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"Disorderly exits from crowded trades"? - On the systemic risks of hedge funds

A reply to the ECB's statement on hedge funds by the EDHEC Risk and Asset Management Research Centre

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Abstract

An article in the June 2006 edition of the European Central Bank's Financial Stability Review (FSR) claims that hedge fund activities pose considerable risk to the financial system. We disagree with this conclusion, which is based on mere speculation. This document outlines the fallacies in the reasoning of the FSR article and makes some propositions on how to assess the welfare impacts of hedge funds. In particular, we argue that it would be worthwhile for financial regulators to work towards obtaining data on hedge fund leverage and counterparty credit risk. Such data would allow for a reliable assessment of the question of systemic risk. In addition, we argue that besides evaluating potential systemic risk, it should be recognised that hedge funds play an important role as "providers of liquidity and diversification".

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1. The FSR's Fallacy

An article in the June 2006 edition of the European Central Bank's Financial Stability Review (FSR) claims that hedge fund activities pose considerable risk to the financial system.

The conclusion in the FSR article is based on the following observations:
1) The article argues that the returns of different hedge fund strategies have become more correlated over time. Likewise, correlations between individual hedge funds classified in the same strategy have increased. This is interpreted as evidence of similar trades across different funds.

2) According to the article, hedge funds are investing in increasingly illiquid positions. This asset illiquidity exposes them to the risk of sudden redemptions from investors leading to a forced sell-off of illiquid assets.

3) Finally, the article shows that in certain market conditions (poor fund returns, increasing risk aversion, increasing interest rates), high investor redemptions are to be expected.

The article concludes that given these observations, there is a risk of "adverse effects of disorderly exits from crowded trades". However, these three observations can be contested, as detailed below.

The increasing correlation is derived using a correlation coefficient based on 12 monthly observations. With such a small sample, it becomes impossible to draw a reliable inference. In addition, the increasing correlation of returns of single hedge funds in the same strategy is based on comparing data for 2004 with data for 2005. Just by way of random influences, it becomes quite likely to observe fluctuations between the two years, even if the true economic mechanism has remained constant. In other words, the results are indistinguishable from statistical noise. It should also be noted that the correlation actually decreases for four out of 11 strategies. It is unclear why the article interprets this result as "the fact that correlations are trending higher".
Furthermore, an increasing correlation between funds in the same strategy is by no means equivalent to similar positions. The academic literature interprets high correlation across funds in the same strategy as evidence of similar risk factor exposure. This risk factor exposure may well be obtained by holding different positions. This can be shown by taking the example of volatility risk exposure. Exposure to volatility risk may be obtained by trading index straddles, trading straddles on individual stock options, delta neutral trading in stocks or in the index, or trading volatility futures and options or even by holding stocks that have a high exposure to changes in market volatility.

