Discussing: “Stress Testing: Where's the Tail?” by David Rowe

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Value-at-Risk

- First effective communication tool
- Aggregator between different areas
- Based on classical statistics and its shortcomings
- Over-sold
- Poor at extreme (tail) events
- Need to go beyond
Stress-Testing

• Obvious adjunct to VaR
• extreme human reaction to outcomes
• Top-down ("structural imagination")
  – Macro-economic and geopolitical scenarios
• Bottom-up ("Achille’s heel")
  – Start from vulnerabilities
• Historic
  – “Market’s Greatest Hits”
Going beyond

• Dynamic scenarios with three types of stress-tests
• Systematic and structural imagination
• Overcoming necessary complexity by technology
• Slow-down in the dark
• Learn systemic risks from other complex areas (e.g. network theory)
• Technological implementations
• Improve communication between the “two cultures”
Art of Stress Testing

Rebonato (2010, 27): “[W]e must recognize that thinking the improbable-but-plausible is at the core of the art of stress testing”

(RAMP, 1998, 68)
Risk Communication between Expert and Management

- Probability, causality, dependence, risk: the difficult primitives
- Distributions, risk measures and models, economic capital: quantitative know-how
- Communication, cognition, perception, elicitation, psychology, sociology, culture: the context

(Fischhoff, 2006; Franzetti, 2011, 271)
Where’s the Tail == where’s the Capital?

- Augmenting Stress Tests with Probabilities?
  - Subjective Probabilities or Frequencies?
  - Coping with dimensionality of dynamic stresses
- Combining Stress Tests and VaR?
- Models from Stress Tests to Risk Capital?
- And the „unknown-unknown“?
References


