

An EDHEC Risk and Asset Management Research Centre Publication

# Hedge Fund Performance in 2007

February 2008



**EDHEC-RISK**  
Asset Management Research



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## About the Author

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**Véronique Le Sourd** has a Master's Degree in Applied Mathematics from the Pierre and Marie Curie University in Paris. From 1992 to 1996, she worked as a research assistant in the Finance and Economics department of the French business school HEC and then joined the research department of Misys Asset Management Systems in Sophia Antipolis. She is currently a senior research engineer at the EDHEC Risk and Asset Management Research Centre.

# Hedge Fund Performance in 2007

## Market Environment

2007 was characterised by positive but fair performance in global stock markets, compared to the strong performance of 2006. For example, the S&P 500 return was only 3.53% in 2007 versus 13.62% in 2006, barely exceeding the 3% return of 2005. The volatility of returns was also higher in 2007 than in 2006, with a value of 9.69% for the S&P 500 monthly returns, compared to the 5.70% of 2006 and the 7.81% of 2005, a year in which the index return was of the same order. Bond markets registered a positive performance with a return of 4.14% for the Lehman Global US Treasury Bond index, after two years of negative returns with -1.68% in 2006 and -1.83% in 2005. Commodity prices increased considerably during the year, with a progression of about 40%. This is to be contrasted with the flat performance of 2006, due to a rise followed by a fall of the same amplitude. Commodity prices are currently at historic highs.

## Hedge Fund Return Analysis

In this context, all hedge fund strategies posted positive returns, but a majority saw a fall-off in performance compared to 2006. Only five of the thirteen strategies obtained higher returns than in 2006: CTA Global, Emerging Markets, Equity Market Neutral, Global Macro, and Short Selling. Funds of Hedge Funds, which are sometimes taken to give an aggregate view of the industry's performance, performed quite well in 2007, with a 10.07% average return. However, this performance is somewhat worse than the 11.25% obtained in 2006, which was a very good year for hedge fund performance, a vintage year, in fact. Meanwhile, the Funds of Hedge Funds index is still slightly outperforming its long-term return. As in 2006, the best performing strategy was Emerging Markets, with a return of 20.79%. It was followed by Global Macro and Long/Short Equity, with respective returns of 12.93% and 10.53%. The lowest return—3.87%—was obtained by Convertible Arbitrage managers. The volatilities of the strategies turn out to be quite low for the last three years, ranging from 1.61%

for Fixed Income Arbitrage to 9.07% for Short Selling. For the ten-year period, the range is wider, from 2.02% to 19.95%, with the minimum value observed for Equity Market Neutral and the maximum value again observed for Short Selling. In view of these results, the Emerging Markets strategy had the best Sharpe ratio value for the period from 2005 to 2007. This strategy also had the best Sortino ratio. The Sharpe ratio is negative for the Short Selling strategy, which also exhibited the lowest Sortino ratio. Over the ten-year period, Equity Market Neutral had both the highest Sharpe and the highest Sortino ratios, while Short Selling had the lowest risk-adjusted performance ratios.

## Convertible Arbitrage

The Convertible Arbitrage strategy exhibited fair performance in 2007, with a return of 3.87%, compared with the strong positive performance of 12.32% in 2006, which was above the average long-term performance for this strategy. The 2007 performance is a bit lower than its average performance for the last three years and much lower than its long-term average performance. A lower annual average return for this strategy has been observed only three times since inception.

## CTA Global

The CTA Global strategy performed fairly well in 2007 with a return of 9.89%, far better than the 5.86% of 2006. This performance is well above both its short-term average performance for the last three years and its long-term average performance. This value is above the median value of annual returns since inception for this strategy, but far from the high of 14.58% obtained in 2002.

## Distressed Securities

Distressed Securities managers posted a return of 7.16% in 2007. Though this performance is certainly positive, it is not nearly as good as the 15.27% of 2006. This performance is also

worse than both its short-term and its long-term averages. In view of all annual returns since inception, this strategy appears to be a high performance strategy most of the time. The 2007 figure, though positive, is among the lowest annual returns for this strategy; only three other annual returns were lower.

## Emerging Markets

Emerging Markets funds exhibited strong positive performance for 2007 with 20.79%, above the already strongly positive performance of 2006. Average annual performance has increased each year from 2004 to 2007. The average performance for 2007 is somewhat better than the short-term performance, but far better than its long-term average performance. While this strategy's performance appears to have been rather stable and very good over the last three years, the range of annual performance is very wide over the long term, as can be seen from the maximum and minimum annual returns obtained since inception. The high comes from 1999, with a return of 44.59%, and the low from 1998, with a return of -26.66%. Of all the strategies, Emerging Markets had the widest range of performance over the long term. This is to be contrasted with the relative stability of the performance over the last three years. For this recent period, this strategy, together with Equity Market Neutral and Long/Short Equity, has the most stable performance.

