



**Edhec-Risk**  
Asset Management Research

# Edhec Hedge Fund Days 2006

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## How much is enough?

The optimal number of hedge funds in a bottom-up  
alternative multi-management approach

**Francois-Serge Lhabitant**

Associate Professor of Finance, Edhec Business School

[fsl@kedgecapital.com](mailto:fsl@kedgecapital.com)

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# Traditional views on diversification

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- Diversification is essential to create an efficient portfolio.
- Diversification eliminates specific risk and keeps market risk.
- Assets with low correlation are good diversifiers.
- More assets in a portfolio means more diversification benefits.

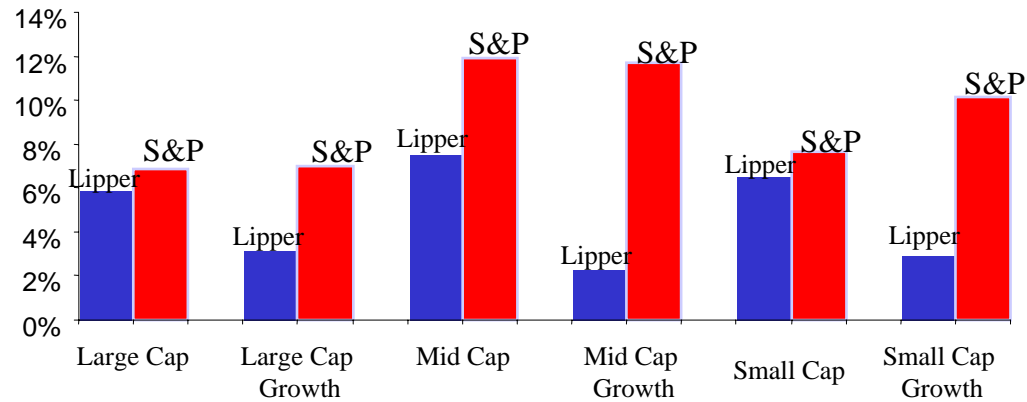
# Do we want market risk?



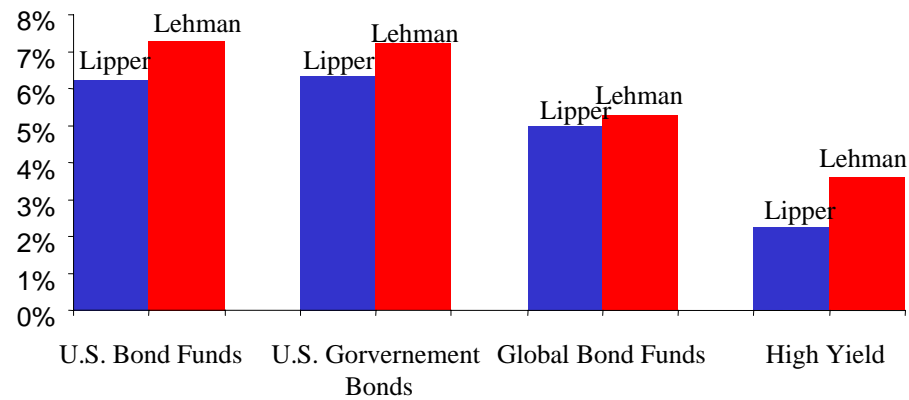
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# Diversification Destroys Alpha

### Lipper versus S&P Indices



### Lipper versus Lehman Indices



# What is wrong?

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- Hedge funds are not static securities.
- Risk measures are not necessarily sub-additive.
- Specific hedge fund risk is precisely what we are looking for.
- Systematic hedge fund risk is poorly rewarded.
- At 2+20, hedge fund diversification is not a zero sum game.

