Private equity investing has created enormous wealth for those fortunate to be the general partners of a fund. But for regular investors – the limited partners – recent studies show that when properly adjusted for risks, PE returns lag those of the less risky public markets. Moreover, there is little evidence that investors can identify, in advance, the very few PE funds that will outperform.

The collapse in interest rates, combined with historically high valuations (at least for U.S. stocks), have led many endowments and pension plans (especially those with large unfunded liabilities) to seek alternative investments that might offer more attractive returns. For example, over the 20-year period 1996 to 2016, pension plan allocations to private equity (PE) increased from just 3% to 11%, with the increase mostly coming at the expense of allocations to fixed income.

PE excites many investors, offering the opportunity for spectacular returns (although, as with most investments, we generally hear only the stories with happy endings). Even the term conveys an exclusive nature, especially for investors who yearn to be “players.” The question is: Is the hype supported by the results?

Washington University’s recent Wealth and Asset Management Research Conference included a panel on private equity with representatives from Washington University, Ascension Investments, Warburg Pincus and Harvard’s Erik Stafford. Unfortunately, I was unable to attend. However, a good friend related that Stafford challenged those promoting PE and their investment assumptions. My friend’s conclusion was that the three PE proponents were unable to adequately defend against Stafford’s data, which, as you will see, showed there was nothing special about private equity returns (except for the huge fees earned by the sponsors).

This outcome did not surprise me, as we have a substantial body of academic research on private equity. As you will see, the studies came to the same conclusion – private equity has not outperformed publicly available mutual funds on a risk-adjusted basis. And that does not even account for the liquidity that private equity investors forfeit.

We’ll examine the evidence, beginning with a review of Stafford’s September 2017 paper “Replicating Private Equity with Value Investing, Homemade Leverage, and Hold-to-Maturity Accounting.” Using a database that covers the period 1984 through 2014, Stafford investigated whether an outside investor could replicate the risks and returns of a diversified private equity allocation with passive investments in public equities using similar investment selection, holding periods, leverage and the calculation of portfolio net asset value under a hold-to-maturity accounting scheme. He began by noting that “the
pre-fee private equity return series [Cambridge Associates Private Equity Index] represents highly attractive investments compared to a portfolio that is invested in the aggregate U.S. stock market and levered two times to mimic the typical leverage of private equity investments.” However, net-of-fee returns were comparable. In other words, just as economic theory suggests, the “alpha” went to the scarce resource – the fund sponsors, not the investors.

Making matters worse, however, is that sophisticated investors understand that the U.S. aggregate market is an inappropriate benchmark, as it is an unlevered investment, which offers daily liquidity, and is dominated by less risky large companies. Returns should be adjusted for incremental risks. The following is a summary of Stafford’s findings:

- Private equity funds tend to select small firms with low EBITDA multiples (value stocks) and low equity issuance (repurchasers as opposed to issuers).
- Public equities with those characteristics have high risk-adjusted returns after controlling for common factors. For example, a portfolio comprised of stocks most similar to PE-selected stocks have high excess returns, averaging 18% per year for the equal-weight portfolio and 14% for the value-weight portfolio, while portfolios comprised of the high multiple stocks have average excess returns of 7.1% and 7.6% for equal and value weight, respectively.
- The equal-weighted portfolio of stocks most similar to the PE-selected stocks has a Sharpe ratio of 0.90.
- A passive portfolio of small, low EBITDA multiple stocks with modest leverage and hold-to-maturity accounting produces an unconditional return distribution that is highly consistent with that of the pre-fee aggregate private equity index.
- The passive replicating strategy represents an economically large improvement in risk- and liquidity-adjusted returns over direct allocations to private equity funds, which charge estimated fees of 3.5% to 5% annually.

Stafford concluded: “Regressions suggest that the EBITDA multiple is a powerful variable for sourcing a value premium in stocks during this sample period, and that several of the most reliable stock characteristics of the PE-selection strategy have tended to be associated with high subsequent excess returns.” Thus, without even considering the illiquidity of private equity (for which there should be a large premium), the returns to private equity could be replicated with public securities. That makes public securities a superior alternative.

Stafford noted that the reported volatility of the PE indexes is considerably lower (about half) than those of the aggregate market (about 9% versus 17%) and the replicating portfolio of levered selected stocks (21-22%). That is due to the lack of daily mark-to-market accounting, long holding periods, and the considerable flexibility PE has in determining valuations. In other words, return smoothing creates the illusion of less risk.

