



Public Market Replication of Private Equity

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On January 18, 2022, a panel of academic researchers and practitioners met to discuss the notion that private equity returns could be replicated in the public markets. This idea has long been a tempting one, but efforts to execute on it have faced many disappointments. But the environment here may be changing. Not only are limited partners increasingly conscious of the “fee drag” associated with the terms of private equity funds, but academic insights into the nature and drivers of private equity returns are far deeper than they were even a decade ago. This discussion explored both the science and practice of replicating private equity and provided some insight into how profound an impact these efforts would have on the industry. The panelists were **Rich Carson** (Cambridge Associates), **Peter Cornelius** (AlpInvest), and **Erik Stafford** (Harvard Business School). The discussion was moderated by **Victoria Ivashina** (Harvard Business School).

Private equity is an asset class that has provided attractive returns over the past several decades and has been a key element in the portfolio of university endowments, sovereign funds, and large pension. Most investors, however, lack access to private equity, especially to the upper echelon of funds that have been true outperformers.

Given these access issues, many investors have been intrigued by the notion of replicating private equity returns with public securities. Moreover, if replication strategies were to truly become successful (i.e., were able to match PE performance at a modest cost) and were scalable, this strategy might be attractive to all LPs, even those that already have PE access. According to *The Economist* magazine, a few firms have attempted to provide these private equity replicating funds with seemingly some success.¹ However, the demand for such a strategy has not yet gained the strong momentum that some expected. In this webinar, a distinguished panelists group discussed the replication of private equity from an academic and practitioner perspective.

¹ “Private Equity Returns Can be Replicated with Public Shares,” August 26, 2017, *The Economist*, <https://www-economist-com.ezp-prod1.hul.harvard.edu/finance-and-economics/2017/08/24/private-equity-returns-can-be-replicated-with-public-shares>.

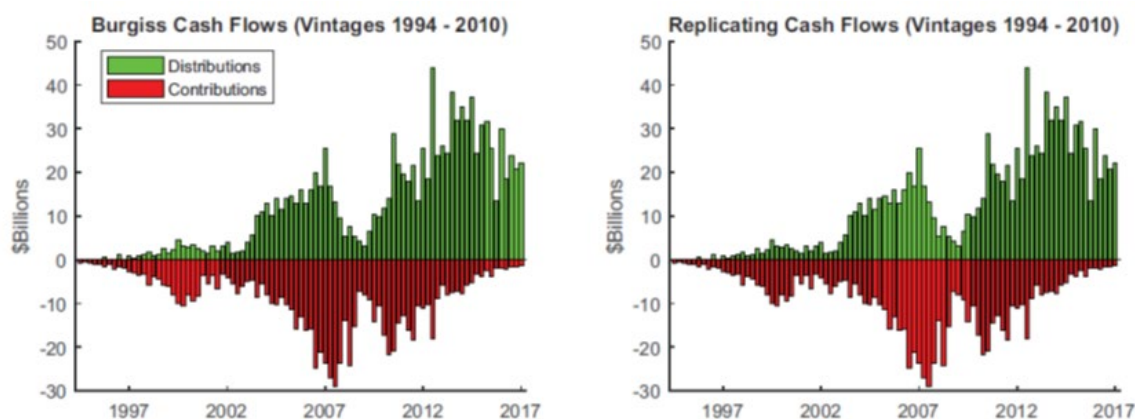
How the Private Equity Replication Strategy Works

In his academic research,² Erik Stafford at the Harvard Business School explores the basic idea of private equity replication. Stafford devises an investment strategy using a set of buyouts from 1994 to 2010 and creating a comparable set of publicly traded companies that are assumed to have the same asset risk as the set of buyout firms. His estimation of risk is made using the covariance of returns with respect to the various factors—or return determinants—of the market portfolio. Stafford explains that what investors really care about is the risk of private investments relative to public investments, because that is the trade-off they are making in asset allocation decisions.

Next, following the pattern of cashflows invested and distributed in the buyout sample, investments are made in a publicly traded portfolio with the same risk factors (see Figure 1 below). The chart on the left side shows the actual cash flows from the buyout sample using data provided by Burgiss. In the replicating portfolio, on the right side of the figure, investors hold the replicating public market portfolio for a similar amount of time as buyouts. As the graphs show, the cash flows are perfectly replicated. In addition, the replicating portfolio uses a similar amount of incremental leverage as a typical LBO, about one to one and half times leverage.

