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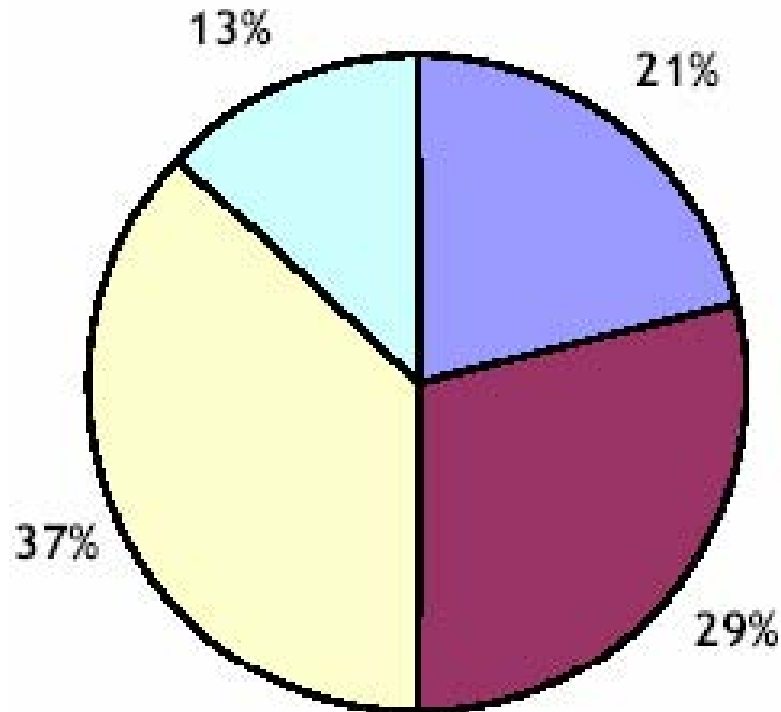
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**Assessing Operational Risk in
Hedge Funds**

Are you concerned about the rate at which capital is flowing into hedge funds (in aggregate)?



- Little to no concern
- Average returns will come down slightly
- Average returns will come down significantly
- There is systematic rise in the financial markets

Hedge Fund Defaults

- Default defined as: Loss > 20% & litigation by investors
- HF Defaults: about **15 each year** → NOT negligible
- More than **60%** of HF failures are clearly related to **Operational** issues
- **70%** of the operational failures can be directly related to **FRAUD**

NOTE: HF Failure is NOT to be confused with HF attrition!

Hedge Fund Defaults

A recent study by EDHEC on failures between 1985 & 2005 shows the following:

- **54% of the cases are fraudulent from inception**
- **33% are failures consecutive to a financial loss**
- **12% are purely operational failures**

(Further statistics in a CAPCO whitepaper on Operational risk from 2003)

Defining Operational Risk

Investors need to perform a thorough Due-diligence on every hedge Fund.

The Reality?

Recent History tells a different story, just looking at some well-publicized cases:

- Manhattan Investment Fund
- Wood River Capital Management
- Integral Investment Management

Defining Operational Risk

“The risk without Reward?”

It is the only risk investors face, which is not rewarded with potential increased returns!

CAPM will not help us, neither will VaR or Sharpe.

So what does help?

Operational Risk: 5 Key issues

1. Experience of Operational Personnel

2. Compliance

3. Internal Controls & Procedures

4. Portfolio pricing

5. Quality of Service Providers

Experience of Operations Personnel

- CFO or COO in place
- Middle- or Back-office in place to oversee the service provider's work:
 - Chase outstanding confirmations
 - Reconcile positions
 - Ensure timely closing of books

Compliance

- Chief compliance officer
- Compliance procedures & manuals
- Monitor & enforce compliance & procedures
- → *Ensure future good relations with regulators*

Internal Controls & Procedures

- Dependent on the complexity of the Fund's investment strategy (*OTC derivatives; heavy volume; etc*)
- Robust procedures at every stage of the trading cycle:
 - Trade authorisation & execution
 - Confirmation
 - Settlement
 - Reconciliation
 - Accounting & transfer of assets
- Segregation of duties (cf Nick Leeson)
- Protection of investors funds (*control of cash movements*)

Portfolio Pricing

- Valuation of assets = Area most at risk for manipulation
- Use & Abuse of fund performance measures (*Does Sharpe tell the whole story?*)

- **NOTE:**

It is important to differentiate between Valuation risk arising from the investment type and the operational risk side.

Products in thinly traded and illiquid markets can be hard to verify at times.

