

Box 2

HEDGE FUNDS AND THE CROWDING OF TRADES

From an efficiency perspective, hedge funds can have a positive effect on the financial system: they contribute to market liquidity, play an important role in the price discovery process, contribute to the elimination of market inefficiencies, and can enhance investment diversification. However, the proliferation of hedge funds in recent years and their growing importance as participants in global financial markets has raised questions about the possible implications for financial market dynamics and, more generally, stability. As an increasing number of funds attempt to exploit profitable opportunities from similar strategies, concerns have been expressed that the positioning of individual hedge funds is becoming more similar or “crowded”. Moreover, the growth of the industry could also be leading to diminishing returns and could as a result push funds into greater risk-taking, through leverage, in order to satisfy the expectations of demanding investors. This Box examines the issue of the risk that crowded trades will result in adverse market dynamics by analysing recent hedge fund return performances from a historical perspective.¹

When markets are stable, the presence of hedge funds can boost liquidity, whereas under stressed conditions hedge funds – because they are unlikely to or simply cannot afford to wait when leveraged positions begin to lose money – would probably be among the first to “rush for the exit”. The crowding of trades or similar positioning across hedge funds within a particular strategy may further magnify the impact of hedge fund exits on certain fledgling or “exotic” markets where the involvement of regulated institutional investors is less prevalent.

Since 2001, hedge fund returns have become less widely dispersed (see Chart B2.1), which could be a broad indication that hedge fund positioning is becoming increasingly similar, although it might also be related to the relatively more benign market environment or to lower risk-taking by hedge funds. One way of disentangling this is to consider patterns in pairwise correlation coefficients of individual hedge fund return performances within strategies. Rising correlations could be a sign that hedge fund managers are employing models that are too similar and are no longer creating true alpha – or excess returns – that are uncorrelated with other managers within the same strategy, even though they may still outperform other types of investments. In the event of a serious market shock, if correlations are high, then hedge funds within a strategy may be more likely to liquidate positions simultaneously, thus amplifying price swings or even causing liquidity to dry up. Higher correlations also imply that diversification possibilities are reduced for funds of hedge funds specialising in a particular strategy.

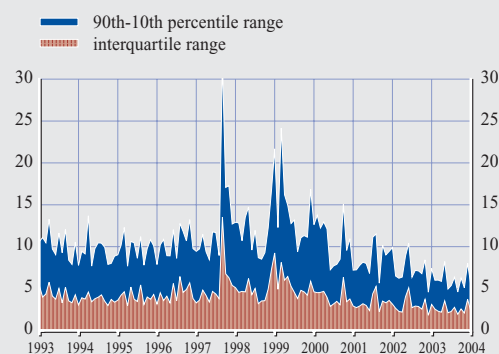
The median pairwise correlation coefficients of hedge fund monthly returns for the 11 years between December 1993 and December 2004 are generally not very high (see the left panel of Chart B2.2),² and after taking into account slightly different classifications of strategies, they

1 This Box is based on findings of a forthcoming ECB Occasional Paper on “The Implications of Hedge Funds for Financial Stability” by F. Dierick and T. Garbaravicius.

2 In the TASS database, some time series of hedge fund returns represent merely counterpart onshore and offshore funds or different classes of shares with different fee structures, lock-up periods and other “technical” differences. As a result, such time series basically correspond to the parts of the same pool of money, which are managed in a highly correlated or nearly identical way. Therefore, to ensure conservative results, such time series were aggregated by taking averages of returns weighted by capital under management.

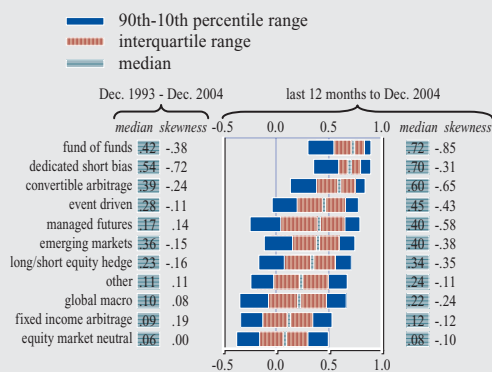
Chart B2.1 Dispersion of hedge fund monthly returns

(%, in USD terms, net of all fees)



Sources: TASS database (24 March 2005 version) and ECB calculations.
Note: Excluding funds of hedge funds.