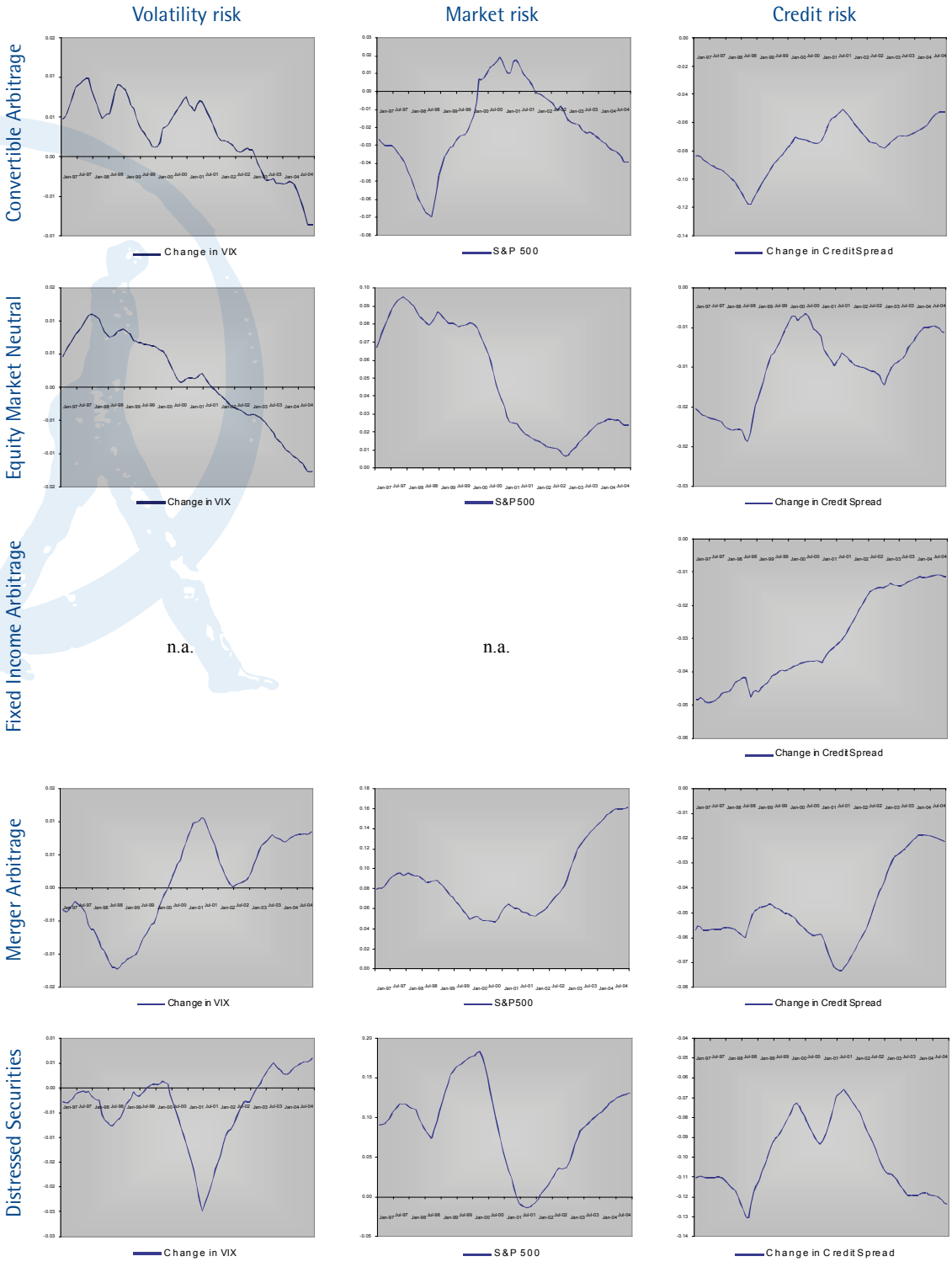
An increasing correlation does not necessarily mean that the risk factor exposure is increasingly similar across strategies. It may simply be the case that the correlation between risk factors themselves is increasing. Take the example of two hedge funds, one is exposed only to volatility risk (short position in volatility), one is exposed only to stock market risk (long position in the stock market). If volatility has a tendency to increase when stock markets decline (and vice versa), then the two funds will have a high correlation. This has nothing to do with similar positions. In fact, there is zero overlap in the positions of these hypothetical funds.

