

The Benefits of Private Equity: 2006 Update

CISDM Research Department

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Abstract

Private equity investments offer high return but are risky. Although the extent of diversification benefit is debatable, it does exist based on this study. Private equity is an investment vehicle that is generally not available to traditional investors. Investors have to increase their knowledge and comfort level to realize the benefits of private equity.

In this annual update, the return and risk characteristics of various forms of private equity investment are reviewed as well as the risk and return impacts of adding private equity to traditional stock and bond portfolios. Results show that traditional private equity indices may provide diversification and return benefits when added to an existing stock and bond portfolio, as well as a stock, bond, and hedge fund portfolio. Lastly, the impact on the use of alternative private equity indices on empirical results are discussed.

The Benefits of Private Equity

Introduction

Private Equity is generally regarded as an investment which offers investors the opportunity to achieve superior long term returns compared to traditional stock and bond investment vehicles. The long-term high returns of private equity represent a premium to the performance of public equities. Private equity provides higher return opportunities relative to traditional asset classes primarily through their ability to participate in a vast and growing marketplace of privately held companies not available in traditional investor products as well as their ability to create value by proactively influencing invested companies' management and operations, thereby providing the opportunity to gain excess return over conventional stock and bond investments. Private equity is often structured as partnerships, a fund made up of the general partner and the limited partners. Each fund is capitalized by commitments of capital from the limited partners. Once the partnership has reached its target size, the partnership is closed to further investment from new investors (or even existing investors) so the fund has a fixed capital pool from which to make its investments. Other common ways to gain exposure to private equity are through private equity fund of funds and direct investment in private companies. Different approaches require various investment skill sets.

Investors have come to realize the investment opportunities provided by private equity. While it is impossible in a short synopsis to convey all the benefits of private equity, the following sections support private equity as a means to:

- (1) Provide standalone superior long term return opportunities that are not available through investment in traditional stock and bond investments and
- (2) Provide a certain degree of diversification benefit to a traditional stock and bond portfolio or a diversified portfolio consisting of stock, bond and other alternative asset class such as hedge funds.

Private Equity: Description

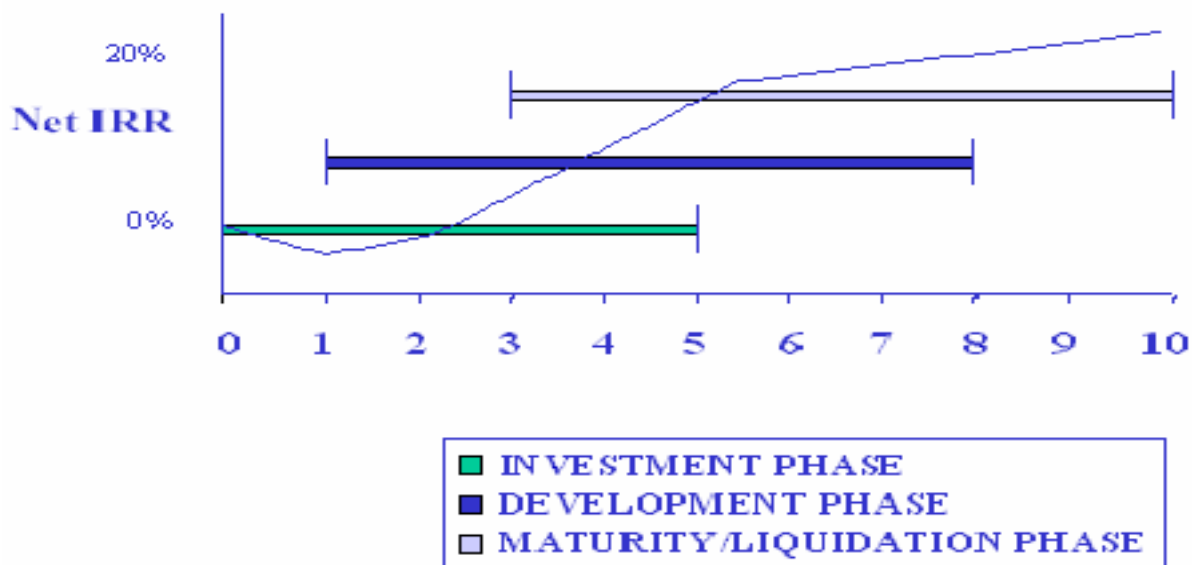
Private equity is a broad term for any equity type investment in a company that is not listed on a stock exchange. The purchase of shares is therefore privately negotiated. Holders of private equity investments will typically realize value normally in the form of capital gains through a sale to, or merger with, a competitor in the same sector, sale to another private equity investor or by eventual flotation on the stock market. Private Equity covers a wide range of investment opportunities, including early stage investment (angel investors and seed capital), take off (venture capital), mid-growth investment (mezzanine finance) and later stage investment (private equity). It can be anything from angel investment to buyout fund investing.

