Understanding and Mitigating Operational Risk in Hedge Fund Investments

A Capco White Paper

March 2003

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1. Background

Over the past decade, interest in hedge fund investments has taken off. Drawn by the prospect of high absolute returns and their low correlation to traditional investments, investors are increasingly looking to hedge funds to improve the overall risk/return profile of their investment portfolios. It is estimated that there are some $600 billion invested in approximately 6,000 hedge funds worldwide. Since 2000, this trend has been further supported by the poor performance of traditional investments and strategies. Many believe that we are now on the verge of a mass 'retailization' of hedge fund investing with leaders from the mutual fund industry introducing hedge fund products for the mass affluent.

As the hedge fund industry has grown explosively, so too has the list of fund failures and burned investors. On close to a monthly basis we continue to hear about the catastrophic losses incurred by some of the industries best known managers with the most recent including Gotham Partners and Beacon Hill.

To better understand the reasons why hedge funds fail in ways that often result in substantial investor losses and how such failures could be prevented or at least avoided, Capco initiated an ongoing proprietary study of the industry in mid 2002. The initial findings from this study have been very compelling and are not expected to change significantly as it progresses.

In a nutshell, our initial analysis finds that operational issues account for an alarmingly high proportion of hedge fund failures (50%) and that expanding due diligence and monitoring practices to understand 'back-office' capabilities can make a big difference in preventing or avoiding these failures.

2. Approach

The study is based on a proprietary database of hedge fund failures going back over 20 years that captures details of losses, litigation and root causes. For this study, failed funds have been defined as those that have been forced to cease investment operations for reasons outside of management's control as distinguished from discretionary fund closures that are much more frequent and are often driven by the business or market expectations of the fund manager.

Our initial findings are based on over 100 failed funds over this period with the primary cause of each fund's failure attributed to at least one of the following factors representing 3 basic categories of risk:

Investment Risk

Market and related risks associated with the overall fund or a specific position

Business Risk

Risks associated with a fund that are not directly related to market movements, such as failure to reach a base level of assets under management or a change in management of the fund

Operational Risk

Risks associated with supporting the operating environment of the fund. The operating environment includes middle and back office functions such as trade processing, accounting, administration, valuation and reporting

In circumstances where it is difficult to isolate the leading causes of a fund's failure to a single category, we have attributed failure to a combination of *Multiple Risks* that span these categories.

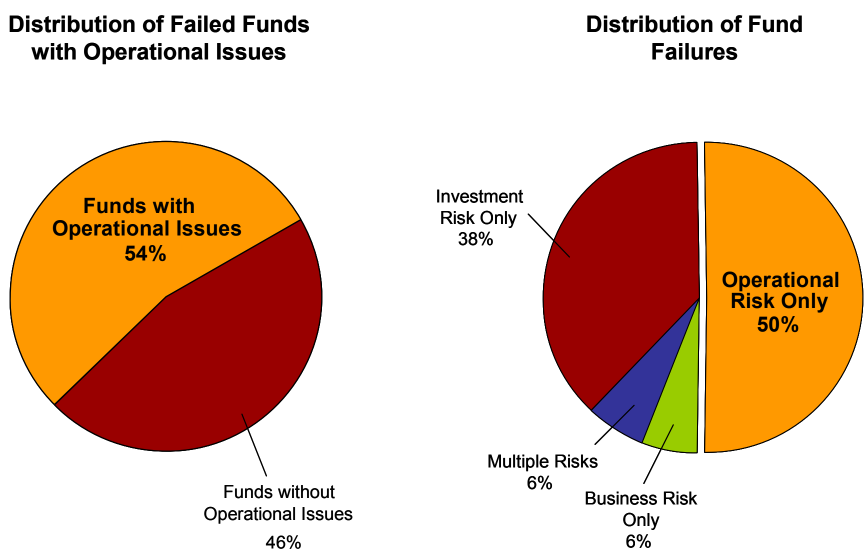
To understand common operational due diligence practices employed in the industry Capco has conducted informal interviews and discussions with leading hedge fund managers and consultants.

3. Initial Findings

3.1 An alarmingly high proportion of hedge fund failures can be attributed to operational issues

54% of failed funds had identifiable operational issues and half of all failures could be attributed to operational risk alone.