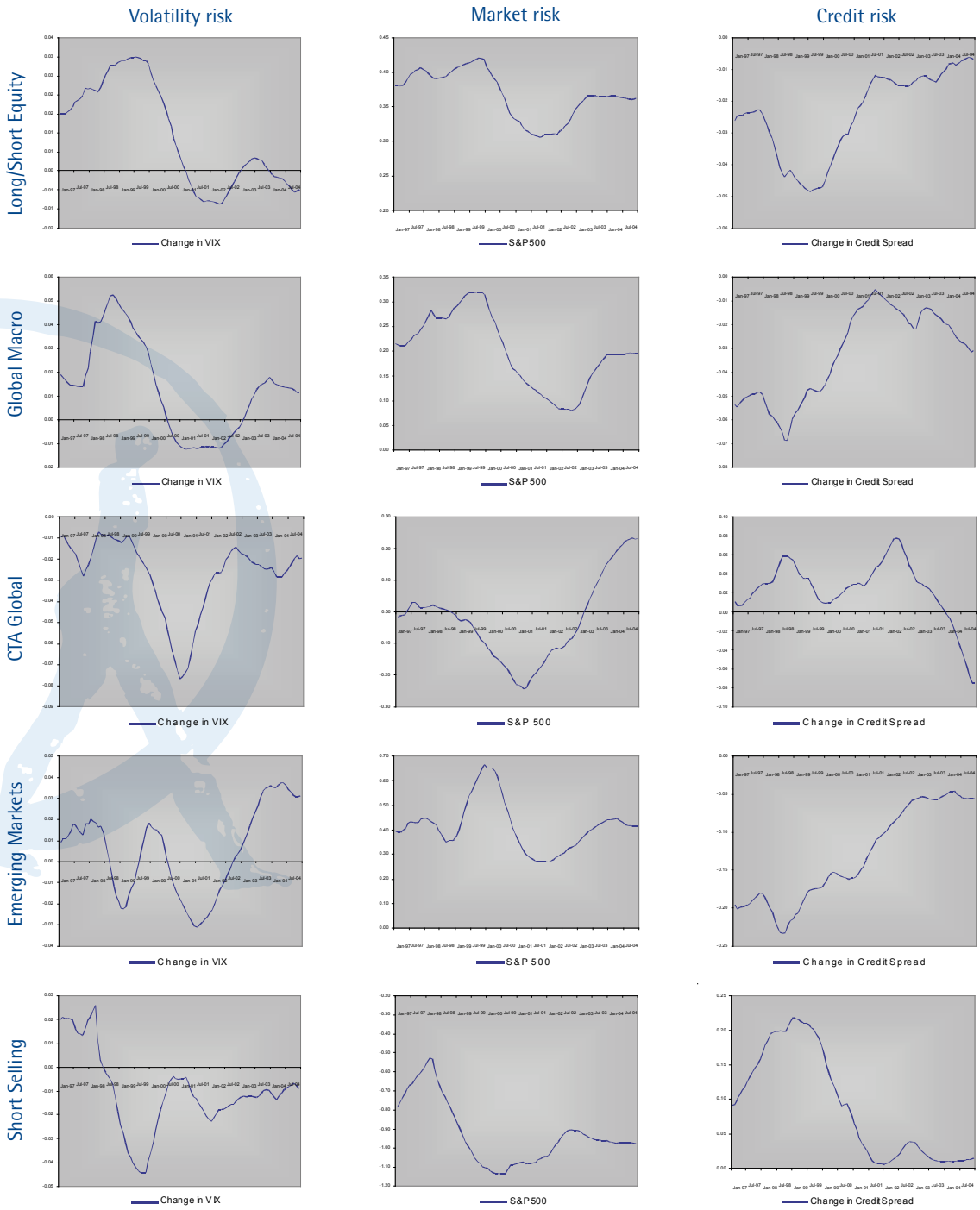
In order to give some perspective on the evolution of risk factors, we reproduce results previously published by EDHEC1 in the graphs below. These graphs show hedge funds' time-varying exposures to major sources of risk. In an attempt to capture the dynamics of hedge fund strategies' exposures to the different risk factors we used factor models allowing for time-varying parameters. More specifically, we implemented the Kalman Smoother approach. One of the advantages of this technique is to determine an optimal weighting scheme from the data. As a result, there is no need to specify an arbitrary window size, as is the case for regressions

1 - Refer to the EDHEC European Alternative Diversification Practices Survey, EDHEC (2005)

with rolling windows. We modelled risk factor exposures as a first order Markov process. For the sake of brevity we focused on the three risk factors that are common to most hedge fund strategies, namely, volatility risk (i.e., changes in implied volatility), market risk (i.e., evolution of the S&P 500), and credit risk (i.e., changes in the level of credit spreads).