## Equity Market Neutral

Funds in the Equity Market Neutral strategy posted a positive return of 8.34% in 2007, which was slightly higher than the 7.49% of 2006. Over the last three years performance has been relatively stable. The 2007 performance is somewhat better than the short-term performance but about the same as the long-term performance of the strategy. The 2007 return is above the minimum value observed in 2004, but far from the maximum value of 15.44% obtained in 1997. This is also the strategy with the narrowest range of annual

returns, considering that the minimum return, obtained in 2004, is 4.71%. We can also observe that since inception this strategy has never exhibited a negative annual return. This characteristic is shared with the Global Macro, Relative Value, and Funds of Funds strategies.

## Event Driven

Hedge fund managers in the Event Driven strategy performed well in 2007, with a return of 9.65%, though this performance was worse than the 15.48% of 2006. The 2007 performance is slightly worse than both the short-term and long-term average performance for this strategy. The short-term and long-term figures are about the same, though the range of average annual performance since inception is relatively high. The return for 2007 is about the median value of annual returns since its 1997 inception.

## Fixed Income Arbitrage

Fixed Income Arbitrage hedge funds did not do quite as well in 2007 as in 2006, with a return of 6.01%, compared to the 7.43% of 2006. This performance is about the same as the average performance over the last three years and somewhat better than long-term performance. The maximum return was obtained in 1999, with a value of 12.62%, while the minimum was the -8.04% observed in 1998. With the exception of these two years, together with 1997, which exhibited about the same return as in 1999, these three years being the first three of historical data, the range of all other annual returns—from 4.63% to 8.37%—is relatively narrow. The return for 2007 is located slightly below the middle of this range.

## Global Macro

Global Macro is one of the few strategies that at 12.93% did significantly better in 2007 than in 2006, when returns were at 7.48%. This performance is better than both its average annual return over the last three years and its average long-term performance. Short- and long-term figures are much the same. 2007

# Hedge Fund Performance in 2007

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performance is quite good and is better than the median of annual returns since inception, as annual performance has been better only three times in this period. But 2007 returns are far from the high of 23.91% observed in 1997.

## Long/Short Equity

Managers in the Long/Short Equity strategy performed somewhat less well in 2007 than in 2006, with a return of 10.53% in 2007 versus 11.77% the previous year. This performance is a little worse than the average performance of the last three years, and about the same as the ten-year long-term performance. Though these statistics may suggest stability, the range of performance observed since inception is quite wide, with a maximum return of 31.40% in 1999 and a minimum of -6.38% in 2002. This range of performance is one of the widest of all the strategies, just after Emerging Markets and Short Selling.

## Merger Arbitrage

Merger Arbitrage managers had a strong positive performance in 2007, with a return of 9.11%, though this performance was far from the 13.70% of 2006. This performance is about the same as that observed on average over the last three years, and somewhat better than long-term performance. The 2007 figure is above the median value of annual returns since inception.

## Relative Value

At 9.43%, managers in the Relative Value strategy posted strong positive returns in 2007, though these did not quite match the 11.84% of 2006. This performance is somewhat better than that observed on average over the last three years, and about the same as long-term performance. The 2007 figure is considerably below the maximum of 17.17% observed in 1999. It is the median value of annual return since inception.

## Short Selling

Managers in the Short Selling universe performed considerably better in 2007 than in 2006, considering that they obtained a strong positive performance of 7.38%, compared to their negative score of -8.26% in 2006. Their 2007 performance was about the same as that of 2005. This performance is significantly better than average performance both over the last three years and over the long term; though positive, both are very poor compared to those of all other strategies. Observing all the annual returns since inception reveals a wide range of performance returns, from a low of -23.86% in 2003 to a high of 27.27% in 2002. This is also the strategy which had the largest number of negative returns, with four years of negative returns, two of them very strongly negative.

## Funds of Funds

The 2007 performance of the Funds of Funds strategy—10.07%—was below the 11.25% observed in 2006. This performance is somewhat better than the averages of the last three years and over the long-term. The return for 2007 may appear quite low compared to the maximum return of 28.51% obtained in 1999. However, the 2007 return is above the median value of annual returns since inception, as the maximum value observed in 1999 was something of an exception.