Private Equity: Return Characteristics

The basis for returns to private equity is similar to that for traditional stock and bond investment; that is, claim on long term earnings, a return premium for providing capital to an illiquid and risky investment as well as positive alpha generated from unique trading strategies or private information. However, while private investment vehicles have a net asset value, this value is not determined in a public market but often as an internal appraisal value. Actual returns are often measured as an internal rate of return or cash disbursements relative to capital investment. As shown in Exhibit 1, these cash flows may be less at the initial stage than later stages of the capital investment (known as the J curve effect). It is also important to point out that private investors are generally active investors and typically exit their successful investments by taking them public. While they rarely sell their shares at the time of the IPO, they frequently sell the shares or distribute them to their investors within several years of going public.

Exhibit 1

Traditional Rate of Return Process



Source: Venture Economics

Private Equity: Investment Alternatives

There are generally three ways in which investors can partake in private equity exposure. The first is investing in a partnership specializing in private equity. The second vehicle available to gain private equity exposure is through fund of private equity funds which provides exposure to a basket of selected private equity funds. The third way is to directly invest in private companies.

- Investing in Private Equity Funds: Investors can get exposure to private equity investment through investing in a partnership specializing in private equity. When an investor commits to a private equity fund, the commitment is typically to provide cash to fund on notice from the general partner. Redemptions and transfers usually are subject to strict limitations; it is

not uncommon for general partner consent to be required for all transfers/redemptions and for the general partner to have complete discretion with respect to granting such consent.

- **Investing in Private Equity Fund of Funds:** Investors can also get exposure to private investment through a pooled fund vehicle, fund of private equity funds. The advantages of investing in fund of funds are greater diversification, access to top fund managers, less cash commitment and reduced due diligence work. The drawback of investment in fund of funds is that investors may have to bear two layers of fees, at both fund level and fund of funds level.
- **Directly Investing in Private Companies:** The third way available for investors to gain access to private equity investment is direct investment in privately held companies. However, compared with investing through funds it requires more capital (to achieve similar diversification and exposure), a different skill set, more resource and different evaluation techniques. This strategy is only suitable to experienced private equity investors. For most investors, the use of private equity funds or fund of funds would be preferred.

Private Equity: Performance Indices

Some index providers have created various indices to benchmark the performance of the private equity investment. One must realize that the performance for private equity funds is somehow distorted because: first, performance assessments are based on a self-reporting procedure, which means that managers report the estimated value of their investments to index providers. Their estimates are usually based on appraisals for the underlying assets since no real time market prices for the underlying assets exist. Second, reporting frequency is low. Private Equity funds performance is usually reported on a monthly or quarterly basis. Third, estimation bias exists because of missing data, censored data, and sample selection bias.

A brief description for the major private equity performance indices is as follows:

PVCI: PVCI (Post Venture Capital Index) was developed by Thompson Financial Venture Economics and Warburg Pincus Counsellors in 1995. It is a market-weighted index of all venture-backed companies, ranging from early stage start-ups to reverse LBOs (Leveraged Buyouts). The value of the PVCI is calculated using the Internal Rate of Returns (IRR)—net of fees-- of the asset.

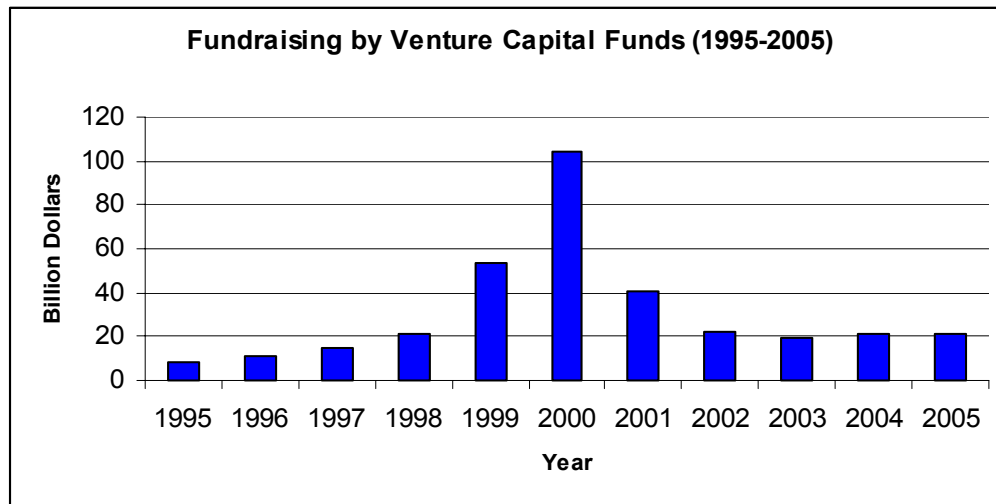
Cambridge Associates LLC U.S. Private Equity Index and U.S. Venture Capital Index: The Venture Capital Index is based on returns data compiled on funds representing over 80% of the total dollars raised by U.S. venture capital managers between 1981 and 2005. The Private Equity Index is based on returns data compiled on funds representing over 70% of the total dollars raised by U.S. leveraged buyout, subordinated debt and special situation managers between 1986 and 2005. They are calculated as the pooled net time-weighted returns for the component funds.