Best practices for valuation

a) Valuation Transparency:

- Clear methods and processes for evaluation
- Comprehensive “Price matrix” for complex instruments
- Maintained by third party administrator
- Valuation committee to approve diversions/ exceptions

b) Price Consistency:

- Securities to be valued the same way over time & at point in time
- Reval rates to be consistent – no “cherry picking”

c) Independent Valuation Process:

- Third party oversight
- NAV calculated by administrator

Which hedge fund strategies cause valuation challenges?

Whilst there is no accepted standard definition of strategies, the table below gives an indication of the types of strategies and the underlying instruments therein, which may cause *potential* pricing issues:

High Yield /Distressed Debt	Fixed Income Arbitrage	Convertible Bond / Arbitrage	Global Macro	Emerging Markets
Secured / Unsecured Debt	Bonds with Embedded Options	Convertible Bonds / Arbitrage	Inflation Linked Bonds	Stocks
Debtor-in-Possession Loans	Interest Rate Forwards	Credit Derivatives	Swaps & Options on Swaps	Stock and Index Warrants
Bank Debt	Options on Bonds	Rights & Warrants	Exotic Commodities	Options
Senior Debt	Exotic Interest Rates Options	Options on Bonds		Futures
Mezzanine Debt	Collateralised Mortgage Obligations			Forwards
Subordinated Debt	Credit Derivatives			Swaps
Junior Debt	Swaps & Options on Swaps			Brady Bonds
Letters of Credit	Collateralised Debt Obligations			Eurobonds
High Yield Bonds	Convertible Bonds / Arbitrage			Convertible Bonds
Convertible Bonds	Mortgage-Backed Securities			Certificates of Deposit (CDs)
Distressed Bonds				Bank Loans
Increasing-rate Notes				Structured Products
Pay-in-kind Securities				Exchange-traded Funds (ETF)
Step-up/Step-down Coupon Securities				
Split Coupon Securities				
Swaps & Options on Swaps				

Quality of Service Provider

- Professional & highly qualified
- Well-known
- Auditors: preferably one of the big 4
- Independent third party administrator.

- **NOT ALL ADMINISTRATORS ARE EQUAL!**
 - “NAV light”
 - Consider the reasons

Due Diligence – done well

Should cover:

- Fund managers organisation
- Fund structure
- Back office
- Valuation
- Independent oversight

Recent Developments

Proper operational infrastructures are made easier for HF managers by the growing offer of outsourcing providers to the industry.

Establishing robust middle-office & compliance procedures is becoming easier in the US & Europe.

Hedge Fund Fraud

Where do we see the majority of the HF Fraud cases around the world?

Why?

How will Asia Perform?

NYU whiz kid to change plea in \$7m hedge fund

scam (*Opalesque; 07 June 2006*)

From InvestmentNews.com:

A former New York University student who bilked investors out of millions of dollars will withdraw his not guilty pleas in a New Haven, Conn. court tomorrow, according to published reports. Prosecutors said Hakan Yalincak, 22, enticed investors to invest in his hedge fund - which he called Daedalus Capital Relative Fund I, based in Greenwich, Ct. - by portraying himself as a member of a wealthy Turkish family. Mr. Yalincak's fund, in fact, did not exist and investors lost more than \$7 million as a result.