# Limits to hedge fund diversification

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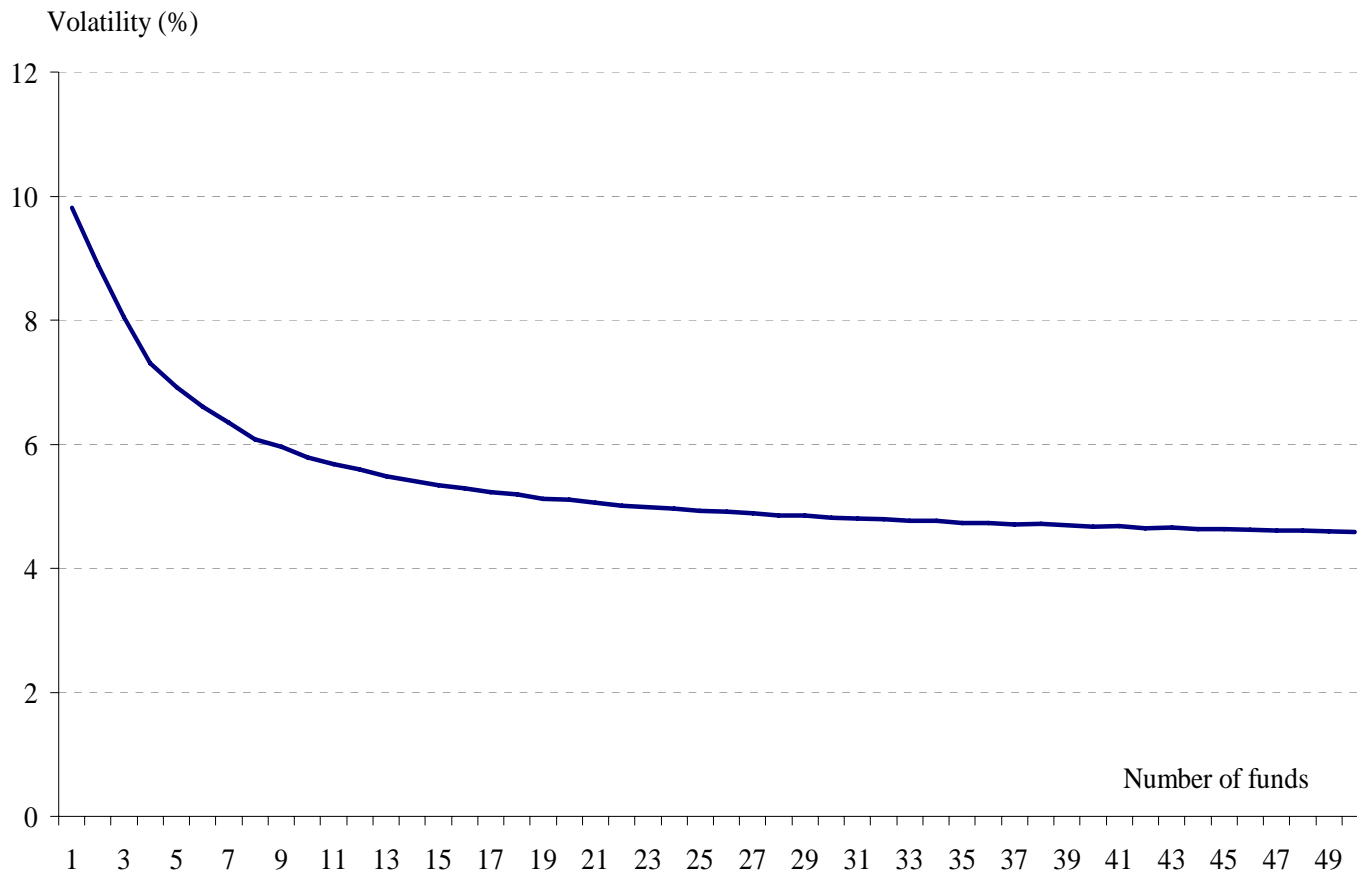
- Duplication of holdings and concentration of bets
- Operational inefficiencies
- Costly due diligence
- Monitoring difficulties
- Lack of talent

# Where are HF Returns Coming From?

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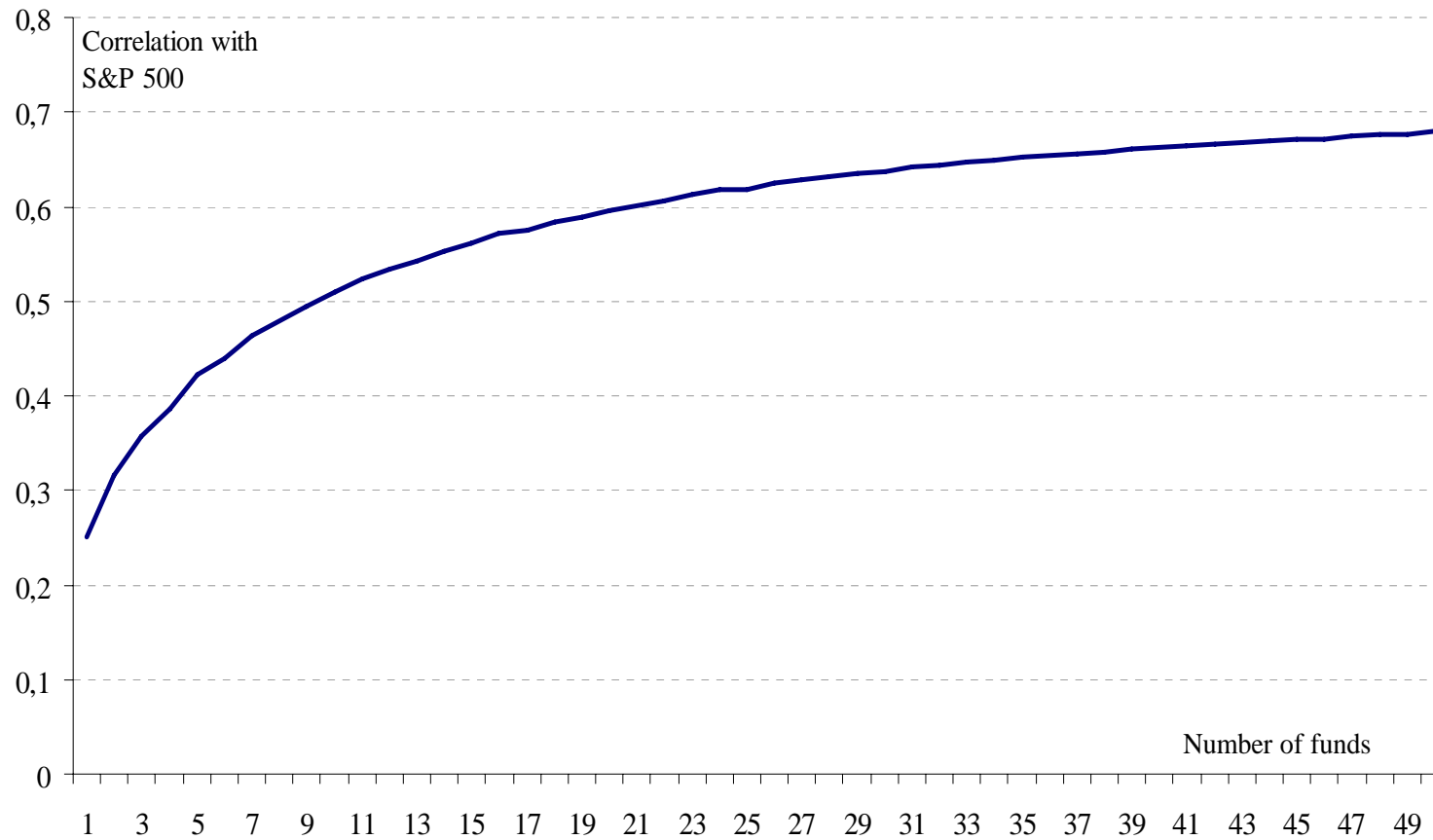
- Directional exposures (non-linear)
  - Market, sectors, Fama-French, Momentum, Interest Rates, Credit, Commodities, Exchange rates, Volatility, etc.
- Non-directional exposures (non-linear)
  - Liquidity, event risk, operational risk.
- Structural alphas (free options)
  - Execution speed, deal flow, size, relationships, soft dollars.
- Pure alpha
  - Rare!!!!
- Leverage
  - Magnifies risk and return
- Noise
  - NAV smoothing, mark to market, etc.

