THE NEW YORKER

The World of Business

Hedge Clipping

Is there a way to get above-market returns on the cheap?

by John Cassidy July 2, 2007

Harry Kat questioned why anyone would pay hedge-fund fees.

Keywords
Kat, Harry;
FundCreator;
Hedge Funds;
Investors, Investing;
Palaro, Helder;
Stock Market;
Two and Twenty

In 2000, Harry Kat got a call from a corporate headhunter who asked whether he would be interested in joining a financial firm that invested in hedge funds—a so-called fund of funds. Kat, a forty-three-year-old Dutch economist, had recently left a high-paying job at the London office of Bank of America to pursue a career in academe. He didn't know much about hedge funds, but he agreed to be interviewed by an executive at the firm.

Hedge funds are privately owned financial companies that raise cash from very wealthy individuals and institutional investors, such as pension funds and charitable endowments. Unlike banks and brokerage firms, hedge funds are largely unregulated, which gives them considerable latitude in investing their clients' money. During the past fifteen years, the number of hedge funds has increased from about five hundred to perhaps ten thousand, and some hedge-fund managers have made vast fortunes. Last year, three reportedly earned more than a billion dollars each: James Simons, of Renaissance Technologies; Kenneth Griffin, of Citadel Investment Group; and Edward Lampert, of ESL Investments.

Hedge funds go to great lengths to maintain their mystique: Simons and other managers rarely grant interviews, and the mostly young analysts and traders who make up the funds' staffs sign confidentiality agreements barring them from discussing their work. The public, denied information about the industry's methods, has focussed instead on the conspicuous spending it has enabled, seeing in the life styles of the funds' managers proof of their ingenuity. Steven Cohen, the founder of SAC Capital Advisors, lives in a thirty-two-thousand-square-foot house in Greenwich, Connecticut, and last year reportedly paid $143.5 million for a painting by Willem de Kooning.

In the jargon of Wall Street, hedge funds seek "alpha": returns greater than those provided by standard market indices, such as the Dow Jones Industrial Average and the S. & P. 500. Investing in hedge funds can be lucrative, but it is also risky: the funds, many of which are highly leveraged, have a tendency to implode when their investments turn against them. (Last week, two hedge funds run by Bear Stearns, the investment bank, were brought to the brink of closure after losing hundreds of millions of dollars, largely in bonds tied to the sub-prime mortgage market.) Funds of funds hold stakes in a variety of hedge funds, so they are somewhat safer. However, as the executive made clear to Kat, investing in them is costly.

Typically, hedge-fund managers charge their clients a management fee equal to two per cent of the amount they invest, plus twenty per cent of any profits that the fund generates. (This fee structure is known as "two and twenty.") On top of these charges, funds of funds often add a management fee of one per cent, plus a commission of ten per cent on investment gains. Thus, people who invest in funds of funds are effectively paying a three-per-cent management fee plus a "success fee" of thirty per cent—"three and thirty."

This arithmetic helps explain the astronomical wealth of leading hedge-fund managers, and suggests why even less successful competitors make plenty of money. If a fund manager does well, he gets to keep a large portion of the profits he makes using his clients' money; if he does poorly, he still receives the generous management fees, at least until his clients withdraw their money, which isn't always easy to do. (Some funds impose "lockup" periods of several years.) Kat had worked in the financial markets for almost fifteen years, but what he learned about hedge-fund fees shocked him. An investor who puts a million dollars in a fund of funds whose value goes up ten per cent in twelve months would face deductions of about sixty thousand dollars on the gains he makes. "Who wants to pay that kind of money?" Kat asked the executive who was interviewing

him. “You can’t seriously expect there to be anything interesting left after somebody takes out three and thirty.” The executive was nonplussed. “I don’t know,” he said. “But they pay it.”

The executive’s firm offered Kat a job as the head of research, but he turned it down. The following year, he began teaching finance at the University of Reading, and in 2003 he became a professor of risk management at Sir John Cass Business School, which is part of City University in London. He continued to think about hedge funds. “When I became an academic, I said, ‘That’s the thing I want to investigate,’ ” he recalled recently. “Is it really possible to generate investment returns to the extent that you can take out three and thirty and still be left with something you can call superior?”