Figure 1

Actual Private Equity Cash Flows versus Replicating Cash flows

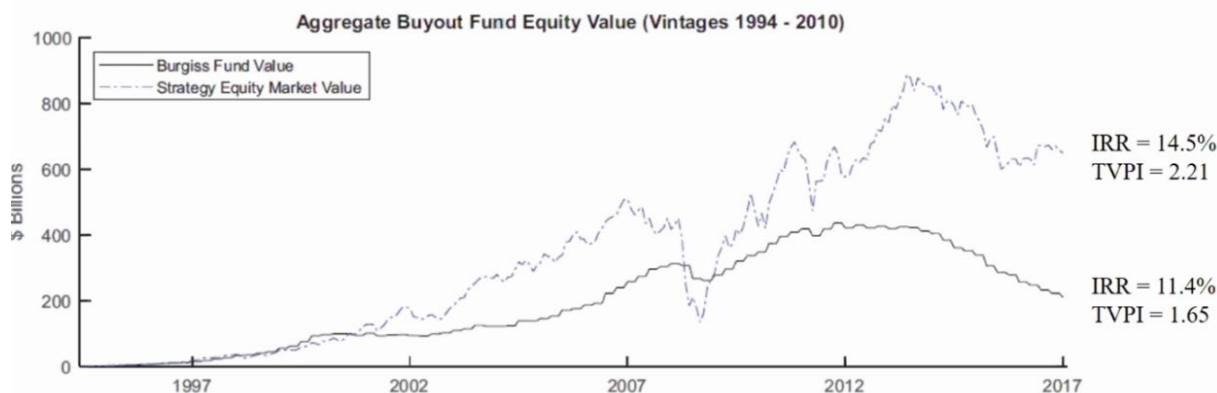


Source: Stafford, Erik, "Replicating Private Equity with Value Investing, Homemade Leverage, and Hold-to-Maturity Accounting," *The Review of Financial Studies*, (November 2020).

² Stafford, Erik, "Replicating Private Equity with Value Investing, Homemade Leverage, and Hold-to-Maturity Accounting," *The Review of Financial Studies*, November 2020.

The results of Stafford’s replication strategy are shown in Figure 2. The smoother line is the reported values of the actual private equity funds, and the more volatile line is the replicating strategy. Stafford finds that the replicating strategy yields a higher internal rate of return (IRR), albeit with higher measured risk. The IRR of the replicating portfolio is 14.5% vs. the buyout IRR of 11.4%. One interpretation of this result is that the extra fees of private equity are lowering the returns to private equity. The results suggest that a replicating portfolio could be an attractive alternative to private equity for many investors, regardless of access constraints.

Figure 2



Source: Stafford, Erik, “Replicating Private Equity with Value Investing, Homemade Leverage, and Hold-to-Maturity Accounting,” *The Review of Financial Studies*, November 2020.

Obstacles in the Market for Replicating Portfolios

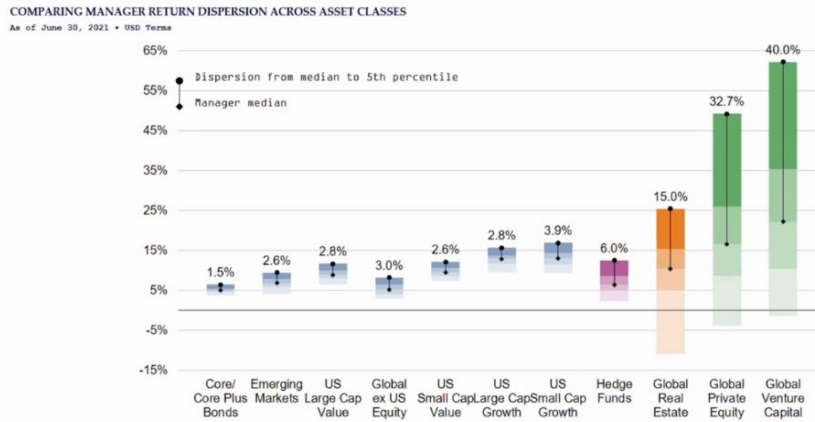
While these research findings were undoubtedly striking, panelists in the discussion raised some challenges that could potentially hinder the growth of replication strategies.