# Over-diversification – Part 1



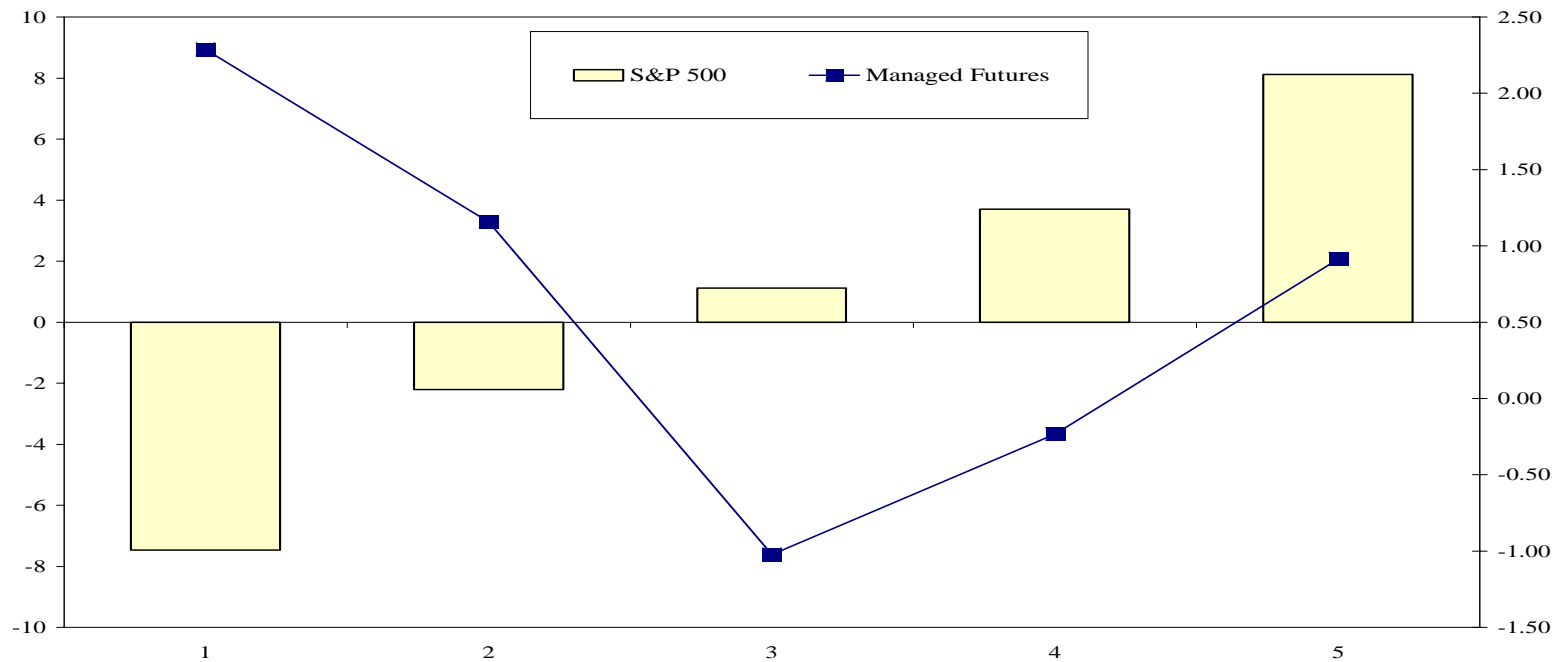
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# Over-diversification – Part 2