Kat had moved to London in 1996, several years after completing a Ph.D. in economics and statistics at the University of Amsterdam. He worked in the derivatives department of an investment bank, where he traded futures and options—financial contracts in which a buyer has an obligation or option to pay a fixed price for a commodity or a security at a future date. Futures and options are relatively simple derivatives; for decades, farmers and businessmen have relied on them to stabilize their incomes. In the past twenty years, however, new kinds of custom-built derivatives have emerged, which allow investors to make bets on, say, the future creditworthiness of corporations, or the future volatility of the stock market.

Kat became an expert in these complex securities, and by the late nineties he was head of the equity-derivatives desk at Bank of America. He never adjusted to corporate life, though. “If you really want to get up at 5 A.M., get the train, and spend all day in the office for twenty-five years, well, good luck,” he said. “I didn’t want to do that.”

Studying hedge funds proved to be a more satisfying, if less remunerative, challenge. (As a professor, Kat earns less than a hundred thousand pounds a year—about a tenth of what he was earning as a financier.) Aside from their fee structure, hedge funds generally have little in common. A few make long-term investments; most buy and sell incessantly. Some trade individual stocks; others place bets on entire industries and markets. Some rely on human intuition to identify plum investments; many use computer software programs to ferret out profitable trades.

Kat, realizing that it would be nearly impossible to determine the trading strategies of individual hedge funds—the companies would never agree to divulge them—decided to study their results instead. Hedge funds aren’t required to file quarterly reports with the Securities and Exchange Commission, so it isn’t easy to get accurate information about their earnings. However, several financial-publishing companies now collate data on monthly returns which hedge funds supply to them voluntarily, presumably in order to impress potential investors. The databases that these publishers have assembled are neither complete nor entirely reliable, but they include information on thousands of funds, some of it dating back to the nineteen-eighties.

When Kat examined the databases, he noticed that in most years hedge funds outperformed the Dow and the S. & P. 500; they appeared to have produced alpha. But the figures in the databases don't take into account the unusual risks that hedge funds take. Many funds use borrowed money to leverage their investments; they short stocks; and they speculate on the price of volatile commodities, such as gold and coffee.

It is well known that risk and return tend to go together. If you go to Atlantic City and bet your life's savings on a roulette wheel's coming up black, you have a good chance of earning an instant return of a hundred per cent; you also have a good chance of going broke. Playing roulette is a high-risk, high-return activity. Putting your money in a bank C.D. is a low-risk, low-return activity. Truly outstanding investors, such as Warren Buffett, somehow generate consistently high returns at low risk. Kat decided to determine whether hedge funds met this standard; only if they did could they genuinely be said to have created alpha. In a study published in the June, 2003, issue of the *Journal of Financial and Quantitative Analysis*, he and a co-author, Gaurav Amin, an analyst at Schroder Investment Management, a British financial firm, compared the fee-adjusted returns of seventy-seven hedge funds between 1990 and 2000 with the returns generated by a market benchmark that had a similar risk profile. Seventy-two of the funds—more than ninety per cent—failed to outperform their benchmarks.

With the help of a graduate student, Helder Palaro, Kat also undertook a larger study, in which he examined more than nineteen hundred funds. The results, which Kat and Palaro posted online as a working paper last year, showed that only eighteen per cent of the funds outperformed their benchmarks, and returns even at the most successful funds tended to decline over time. "Our research has shown that in at least eighty per cent of cases the after-fee alpha for hedge funds is negative," Kat told me. "They are charging more than they are adding. I'm not saying they don't have skill; I'm just saying they don't have enough skill to make up for two and twenty."

Other economists had been scrutinizing hedge funds closely. In a widely discussed 2005 paper, Burton Malkiel, a Princeton professor, and Atanu Saha, a New York investment analyst, argued that many published estimates of hedge-fund returns are misleading. Malkiel and Saha discovered that funds tend to exaggerate how well they performed in the past, and that those which perform badly often close and disappear from databases, leaving a biased sample. After examining results of now defunct firms, Malkiel and Saha found that between 1996 and 2003 hedge funds made an average return of 9.32 per cent, significantly less than the 13.74-per-cent average return of funds included in the published databases.

Stephen Brown, William Goetzmann, and Bing Liang, researchers at New York University, Yale, and the University of Massachusetts at Amherst, respectively, have published data suggesting that the fees paid by investors in many funds of funds negate most or all of what is generated in extra returns. And several groups of researchers—including William Fung, of the London Business School, and David Hsieh, of Duke; and Jasmina Hasanhodzic and Andrew Lo, of M.I.T.—have shown that broad market movements in the prices of stocks, bonds, and other common securities account for a

good deal of the variation in hedge-fund returns. These findings suggest that stock picking, trading smarts, and computer algorithms are less important than many scholars had thought. “Our idea was to see how much of the variation in hedge-fund returns you could explain using very simple, passive investment strategies,” Lo said. “Given all the hype and mystique surrounding hedge funds, we expected the answer to be ‘very little.’ We were quite surprised to find that it was about forty per cent.”