Stafford also compared the returns of the replicating portfolio to that of the returns to Yale’s Endowment on its buyout fund investments. Consistent with the perception that Yale’s buyout portfolio has performed well, it realized a mean annual return of 18.5% with measured volatility of 19%, producing a Sharpe ratio of 0.78. Stafford found that the replicating portfolios had highly similar returns.
in terms of mean, standard deviation and Sharpe ratio.

Stafford reached the following conclusion: “After paying fees, which are estimated to be 3.5% to 5% per year, investors who agree that the risk-match between the private equity index and the two replicating portfolios is appropriate are considerably underperforming the feasible alternative of investing in similar passive replicating portfolios.” He added: “There are two claimed benefits of the private equity investment process that outside investors commonly promote that appear to be incorrect. These are (1) the long-term corporate debt used to increase leverage at portfolio companies provides the outside equity investors access to an advantaged form of leverage that allows them to avoid the economic costs associated with margin calls; and (2) holding illiquid assets allows long horizon outside equity investors to earn an illiquidity premium. The key challenge to both of these views is that they should show up in returns, but do not.” And finally, he noted: “While these investments are in fact illiquid, they do not appear to earn an illiquidity premium, as demonstrated by the passive liquid replicating portfolios having similarly high mean returns.”

Stafford’s findings are consistent with those of other research. For example, Jeff Hooke and Ken Yook, authors of “The Grand Experiment: The State and Municipal Pension Fund Diversification into Alternative Assets,” studied the performance of state pension plans from 1997 through 2016 to determine if the fees to hedge funds and private equity were justified by superior performance. They concluded: “Public pension plans, in the aggregate, had lower returns and similar volatility when evaluated against several public-security-oriented index portfolios.”

Perhaps because of the widely publicized success of the Yale Endowment, Berk Sensoy, Yingdi Wang, and Michael Weisbach, authors of the 2013 paper “Limited Partner Performance and the Maturing of the Private Equity Industry,” studied the performance of endowments investing in private equity. They analyzed their most recent sample of PE funds raised between 1999 and 2006 and found no evidence that endowments outperform other limited partner types or display any superior skill at selecting general partners. They concluded: “The disappearing endowment advantage is consistent with other secular trends in the industry, particularly the decline in VC performance since the late 1990s and the decline in performance persistence in BO [buyout] firms.”

There’s even more bad news for private equity investing. While the industry has not delivered excess risk-adjusted returns, some investors pin their hopes on persistence among the top performers, allowing them to identify in advance funds that can deliver after-fee alpha. Unfortunately, Reiner Braun, Tim Jenkinson and Ingo Stoff, authors of the 2017 paper “How Persistent is Private Equity Performance? Evidence from Deal-Level Data,” studied the performance of private equity funds over the period 1974 to 2012 and concluded: “Overall, the evidence we present suggests that performance persistence has largely disappeared as the PE market has matured and become more competitive.” They added: “Those Limited Partners (LPs) who were early investors in PE – such as endowments – established relationships with successful GPs which were valuable when the market was developing. However, those relationships, and access to funds – at least on the buyout side – are now much less valuable and are no longer a source of LP out-performance.” For investors, this research has an important implication: If past performance provides little guidance on the choice of GPs, how can one identify the future top performers?

We can also review the findings from prior studies, covering different economic regimes, covered in
the chapter on private equity in my 2011 book, *The Quest for Alpha*.

According to Venture Economics (a research firm that provides information and analysis on the private equity industry), PE overall returned 13.8% for the 20-year period ending June 30, 2005, outperforming the S&P 500 Index by 2.6% per annum. However, they underperformed more similar risky small-cap value stocks that returned 16.0%.

These findings are consistent with those of the study, "Private Equity Performance: Returns, Persistence, and Capital Flows," by Steve Kaplan and Antoinette Schoar. Their study covered PE funds that launched from 1980 to 1997, although the data covered the period ending in 2001. The authors found that the average PE fund had returns roughly equal to the return of the S&P 500 Index.

The above research covered the period that included one of the greatest PE booms in history – the dot-com era. It is helpful to also examine the returns from an earlier period. The 1992 study "Venture Capital at the Crossroads" by William Bygrave and Jeffry Timmons, covering the period 1974 to 1989, found that the average internal rate of return (IRR) from venture capital was 13.5%. (The IRR is the discount or interest rate at which the net present value of an investment is equal to zero.) This was virtually identical to the 13.3% return from the S&P 500 Index. However, this was significantly below the returns of microcap stocks (17.5%) and small-cap value stocks (23.7%).