Wilshire Associates LBO Index, Venture Capital Index and Mezzanine Index: Wilshire Associates is another private equity index provider. It creates the above three indices to benchmark the performance of private equity funds. Wilshire's indices are forecast returns based upon past results as well as a financial assessment of the added risks in private equity. As a result, the correlations of their indices are similar to that of the primary market used to capture the return performance.

Growth of Private Equity

The private equity industry has experienced rapid growth since 1970's due to the clarification of the "prudent man" rule issued by the Labor Department which relaxed limitations placed on institutional pension funds. Another catalyst in the growth of the private equity industry occurred in late 1990s due to the low inflation environment. This environment has created a particular need for growth stocks and highlighted a core skill of successful private equity managers. However, in early 2000s, investment in private equity funds declined significantly because of the burst of NASDAQ bubble. According to Venture Economics, the total investment in venture capital in United States companies increased from less than 8 billion dollars in 1995 to 104.7 billion dollars in 2000, then went down to about 21.7 billion dollars in 2005 (Exhibit 2). The total amount of investment in private equity including venture capital is about 111.5 billion dollars at the end of 2005. The main sources of these private equity investments come from pension funds, insurance companies, corporate investors, banks, private individuals, academic institutions and government agencies.

Exhibit 2



Source: PricewaterhouseCoopers/Venture Economics

Empirical Results

Risk and Return Performance:

In this article, Cambridge Associates indices are used to explore the benefits of private equity investment. The Cambridge Associates Venture Capital Index is used to calculate the returns of venture capital investment, and Cambridge Associates Private Equity Index is used to represent the performance for LBO, subordinated debt and special situation funds. Performance comparison between Cambridge Associates indices and Wilshire Associates indices and PVCI is also conducted.

The following section supports that 1) the private equity investment, as a standalone investment vehicle, provides higher return opportunities not easily obtained through conventional stock and bond investment vehicles and 2) provides additional diversification. Results show that when private equity investment is added to a traditional stock and bond portfolio or a diversified portfolio with stock, bond and hedge fund, the portfolio's risk/return profile improves.

Exhibit 3 shows the historical performance for private investment as well as traditional (stocks and bonds) investments. Over the past 16 years, both Private Equity Index and Venture Capital Index provided higher average annual returns than those provided by traditional stock and bond. Venture Capital Index exhibited highest returns (21.14%) as well as highest risk (27.81%). On a risk adjusted basis, Private Equity Index and Venture Capital Index had higher Sharpe ratios (1.08 and 0.61 respectively) than that of the S&P 500 (0.46). Private Equity Index and Venture Capital Index reported moderate correlations with the S&P 500 (0.66 and 0.46 respectively) but exhibited low correlations with Lehman Aggregate bond (-0.21 and -0.19, respectively) (Exhibit 4).

Exhibit 3

Asset Performance (1990-2005)						
Index	Average Annual Return	Standard Deviation	Sharpe Ratio	Maximum Drawdown	Skewness	Kurtosis
Private Equity Index	14.48%	9.54%	1.08	-27.83%	-0.29	0.22
Venture Capital Index	21.14%	27.81%	0.61	-67.41%	3.02	16.09
Private Equity Portfolio	17.81%	17.22%	0.79	-50.04%	1.94	9.78
S&P 500	11.33%	15.45%	0.46	-43.75%	-0.41	0.62
Lehman Aggregate	7.25%	4.23%	0.73	-3.87%	-0.04	-0.79
Lehman High Yield	9.10%	8.83%	0.56	-11.79%	0.65	4.39

Exhibit 4

Correlation Matrix (1990-2005)						
Index	Private Equity Index	Venture Capital Index	Private Equity Portfolio	S&P 500	Lehman Aggregate	Lehman High Yield
Private Equity Index	1.00					
Venture Capital Index	0.61	1.00				
Private Equity Portfolio	0.77	0.98	1.00			
S&P 500	0.66	0.46	0.55	1.00		
Lehman Aggregate	-0.21	-0.19	-0.21	-0.05	1.00	
Lehman High Yield	0.27	0.07	0.13	0.57	0.15	1.00

