



# FOFIX<sup>®</sup> Research

## New VaR Back-testing Results

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# VaR BACK-TESTING

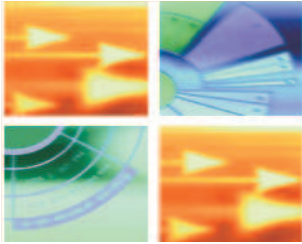
- 1000 Hedge Funds
  - Distribution across Strategies similar to overall HF population
  - Including Dead Funds
  - Monthly Returns
  
- Analysis Period
  - 3Y monthly Sliding Window
  - Jan 95 to Jun 05 (restricted to Fund existence)
  
- Methodology
  - VaR Hits = Percentage of Returns  $< -\text{VaR}$
  - Compare to “Actual VaR” =  $-\text{Percentile of Returns Distribution}$



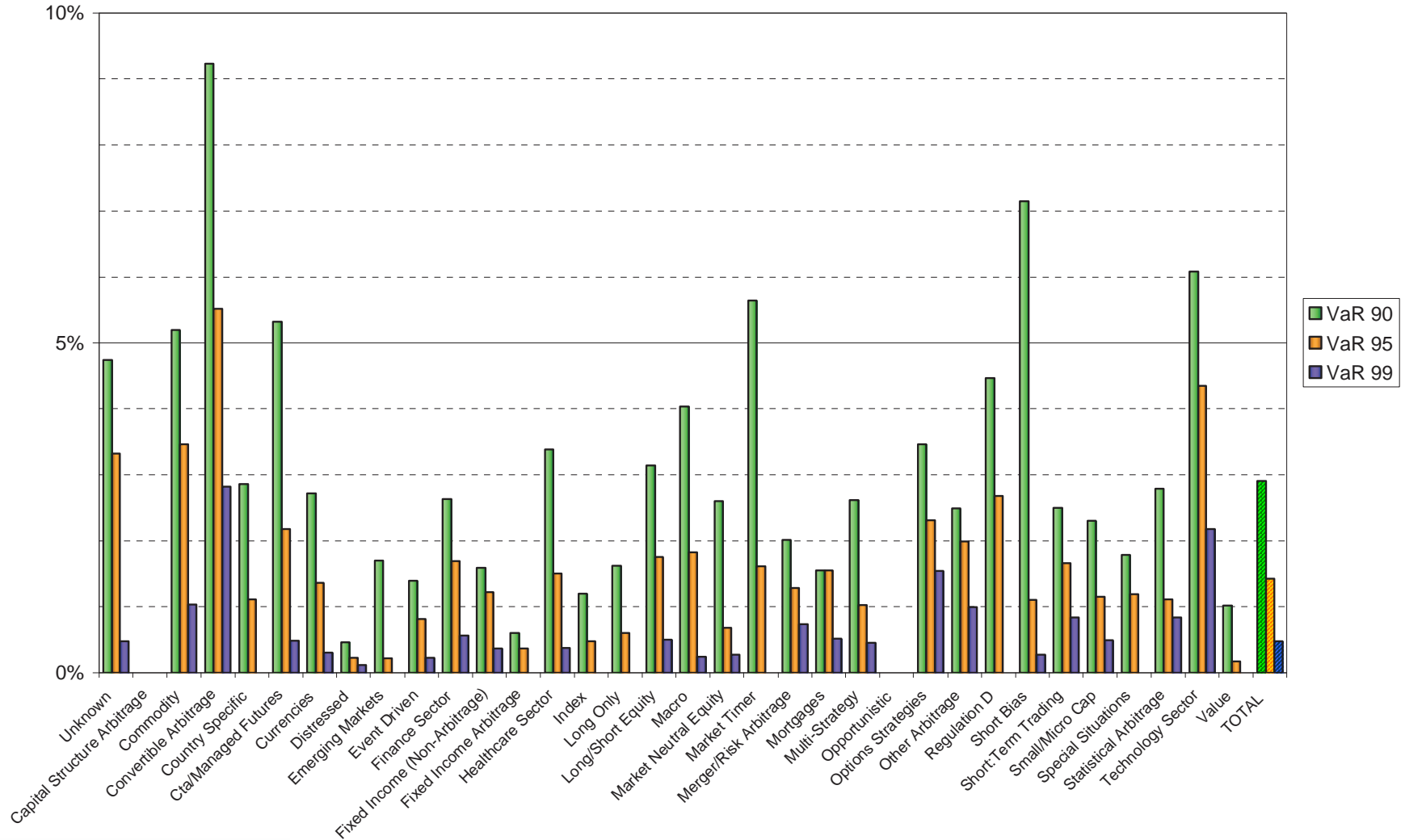
# VaR BACK-TESTING

## □ VaR Computation Steps

- Complete NAV data series to Daily: 01/02/00 → Today
  - The algorithm matches time varying covariances with ~ 800 market factors as well as the volatility of returns
  - Captures events not included in data series
  
- Generate Monte-Carlo Series (Usual Riskdata MC Generator)
  - 1000 Gaussian draws centred at 0
  - Exponential Weight with Decay  $\lambda = 0.996$  (8 m.  $\frac{1}{2}$  life)
  - Over 20,000 market variables with accurate correlations
  
