DATAART

PE MANAGER

# Academic Finds Way to Quantify GP Risk

**August 2, 2013**

## Fresh research has discovered a way for GPs to quantify their firm-wide risk profile, something that some investors are taking a greater look at.

**Thomas Duffel**

The risk/return analysis of private equity funds has always been a part of an investor's evaluation of a firm. But in the past this analysis has typically concentrated on the fund, and not the firm as a whole.

But investors are increasingly adding a risk dimension to the overall track record of private equity firms to assign general partners (and industry sectors) a risk profile, according to one large European LP.

"A risk profile analysis of funds is an essential process for every private equity firm," echoes in agreement Vitaly Nechaev, vice president of private equity software developer DataArt.

But assigning a risk score to a GP as a whole has historically been difficult to do, mostly on account of shortcomings of other risk assessment methodologies, he adds. For example finding the standard deviation or variance of returns based on changes of a portfolio company's Net Asset Value has a "stale pricing problem". This is caused because the illiquid nature of the asset class means that it is difficult to work out the volatility of underlying portfolio companies, and so difficult to work out the volatility of the fund as a whole.

However, recent research from academic Oliver Gottschalg of HEC Business School has paved the way for private equity firms and investors to conduct a more effective risk profile analysis of the firm by using a profit distributions method.

*Oliver Gottschalg*

In creating a risk profile for the entire firm, one must analyze the distribution of returns the firm has generated over a given time period. This type of research is done by GPs and LPs alike, but more typically to evaluate the return potential of a future fund, and not necessarily firm-wide risk, adds the LP.

But by comparing the cumulative profits generated by a certain sub-set of the portfolio (to the size of the sub-set) you can create a risk profile for a private equity firm, according to Gottschalg.

What you end up with is plotting the percentage of a fund's investments on the x-axis and the percentage of profits from the fund on the y-axis – known as the PERACS Risk Curve. In other words, you can measure for example to what extent the worst 20 percent of all deals are responsible for contributing less than 20 percent of the profits of a firm.

Based on this data an analyst can draw a performance-distribution curve to graphically show the risk profile of the firm.

### THE METHOD

To do so one must calculate how much profit each individual investment contributed to a portfolio – measured by either a particular currency or in terms of net present value (NPV). Thus the profit contribution is the cash received by investors minus the capital paid by investors; or the present value of the cash flows received by the investors minus the present value of the capital paid by investors.

If there are investments where the cash received is less than cash invested, then the curve will initially be downward sloping, but if investments are profitable, the curve will slope upward.

Gottschalg says it is important to note that LPs may differ in their preference for different shapes of the risk curve. Some limited partners may favor fund managers that appear to systematically generate moderate levels of return with little lossmaking deals, whereas others may want to invest in private equity fund managers that finds big hits and may tolerate some losses at the same time.

But the risk curve is designed to be independent of the absolute amount of profits generated by the fund; Gottschalg says this is so that the risk profiles of different funds can be compared free of their returns. The advantage of profiling your risk this way is that it gives investors the opportunity to easily assess and compare different private equity firms' risk attributes.

But not everyone agrees that all LPs are actually taking much notice of the more scientific ways that GPs are thinking about profiling risk. Iain Bannatyne, partner at KPMG's private equity practice, says that investors still look at performance on an internal rate of returns (IRR) or cash multiples basis and are not too interested with how the fund gets there.

"LPs are invested in the fund not in individual assets; so arguably shouldn't be too concerned with whether a fund manager generates his returns through moderate steady returns across all assets or through a significant recovery offset by losses elsewhere."

**"...a majority of LPs do appear to value consistency of returns and funds with those characteristics have found it easier to raise further capital"**

But Bannatyne tempers this argument by adding that "a majority of LPs do appear to value consistency of returns and funds with those characteristics have found it easier to raise further capital."

**GIVING FIRMS A NUMBER**

The research also provides a way for a coefficient that numerically captures the shape of the curve to be quantified (see below).

Using the coefficient investors are able to benchmark the risk profile of different firms or sectors within the private equity industry, for example comparing Carlyle with Blackstone, or comparing the lower mid-market to mega buyouts by plotting mega buyouts and lower mid-market returns over a set period of time.

The simplicity of the methodology means that even less sophisticated investors or those without the resources of the biggest LPs will get a "jump-start" into tracking the risk of private equity firms and sectors, adds the European LP. And Gottschalg says the method will provide private equity firms with a better way of showcasing the dispersion of performance in a standardized and easy to understand fashion.

But regardless of whether or not investors are demanding greater risk profiling, Gottschalg's method does provide the best firms with evidence that not only do they deliver returns, but they do so with every deal.

==========

**SCORING YOUR RISK PROFILE**

*The shape of the PERACS Risk Curve can be quantified using a risk coefficient. Here's how:*

Every point on the curve corresponds to a performance statistic, such as 'the bottom 40 percent of all investments in the fund represents 30 percent of all profits'. If every deal produced the same return then the curve would result in a straight line.

In this instance the bottom 'N' percent of investments would cumulatively always have 'N' percent of the profits resulting in a straight line, as opposed to a curve. This is known as the line of perfect equality.

If you then express the area between the line of perfect equality and the risk curve as a percentage you create the risk coefficient. The higher the coefficient the more unequal the distribution is.

Gottschalg hopes that once enough data is compiled on a large enough set of private equity funds using the risk coefficient it might be possible to establish a risk-return paradigm for private equity.