Investors’ objectives

An essential challenge in this arena is that private equity funds vary tremendously in their returns. Figure 3 below highlights the dispersion of returns (median return vs. the top fifth percentile return) across a wide variety of asset classes. The dispersion of returns in public markets and even hedge funds is 6% or less. In contrast, the corresponding range is 33% for private equity and 40% for venture capital.

Figure 3

Investors Attracted to Potentially Outsized Returns in Private Investments



Source: Cambridge Associates, LLC.

One potential reason for the slow acceptance of replicating portfolios is that investors, especially in the private markets, are almost always focused on beating the benchmark rather than just achieving average returns. This perspective corresponds to one of the critical questions about demand for products that try to replicate the average returns of the industry: Would investors be satisfied with industry average returns, or instead, are they structuring their organizations and allocating their money to more active strategies so that they can take advantage of the huge dispersion in Figure 3?

Achieving a truly comparable set of publicly traded companies

The replication strategy hinges on correctly matching risks. This is particularly challenging, as PE firms reveal the risks of their portfolios in a highly imperfect manner. PE portfolios are not marked-to-market on a frequent basis that is observable to the public. Thus, correctly matching risks can be difficult.

Another issue is matching transaction types and sizes. The buyouts used in the research project are biased towards large buyout transactions, whereas private equity investments, in general, are more focused on small cap and mid cap transactions. (The buyouts in Stafford's study represent about 5% of all transactions, but 25 to 30% of the value of investments.) Furthermore, it is important to match by industry sectors because the sectors backed by private equity tend to deviate significantly from the public markets, as captured in indexes such as the S&P 500. Over the past twenty years, private equity firms focused on the technology, healthcare, consumer discretionary, and industrial sectors and underweighted energy and consumer staples.

Lastly, there was concern expressed over the use of leverage and its role in replication strategies. In the buyout industry, the use of leverage declined significantly over the sample period of Stafford's study. Moreover, deleveraging has played little, if any, in the role of some of the most successful recent deals. Rather than focusing on deleveraging over the holding period of a portfolio company, boosting earnings through growth appears to be an increasing area of concentration for many private equity groups.

The emergence of new private equity strategies

Thus, in some cases, investing directly in private equity may be superior. Managers can create value in ways that the replication strategy, which focuses primarily on asset allocation and leverage, cannot. New direct private equity strategies that minimize fees are rapidly growing. For instance, co-investments, where an LP invests alongside the GP, are becoming more prevalent.

In addition, the secondary market for private equity has grown in importance, along with the emergence of continuation funds. In general, partner-led secondaries, investors can achieve liquidity and, at the same time, allow GPs to hold onto assets that they like with longer and longer holding periods (10 years or longer vs. the historical 4 to 5 years). We can anticipate that general partners will continue to innovate to help create differentiated strategies.

Opportunities for the Replication Strategy

Despite these concerns, there was a consensus among the panelists that public market replicating strategies are likely to grow in popularity. Here are some instances in which replication may offer a good solution:

Private equity exposure for resource-constrained investors

Certain types of investors do not have the capabilities, size of staff, or ability to select and monitor managers that can do the kind of active management to take advantage of the high dispersion of returns in private equity. Thus, a replication strategy may be good when an investor lacks this sophistication.

Liquidity management

Investors who have a need for liquidity for all or some of their portfolio, but still want to have private equity-like returns, may want to embrace these replication products.

One such application is likely to be for undrawn capital commitments. Since private capital groups can take long periods to fully draw down funds, limited partners may have substantial pools of capital earmarked for these funds that they are reluctant to place in illiquid assets. In these

instances, a replication strategy can be used as a vehicle to “park” committed uncalled capital until it is ready to be invested directly. At the same time, this could help investors ramp up to a target asset allocation more quickly.

Conclusion

While the results clearly indicate that replication strategies do produce higher than average return than private equity, there are still obstacles to the growth of this market. Success in the market will hinge on the low cost, speed of deployment, and the ability to scale. The industry may well be at the point where it is large enough and sophisticated enough that investors see this as a valuable tool to manage increasingly large and complex portfolios.