Since private equity has historically outperformed traditional asset classes (Exhibit 3) and is only moderately correlated to the stock and bond investments (Exhibit 4), it provides diversification benefits when added to a traditional stock and bond portfolio. As shown in Exhibit 5, adding 20% exposure in private equity to a traditional stock and bond portfolio (Portfolio II), which is originally allocated between 50% S&P 500 and 50% Lehman Aggregate Bond, increases risk adjusted return (e.g. Sharpe Ratio) from 0.65 to 0.80. The benefits of private equity can be further expanded when added to a diversified portfolio consisting of both traditional and alternative asset classes. As indicated in Exhibit 5, a 10% exposure to a portfolio of stock, bond and hedge fund (Portfolio IV) improves the portfolio's risk adjusted return from 0.81 to 0.87.

Exhibit 5

Portfolio Performance (1990-2005)			
Portfolio	Average Annual Return	Standard Deviation	Sharpe Ratio
Portfolio I	9.29%	7.91%	0.65
Portfolio II	11.00%	8.54%	0.80
Portfolio III	10.37%	7.63%	0.81
Portfolio IV	11.12%	7.96%	0.87

Portfolio I: 50% S&P 500 and 50% Lehman Aggregate Bond
 Portfolio II: 80% Portfolio I and 20% PE Portfolio
 Portfolio III: 80% Portfolio I and 20% CISDM EW HFI
 Portfolio IV: 90% Portfolio III and 10% PE Portfolio
 PE Portfolio: 50% Venture Capital Index and 50% Private Equity Index

Alternative Index Performance

As discussed earlier, three major private equity indices exist to benchmark the private equity investment performance, such as PPCI, Wilshire Associates private equity indices and Cambridge Associates private equity indices. In this section, the quarterly returns for these indices are compared to explore the impact of index construction methodology on index performance.

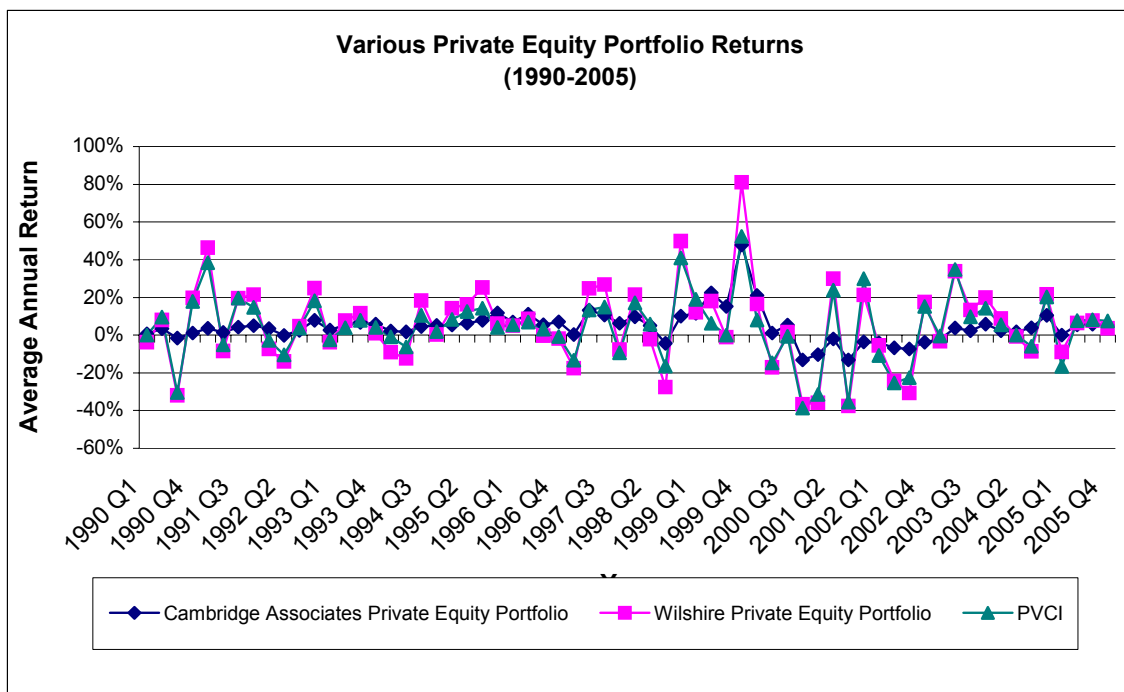
Exhibit 6 shows that Wilshire Private Equity Portfolio (50% Venture Capital Index, 25% Mezzanine Debt and 25% Leveraged Buyout) exhibited the highest volatility (42.57%) but also

generated highest average annual returns (21.13%). Cambridge Private Equity Portfolio which consists of 50% Private Equity Index and 50% Venture Capital Index exhibited lowest risk (17.22%) and moderate return (17.81%). The risk/return profile for PPCI is similar to that of Wilshire PE Portfolio but exhibited lower return (16.22%) and less volatility (34.88%). Despite the differences in reported return and risk, the various indices show a high degree of common movements in returns (Exhibit 7).

