

## Box 6

## HEDGE FUND LIQUIDATIONS

Hedge funds are often considered to be a rather risky alternative investment, although the historical risk-adjusted performance of non-investable hedge fund indices of some investment strategies might suggest the opposite. Because the failure of a large hedge fund or a cluster of smaller hedge funds could cause financial instability by impairing banks' soundness and the smooth functioning of affected financial markets, this Box investigates hedge fund failures in greater detail.

Hedge fund failure has different implications for parties associated with a failed fund. For investors, credit and trading counterparties, a hedge fund failure constitutes a loss on their investments and credit exposures, whereas for the hedge fund manager, who has not committed own capital to the fund and does not manage other funds, it represents a failed asset management venture that culminates in the eventual liquidation of the fund.

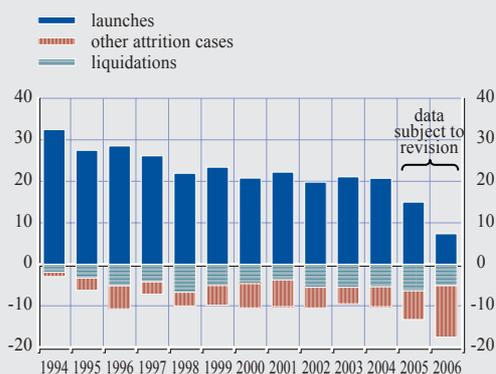
Liquidations can be either involuntary or voluntary at the initiative of the hedge fund manager. A forced closure would typically occur if investors demand the return of the remaining funds after investment losses that eroded a substantial part of their capital or because of any other reason that led to a loss of trust in the hedge fund manager. There is some evidence that in approximately half of cases scrutinised, hedge funds were forced to shut down owing to various operational risk factors, such as misrepresentation of investments, misappropriation of funds/general fraud, unauthorised trading and style breaches, or inadequate resources and infrastructure.<sup>1</sup> In the worst case, owing to fraudulent activity or investment losses, particularly on leveraged investment positions, all investor capital could be depleted and there would be nothing to return to investors.

If investors withdraw a substantial part of their money, the remaining capital under management may not be sufficiently large to make it economic for the manager to continue operating a fund. This is because without sufficient investor capital, the benefits of economies of scale cannot be reaped, and the flow of asset management and performance fee income may be inadequate for the manager. As a result, significant investor redemptions and unsuccessful fund-raising efforts are likely to be key reasons behind voluntary liquidations, although hedge funds can close for other reasons as well, such as the departure of key managers.

<sup>1</sup> See S. Feffer and C. Kundro (2003), "Understanding and Mitigating Operational Risk in Hedge Fund Investments", *White Paper Series*, Capco Institute, March.

**Chart B6.1 Launch, liquidation and attrition rates of single-manager hedge funds**

(% of existing funds at the end of the previous year)



Sources: Lipper TASS database and ECB calculations.

Note: Only funds with last reported performance before December 2006 were used for the calculation of liquidations and other attrition cases.

It is important to emphasise that hedge fund liquidation and attrition rates are not the same thing, since the latter term is a broader concept that also encompasses liquidations and refers to all cases when hedge funds stop reporting to databases for whatever reason. Such reasons could, for example, include good performance that attracts investors and even leads to the closure of a fund to new investments, or poor performance after which the manager may prefer to stop reporting until the hedge fund has recovered from a temporary setback.

Since the beginning of 1994, the Lipper TASS database has tracked the reasons why hedge funds have left it, which allows liquidations to be separated from other attrition cases.<sup>2</sup> Based on information in the database, annual hedge

fund liquidation and attrition rates fluctuated at around 5% and 10% respectively (see Chart B6.1).<sup>3</sup> These estimates are in line with evidence and anecdotal information on the probability of hedge fund liquidations from various market participants.<sup>4</sup>

Cumulative hedge fund liquidation and attrition rates are depicted in Chart B6.2. It shows that liquidated and all defunct single-manager hedge funds account for less than a quarter and almost half of all single-manager hedge funds in the database respectively. Moreover, the increase in cumulative liquidation and attrition rates slows down significantly after funds become more than ten years old. Cumulative hedge fund liquidation rates also vary by strategy. Managed futures and event-driven strategies appear to exhibit the highest and the lowest cumulative liquidation rates respectively after the tenth year since inception.

A more illustrative way to analyse the timing of hedge fund liquidations is to use hazard rate curves. The hazard rate is the conditional liquidation rate, or the fraction of funds that were liquidated during a particular time interval, given survival up to the beginning of the interval. Hedge fund hazard rates typically peak in the third year of a hedge fund's lifetime and can be very volatile, depending on the investment strategy (see Chart B6.3). As in the case of cumulative liquidation and attrition rates, the hazard rates of funds of hedge funds are lower than those of single-manager hedge funds.