Figure 1. Failed Funds with Operational Issues and Primary Causes of Fund Failure



3.2 The most common operational issues related to hedge fund losses have been Misrepresentation of Fund Investments, Misappropriation of Investor Funds, Unauthorized Trading, and Inadequate Resources.

Misrepresentation of investments

The act of creating or causing the generation of reports and valuations with false and misleading information.

Misappropriation of funds /general fraud

Investment Managers who knowingly move money out of the fund for personal use, either as an outright theft or to cover pre existing trading losses.

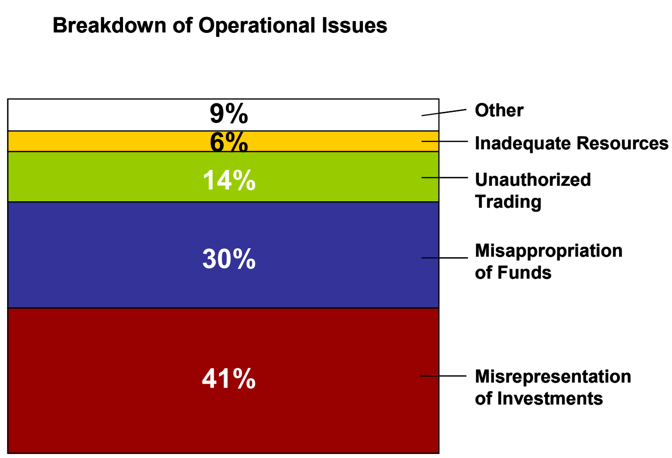
Unauthorized trading & style breaches

Making investments outside of the stated fund strategy or changing the investment style of the fund without the approval of investors.

Inadequate resources for fund strategy(s)

Technology, processes or personnel that are not able to properly handle operating volumes or the types of investments and activities that the fund engages in.

Figure 2. Distribution of Operational Issues Contributing to Operational Risk in Hedge Funds



These problems have contributed to substantial investor losses in hedge funds that could possibly have been prevented or avoided with a more comprehensive due diligence and monitoring approach. For example, in the case of last year's failure of the Lipper convertible arbitrage funds, had investors scrutinized and monitored the funds' valuation practices closely, there is a good chance that they would have recognized their limited use of objective third parties to verify the pricing of illiquid securities and avoided investing in these funds.

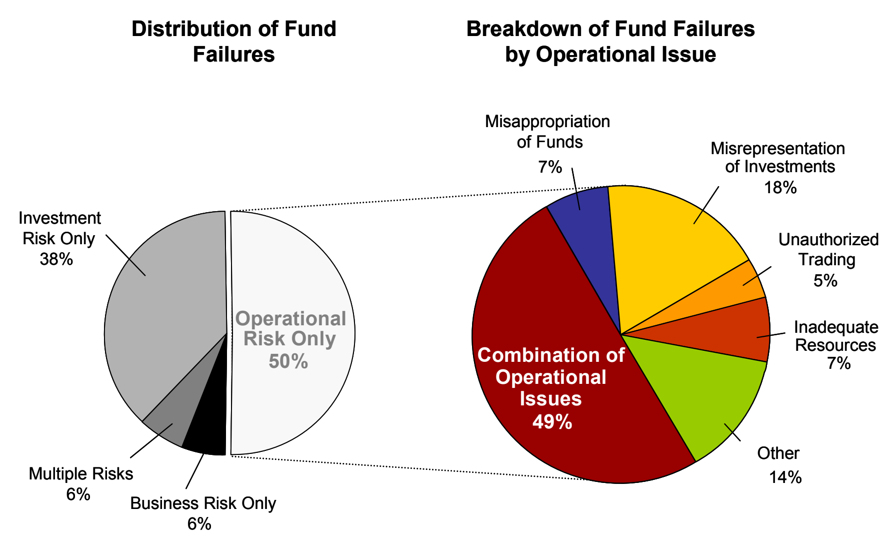
(Additional examples are summarized in figure 3).