Chart B2.2 Distribution of pairwise correlation coefficients of monthly hedge fund returns within each strategy



Sources: TASS database (24 March 2005 version) and ECB calculations.
Note: For the last 12 months to Dec. 2004, only hedge funds with 12 observations were included, whereas for the period from Dec. 1993 to Dec. 2004, no less than 12 consecutive overlapping observations were necessary for each pair of hedge funds. Pearson median skewness.

roughly correspond to the values obtained by the Financial Stability Forum (FSF) in 2000 from the MAR/Hedge database for the period from January 1990 to August 1999.³ According to both calculations, short-sellers and funds of funds were the two categories with the highest medians. However, these results cover rather long periods, while the medians of pairwise correlation coefficients of returns over the 12 months to December 2004 convey a more worrying picture (see the middle and right-hand panels of Chart B2.2).⁴ Across all strategies, medians were substantially higher and the distributions of pairwise correlation coefficients were more negatively skewed than their long-term values. For many strategies, the proportions of pairwise correlation coefficients close to or less than zero were substantial, suggesting that in 2004 there were still hedge funds with returns that were uncorrelated to other hedge funds within the same strategy, assuming funds were (self-)classified correctly and that there was no style drift.

In normal times, owing to a sufficient diversity of micro factors, such as portfolio structure, liquidity profile, internal risk limits or timing, similar actions by hedge funds may lead to varied performances, even if hedge fund investment strategies, positions and expectations within strategies might be very alike. However, under stressed conditions, these differences tend to disappear, especially if trades are leveraged, and the ability of hedge funds to take offsetting contrarian positions is limited.

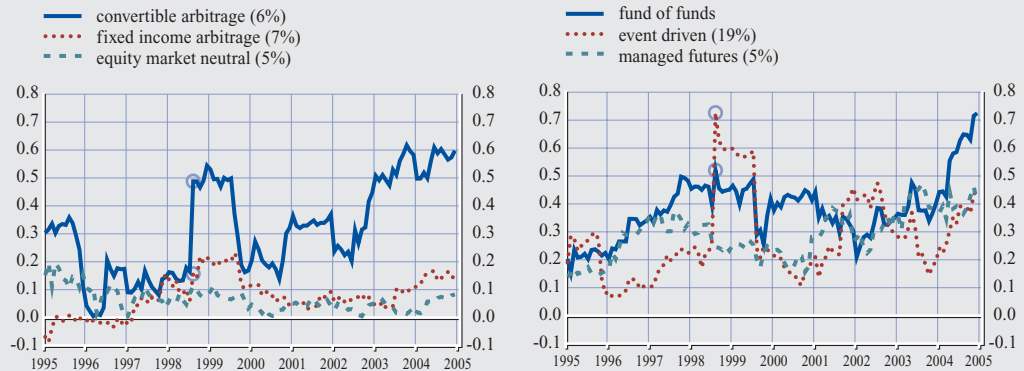
In times of stress, if trades are crowded, the correlations of return performances can surge. This occurred in August and September 1998 after the Russian default and the near-collapse of LTCM (see Chart B2.3). Putting the recent rise of correlations into this historical context, the behaviour of median pairwise correlation coefficients within fund of funds, event driven,

³ See FSF (2000), "Report of the Working Group on Highly Leveraged Institutions", April, p. 89 and p. 104.

⁴ Given 12 observation pairs and a 5% (1%) confidence level, statistically significant (i.e. different from zero) module values of pairwise correlation coefficients should exceed 0.58 (0.71).

Chart B2.3 Medians of pairwise correlation coefficients of monthly hedge fund returns within strategies

(moving 12-month window)



Sources: TASS database (24 March 2005 version), TASS Research and ECB calculations.

Note: Circled points refer to August 1998. Numbers in the parentheses after strategy names indicate the share of total capital under management (excluding funds of hedge funds) at end-December 2004, as reported by TASS Research.

convertible arbitrage and managed futures strategies in a relatively benign market environment raises concerns. The medians of convertible arbitrage, fixed income arbitrage, event driven and managed futures strategies have also exhibited long-term rising trends.

All in all, there are indications that hedge fund positioning has resulted in a crowding of trades in some markets, possibly leaving them vulnerable to adverse market dynamics. These concerns are the largest for convertible arbitrage and fixed income arbitrage strategies, calling for close monitoring, especially as these strategies generally have the highest leverage and therefore significant gross positions. The unwinding of these positions could prove disruptive for the fixed income markets in which these funds are involved, especially if the degree of liquidity in these markets was to prove low.