Exhibit 6

Alternative Index Performance (1990-2005)						
Index	Average Annual Return	Standard Deviation	Sharpe Ratio	Maximum Drawdown	Skewness	Kurtosis
Cambridge PE Portfolio	17.81%	17.22%	0.79	-50.04%	1.94	9.78
Wilshire PE Portfolio	21.13%	42.57%	0.40	-83.28%	0.45	1.78
PPCI	16.22%	34.88%	0.35	-80.94%	-0.08	0.88

Exhibit 7



The high degree of return co-movement in Exhibit 7 is further indicated in Exhibit 8 which shows that Wilshire PE Portfolio and PPCI are highly correlated with each other (0.96) and with S&P 500 (0.87) and moderately correlated with Cambridge PE Portfolio (0.70 and 0.63 respectively).

Exhibit 8

Correlation Matrix (1990-2005)						
Index	Cambridge PE Portfolio	Wilshire PE Portfolio	PVCI	S&P 500	Lehman Aggregate	Lehman High Yield
Cambridge PE Portfolio	1.00					
Wilshire PE Portfolio	0.70	1.00				
PVCI	0.63	0.96	1.00			
S&P 500	0.55	0.87	0.87	1.00		
Lehman Aggregate	-0.21	-0.10	-0.14	-0.05	1.00	
Lehman High Yield	0.13	0.47	0.52	0.57	0.15	1.00

Investment Comparisons: 1990-1994, 1995-2000 and 2001-2005

Over the past 16 years, private equity investment has experienced dramatic fluctuation as shown in Exhibit 9. For the time period of 1990-1994 and 1995-2000, both Private Equity Index and Venture Capital Index outperformed S&P 500 and Lehman Bonds in terms of risk adjusted returns. Venture Capital Index had the superior returns in the first two sample periods by providing the highest average annual returns (14.07% for 1990-1994 and 54.88% for 1995-2000). However, consistent with the equity market downturn in 2001 and 2002, Venture Capital had the worst performance in the last sub period (-12.27% for 2001-2005) among the analyzed indices in this study. Since the investment focus for venture capital is start up companies that are more vulnerable to equity market compared to those well established ones, significant performance differences for Venture Capital Index between the three time periods is understandable. In contrast, the performance of Private Equity Index is more consistent throughout all the three analyzed time periods.

Exhibit 9

Performance Comparison				
1990-1994		Average Annual		
	Index	Return	Standard Deviation	Sharpe Ratio
	Private Equity Index	12.31%	4.94%	1.51
	Venture Capital Index	14.07%	5.85%	1.58
	Private Equity Portfolio	13.19%	4.79%	1.74
	S&P 500	9.07%	11.61%	0.36
	Lehman Aggregate	7.56%	4.91%	0.55
	Lehman High Yield	12.25%	11.79%	0.63
1995-2000		Average Annual		
	Index	Return	Standard Deviation	Sharpe Ratio
	Private Equity Index	20.02%	10.36%	1.42
	Venture Capital Index	54.88%	37.19%	1.33
	Private Equity Portfolio	37.45%	22.06%	1.46
	S&P 500	20.86%	15.06%	1.03
	Lehman Aggregate	8.20%	4.07%	0.71
	Lehman High Yield	6.62%	5.69%	0.23
2001-2005		Average Annual		
	Index	Return	Standard Deviation	Sharpe Ratio
	Private Equity Index	9.99%	11.45%	0.69
	Venture Capital Index	-12.27%	13.76%	-1.05
	Private Equity Portfolio	-1.14%	12.22%	-0.27
	S&P 500	2.16%	18.17%	0.00
	Lehman Aggregate	5.82%	3.79%	0.98
	Lehman High Yield	8.94%	8.70%	0.78

Exhibit 10 shows portfolio performance for different investment periods. For the first two sample periods, adding private equity investment to a stock and bond portfolio or a diversified portfolio with stock, bond and hedge funds improves the portfolio's risk/return profile. However, for the third time period (2001-2005), no diversification benefit is observed. 50% weight of Venture Capital Index reduces the Private Equity Portfolio's expected return and enhances its volatility, constraining private equity investment's ability to serve as a portfolio diversifier. Investors must fully understand that on a long time investment horizon, private equity provides premiums over traditional investment vehicles and offers diversification benefits. However, it may not beat the conventional asset classes within a short time period.