Hedge Funds' Time-Varying Exposures to Major Sources of Risk





The data used are the monthly returns for the EDHEC Alternative Indexes from 01/1997 to 12/2004. For the factors, we use the changes in the implied volatility index VIX, calculated by the Chicago Board of Options Exchange, the returns of the S&P 500, and the changes in the level of credit spreads (difference in the yield to maturity between Lehman US Universal High Yield Corporate and Lehman US Treasury).

As can be seen from these graphs, the exposure of hedge fund strategies to volatility, market and credit risk is far from stable over time. More importantly, the patterns of time varying risk exposure differ between the different strategies. At any point in time, while some strategies similarly reduce risk exposure, other strategies increase exposure to the same risk factor or leave it unchanged. It can also be seen that the level of risk exposure differs widely across strategies.

The FSR article's claim that hedge funds take positions in more and more illiquid securities is not substantiated by any data. The article merely states that "the liquidity of hedge fund investments may be decreasing, as recently hedge funds have reportedly been acquiring less liquid assets". While it is obviously difficult to obtain data on this topic, it is revealing for the article's methodology that a mere guess suffices to support the statement.

Most importantly, even if the claim of increasingly similar positions in illiquid securities corresponded to reality, this does not allow for the conclusion that adverse affects are likely to occur if investors start to redeem their shares in a massive way. In fact, hedge funds have a number of mechanisms that aim at matching funding liquidity and asset liquidity. In particular, lock-up periods - ranging from a month to more than a year - protect hedge funds from situations where they are obliged to sell assets due to decreasing funding liquidity. The FSR article itself asserts "a tendency [...] to offer longer lock-up periods". Therefore, even if hedge funds are investing into more illiquid securities, sudden redemptions by investors may simply be impossible. In addition to lock-up periods, hedge funds typically require a notice period prior to redemption, further increasing the time to redemption for investors, and they charge redemption fees that give additional disincentives for sudden redemptions.

2. Hedge Funds and Systemic Risk

The question of systemic risk of hedge funds is not new. Therefore, we propose a review of this topic, including positions taken by several regulatory authorities. It can be stated that the comments of most authorities – including prior research by the ECB - diverge clearly from the conclusions of the FSR article since they take a more nuanced point of view.

As explained in a recent study by the ECB (see ECB (2005)), hedge funds could affect financial stability through three channels:
1) "the failure of a large individual or a group of hedge funds could lead to far-reaching repercussions for exposed banks and financial markets",

2) "the serious mismanagement of exposures to hedge funds at an individual bank or banks might lead to a systemic crisis via contagion effects",

3) "instability could be initiated through the impact of hedge fund activities on financial markets". Unfortunately, as stressed in Chan et al. (2005), "A definitive assessment of the systemic risks posed by hedge funds requires certain data that is currently unavailable, and is unlikely to become available in the near future, i.e., counterparty credit exposures, the net degree of leverage of hedge fund managers and investors, the gross amount of structured products involving hedge funds, etc. Therefore, we cannot determine the magnitude of current systemic risk exposures with any degree of accuracy".

Furthermore, as highlighted in a recent discussion paper by the FSA (see FSA (2005)), "the risk of an individual hedge fund posing a threat to the financial system on the scale of the LTCM episode, or even approaching it, has significantly diminished since 1998. This is primarily a consequence of enhanced risk management by hedge fund counterparties and the seeming absence of hedge funds with the level and nature of exposures taken on by LTCM". The same conclusion was drawn in a recent study by the ECB (see ECB (2005)). Despite some evidence that hedge funds may engage in "crowded trades", the situation today is certainly better than before the LTCM crisis because:
1) banks use more sophisticated techniques to manage their exposures to hedge funds,