Figure 3. Sample Cases

Strategy : Market Neutral **Total Estimated Loss/Redemption :** 700+ Million USD **Primary Operational Issue: Unauthorized T**rading **Highlights:** ➢fund marketed as a market neutral fund ➢betting on drop in interest rates leveraged 10 to 1 ➢lost 60% of value in 7 months	**Strategy :** Fixed Income Arbitrage **Total Estimated Loss/Redemption :** 500+ Million USD **Primary Operational Issue:** Inadequate Resources/ Infrastructure **Highlights:** ➢fund had a steady track record for many years ➢shifted to new trading/investment strategy ➢risk mgt system could not fully support new security types ➢resulted in high volatility leading to losses and draw-downs
Strategy : Convertible Arbitrage & International **Total Estimated Loss :** 300+ Million USD **Primary Operational Issue:** Misrepresentation of Investments **Highlights:** ➢hedge fund manager wrote down $315 million ➢attributed it to a conservative pricing of illiquid securities ➢pricing was done w/o a third party verification	**Strategy :** Long/Short Equity **Total Estimated Loss :** 40+ Million USD **Primary Operational Issue:** Misappropriation of Funds/Fraud **Highlights:** ➢fund had initial minimal loss that was hidden ➢fund manager mis-represented performance ➢attracted additional investments and opened more funds ➢management used fund assets for personal expenses

3.3 Of Funds that failed as the result of operational risk only, nearly half had multiple operational issues.

Figure 4. Breakdown of Fund Failures Attributed to Operational Risk Only by Operational Issue



3.4 The most frequent combination of operational issues was Misappropriation of Investor Funds and Misrepresentation of Fund Investments.

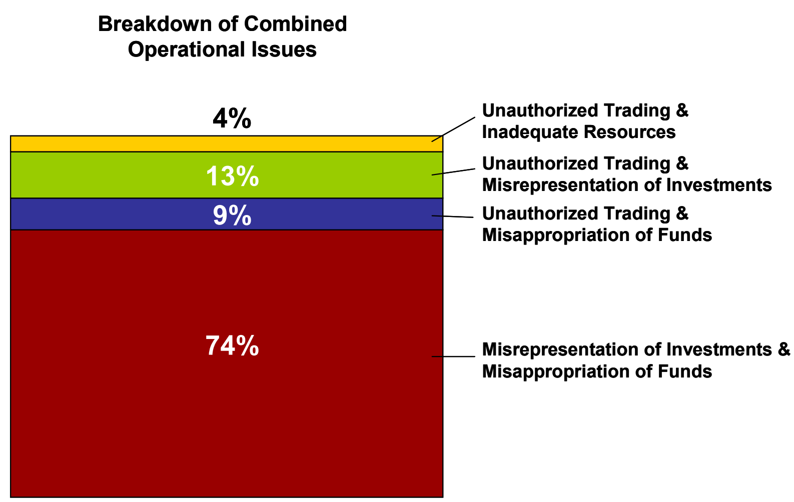
The misrepresentation of fund investments and activities is clearly a major problem in both its prevalence among failed funds and its relationship to other issues and risks. Although most managers do not set out to defraud investors from day one, but many clearly have done so, we have found numerous occasions where on the back of poor investment performance, managers 'modified' the valuation of their funds and/or their investment results to buy time until actual results hopefully improved.

Although it may be impossible to foresee which managers will attempt to defraud investors their funds, it is critical that investors understand to what extent the opportunity exists to manipulate and misrepresent fund investments should their managers feel the urge. This can be accomplished through more complete scrutiny of a hedge fund's operations and technology capabilities and a detailed understanding of the information flows between a fund and its supporting service providers that typically include, prime brokers and administrators).

Knowing that a fund has very tight controls over cash flows and seeks third party verification of a valuations to ensure they are current and appropriate will not eliminate the risk of fraud, but will go a long way in limiting the manager's opportunity to do so.

Relying solely on a fund's administrators and auditors is not be enough. For example, to hide substantial investment losses, the Manhattan fund allegedly created fictitious account statements that materially overstated the value of the fund. These statements were provided to investors, potential investors as well as the funds' administrator and auditor for more than 3 years with neither the administrator nor the auditor catching the problem.

Figure 5. Breakdown of Most Frequent Combinations of Operational Issues



3.5 Operational Risk in hedge funds is typically driven by people/ operations, technology and data/information.

People/Operations

Fraud; misrepresentation; processing errors; poorly trained/insufficient staff; inadequate policies and procedures; lack of board/management oversight

Technology

Lack of automation; system limitations; insufficient scalability; viruses; disasters

Data/Information

Poor data sources; unreliable information; timeliness, accessibility of data

3.6 Effective operational due diligence is an important component of the investment process.

Operational due diligence can help address some fundamental questions affecting investment decisions yet tends to be the least monitored of all hedge fund related risks.