Exhibit 10

Portfolio Performance Comparison				
1990-1994		Average Annual		
	Portfolio	Return	Standard Deviation	Sharpe Ratio
	Portfolio I	8.32%	7.46%	0.47
	Portfolio II	9.29%	6.37%	0.70
	Portfolio III	9.90%	7.03%	0.72
	Portfolio IV	10.23%	6.54%	0.82
1995-2000		Average Annual		
	Portfolio	Return	Standard Deviation	Sharpe Ratio
	Portfolio I	14.53%	7.55%	1.22
	Portfolio II	19.11%	8.77%	1.57
	Portfolio III	15.25%	7.56%	1.32
	Portfolio IV	17.47%	8.20%	1.48
2001-2005		Average Annual		
	Portfolio	Return	Standard Deviation	Sharpe Ratio
	Portfolio I	3.99%	8.15%	0.23
	Portfolio II	2.96%	8.35%	0.10
	Portfolio III	4.99%	7.69%	0.37
	Portfolio IV	4.38%	7.79%	0.29
Portfolio I: 50% S&P 500 and 50% Lehman Aggregate Bond Portfolio II: 80% Portfolio I and 20% PE Portfolio Portfolio III: 80% Portfolio I and 20% CISDM EW HFI Portfolio IV: 90% Portfolio III and 10% PE Portfolio PE Portfolio: 50% Venture Capital Index and 50% Private Equity Index				

Recent Performance (2001-2005)

Over the past five years, all the analyzed asset classes except Lehman High Yield Bond underperformed relative to the period of 1990-2005. Venture Capital Index, in particular, experienced its worst 5 years. As discussed previously, the return/risk profile for Venture Capital Index and Private Equity Index diverge significantly in recent years (Exhibit 11). Venture Capital Index exhibited a negative average annual return with high volatility, resulting in the lowest Sharpe Ratio. Private Equity Index, however, successfully generated high positive return with modest volatility. Due to the heavy allocation (50%) to Venture Capital Index, the Private Equity Portfolio does not provide diversification benefit to either traditional stock and bond portfolio or a diversified portfolio with stock, bond and hedge funds. It is worth reiterating that investors must be well educated with the risks associated with private investment, and should understand that the benefits of private equity may not be observed on a short time investment horizon.

Exhibit 11

Recent Performance (2001-2005)			
Index	Average Annual Return	Standard Deviation	Sharpe Ratio
Private Equity Index	9.99%	11.45%	0.69
Venture Capital Index	-12.27%	13.76%	-1.05
Private Equity Portfolio	-1.14%	12.22%	-0.27
S&P 500	2.16%	18.17%	0.00
Lehman Aggregate	5.82%	3.79%	0.98
Lehman High Yield	8.94%	8.70%	0.78

Exhibit 12

Portfolio Performance (2001-2005)			
Portfolio	Average Annual Return	Standard Deviation	Sharpe Ratio
Portfolio I	3.99%	8.15%	0.23
Portfolio II	2.96%	8.35%	0.10
Portfolio III	4.99%	7.69%	0.37
Portfolio IV	4.38%	7.79%	0.29

Portfolio I: 50% S&P 500 and 50% Lehman Aggregate Bond
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 Portfolio III: 80% Portfolio I and 20% CISDM EW HFI
 Portfolio IV: 90% Portfolio III and 10% PE Portfolio
 PE Portfolio: 50% Venture Capital Index and 50% Private Equity Index

Selected Recent Research: Summary

One cannot in this brief presentation, discuss the entirety of research being conducted in the area of private equity. For a fuller review of current research, please visit www.cisdsm.org. The following provides a brief sample of issues surrounding current research in private equity.

Performance Measurement: Recent research in private equity has concentrated on the creation of an appropriate benchmark to measure and compare performance. While the IRR is the most prevalent measure of performance, several drawbacks of this method such as the assumption of reinvestment of the net asset value at the IRR prevent it from being an accurate barometer of performance¹. An alternative approach is to create a public market benchmark parallel to the private equity portfolio where each contribution or realization to or from the private equity portfolio is matched by an equal investment or sale of the benchmark portfolio. A positive final value of the benchmark portfolio indicates that it would have outperformed the private equity portfolio and vice versa. Although NAV (net asset value) is seldom used to evaluate the performance for private equity investment, Malherbe [2005] argues that current NAV cannot be simply overlooked in that accumulated investments, which ultimately translate into a NAV for the fund, will be the basis for future returns and dividends distributions and proceeds repayments.