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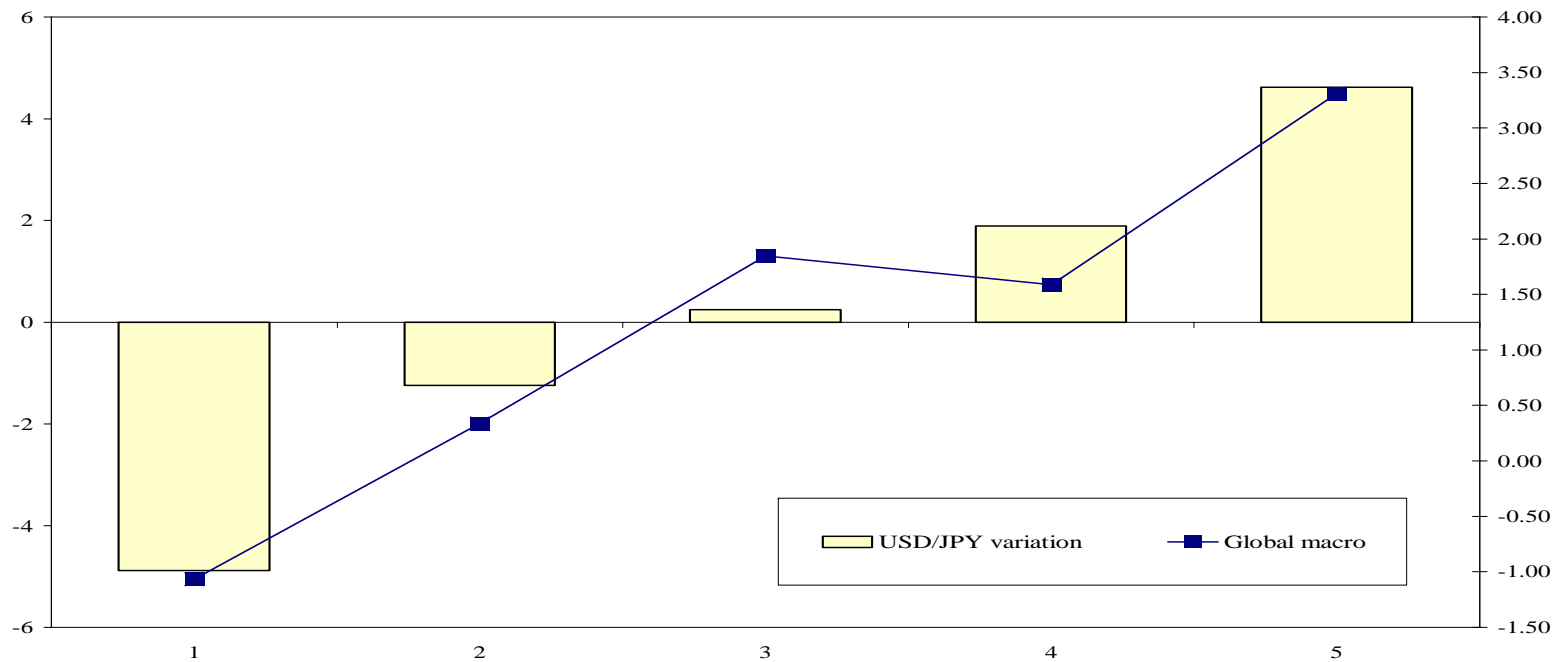
# Non Linearities



The performance of the managed futures strategy  
(in % p.a., right scale) versus U.S. equities  
(S&P 500, in % p.a., left scale)

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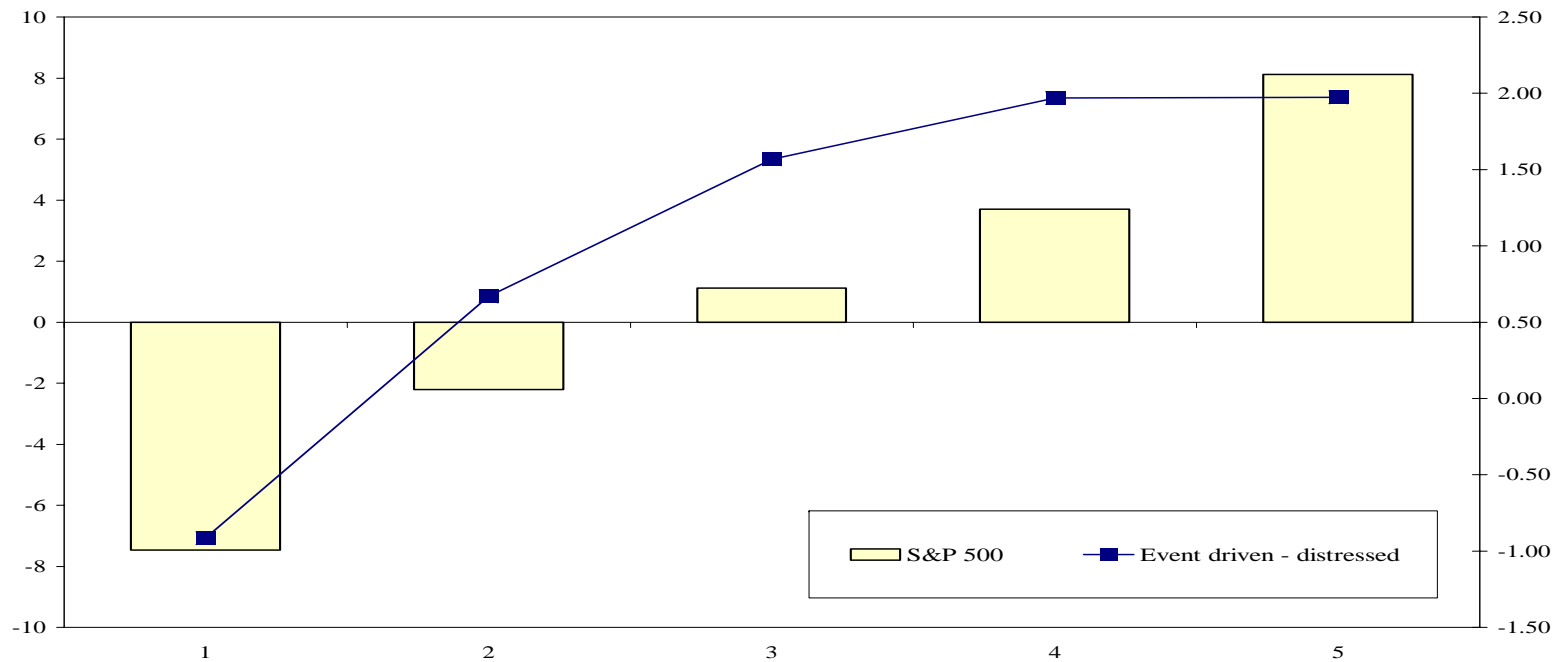
# Non Linearities



The performance of the global macro strategy  
(in % p.a., right scale) versus the USD/JPY  
exchange rate (in % p.a., left scale)