Transparency
Underlying positions in the invested funds for use in generating risk analysis as well as tracking potential style drift

Capacity
Selecting funds that have capacity to accept additional subscriptions

Survivorship
Confidence that the underlying funds will continue to operate to alleviate the need for reallocation of invested funds

Flow of Funds
Ensuring the proper controls, processes and information links are in place to allow quick valuations, and timely allocation and investment of subscriptions

3.7 Traditional approaches to operational reviews fall short of the mark.

For the most part they are:

- an ancillary component of the overall investment due diligence process
- based on a generic view across multiple managers, fund types and strategies

- focused on specific functions
- focused on specific aspects of the operating environment
- focused internally
- often reduced to a background check and character assessment of fund managers

As a consequence, information about the efficiency, effectiveness, capacity and control of hedge funds is rarely assessed in sufficient detail to inform investment decisions and identify appropriate mitigation opportunities.

4. Effective Operational Due Diligence for Hedge Funds

Capco has defined 5 key characteristics of an effective operational due diligence approach for hedge funds:

1) Provides a comprehensive view of the structure, quality and control of the people, operations, technology and data supporting the fund

2) Covers internal processes, systems and information flows

3) Covers the processes, systems, information flows and interfaces provided by external parties such as prime brokers, administrators, custodians, etc.

4) Analyzes the unique requirements of each fund/strategy as they can vary considerably depending upon fund objectives and investment style

5) Assessments are updated on a periodic and event driven basis

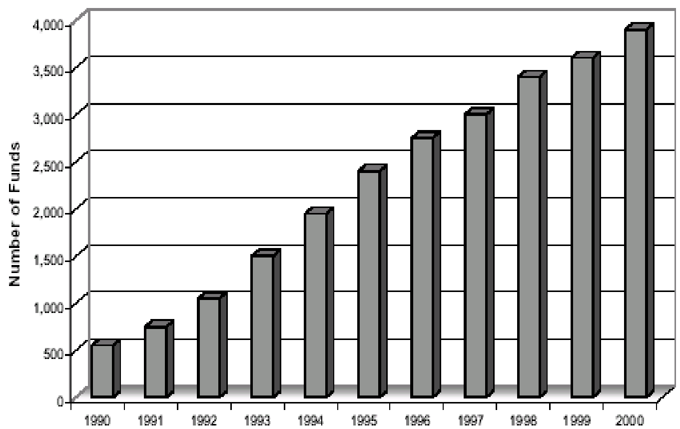
5. It Only Gets More Challenging from Here

Despite lukewarm performance results for 2002, the hedge fund industry is expected to maintain its steep growth trajectory. We expect that the anticipated growth in hedge fund investing will be accompanied by increased performance and operational demands as the number of new managers grows, the breadth and complexity of investment strategies expands and new forms of regulation are considered and eventually adopted.

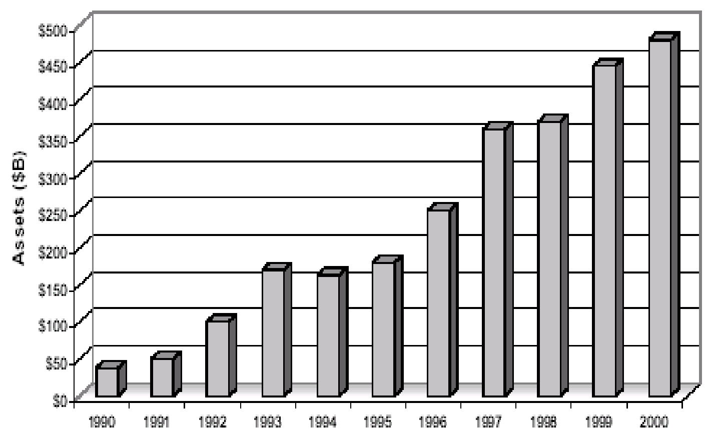
All of this suggests that the operational risks associated with these investments will only grow more important. For the hedge fund investor, effective operational due diligence and monitoring will be key to reducing the potential of catastrophic losses and improving long term investment results in this sector.

Appendix:

Number of Hedge Funds
(1990 - 2000)



Hedge Fund Assets
(1990 - 2000)



Sources: Grosvenor Capital; Undiscovered Managers