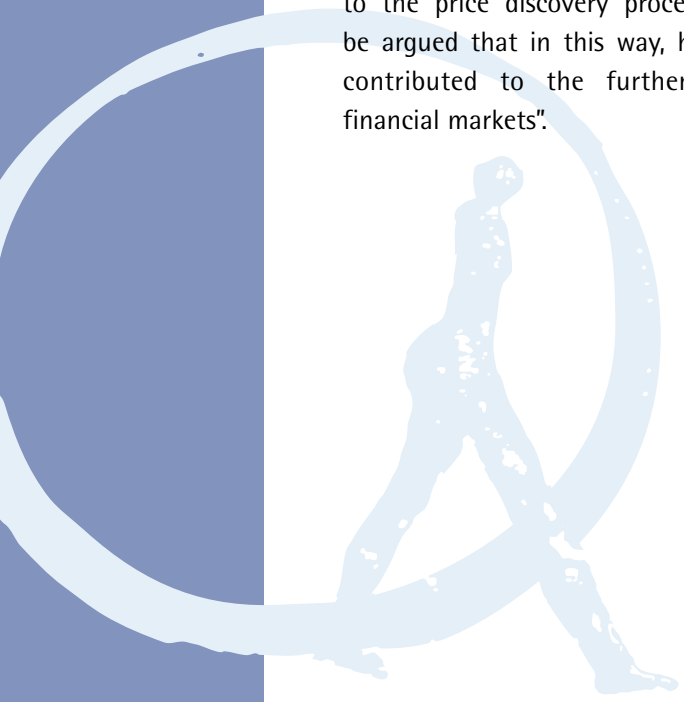
2) as more players have entered the market, positions are probably much less concentrated in one or a few funds,

3) leverage levels taken on by funds are now lower. The Financial Economists' Roundtable (FER) concurs that "[...] systemic risk of a cascading nature that would jeopardize financial institutions is now small, but we recognize the inherent difficulty in drawing any firm conclusion in this regard".

It should be noted that no study has been able to demonstrate the implication of hedge funds in any systemic crisis, so far. As a matter of fact, the Financial Stability Forum (see Financial Stability Forum (2000)), in its report on highly leveraged institutions declined to conclude that hedge funds had compromised market integrity in the episodes it analyzed. In fact, often large international or domestic financial institutions and not hedge funds turned out to have led or precipitated market crashes. Secondly, it is worth noting that systemic risks are already indirectly controlled by regulators. We recall that hedge funds borrow money from regulated financial institutions, i.e., institutions that must monitor and control their counterparty risk. Had these financial institutions followed their internal risk control procedures properly, LTCM would not have been able to increase its leverage in such extreme proportions and the collapse would have been avoided, or in the worst-case scenario, its bankruptcy would have remained an idiosyncratic event.

In addition to an evaluation of potential systemic risks, there are undeniably some benefits from

hedge fund activity. The ECB itself stresses in a recent study (see ECB (2005)) that "[...] hedge funds have a role as providers of diversification and liquidity, and they contribute to the integration and completeness of financial markets. [...] As active market participants they often take contrarian positions, thus contributing to market liquidity, dampening market volatility and acting as a counterbalance to market herding. [...] They thrive on perceived inefficiencies by arbitraging away price differences for the same risk across markets. In this way, hedge funds contribute to the price discovery process. It might also be argued that in this way, hedge funds have contributed to the further integration of financial markets".



Conclusion

Detailed discussion of the methodology and reasoning reveals that the FSR article's conclusion of a risk of "disorderly exits from crowded trades" is based on mere speculation. While the question of systemic risk is of importance, we do not dispose of enough data to reliably address this question at this stage (see Chan et al, 2005). For authorities in the financial markets, working towards obtaining such data would probably be worthwhile. In addition to evaluating systemic risks, the benefits offered by hedge funds should not be neglected when analysing the role they play in financial markets.

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