Kat, though, has gone farther than other researchers in challenging the hedge-fund industry’s reputation—and threatening its sources of funding. Much of the money in such funds comes not only from the industry’s traditional clients—rich people hoping to get richer—but from institutional investors that manage money on behalf of the middle classes. In 2000 and 2001, when the stock market collapsed, most hedge funds held up pretty well. Some made money by shorting stocks; others were holding commodities and other kinds of assets that were unaffected by the crash. The ability to generate positive returns at a time when most financial investments were faltering suggested that hedge funds had lived up to their name: they had provided valuable hedges. Among the institutional investors that have put their clients’ money in hedge funds are several large pension funds, including those for employees of General Motors and those for state workers in New Jersey and California. (Earlier this year, William Thompson, Jr., the comptroller for New York City, announced that he was considering investing some of the city’s pension funds in hedge funds.) Such institutional investors aren’t merely chasing high returns; they are seeking to diversify their holdings as insurance against another bear market.

However, Kat remained skeptical. As he conducted his research on hedge funds, he became convinced that it might be possible to generate similar returns in a mechanical way and with much less effort. Two years ago, he and Palaro began to sketch out ideas for a software program that could mimic the returns of individual hedge funds by trading futures. “We may be able to do without expensive hedge-fund managers and all the hassle, including the due diligence, the lack of liquidity, the lack of transparency, the lack of capacity and the fear of style drift”—changes in a fund’s strategy—“which comes with investing in hedge funds,” Kat and Palaro wrote in a working paper about the project which they published last year.

Kat provided many of the mathematical ideas. Palaro, an experienced programmer, did most of the computer work. Rather than trying to emulate a hedge fund’s monthly return—a nearly impossible task—the researchers sought to match the fund’s results over a period of several years, as well as the other statistical properties of its performance that investors were likely to care about most: the volatility of the returns, their correlation with the stock market, the likelihood of suffering extreme losses.

In the spring of last year, Kat sent me an e-mail in which he expressed confidence that he and Palaro would succeed. “It is possible to design mechanical futures-trading strategies which generate returns with the same, and often better, risk-return properties as hedge funds,” he said. “This means investors can have hedge-fund returns but without the massive fees and all the other drawbacks that come with the real thing.”

By the end of 2006, Kat and Palaro had finished writing their software program, which they called FundCreator, and had conducted several successful trials. In April, Kat demonstrated the software for me at his office on the Cass Business School's campus. A hefty man with blue eyes and spiky brown hair, Kat was wearing jeans, sneakers, and a garish striped polo shirt. When he turned on his computer, a hideous animal's head, replete with fangs and horns, appeared on the screen. Kat, an avid heavy-metal fan who plays the electric guitar, said, "That's the FundCreator monster. Now let's get started."

I entered my name and address and the amount of money—a hundred million dollars—I wanted the system to manage. Then I had to select the kinds of futures contracts I wanted to trade. The choices included equity futures, interest-rate futures, commodity futures, and currency futures. These futures are the building blocks that FundCreator uses to simulate hedge-fund investments. Next, I was directed to a screen that allowed me to choose from a list of several thousand hedge funds. I asked Kat if I could replicate one run by George Soros. Using a pull-down menu, Kat clicked on Quantum Fund NV, which for many years was Soros's investment flagship and often had an annual return of twenty-five per cent or more. A Web page appeared that was full of statistics detailing Quantum's record going back to 1985. It showed that the annual volatility of Quantum's returns—the amount they varied from year to year—was high (twenty-four per cent), indicating that the fund was a risky investment. The coefficient of correlation between Quantum's returns and the S. & P. 500—a statistical measure of how closely the fund's performance tracked the stock index—was low (0.35), indicating that Quantum provided valuable diversification. "If you say you want to replicate Quantum, you leave it all as it is," Kat said, pointing to boxes displaying each figure. "But you can also do some genetic engineering. If you want zero correlation with the S. & P. 500, you write in zero. If you leave it all as it is, that is called fund replication. If you change something, that is called fund creation."