Performance smoothing: Stale pricing has also received attention in recent research². Appraisal based pricing as a result of illiquid investments results in a reduced perception of volatility. While Conner [2003] proposes that much of the perceived diversification benefits disappear after adjusting for stale prices, Emery [2003] finds substantial return benefits by incorporating longer time horizons in performance computation.

Capital Allocation Impacts: Nevins, Connor and McIntire [2004] address the question of capital allocation to private equity. They feel that the allocation target for committed capital should cause invested capital to converge to its target when expectations for investment returns and private equity cash flows are met. New commitments should be made if the prior committed capital falls short of its target while further commitments should be delayed in case of excess capital. This allows for a systematic approach to allocate capital to private equity and works better as opposed to a fixed annual commitment percentage.

Regulation: Lerner and Schoar [2005] find that transactions vary with nations' legal enforcement. Investments in high enforcement and common law nations often use convertible preferred stock with covenants. In low enforcement and civil law nations, private equity groups tend to use common stock and debt, and rely on equity and board control. Furthermore, transactions in high enforcement countries have higher valuations and returns.

Performance Reporting: With regard to the performance study for private equity investment, Kaplan and Schoare [2005] find that over their sample period, average fund returns net of fees approximately equal the S&P 500 although there is a large degree of heterogeneity among fund returns. Returns persist strongly across funds raised by individual private equity partnerships. The returns also improve with partnership experience. They also find that market entry in the

¹ Frei and Studer [2004]

² Conner [2003], Emery [2003] and Cumming, Fleming and Schwienbacher [2004]

private equity industry is cyclical. Funds [and partnerships] started in boom times are less likely to raise follow-on funds, suggesting that these funds subsequently perform worse. Aggregate industry returns are lower following a boom, but most of this effect is driven by the poor performance of new entrants, while the returns of established funds are much less affected by these industry cycles.

It is important to create a correct view on return developments in the Private Equity market. Peng [2001] uses a method of moment repeated-sales regression [MM-RSR] and a re-weighting procedure to overcome upward biased estimates. He finds an annual return of 55.18% from 1987 to 1999. Cochrane [2001], on the other hand, uses a maximum likelihood estimate to correct for selection bias. He finds that there is a considerable amount of selection bias, which increases the mean logarithmic returns. Because of the high volatility, arithmetic returns are 40-50%, underlining the high achievable rates of returns of Private Equity investments. It is important to note the time bias of each of these studies which did not incorporate the 2001-2005 period of return decline.

Conclusion

Private equity is an investment vehicle that is generally not available to traditional investors. Investors have to increase their knowledge and comfort level to realize the benefits of private equity. Investors should be aware of the amount of risk they want to take in order to realize the maximum returns.

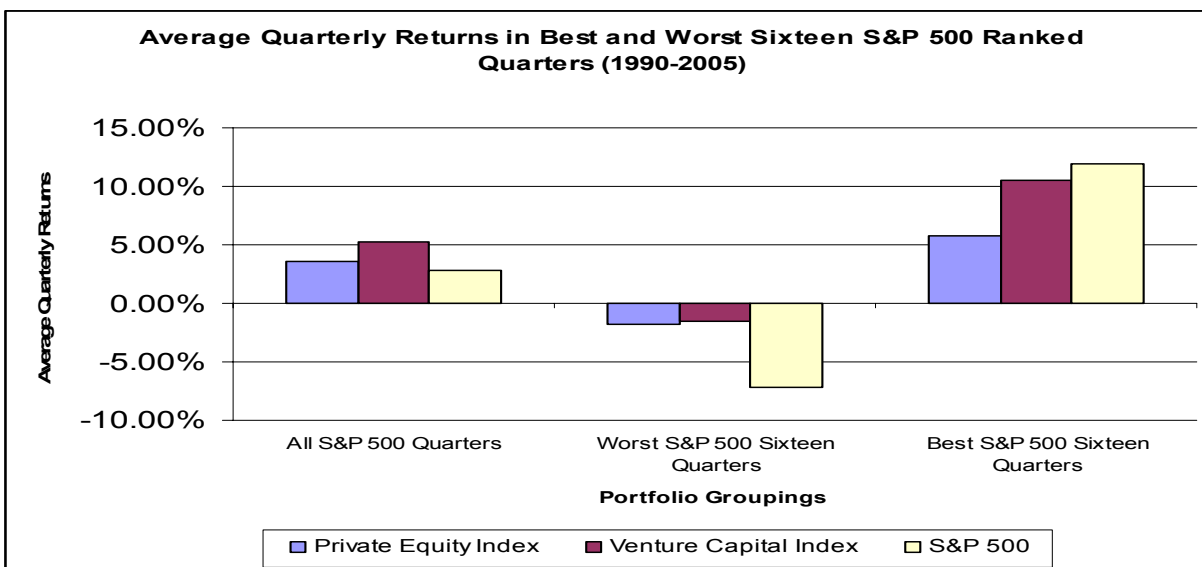
Appendix I: Return Performance in Extreme Market Environments (1990-2005)