# Hedge Fund Performance in 2007

Illustration 1: Hedge Fund Strategy Performance for 2007 compared to Short-Term and Long-Term Performance

	Performance					
	2007 Annual Return*	2006 Annual Return*	3-year Average Return* (2005-2007)	3-year Cumulative Return (2005-2007)	10-year Average Return* (1998-2007)	10-year Cumulative Returns (1998-2007)
Convertible Arbitrage	3.87%	12.32%	4.59%	14.41%	8.36%	123.24%
CTA Global	9.89%	5.86%	5.07%	15.93%	7.27%	101.61%
Distressed Securities	7.16%	15.27%	10.50%	34.92%	11.67%	201.65%
Emerging Markets	20.79%	18.85%	18.93%	68.26%	11.85%	206.43%
Equity Market Neutral	8.34%	7.49%	7.44%	24.04%	8.48%	125.77%
Event Driven	9.65%	15.48%	10.75%	35.87%	10.40%	168.95%
Fixed Income Arbitrage	6.01%	7.43%	6.02%	19.17%	5.71%	74.27%
Global Macro	12.93%	7.48%	9.95%	32.91%	9.37%	145.01%
Long/Short Equity	10.53%	11.77%	11.21%	37.57%	10.77%	178.19%
Merger Arbitrage	9.11%	13.70%	9.19%	30.20%	8.51%	126.45%
Relative Value	9.43%	11.84%	8.81%	28.80%	9.07%	138.33%
Short Selling	7.38%	-8.29%	1.86%	5.63%	2.66%	29.95%
Funds of Funds	10.07%	11.25%	9.36%	30.78%	8.98%	136.15%

Illustration 2: Hedge Fund Strategy Performance for 2007 compared with Previous Years' Annual Performance

	Performance					
	2007 Annual Return*	2006 Annual Return*	Maximum Annual Return* (1997-2007)	Minimum Annual Return* (1997-2007)	Year of maximum annual Return	Year of minimum annual Return
Convertible Arbitrage	3.87%	12.32%	17.77%	-1.93%	2000	2005
CTA Global	9.89%	5.86%	14.58%	-0.35%	2002	2005
Distressed Securities	7.16%	15.27%	27.35%	-2.25%	2003	1998
Emerging Markets	20.79%	18.85%	44.59%	-26.66%	1999	1998
Equity Market Neutral	8.34%	7.49%	15.44%	4.71%	1997	2004
Event Driven	9.65%	15.48%	22.74%	-1.07%	1999	2002
Fixed Income Arbitrage	6.01%	7.43%	12.62%	-8.04%	1999	1998
Global Macro	12.93%	7.48%	23.91%	4.59%	1997	2004
Long/Short Equity	10.53%	11.77%	31.40%	-6.38%	1999	2002
Merger Arbitrage	9.11%	13.70%	18.11%	-0.88%	2000	2002
Relative Value	9.43%	11.84%	17.17%	2.78%	1999	2002
Short Selling	7.38%	-8.29%	27.27%	-23.86%	2002	2003
Funds of Funds	10.07%	11.25%	28.51%	1.25%	1999	2002

\*annualised statistics are given

# Hedge Fund Performance in 2007

Illustration 3: Hedge Fund Strategy Annual Performance from 1997 to 2007

	1997 Annual Return*	1998 Annual Return*	1999 Annual Return*	2000 Annual Return*	2001 Annual Return*	2002 Annual Return*	2003 Annual Return*	2004 Annual Return*	2005 Annual Return*	2006 Annual Return*	2007 Annual Return*
Convertible Arbitrage	14.80%	3.13%	16.08%	17.77%	13.78%	8.60%	10.79%	1.10%	-1.93%	12.32%	3.87%
CTA Global	12.27%	14.29%	1.80%	7.31%	3.52%	14.58%	11.64%	5.18%	-0.35%	5.86%	9.89%
Distressed Securities	16.67%	-2.25%	19.74%	4.82%	14.66%	5.86%	27.35%	17.90%	9.22%	15.27%	7.16%
Emerging Markets	22.56%	-26.66%	44.59%	-3.81%	12.52%	5.76%	31.27%	14.31%	17.20%	18.85%	20.79%
Equity Market Neutral	15.44%	10.58%	13.17%	15.36%	8.19%	4.72%	6.28%	4.71%	6.52%	7.49%	8.34%
Event Driven	21.01%	0.99%	22.74%	9.02%	9.31%	-1.07%	20.47%	12.44%	7.30%	15.48%	9.65%
Fixed Income Arbitrage	12.43%	-8.04%	12.62%	5.72%	7.81%	7.58%	8.37%	6.27%	4.63%	7.43%	6.01%
Global Macro	23.91%	8.42%	15.72%	8.17%	5.50%	4.98%	17.26%	4.59%	9.50%	7.48%	12.93%
Long/Short Equity	21.36%	14.58%	31.40%	12.03%	-1.20%	-6.38%	19.32%	8.62%	11.35%	11.77%	10.53%
Merger Arbitrage	17.44%	7.77%	17.98%	18.11%	2.87%	-0.88%	8.34%	4.83%	4.95%	13.70%	9.11%
Relative Value	16.53%	5.28%	17.17%	13.36%	8.61%	2.78%	12.13%	5.72%	5.23%	11.84%	9.43%
Short Selling	3.07%	27.07%	-22.55%	22.79%	10.19%	27.27%	-23.86%	-4.66%	7.26%	-8.29%	7.38%
Funds of Funds	17.40%	4.18%	28.51%	7.83%	3.52%	1.25%	11.46%	7.07%	6.80%	11.25%	10.07%