I decided not to change any of the fund's parameters. The next step was to determine, by pressing a button, whether the software could perform what I'd asked it to. "You might be asking for something it is just impossible to pull off," Kat said. "I get e-mails every week from people saying, 'Harry, can you make a twenty-five-per-cent average return with no volatility?' Of course I can't. The interest rate on Treasury bonds is five per cent. That is what I can achieve without any volatility."

FundCreator indicated that it could replicate Quantum. Kat pressed a few more buttons. On a new page, a list of the futures I had chosen appeared, along with numbers next to them indicating how many contracts I needed to buy and sell. The software doesn't carry out actual futures trades. An investor may do those himself, or he can enlist the help of one of two brokerage firms that have agreed to provide such services for FundCreator. Each night, after the markets have closed, FundCreator downloads financial data from all over the world and determines what new trades each of its users needs. When a user logs on in the morning, a red light flashes to indicate that action is needed. "You just click on it every day, it tells you what you need to do, you do it, and you get Quantum," Kat said proudly. "It's simple."

What goes on behind the screen is more complicated. After I entered my choices, FundCreator ran through fifty-four different statistical models, picking the one that best fit the monthly returns for Quantum Fund NV. Then the program, using the model it had selected, together with some sophisticated mathematical formulas, chose the investments I needed to make. These calculations were completed within seconds.

The theoretical ideas behind FundCreator are well established. Most ultimately derive from what is known as the Black-Scholes formula, which was developed by economists in the early nineteen-seventies to determine the price of stock options. Kat and Palaro relied on a version of Black-Scholes similar to the one that investment banks use to design hedging strategies for their own derivatives portfolios. However, Kat and Palaro were the first to apply the formula to create virtual hedge funds based on existing ones. "The new thing is that it allows you to generate returns with predefined properties," Kat said. "Normally, managers of hedge funds will give you some idea of the properties they are looking for, but they won't pin themselves down to a certain number. They'll tell you they are aiming for a volatility of eight per cent or so, but, if you give them a few years and calculate what it was, it could have been six, it could have been eight, or ten, or even more. Our method allows you to pinpoint a certain number."

In the past twelve months, several investment banks, among them Goldman Sachs and Merrill Lynch, have launched their own low-cost alternatives to hedge funds. These so-called tracker funds, inspired by academic research, including work by Fung and Hsieh and by Hasanhodzic and Lo, try to mimic the performance of a basket of hedge funds by accumulating many of the same types of assets that are in the funds' portfolio—stocks, bonds, currencies, commodities, credit swaps. "Unlike Kat's model, tracker funds are not designed to replicate individual funds," Lo told me. "They try to capture some of what hedge funds do as a class. The idea is to provide institutional investors with a relatively inexpensive vehicle by which to achieve the risk-reward tradeoffs they are looking for, without some of the drawbacks of investing in hedge funds, such as lack of transparency."

Kat and Palaro originally intended to use FundCreator to demonstrate for business students and scholars the feasibility of replicating hedge-fund returns. Late last year, after several articles about the software appeared in the British financial press, and professional investors approached Kat and Palaro about using it, they launched it as a business—though not, Kat insists, with the expectation of making much money. "I like my life as it is," he told me. "If we made a lot of money, I wouldn't know what to do with it. I've got a house here. I've got a summer house in Spain. That's enough. The only thing I need more of is time."

FundCreator's launch coincided with the end of a particularly bad year for hedge funds: in 2006, the majority failed to match the 15.8-per-cent return of the S. & P. 500. In February, Russell Read, the chief investment officer for the California state employees' pension fund, complained at a financial conference that many hedge funds were charging clients large sums that weren't matched by large returns. "A lot of people are waking up

to the fact that hedge-fund fees are a bit steep, and they are looking for alternatives," Kat said.

In the London financial community, word of FundCreator's abilities has spread rapidly. As of last week, Kat said, two institutional investors were paying to use it, and more than fifty were experimenting with it. Kat and Palaro charge their clients an annual fee of roughly a third of one per cent of the money they invest using the software—less than a fifth of what most hedge funds charge. The cost of executing futures trades must be added on to FundCreator's management fees, but, unlike at hedge funds, investors keep all the gains they make. "Why would you pay the high fees that hedge funds charge if you are able to get the same risk characteristics, in a statistical sense, by using a dynamic futures-trading strategy?" Bas Peeters, the head of structured products at ING Investment Management, said to me. "FundCreator is potentially a very cost-efficient solution." Pete Eggleston, the head of quantitative solutions at the Royal Bank of Scotland, one of the biggest banks in Europe, said of FundCreator, "Such approaches may revolutionize the industry in terms of providing investors with access to lower-cost investment returns."