2 In the database, there are seven attrition cases: fund liquidated, fund no longer reporting, unable to contact the fund, fund closed to new investment, fund has merged into another entity, fund dormant, and unknown.

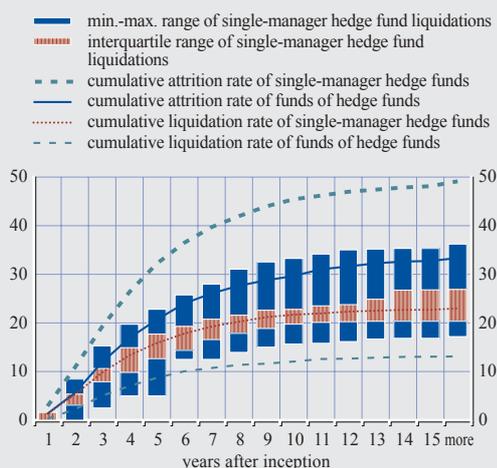
3 It should be noted that these estimates are not adjusted for the fact that some entries in the database may represent sub-fund structures (onshore and offshore versions or different classes of shares) rather than separate funds.

The estimated rates for 2005 and 2006 should be treated with caution, since hedge fund launch rates may increase, and liquidation and attrition rates may decline later as more funds join the database after successful incubation periods, backfill their historical track records and thereby augment the number of launched and existing funds. This also applies, albeit to a lesser extent, to earlier years as well, since hedge funds can add, delete and modify their historical and contemporaneous information in the database continuously. Moreover, the latest performance data are subject to incomplete reporting, and some funds which have not yet reported their late-2006 performance might choose to do so at a later date, and would then be removed from other attrition cases.

4 For example, Hennessee Group, an adviser to hedge fund investors, estimated that from 1999 to 2006 the average annual liquidation rate was 5.2%. See Hennessee Group (2007), "Hedge fund attrition rate at 5.1% for 2006", 31 January, press release.

**Chart B6.2 Cumulative hedge fund attrition and liquidation rates and the dispersion of cumulative liquidation rates of single-manager hedge funds by strategy**

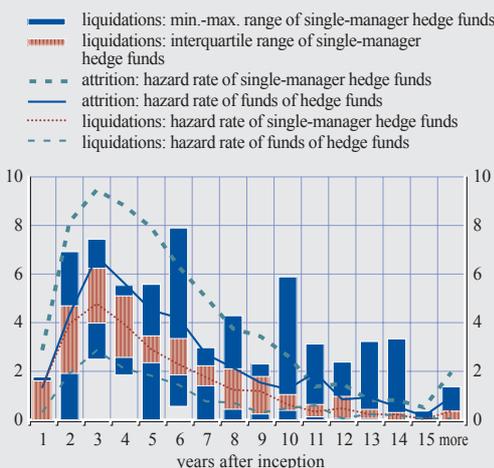
(up to Dec. 2006, % of funds)



Sources: Lipper TASS database and ECB calculations.  
 Note: Cumulative attrition rates comprise liquidations and other attrition cases where the last reported performance dates are before December 2006. The single-manager group includes ten strategies: multi-strategy, equity market neutral, convertible arbitrage, fixed income arbitrage, event driven, managed futures, emerging markets, global macro, dedicated short bias and long/short equity hedge.

**Chart B6.3 Hedge fund hazard rates and the dispersion of hazard rates of single-manager hedge funds by strategy**

(up to Dec. 2006, % of funds which reported up to the beginning of a particular year since inception)



Sources: Lipper TASS database and ECB calculations.  
 Note: The hazard rate measures the proportion of funds that stopped reporting during a particular year since their inception, given reporting up to the beginning of that year. Hazard rates for liquidations account only for liquidations, and every year the number of funds in the database was only decreased by the number of liquidated funds, thereby ignoring other attrition cases. Only funds with last reported performance before December 2006 were used to calculate liquidations and other attrition cases.

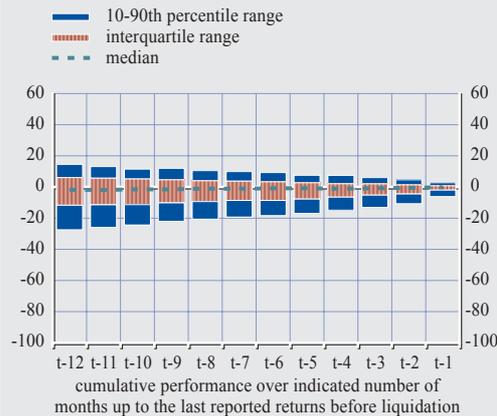
The rationale behind the highest hazard rates through the second to fourth years of operation is related to capital-gathering from investors. A new hedge fund first of all represents a start-up asset management venture that may succeed in the longer run only if it attracts and retains investors' money. During an incubation period that may last for one to two years, the hedge fund manager attempts to build up an attractive investment track record that would help woo investors. Of course, there are exceptions, since some managers succeed in securing large amounts of capital for quite long periods soon after or even during the launch phase, but such cases seem to be rare.