\* annualised statistics are given

## Hedge Fund Risk analysis

Illustration 4: Hedge Fund Strategy Risks (2005-2007)

Reference period: January 2005-December 2007	Risk Dimension				Risk-Adjusted Performance	
	Maximum Drawdown (in %)	Volatility (in %)*	Downside Risk (in %)*	Modified Value-at-Risk (in %)**	Sharpe Ratio */**	Sortino Ratio */**
Convertible Arbitrage	7.23%	4.02%	3.13%	1.80%	0.08	0.67
CTA Global	7.77%	7.53%	4.35%	3.25%	0.11	0.59
Distressed Securities	1.73%	3.32%	2.11%	0.92%	1.88	3.80
Emerging Markets	4.82%	7.55%	4.52%	2.50%	1.94	3.64
Equity Market Neutral	0.94%	1.74%	1.23%	0.32%	1.82	4.03
Event Driven	2.02%	4.28%	2.80%	1.37%	1.51	2.94
Fixed Income Arbitrage	0.94%	1.61%	1.33%	0.33%	1.09	2.65
Global Macro	2.68%	4.21%	1.72%	1.18%	1.35	4.33
Long/Short Equity	3.39%	5.48%	3.35%	1.96%	1.27	2.60
Merger Arbitrage	1.74%	3.41%	2.14%	0.99%	1.44	2.71
Relative Value	1.52%	2.91%	1.66%	0.78%	1.56	3.04
Short Selling	17.19%	9.07%	4.55%	3.80%	-0.27	0.25
Funds of Funds	2.22%	4.34%	2.87%	1.51%	1.17	2.18

\* Annualised statistics are given

\*\* The risk-free rate is the average 3-month US Treasury bill for the period from 2005-2007 (4.27%); MAR (minimum acceptable return) is fixed at 2.5%

\*\*\* Non-annualised 5%-quantiles are estimated

# Hedge Fund Performance in 2007

Illustration 5: Hedge Fund Strategy Risks (1998-2007)

Reference period: January 1998–December 2007	Risk Dimension				Risk-Adjusted Performance	
	Maximum Drawdown (in %)	Volatility (in %)*	Downside Risk (in %)*	Modified Value-at-Risk (in %)**	Sharpe Ratio */**	Sortino Ratio */**
Convertible Arbitrage	8.22%	4.07%	3.06%	1.47%	1.20	1.91
CTA Global	11.68%	8.81%	4.85%	3.48%	0.43	0.98
Distressed Securities	11.62%	5.29%	5.08%	1.96%	1.55	1.80
Emerging Markets	31.69%	12.19%	11.52%	5.59%	0.69	0.81
Equity Market Neutral	1.07%	2.02%	1.27%	0.24%	2.47	4.71
Event Driven	10.92%	5.56%	5.68%	2.27%	1.24	1.39
Fixed Income Arbitrage	12.61%	3.60%	5.75%	1.46%	0.62	0.56
Global Macro	5.36%	5.34%	2.45%	1.41%	1.10	2.80
Long/Short Equity	10.75%	6.95%	4.22%	2.39%	1.05	1.96
Merger Arbitrage	5.44%	3.79%	3.98%	1.44%	1.33	1.51
Relative Value	4.71%	3.36%	2.92%	1.07%	1.66	2.25
Short Selling	49.56%	19.95%	11.82%	7.76%	-0.04	0.01
Funds of Funds	7.07%	5.58%	3.83%	1.73%	0.98	1.69