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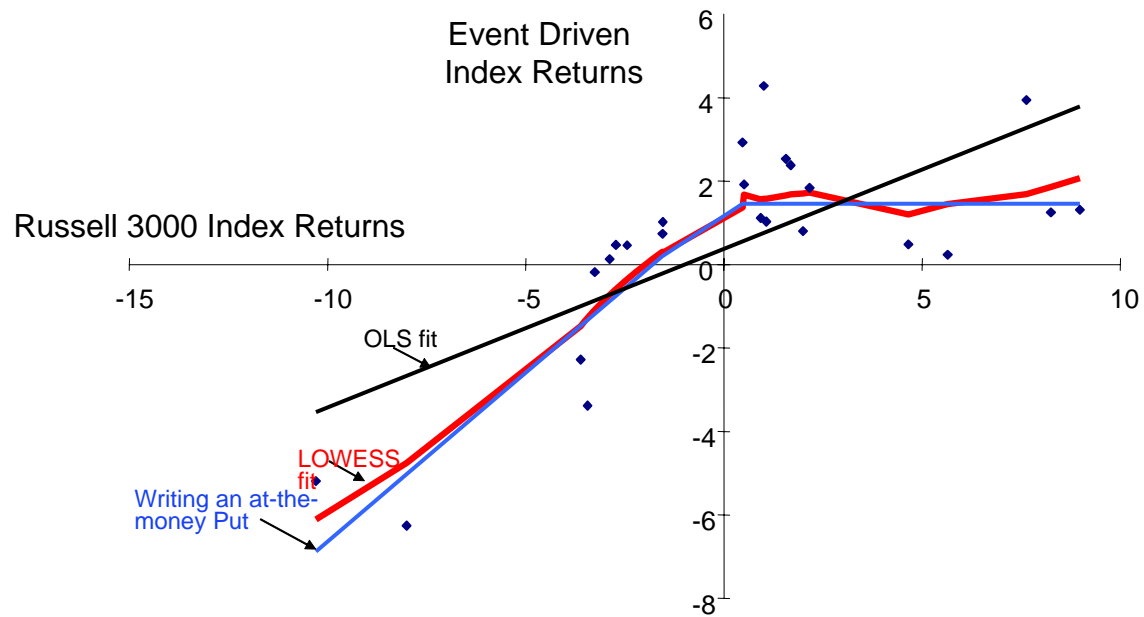
# Non Linearities



The performance of the distressed strategy (in % p.a., right scale)  
versus U.S. equities (in % p.a., left scale)

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# The Economics Behind the Non Linearity