Some scholars remain skeptical. "As a renegade statistician, I am a little bit suspicious of Kat's methods," Stephen Brown, of N.Y.U., said to me. He pointed out that, unlike Quantum, many hedge funds have been around for just a few years and there is little information about their performance. "On the basis of very limited data, it is a real challenge to construct an accurate and robust model of hedge-fund returns," Brown said. Andrew Lo said that using FundCreator may not be as straightforward as it seems. "From the point of view of theory, there is nothing wrong with what Kat is doing," he said. "But all dynamic trading strategies involving derivatives carry some risk. They rely on very specialized mathematical assumptions. If the assumptions turn out to be wrong, you can be mis-estimating the risks in a big way." Faulty assessments of risk contributed to major financial losses suffered by Long-Term Capital Management and several other companies that have encountered problems trading derivatives.

Veryan Allen, an investment adviser and former hedge-fund executive who writes a blog about hedge funds (hedgefund.blogspot.com), said in a post last December, "If Goldman Sachs, Dow Jones, Merrill Lynch, Andrew Lo, or Harry Kat think they can do it, great . . . but I suspect investors will end up disappointed if they think the returns from hedge-fund clones will be anywhere near the performance of the best hedge funds." Allen went on, "No matter what occurs in the markets, well-managed 'expensive' hedge funds operating proprietary strategies with skilled traders, robust risk management, and technology will perform, even under pessimistic economic scenarios. . . . That is why it is worth paying the two and twenty. . . . Average or generic hedge funds can certainly be replicated, but not the best hedge funds."

When I asked Kat about the hedge-fund industry's reaction to FundCreator, he said, "People say, 'Look, you don't generate any alpha.' After fees, I generate a lot of alpha. I just generate it differently. Instead of trying to beat the market, I get the fees down." He conceded that there will always be hedge funds whose returns FundCreator can't hope to match, but he argued that even some of the most prestigious funds owe much of their

success to luck. “You can be fortunate,” he said. “You can live off market trends for quite a while. As in credit spreads”—the difference in yields between different types of bonds. “Credit spreads start to come down, and you make lots of money in credit. A couple of guys from an investment bank’s credit desk jump out and start a fund. If they are lucky, the trend continues for another couple of years, and they will look like masters of the universe. But when the trend reverses, or when there is no trend left, they are in trouble. If a guy has done well for two years, what does that mean? He could be really smart, or he could be really lucky. If I had bought stocks at the end of 1997 and you had looked at me at the end of 1999, I would have looked brilliant.”

It is notoriously difficult to distinguish between genuine investment skill and random variation. But firms like Renaissance Technologies, Citadel Investment Group, and D. E. Shaw appear to generate consistently high returns and low volatility. Shaw’s main equity fund has posted average annual returns, after fees, of twenty-one per cent since 1989; Renaissance has reportedly produced even higher returns. (Most of the top-performing hedge funds are closed to new investors.) Kat questioned whether such firms, which trade in huge volumes on a daily basis, ought to be categorized as hedge funds at all. “Basically, they are the largest market-making firms in the world, but they call themselves hedge funds because it sells better,” Kat said. “The average horizon on a trade for these guys is something like five seconds. They earn the spread. It’s very smart, but their skill is in technology. It’s in sucking up tick-by-tick data, processing all those data, and converting them into second-by-second positions in thousands of spreads worldwide. It’s just algorithmic market-making.”

Almost by definition, there can be only a handful of genius investors, Kat continued. “And even if they are there, the chances that you will find them and that they will let you in are very, very slim,” he said. “That’s what I tell people. If you are really convinced that you can find those super managers, then don’t waste your time with our stuff. Go look for them. But if you are a bit more realistic, if you know that eighty per cent of hedge-fund managers aren’t worth the fees they charge, then the rational thing to do is to give up trying to find a super manager, and just go for a good, efficient diversifier instead.”

Not so long ago, Kat recalled, one hedge-fund manager, a “global macro” investor who specializes in betting on currencies and stock markets around the world, approached him with an offer. “He said, ‘Harry, I want to buy your thing so I can replicate myself. Then I’ll be able to enjoy life a bit more and keep sending my clients bills for two plus twenty. It’ll take them years to figure it out, if they ever do.’ ” ♦

ILLUSTRATION: RICHARD THOMPSON