumptions for Private Market Investments" *Wilshire Private Markets*, First Quarter 1998.

Robin, Henry G., "Clients for Alternative Assets: Institutional Investors," *Alternative Investing*, pp. 15-21 AIMR 1998.

Winegerd, Daniel, "The Private Equity Market: History and Prospects," *Investment Policy*, September/October 1997.