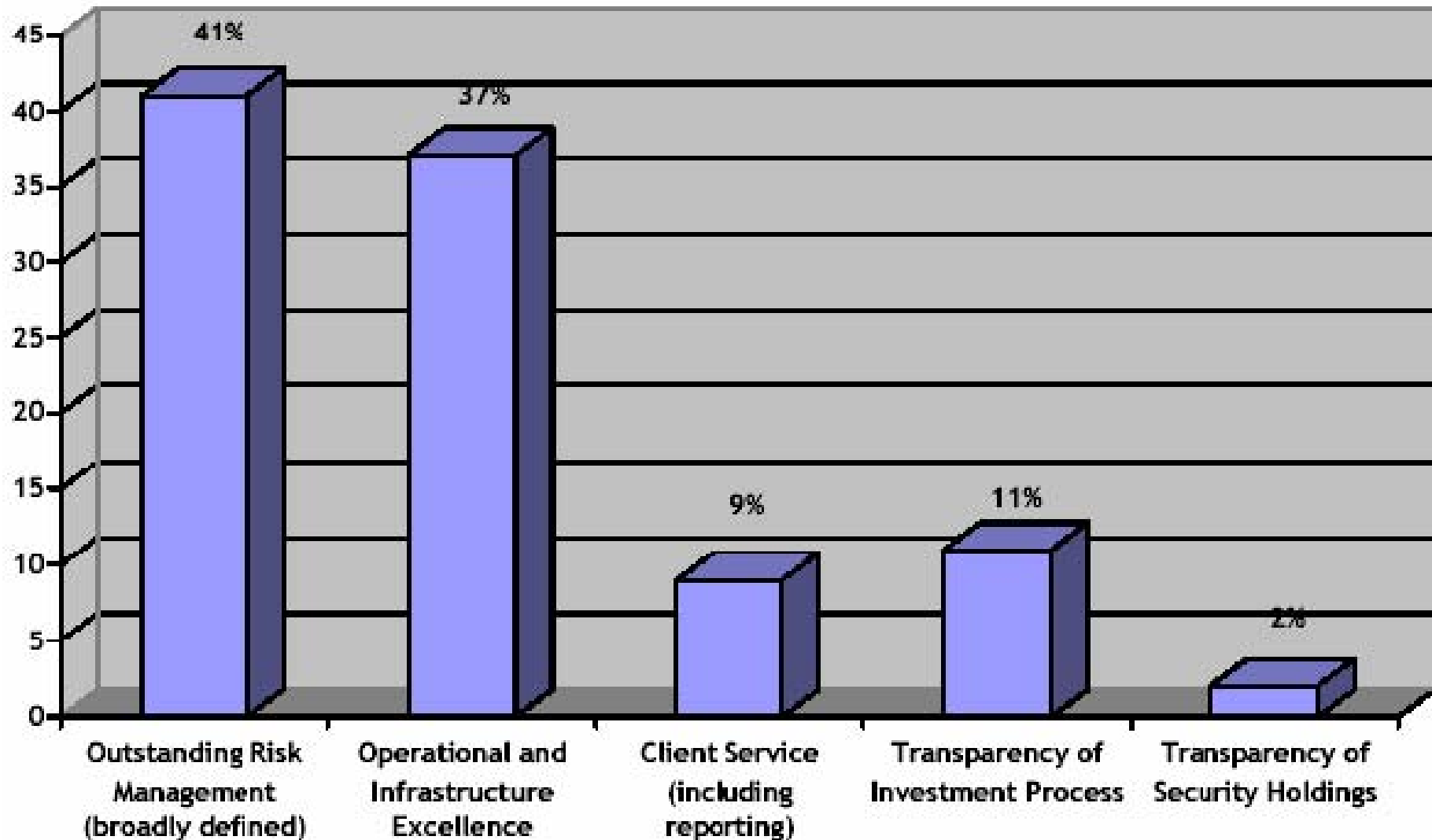
CAPCO Study 2003

<p>Strategy : Market Neutral</p> <p>Total Estimated Loss/Redemption : 700+ Million USD</p> <p>Primary Operational Issue: Unauthorized Trading</p> <p>Highlights:</p> <ul style="list-style-type: none">➤ fund marketed as a market neutral fund➤ betting on drop in interest rates leveraged 10 to 1➤ lost 80% of value in 7 months	<p>Strategy : Fixed Income Arbitrage</p> <p>Total Estimated Loss/Redemption : 500+ Million USD</p> <p>Primary Operational Issue: Inadequate Resources/ Infrastructure</p> <p>Highlights:</p> <ul style="list-style-type: none">➤ 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
<p>Strategy : Convertible Arbitrage & International</p> <p>Total Estimated Loss : 300+ Million USD</p> <p>Primary Operational Issue: Misrepresentation of Investments</p> <p>Highlights:</p> <ul style="list-style-type: none">➤ 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	<p>Strategy : Long/Short Equity</p> <p>Total Estimated Loss : 40+ Million USD</p> <p>Primary Operational Issue: Misappropriation of Funds/Fraud</p> <p>Highlights:</p> <ul style="list-style-type: none">➤ 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

Do HF's need Protection from FRAUD?



Apart from perceived investment skill, what makes for an attractive hedge fund firm?



What makes a “Highly Effective Hedge Fund”

1. Strong tactical business management skills
2. Culture of Integrity
3. Operational excellence
4. Disciplined investment process
5. Investment strategy innovation (!)
6. Comprehensive risk oversight
7. Sophisticated client interphase

Sources

- Bank of New York & Amber Partners Ltd. studies:
 - “Institutional Demand for HFs: New Opportunities & Standards” (2005)
 - “Hedge Fund Operational Risk” (2006)
- Eureka hedge, Singapore
- “Understanding and Mitigating Operational Risk in Hedge Fund Investments” (A Capco White Paper; 2003)

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