- Compute VaR and Marginal VaR



# Percentage of VaR Hits

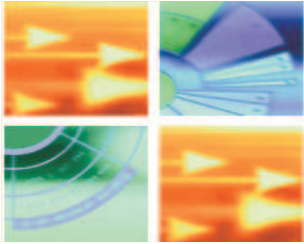


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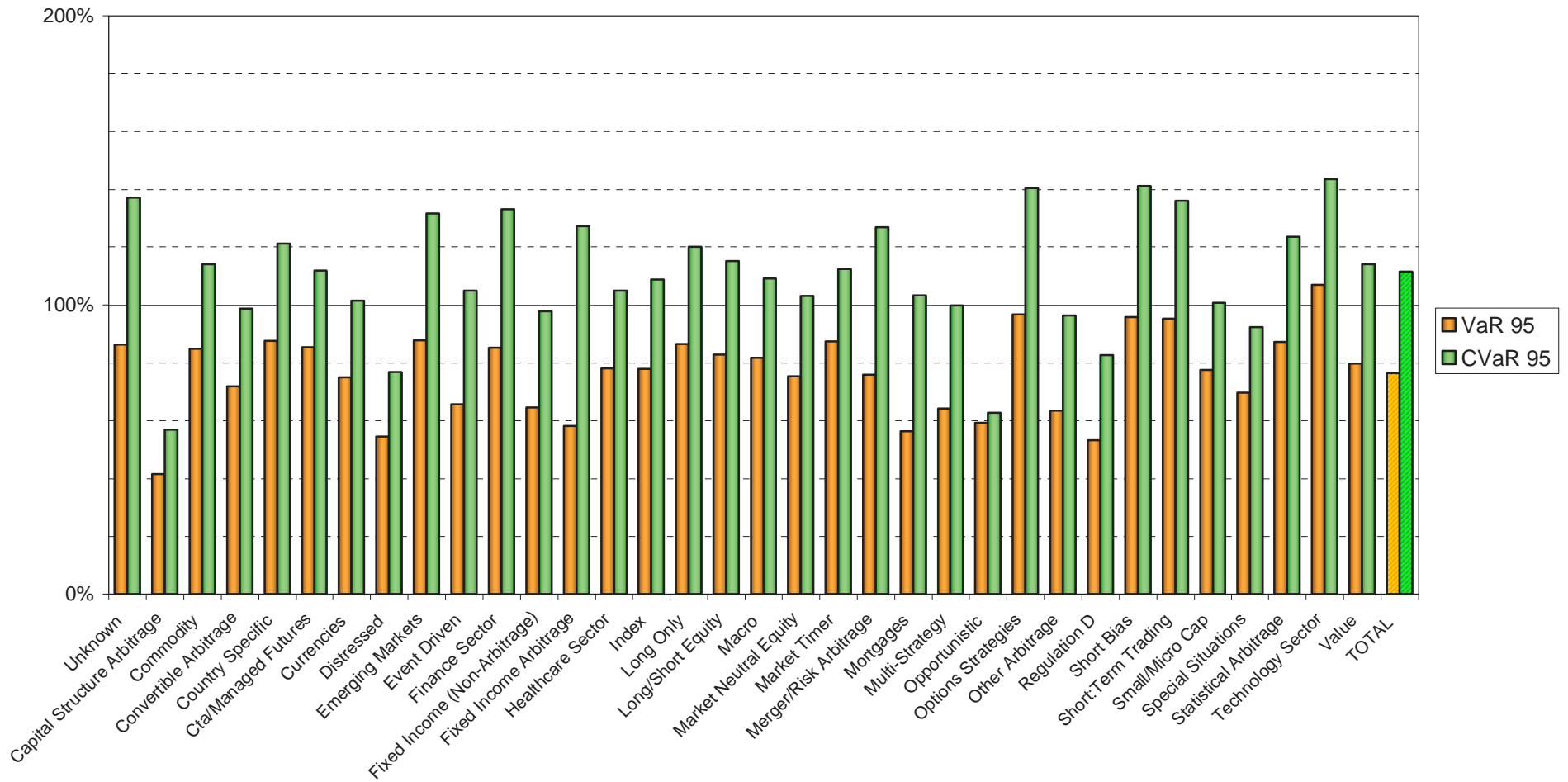


# VaR BACK-TESTING

- ❑ Economic Capital ~ VaR 95
- ❑ Conservative if Measured VaR > Actual VaR
  - Conservativeness ~  $(\text{Measured} - \text{Actual}) / \text{Measured}$
- ❑ Uncontrolled Risk if Measured VaR < Actual VaR
  - Risk ~  $(\text{Actual} - \text{Measured}) / \text{Measured}$
- ❑ What happens in case VaR is hit?
  - CVaR = Average Loss *conditional to* Return < -VaR
  - Important for Hedge Funds because of large Negative Skew



# Historical VaR 95 vs. Riskdata VaR 95



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# VaR BACK-TESTING

- Almost always, Actual VaR < Measured VaR
  - Average Conservativeness = 22%
  - Most conservative:
    - Capital Structure Arbitrage
    - Distressed
    - Regulation D
    - Fixed Income Arbitrage (but high CVaR)
    - Mortgage (but high CVaR)
  
- Conservative Strategies in fact have a large CVaR
  - Often due to big drops not yet observed (time bombs)
  - Dangerous to reduce Measured VaR