

“The Evolution of Hedge Fund Research”

Lectures by Professor Narayan Naik

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1 First Lecture

Hedge funds are alternative investment vehicles. They differ from more traditional funds, e.g. mutual funds, in terms of investment strategies, regulation, and fee structure. While the asset classes in which mutual funds and hedge funds invest overlap to some extent, the strategies can be very different. Mutual funds are strictly regulated and required to generate returns with long only strategies. Hedge funds use more sophisticated trading strategies by investing in derivatives and short selling assets. Further, hedge funds are known to invest in more illiquid and riskier assets than mutual funds. The fees which hedge funds charge for the right to invest with them are high compared to other money managers. A management fee of 2% and performance fee of 20% is common. This fee structure leads to the question, whether hedge fund managers are worth the fees they charge and deliver sufficient α for their investors.

In the first lecture, Professor Naik focuses on this topic and talks about the assessment of a hedge fund manager’s skills. Inspired by the historical equity premium, the *LIBOR* + 3% return was initially used as a benchmark in the hedge fund literature. From 2000 to 2010, some of the flagship hedge funds have outperformed this benchmark by an impressive margin. Over this 10 year period, the “Blue Chip” firms almost tripled the money which investors have consigned to them. However, the rest of the cohort, i.e. the non-flagship funds, have struggled to match the performance of *LIBOR* + 3%.

More recently, academic researchers have been arguing that the *LIBOR* + 3% return might be unsuitable as a benchmark for the purpose of performance assessment. Due to their unconventional investment strategies, the risk factors used to explain hedge fund returns are different from the risk factors of traditional investments. To analyse, if a hedge fund generates α , we must account for alternative β s. Such alternative risk factors are for example the credit spread or the return on option based trading strategies. The model used to discover this α is given by

$$r_t = \alpha + \sum_i \beta_{t,i}^{trad} F_{t,i}^{trad} + \sum_i \beta_{t,i}^{alt} F_{t,i}^{alt} + \epsilon_t,$$

where r_t is the return of a hedge fund above the *LIBOR*, $F_{t,i}^{trad}$ stands for the traditional risk factors, and $F_{t,i}^{alt}$ denotes the alternative risk factors. With the help of these alternative risk factors one can distinguish between hedge fund managers who deliver skill-based returns by generating a positive and significant α , and managers whose returns are simply due to exposure to traditional and alternative risk factors. The returns of the latter can be replicated, and the high management and performance fees are difficult to justify.

Finance practitioners have started utilizing these insights. Various investment banks have launched indices which replicate the typical strategies of hedge funds. Hence, investing in a hedge fund whose returns are

*Any remaining errors are the responsibility of the author.

explained by alternative risk factors has become less attractive. The hedge fund replicators provide an investor with the same risk factor exposure but without the fees charged by a hedge fund. These indices allow an investor to access hedge fund β in a safe, cheap, and passive manner. Further, they allow investors to discover α producing managers.

2 Second Lecture

2.1 Non-linearity of hedge fund strategies

The second lecture focuses on the analysis of hedge fund strategies from a top-down perspective. We look at hedge fund returns and try to characterize the underlying strategies.

The risk-return characteristics of hedge funds are particularly interesting. Despite hedge funds trading in standard asset classes, the correlation of hedge fund returns with the respective returns of the asset classes is rather low. This implies that investing in hedge funds provides the investor with exposure to “alternative” risk premia, e.g. stochastic volatility risk or price jumps. The reason behind this “alternative” risk premia are the dynamic or option-based trading strategies of hedge funds. Simple buy-and-hold type strategies used by mutual funds do not lead to such an exposure.

Traditional linear factor models cannot capture the non-linear option-like exposures of hedge funds to standard asset classes. Agarwal and Naik in their paper “Risk and Portfolio Decisions involving Hedge Funds” augment traditional models with non-linear factors based on option buying/writing strategies. The option-based factors proxy for dynamic trading strategies and state-contingent bets. They find that a few option buying/writing strategies are able to explain a significant proportion of variation in hedge fund returns over time. An implication of their finding is that hedge fund returns should be broken down in two parts. First, the asset class in which the hedge fund trades, i.e. the buy-and-hold component. Second, the trading strategy implemented by the hedge fund, i.e. the option component.

The multifactor model used for their analysis is

$$r_t = C + \lambda BH_t + \gamma OS_t + \epsilon_t,$$

where r_t is the hedge fund return, BH_t is the buy-and-hold risk factor return, and OS_t is the option-based risk factor return. For the buy-and-hold risk factors, standard variables are used, e.g. equities market return or Fama-French factors. For the option-based risk factors, the authors implement a trading strategy which buys and sells at-the-money and out-of-the-money options.

The sample data used in the paper is from the Hedge Fund Research database and the CSFB/Tremont database. The in-sample period is from 1990 to 2000. Agarwal and Naik estimate their model for different investment style subgroups, e.g. event arbitrage or relative value arbitrage. They find that the option-based risk factors are significant with a sign that is in line with the underlying theory in the majority of the cases. The explanatory power of their model is high across all the investment style subgroups with an adjusted R^2 of up to 92%. Further, the results of Agarwal and Naik hold up in an out-of-sample exercise from 2000 to 2003. This is an impressive finding, considering that the structure of asset markets has changed substantially from the in-sample to the out-of-sample period.

The implication of these non-linear factors explaining hedge fund returns is that a standard mean-variance or Value-at-Risk analysis will not accurately measure the expected loss of hedge fund investments. The left tail risk of hedge fund returns is underestimated.

2.2 Managerial incentives

The nature of investment management, i.e. a principal, the investor, asking an agent, the fund manager, to manage money on her behalf, implies that agency problems arise. However, different fund types are dealing with such agency problems through different mechanisms. In the case of mutual funds, little attention is paid to managerial incentives. The focus lies on curbing managerial discretion by imposing strict regulation. For hedge funds, regulation is very limited, but the emphasis is on incentivizing hedge fund managers.

Proper incentives for a hedge fund manager are based on four pillars. First, there is a substantial performance-linked incentive fee, which can differ across hedge funds but is generally around 60% of the total fee. Second, a high-water mark provision ensures that a hedge fund manager has to win back previous losses before a performance fee is paid. Third, due to hurdle rate provisions, it is not enough for the hedge fund manager to earn a positive return. The return of the hedge fund must exceed a benchmark return. Fourth, since the manager is also invested in the fund, the agency problem is further mitigated, as the manager puts her own capital at risk. Because of these incentives, there is less attention to curbing managerial discretion. The investors accept light regulation, limited disclosure, and lockup, notice, and redemption periods.

Due to the special structure of incentives for hedge fund managers, a natural research question to ask is, how cross-sectional differences in managerial incentives, ability, and flexibility relate to future performance and investor flows of hedge funds. Agarwal, Daniel, and Naik, look at this in their paper “Effect of Managerial Incentives and Discretion on Performance of Hedge Funds”. They use variables which proxy for managerial incentives, managerial flexibility, and managerial ability, and estimate panel regressions with performance and flows as dependent variables. They find that their proxies are indeed relevant when explaining the performance of hedge fund managers and investor flows.