\* Annualised statistics are given

\*\* The risk-free rate is the average 3-month US Treasury bill for the period from 1998-2007 (4.27%); MAR (minimum acceptable return) is fixed at 2.5%

\*\*\* Non-annualised 5%-quantiles are estimated

## Methodology

We used the EDHEC Alternative Indices to measure the performance of hedge fund strategies and their exposure to major risk factors. These indices of indices have the merit of being by construction more representative and more stable than the hedge fund indices available on the market (see edhec-risk.com for more details). On the other hand, with hedge fund strategies showing significant

extreme risks, we decided to present three risk-adjusted performance indicators that take into account this specific feature. The adjusted Sharpe ratio, for example, involves replacing the volatility in the denominator of the traditional Sharpe ratio with the Modified Value-at-Risk. The Sortino ratio divides the excess return of an asset over a pre-specified threshold (the minimum acceptable return is equal to 2.5 in our case) by the downside risk of this asset.

# About the EDHEC Risk and Asset Management Research Centre

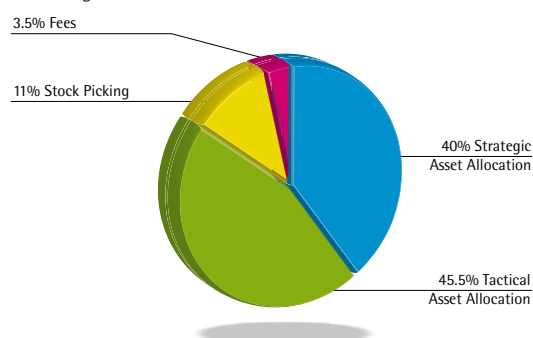
EDHEC is one of the top five business schools in France. It was ranked 12<sup>th</sup> in the *Financial Times* Masters in Management Rankings 2007. Its reputation is built on the high quality of its faculty (110 professors and researchers from France and abroad) and the relationship with professionals that the school has privileged since its establishment in 1906. EDHEC Business School has decided to draw on its extensive knowledge of the professional environment and has therefore focused its research on themes that satisfy the needs of professionals.

EDHEC is one of the few business schools in Europe to have received the triple crown of international accreditation: AACSB (US-Global), EQUIS (Europe-Global) and Association of MBAs (UK-Global). EDHEC pursues an active research policy in the field of finance. The EDHEC Risk and Asset Management Research Centre carries out numerous research programmes in the areas of asset allocation and risk management in both the traditional and alternative investment universes.

## The choice of asset allocation

The EDHEC Risk and Asset Management Research Centre structures all of its research work around asset allocation. This issue corresponds to a genuine expectation from the market. On the one hand, the prevailing stock market situation in recent years has shown the limitations of active management based solely on stock picking as a source of performance. On the other, the appearance of new asset classes (hedge funds, private equity), with risk profiles that are very different from those of the traditional investment universe, constitutes a new opportunity in both conceptual and operational terms. This strategic choice is applied to all of the Centre's research programmes, whether they involve proposing new methods of strategic allocation that integrate the alternative class, measuring the performance of funds while taking the tactical allocation dimension of the alphas into account, taking extreme risks into account in the allocation, or studying the usefulness of derivatives in constructing the portfolio.

Percentage of variations between funds



Source: EDHEC (2002) and Ibbotson, Kaplan (2000)

## An applied research approach

Mindful of ensuring that the research it carries out is truly applicable in practice, EDHEC has implemented a dual validation system for the work of the EDHEC Risk and Asset Management Research Centre. All research work must be part of a research programme, the relevance and goals of which have been validated from both an academic and a business viewpoint by the Centre's advisory board, which is made up of both internationally recognised researchers and the Centre's business partners.

To date, the Centre has implemented six research programmes:

- Asset Allocation and Alternative Diversification
- Performance and Style Analysis
- Indices and Benchmarking
- Best Execution and Operational Performance
- Asset Allocation and Derivative Instruments
- ALM and Asset Management

## Research for business

To optimise exchanges between the academic and business worlds, the EDHEC Risk and Asset Management Research Centre maintains a website devoted to asset management research for the industry: [www.edhec-risk.com](http://www.edhec-risk.com), circulates a monthly newsletter to over 150,000 practitioners, conducts regular industry surveys and consultations, and organises annual conferences for the benefit of institutional investors and asset managers. The centre's activities have also given rise to the business offshoots EDHEC Investment Research and EDHEC Asset Management Education.