Private equity is generally considered as an asset class that provides standalone superior returns in a long run. As discussed earlier, private equity investment also provides diversification benefit to a traditional stock and bond portfolio. To further illustrate its diversification advantage, the performance of private equity investment over different S&P 500 market environments is presented. The S&P 500 quarterly returns are ranked from low to high and divided into four sub periods. The average quarterly returns in the worst S&P 500 subperiod (-7.19%). While the Private Equity Index and Venture Capital Index also exhibited negative average quarterly returns in the same subperiod (-1.84% and -1.51%, respectively), both of them outperformed S&P 500 significantly, indicating that involvement in private equity investment can enhance portfolio return even during extreme market environments. However, investors have to realize that private equity investment can only provide limited diversification benefit. As indicated in Exhibit 13-A and 13-B, performance for both Private Equity Index and Venture Capital Index moves together with S&P 500. They generated highest returns when the public equity market performed well and exhibited lowest returns when S&P 500 experienced its worst performance.

Exhibit 13-A

Average Quarterly Returns in Best and Worst Sixteen S&P 500 Ranked Quarters (1990-2005)			
	Private Equity Index	Venture Capital Index	S&P 500
All S&P 500 Quarters	3.62%	5.29%	2.83%
Worst S&P 500 Sixteen Quarters	-1.84%	-1.51%	-7.19%
Best S&P 500 Sixteen Quarters	5.74%	10.51%	11.93%

Exhibit 13-B



Appendix II: Selected Academic and Professional Research Centers

The following organizations may be useful to private equity investors, entrepreneurs and researchers.

Cambridge Associates LLC.: <https://www.cambridgeassociates.com/index.asp?bhcp=1>

DowJones VentureOne: <http://www.ventureone.com/>

Emerging Markets Private Equity Association: <http://www.empea.net/default.aspx>

European Venture Capital Association: <http://www.evca.com/html/home.asp>

National Venture Capital Association: <http://www.nvca.com/>

Private Equity Central: <http://www.privateequitycentral.net/splash.cfm>

Private Equity Institute: <http://www.london.edu/privateequityinstitute.html>

Private Equity Valuation: <http://www.privateequityvaluation.com/index.php>

Silicon Valley Association of Startup Entrepreneurs: <http://www.svase.org/>

The Center for Private Equity and Entrepreneurship: <http://mba.tuck.dartmouth.edu/pecenter/>

The Center for Venture Education: <http://kauffmanfellows.org/>

Thomson Venture Economics: <http://www.ventureeconomics.com/vec/us.html>

Venture Capital Institute: <http://www.vcinstitute.org/>

Wilshire Associates Inc.: <http://www.wilshire.com/>

Appendix III: Terminology: From National Venture Capital Association

Stage of Private Equity Investment

Seed: Finance provided for the development of a business concept, perhaps involving the production of a business plan, prototypes and initial research.

Start-up: Financing provided to companies for use in product development and initial marketing. Companies may be in the process of being set up or may have been in business for a short time, but have not yet sold their product commercially.

Other early stage: Financing provided to companies that have completed the product development stage and require further funds to initiate commercial manufacturing and sales. They may not yet be generating profits.

Expansion: Sometimes known as "development capital" provided for the growth and expansion of an established company. Funds may be used to finance increased production capacity, product development, provide additional working capital, and/or for marketing.

Bridge financing: Short-term venture capital funding provided to a company generally planning to float within a year.

Secondary purchase/Replacement equity: Purchase of existing shares in a company from another private equity firm, or from another shareholder or shareholders.

Rescue/turnaround: Financing provided to a company in difficulty or to rescue it from receivership.

Management buy-out (MBO): Funds provided to enable the current operating management and investors to acquire an existing product line or business.

Management buy-in (MBI): Funds provided to enable an external manager or group of managers to buy into a company.

Institutional buy-out (IBO): The purchase of a company by a private equity firm following which the incumbent and/or incoming management will be given or acquire a stake in the business.

Leveraged build-up (LBU): When a private equity firm buys a company as principal with the aim of making further relevant acquisitions to develop an enlarged business group.

Mezzanine finance: Loan finance sitting between equity and secured debt, often provided as part of a private equity package.

Public to private: Finance provided to take a quoted company into private ownership.

Purchase of quoted shares: Venture capital firms prepared to take stakes and/or acquire shares in quoted companies.

Selected References

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