

InvestorLit Review 2011(2)

“ABCs of Hedge Funds: Alphas, Betas, and Costs”

Updating a similar earlier study, this paper takes a large sample of US hedge funds over a 15 year period, adjusts for survivorship and backfill bias and, using returns-based attribution (including lagged beta), estimates alpha, beta, and costs by subcategory.

Introduction

The “ABCs of Hedge Funds: Alphas, Betas, and Costs” updates a study by Brown, Goetzmann, and Ibbotson (1999) which found significant alpha in hedge fund returns, while acknowledging some limitations in their database with respect to biases. In “ABCs”, Ibbotson, Chen and Zhu (2009)¹ use recent data from a period (1995-2009) when hedge funds grew significantly (TASS Funds grew from 644 to 2537 over 1995-2009), and also used data amenable to bias adjustment (survivorship and backfill). Their study included examining the effects of size on returns, and the performance of alpha and beta by subcategory of fund. Their overall decomposition of returns to the ABCs found: Alpha of 3.0%, Beta of 4.70%, and Costs (i.e., fees) of 3.43%.

As such, their study provides a comprehensive and up-to-date return attribution of Funds and Funds of Funds (FoFs), by strategy subcategories, corrected for bias. It also provides valuable comments on the impact on returns of Fund size, and suggests possible reasons. While the authors find significant production of alpha, as in previous studies, the implications of bias for investors in hedge funds is an important aspect of their study.

The upcoming *InvestorLit Review 2012(1)*, entitled “Hedge Fund Due Diligence”) - provides further commentary on hedge fund returns.

Bias in Hedge Fund Return Reporting

While there are various forms of bias in databases, survivorship and backfill are the two most important for hedge funds (selectivity bias is probably third). They all stem mainly from the unregulated nature of the industry.

Survivorship bias results from the removal of (mainly) “failed” funds from the database, along with their return history. Hedge funds report voluntarily so they typically stop reporting when problems occur. The database providers move so called “dead” funds to a section referred to as the “graveyard”. Needless to say dead funds in total underperform live funds - the exceptions being some stellar performers who stop reporting due to being closed). Previous studies estimate that survivorship bias reduces returns by 3-4%. Table 1. shows survivorship rates in number and percentages for Funds, FoFs and Total - TASS database, 1995-2009.

¹ Roger Ibbotson, Professor at the Yale school of Management, and Peng Chen, CFA, President of Morningstar Investment Management, are both from the University of Chicago, which is well-known for the quality and rigour of its academic research. Kevin X. Zhu is Assistant Professor at Hong Kong Polytechnic University.

Table 1:

	# Funds	% of Funds	# FoFs	% of FoFs	# Total	% of Total
Live	2252	36.5%	1089	45.5%	3341	39.0%
Dead	3917	63.5%	1307	54.5%	5224	61.0%
Total	6169	100.0%	2396	100.0%	8565	100.0%

From Ibbotson et al. (2009), page 16. Only US Funds and FoFs are included in sample data.

Of particular note are the failure rates: 1/ 63.5% of Funds died over the sample period, 2/ FoFs fared better, but still 54.5% of FoFs died over the period, and 3/ 61.0% of Total Funds (i.e., Funds plus FoFs) died over the period.

Backfill bias results from the inclusion of past data when a hedge fund starts reporting to an index provider (needless to say, this is not done with normal stock or bond indices). Entrants are much more likely to start providing returns when performance is good. It goes without saying, allowing backfill, similar to survivorship bias, inflates index returns. Previous studies estimate backfill bias in a wider range than survivorship bias, but generally in the order of 4%. Table 2. shows how returns are affected by backfill and survivorship bias for Total Funds:

Table 2:

Total of Funds and FoFs	Returns With Backfill	Returns Excluding Backfill	Backfill Effect
Live	14.88%	12.83%	2.05%
Live + Dead	11.72%	7.70%	4.02%
Survivorship Effect	3.16%	5.13%	-

From Ibbotson et al. (2009), page 16. Equal-weighted post fee returns from TASS database.

Of note for hedge fund investors: 1/ uncorrected for bias, returns would appear to be 14.88%, 2/ corrected for bias reduces returns to 7.70%, 3/ 4.02% comes from backfill effect, and 3/ 4.02% comes from survivorship effect. The difference of 7.18% is the effect of both biases - consistent with preceding studies, as noted.

Size Effect

The study examined the size effect by calculating equal-weighted and value-weighted returns using live and dead Funds, with and without backfill. Without backfill, value-weighted returns were 11.76% vs.

equal-weighted returns of 8.55%, indicating higher returns for larger funds. The study suggests this may be due to larger funds employing more leverage plus having more resources at their disposal. (*InvestorLit Review 2012(1)* suggests the contribution of size to returns is also due to greater due diligence capability.)

The ABCs: Alpha, Beta, and Costs, Subcategory

Alpha and Beta are estimated for the nine subcategories of strategies within the TASS database using returns-based attribution. The authors correct for the two biases and they use equal-weighted returns after fees. Given the previously noted 7.70% return - bias corrected, equal weighted, and net of fees - their attribution finds average alpha of 3.00% and average beta of 4.70% (the average across all subcategories). Costs (i.e., Fees) were then calculated at 3.43% on average. We have not included the detail of the subcategories, but it is interesting and would recommend to the reader. Alphas across all subcategories were positive, occurred in a moderate range of 1.91% to 4.79%, and were significant at the 5% level in four of the subcategories. Betas had a wider range of -0.90 to 1.55 but made sense, for example, equity strategies tended to have negative betas to bonds.

The significance of alpha across subcategories to me raised a question about the conclusions of Asness et al. (2001) in "Do Hedge Funds Hedge?" Asness et al. found alpha of 2.63 and beta of .37 using monthly regressions and a generally similar database and similar bias corrections. They posited that illiquid securities may not be accurately priced (i.e., "stale priced") and they corrected for this by including lagged prices and recalculating beta (i.e., "lagged beta"). They found alphas dropped to about zero and betas rose to .84 - quite high compared to the stock and bond betas of the Ibbotson study. Hence their question whether hedge funds actually hedged. I asked Roger Ibbotson about this (who was very gracious and helpful). He reminded me that they too used lagged beta in their study but did not know why the results of the two studies differed. It is noteworthy that both Brown et al. and Ibbotson et al. both found significant alpha and, as noted, their approaches certainly appear rigorous.

Conclusions

This paper represents a comprehensive review of the sources and characteristics of hedge fund returns. The discussion of biases is very significant for investors - as the study points out, 54% of Funds of Funds and 63% of

Funds failed over the fifteen year sample period 1995-2009. The study's estimates of the two major sources of bias are generally consistent with past studies; survivorship bias in the order of 4% and backfill bias in the order of 3%. The authors' examination of the effect of size suggests that larger funds have higher returns than smaller funds and they suggest some reasons. Finally, the attribution of returns to the ABCs finds: Alpha of 3.0%, Beta of 4.70%, and Costs of 3.43% over sample period.

G. Ibbotson, Peng Chen, CFA, and Kevin X. Zhu. "ABCs of Hedge Funds: Alphas, Betas, and Costs", Financial Analysts Journal, January/February 2011.

Clifford Asness, Robert Krail, and John Liew. 2001. "Do Hedge Funds Hedge?" Journal of Portfolio Management, vol. 28, no.1, (Fall):8-23.

Steven J. Brown, William Goetzmann, and Roger G. Ibbotson. 1999 "Offshore Hedge Funds" Survival and Performance 1989- 1995". Journal of Business, vol. 72, no.1, (January):91-117.