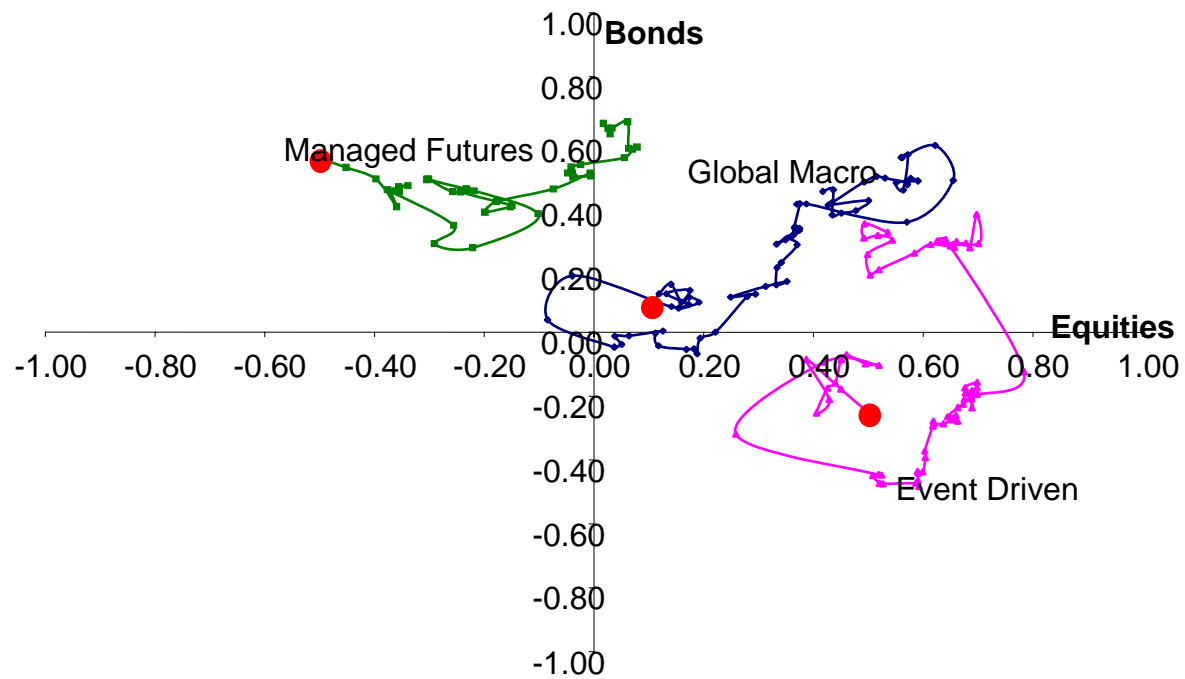


# Hedge Funds vs. Structured Products

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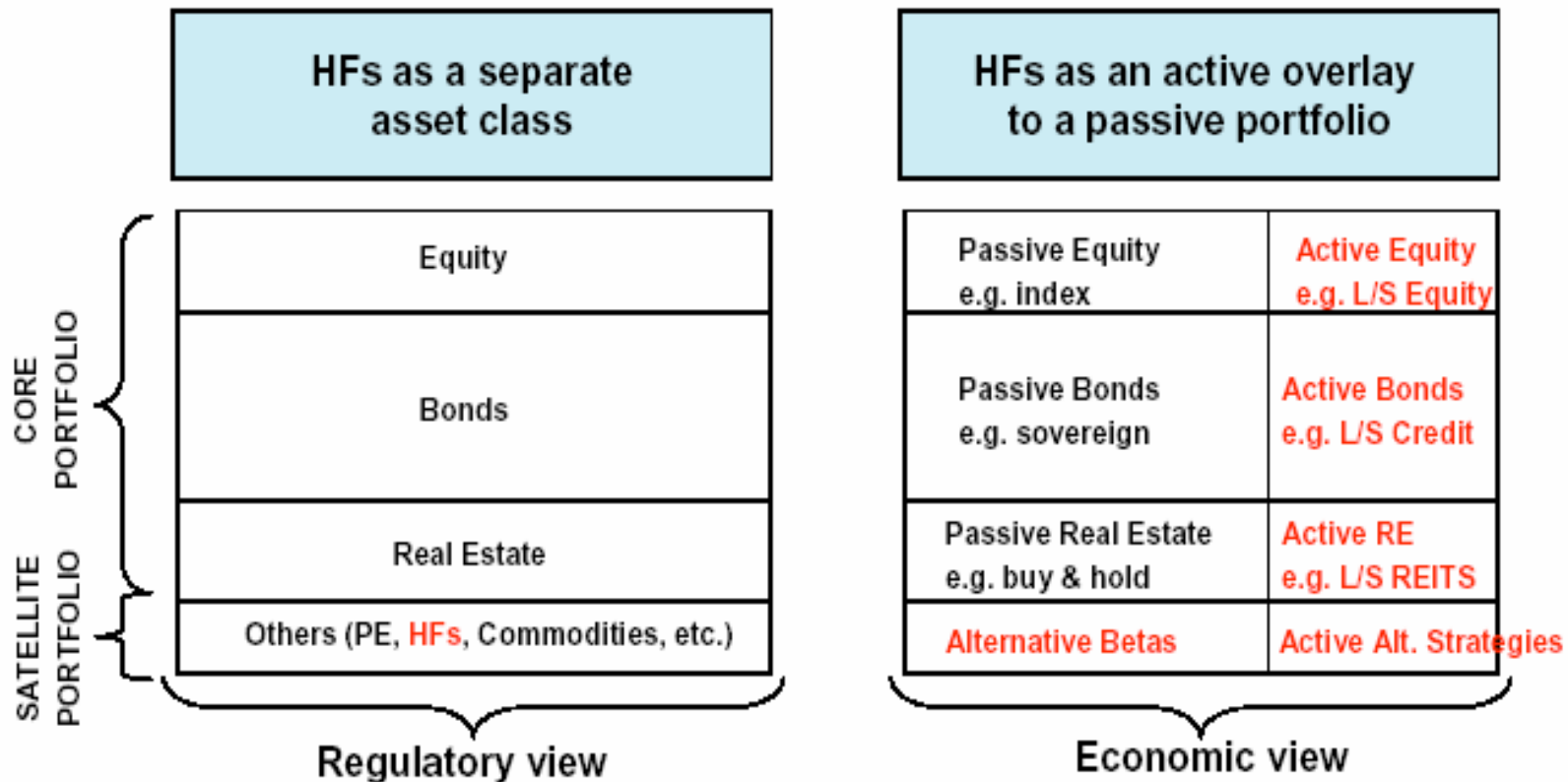
- Hedge funds and structured products provide a similar function.
- Structured products have a hidden cost, a finite life and guarantee a final payoff. They are a derivative product.
- Hedge funds have a known cost, an unknown maturity, but do not guarantee the final payoff. They use dynamic stop losses.
- We need to understand the nature of the expected payoff to assess its attractiveness and diversify it.

