Systemic Risk and Hedge Funds
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Hedge Funds Have Expanded Rapidly

Worldwide Hedge Fund Assets ($ in billions)

Number of Hedge Funds Worldwide
Estimated Strategy Composition by AUM – 1990

- Global Macro: 72%
- Event-Driven: 3.8%
- FI: Arbitrage: 3.2%
- Merger Arb.: 0.6%
- Relative Value Arb.: 10.1%
- Convert. Arb.: 0.5%
- Distressed Securities: 2.4%
- Emerging Market Neutral: 1.7%
- Equity Hedge: 5.3%
- Equity Non-Hedge: 0.6%
- Equity Market Neutral: 0.4%
- Sector (Total): 0.3%

Note: From HFR
Estimated Strategy Composition by AUM – 2006

- Equity Hedge: 30.4%
- Emerging Markets: 4.3%
- Distressed Securities: 4.6%
- Convertible Arbitrage: 3.1%
- Short Selling: 0.3%
- Sector: 4.8%
- Relative Value Arbitrage: 11.9%
- Merger Arbitrage: 1.4%
- Regulation D: 0.2%
- Market Timing: 0.4%
- Macro: 10.3%
- Event Driven: 14%
- FI: Arbitrage: 3%
- FI: Diversified: 1.7%
- FI: Mortgage-Backed: 2.4%
- FI: High Yield: 0.8%
- FI: Diversified: 1.7%
- Global Macro: 72%
- Equi Non-Hedge: 4.6%
- Equity Market Neutral: 2.2%
- Note: From HFR 2006-1Q Report
Concentration of Hedge Fund Assets

Notes:
1. Source: Absolute Return, Feb-2006
3. Source: Strategic Financial Solutions estimates 3,500 General Partners based on HF database study
Hedge Funds are Active Market Participants

- They Account for 35-40% of Overall Equity Commissions in US and Asia
- They Account for 40-50% of Daily Turnover on the New York and London Stock Exchanges
- They Dominate Convertible Bond Trading Flows, Accounting for over 70% of Total Volume
- They Account for 20-30% of the Credit Default Swap Volume
- They Represent 82% of the Trading Volume in US Distressed Debt
- They are Almost 33% of Trading in US Speculative-Grade Bonds
- They Dominate US Exchange Traded Funds, Controlling 70% of the Volume
- They are Heavily into Global Foreign Exchange, Representing 10-15% of Worldwide Volume

Source: Greenwich Associates, CSFB, BernsteinResearch
Investment Opportunities

Traditional

Passive Strategies

Active Strategies

Alternative

- Extraordinary Corporate Events
- Complex Financial Instruments
- Convertibles / Warrants
- Emerging Market Bonds
- Small Cap Stocks
- High Yield Bonds
- Large Cap Stocks
- Corporate Bonds
- G7 Bonds
- Cash Instruments

Increasing Inefficiencies

Increasing Potential to Add Value
Hedge Funds and Financial Institutions

HF 1  HF 2  HF 3  HF 4  HF 5  HF 6
HF 7  HF 8  HF 9  HF 10  HF 11  HF 12
FI 1  FI 2  FI 3  FI 4
Complex Interactions
Strategies and Trades are Often Correlated
Economic Crises can lead to Contagion
Systemic Risk?
Key Ideas

- Hedge Funds are Risky
- Dynamic Trading Strategies Produce Option-Like Payoffs
- Liquidity Matters
Implications

- Traditional Risk Measures Are Inappropriate

- Traditional Performance Measures Do Not Work

- Need For New Measures

- Is there alpha?
  - Tail Risk
  - Liquidity Risk
Hedge Fund Leverage

- Balance Sheet Leverage
- Instrument Leverage
- Dry-Powder Agreements
- Leverage on Leverage
Institutional Exposure to Hedge Funds

- Prime Brokerage
  - Cash
  - Synthetic

- Financing

- Counterparty Trading

- Correlated Trading

- Secondary Market Effects
Trading Volatility

Negative Trading Days

Trading Revenue Volatility

Notes:
1) Trading Revenue Volatility measured by standard deviation of trading revenue as % of its mean, over three years to Q4 2005
2) Source: Moody’s as reporting in The Economist 29-Apr-06
Institutional Exposure to Hedge Funds

- Legal Certainty
  - Netting
  - Bankruptcy

- Documentation

- Clearance and Settlement

- Internal Systems

- Risk Management

- Liquidity Management