We also have the results of the 2002 study "The Returns to Entrepreneurial Investment: A Private Equity Premium Puzzle?" by Tobias Moskowitz and Annette Vissing-Jorgensen, covering the period 1952 through 1999. The authors concluded that PE investing provided returns similar to those of public equity markets. They noted the finding was surprising, given the greater risks of PE investing. For example, they found that after 10 years, the survival rate of PE is only about 34% – there is a high risk of a total loss.

The results of the 2006 study “The Performance of Private Equity Funds” by Oliver Gottschalg and Ludovice Phalippou are quite interesting. The authors researched the performance of 6,000 PE deals and about 1,000 buyout funds, using data collected from investors in 852 PE funds raised before 1993 (to be sure the funds had sold all their assets). They found that after accounting for fees, the average PE fund underperformed the S&P 500 Index by 3% per year.

Finally, we have the 2005 study “The Risk and Return of Venture Capital” by John Cochrane, which covered the period 1987 through June 2000. Cochrane looked at 16,613 financing rounds involving 7,765 companies and found the returns to venture capital were similar to those of the smallest Nasdaq stocks. These are stocks defined by small market capitalizations that are illiquid and thinly traded (for some of them, there are many months with no trading at all). Furthermore, they exhibit traits similar to venture capital (extreme skewness and high volatility). Despite their greater risks, venture capital did not provide any higher return than comparable publicly traded equities. Cochrane concluded: “The fact that we see a similar phenomenon in public and private markets suggests that there is little that is special about venture capital.”

Before summarizing, let’s return to the Washington University panel discussion. The three proponents of PE investing offered the following defenses as explanations for their investments. They are
“preferred investors,” and as such they get better deal terms (i.e., lower fees). While this may be true, the evidence demonstrates that despite lower fees, PE investments have not earned higher risk-adjusted returns. Return smoothing has value. The problem is, the returns are artificially smoothed, so the actual volatility is much higher. They have leverage constraints and need the funds to take the additional leverage for them. Stafford showed that the advantage did not show up in returns. Lastly, they remain hopeful that their very special managers and relationships will do better than the fees by a wide enough margin to justify them. Demonstrating that hope is not an investment strategy, the data shows that their faith has not been rewarded.

Summary

The results of the research demonstrate that PE strategies have provided returns that have not been commensurate with their risks. This holds despite the fact that institutional investors, such as the panelists at the Washington University conference, are “preferred investors,” paying lower fees and having access to the “best managers.”

Among the considerations are that PE investors forgo the benefits of liquidity, transparency, broad diversification and access to daily pricing that mutual fund and ETF investors enjoy. PE investments typically entail long lockout periods, during which investors cannot access their capital.

There are other aspects of the asset class that investors should consider carefully.

Characteristics of PE returns

PE returns exhibit the following characteristics:

- Extreme positive skewness in returns: The median return of PE is much lower than the mean (the arithmetic average) return. Their relatively high average return reflects the small possibility of a truly outstanding return, combined with the much larger probability of a more modest or negative return. In effect, PE investments are like options (or lottery tickets): They provide a small chance of a huge payout, but a much larger chance of a below average return. This is what is meant by positive skewness.

- High standard deviation of returns: The standard deviation of PE is in excess of 100%. This compares to the standard deviations of the S&P 500 Index of about 20%, and of small-cap value stocks (the Fama/French Small-Cap Value Index) of about 35% from 1927 to 2007. The 2002 study “Venture Capital and Its Role in Strategic Asset Allocation” covered the period 1960 through 1999 and found that venture capital had an annual arithmetic average return of 45%. The high standard deviation of 116% reduced the annual arithmetic average return of 45% to an annualized return of just 13%. Authors Ping Chen, Gary Bairol and Paul Kaplan concluded: “The variance of VC investment is so high that the estimated average compounded annual return for VC investment is actually lower than for U.S. small-cap stocks and comparable to U.S. large-cap stocks and international stocks.”

In addition to the risks of extreme skewness and high volatility, investors must consider that because of the inability to broadly diversify across hundreds or even thousands of stocks (as do index/passive
asset class mutual funds), PE investing involves accepting the risk that such investments may produce a wide dispersion of returns. Because of the size of their portfolios, institutional investors are able to diversify their exposure to PE investments across many investments. It is unlikely that the typical individual investor would be able to accomplish similar diversification. Thus, it is also unlikely that the returns individual investors received over the period would have been similar to the return averaged by all PE funds.

Without such diversification, investors must accept the risk that the funds they invest in might generate poor results. Therefore, one of the risks individual investors are accepting, probably without giving it appropriate consideration, is an uncompensated risk – because it could be diversified away.

Unless you place a high value on being a member of “the club,” limit your investments to publicly available securities.

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