To investigate further the reasons for hedge fund liquidations, it is useful to examine the patterns of hedge fund performance and capital under management before liquidation. Such analysis is however hindered by so-called liquidation bias, which refers to the fact that hedge fund managers can stop reporting to a database before the final liquidation value of a fund. As a result, the time interval between the last reported returns and the actual liquidation may vary. However, according to researchers who have studied this bias the average loss to investors beyond information contained in databases may not necessarily be that large.<sup>5</sup> Nevertheless, even if hedge funds were to report all returns and capital under management up to the liquidation point, it would still remain unclear when the decision regarding the voluntary or forced

<sup>5</sup> See C. Ackermann, R. McEnally and D. Ravenscraft (1999), "The Performance of Hedge Funds: Risk, Returns and Incentives", *Journal of Finance*, Vol. 54, No. 3, 833-874. Researchers used hedge fund information up to the end of 1995 and asked Hedge Fund Research, a database vendor, to determine the liquidation value of hedge funds. The average post-reporting loss was found to be only 0.7%.

**Chart B6.4 Dispersion of single-manager hedge fund performance before liquidation**

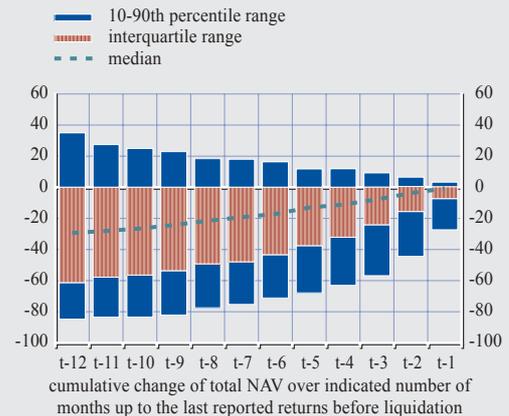
(cumulative % change of net-of-all-fees returns)



Sources: Lipper TASS database and ECB calculations.  
 Note: Only liquidated funds with last reported net-of-all-fees performance before December 2006 and capital under management data available at least on the date of last reported returns. Only observations with available matching cumulative change in total NAV included.

**Chart B6.5 Dispersion of changes in single-manager hedge fund capital under management before liquidation**

(cumulative % change of capital under management)



Sources: Lipper TASS database and ECB calculations.  
 Note: Only liquidated funds with last reported net-of-all-fees performance before December 2006 and capital under management data available at least on the date of last reported returns.

liquidation was taken and which part of time series reflects investment activity rather than managed liquidation of remaining investments in order to return proceeds to investors.

Charts B6.4 and B6.5 contain information on the dispersion of cumulative performance and change in capital under management during the last 12 months up to the last reported returns before fund liquidation. Both charts are based on the matched sample of liquidated single-manager hedge funds, which reported returns on a net-of-all-fees basis and for which capital under management data were available at least on the date of last reported returns before liquidation. The charts suggest that historically, hedge fund liquidations were generally not preceded by poor cumulative absolute returns very often, yet were associated with relatively large declines in capital under management stemming, therefore, predominantly from investor redemptions. However, the patterns of cumulative underperformance relative to respective strategy indices were much more negative than those of cumulative absolute returns. Chart B6.5 also indicates that there were funds which were liquidated after experiencing relatively strong growth of capital under management, but which, nonetheless, most likely were characterised by small total fund size or ceased operations for other reasons, such as, for example, the departure of key managers.

All in all, three main conclusions can be drawn from the information presented above. First, annual hedge fund liquidation rates appear to fluctuate around 5%, and are much lower than attrition rates from hedge fund databases. Second, the period after the incubation phase around the third year after inception appears to be critical for many hedge funds. Third, most hedge fund liquidations appear to be caused by business risk related to unsuccessful fund-raising and/or investor exodus, which, of course, largely depends on fund performance. Nevertheless, high-profile misfortunes, such as the ones experienced by Long-Term Capital Management in

September 1998 or Amaranth Advisors in September 2006, remain useful reminders of the potential risks to banks and financial markets posed by excessive risk-taking and deficient risk management within hedge funds.