# Correlation is time dependent



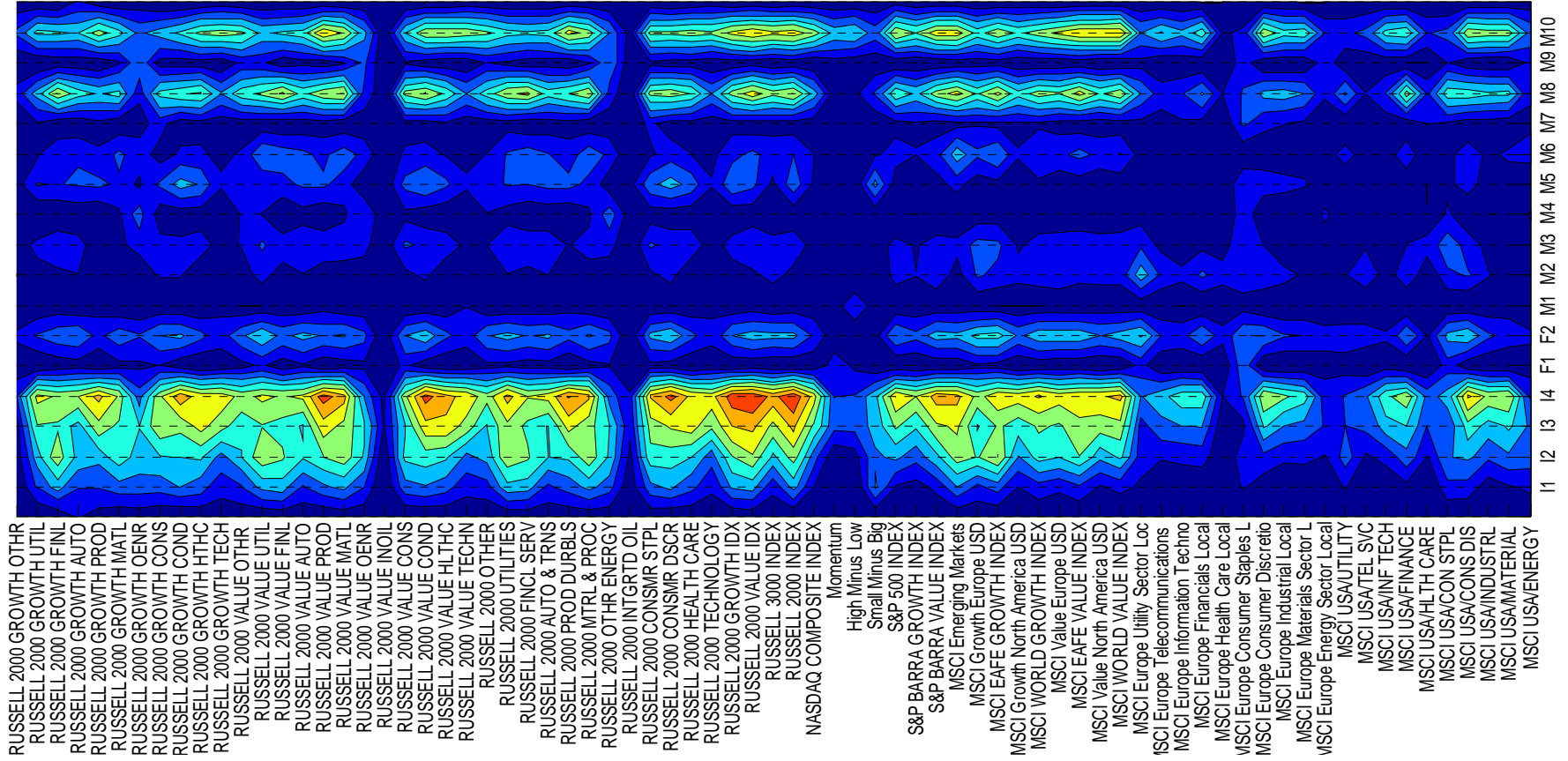
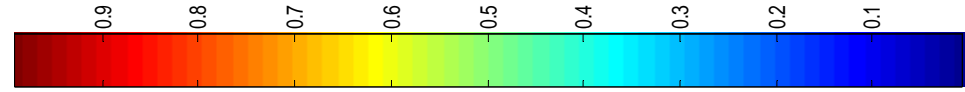
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# How to Analyze HF Diversification



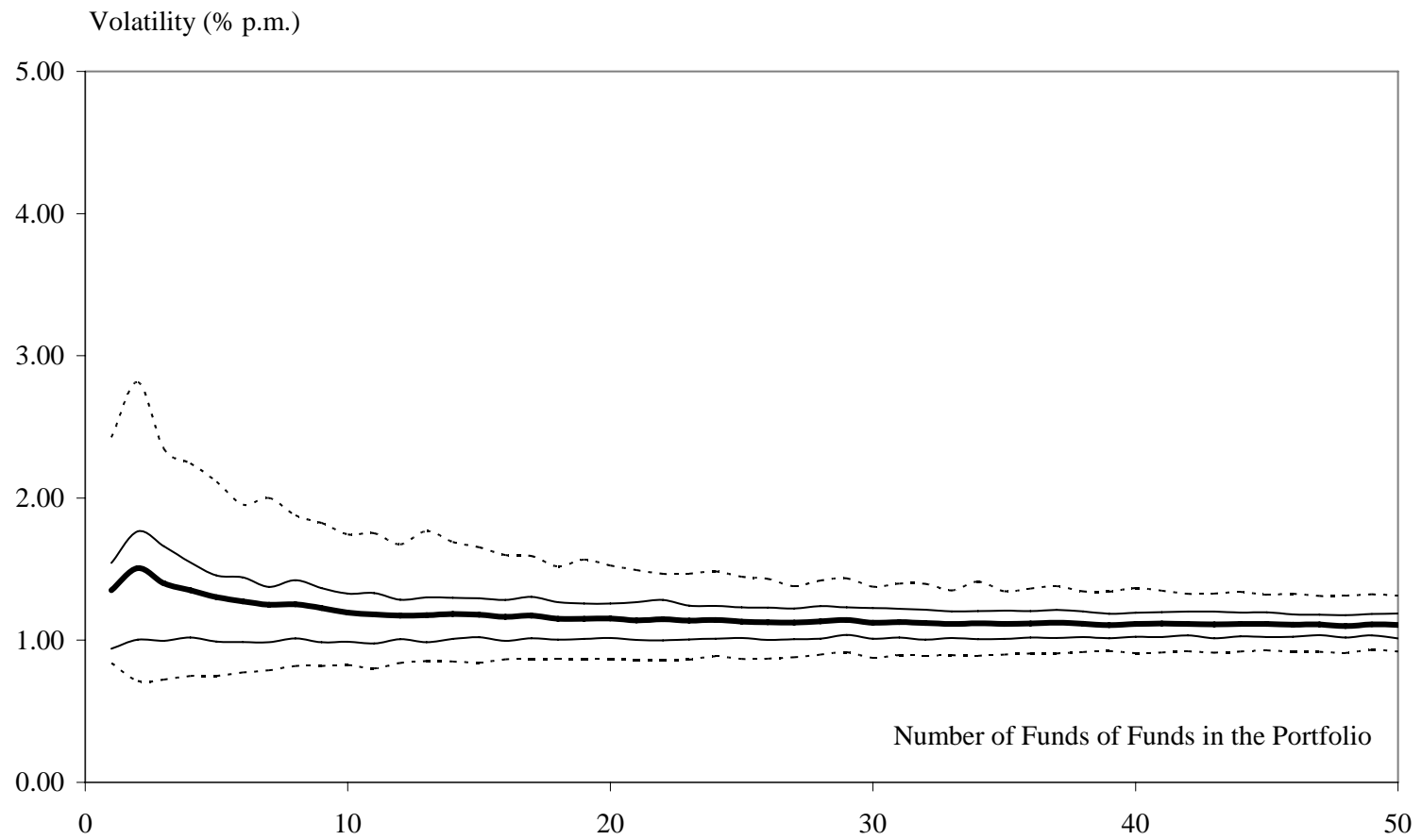
Source: Harcourt

# Do Hedge Funds Deliver?

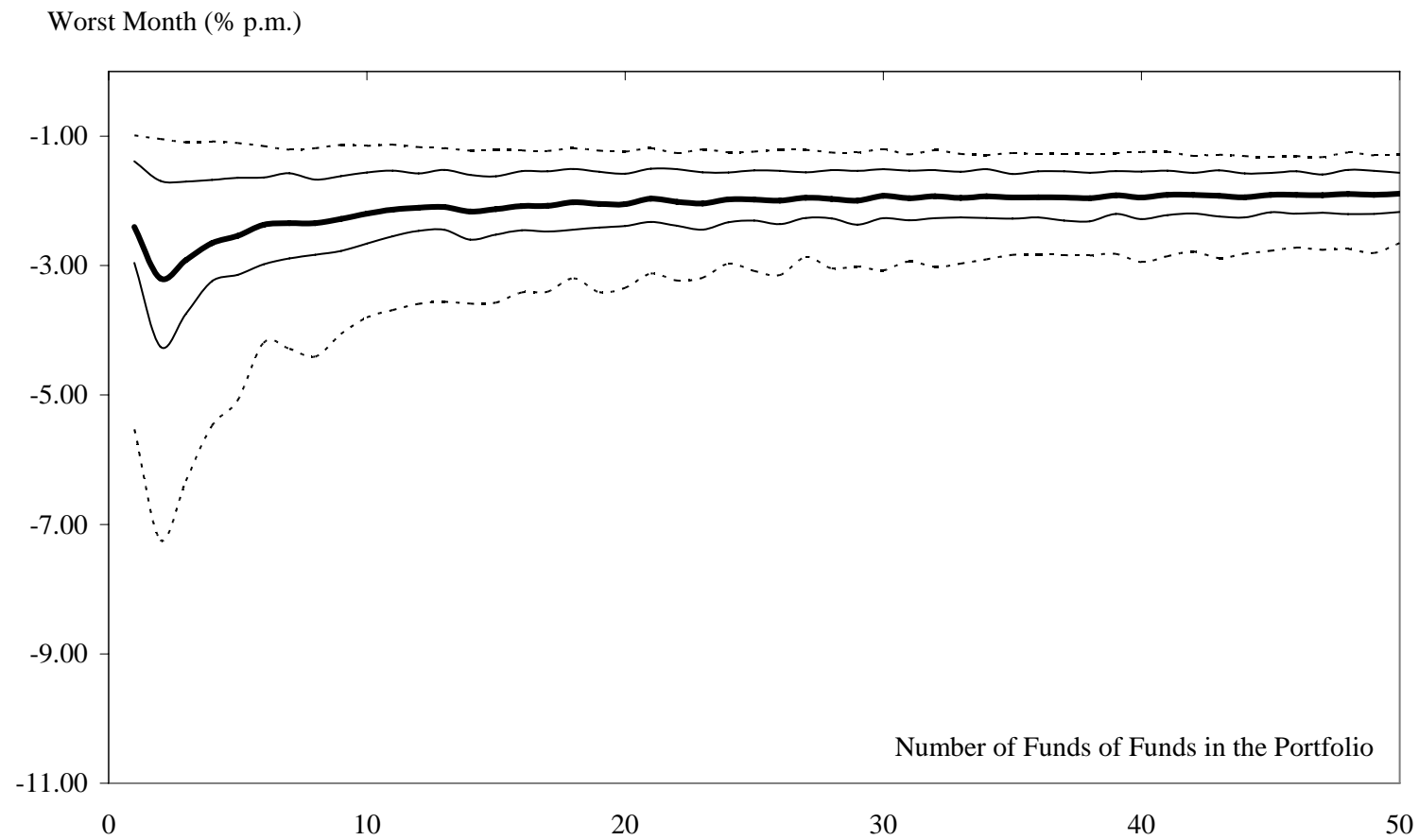


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# Funds of Funds of Funds



# Funds of Funds of Funds



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# Conclusions

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- The number of managers can be a very bad indicator of the level of diversification in the hedge fund world.
- Over-diversification kills alpha, restores beta, and costs a lot!
- Diversification should not be a substitute to due diligence.
- A few good managers are enough...

# Sources

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- F.S.Lhabitant (2006), *Global Asset Management*, forthcoming Summer 2006, at John Wiley and Sons, London, (co-authored with D. Mirlesse), 288 pages
- F.S.Lhabitant (2006), *The Handbook of Hedge Funds*, forthcoming Summer 2006, at John Wiley and Sons, London, 640 pages
- F.S.Lhabitant (2006), *Funds of Funds of Hedge Funds: Welcome to Divorsification*, forthcoming in *Fund of Hedge Funds: Performance, Assessment, Diversification and Statistical Properties*, Greg Gregoriou (ed), Elsevier (co-authored with N. Laporte)