Scenario-based AMA

As observed from France, July 2006

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Foreword

Caveat

- Personal opinions expressed here do not necessarily reflect the Commission Bancaire point of view

- Views are very much time-of-observation related; they may get obsolete rapidly in this fast moving subject.

- This is a range of practice description, not prescriptive guidance
General motivation

- 3 different types of "scenario-based" approaches, plus diverse combinations of these types

- Evolution
  - From Federal Reserve Bank of New York 2003
  - Today, as an ubiquitous complement to real data

- Why are scenario approaches popular today?
  - Then: forward-looking, risk management orientation, not "geeky"
  - Now: same still holds but more attractiveness from adjustment needs
Different practices of scenarios

- Type 1: distributional scenario approach
  
  - Business practitioners describing density functions
    - Directly, or
    - Inferred by statisticians
  
  - Related to "average scenarios" of every day activities
  
  - Mostly 2-point curves (mode and 90%)
Different practices of scenarios

Type 2: "circumstances" scenario approach

- Panels of experts for reckoning of N worst cases
- Related to "catastrophic scenarios" (earthquakes, terrorism, flooding, epidemic…)
- Yields UL in each area investigated
- Generally there is no proof of exhaustivity
Different practices of scenarios

☯ Type 3 : "mechanism" scenario approach

- Causal models for chaining together events sequentially
- Ties directly into simulation approaches
- Looks at factors, "heat maps" being only a starting point
- Leads to look deeper (into propagation, unfolding mechanism, trees …)
Potential pitfalls

- **Technical**:  
  - Homogenous valuation by human expertise  
  - Unwanted bias and their measure

- **Theoretical**:  
  - Systematic sweeping of state space  
  - What kind of simulation?

- **Practical**:  
  - Pervasiveness and remanence  
  - Update, storage and filtration and documentation  
  - Simulation!
Principles-based supervision of SBA

- Go beyond vocabulary, look at mechanics
- Apply different criteria for evaluation of different kinds of scenario-based approaches
- Demand clear documentation
  - Separating theory, methodology and practice
    - How they cascade
    - How choices were made
  - Separating what is really implemented from future developments
  - Separating "generated" data from real data, assumed parameters from regressed parameters…

- Keep in mind successive supervisory priorities
  - Capital ?
  - Risk management ?
  - Use test ?
Potential remedies

- Real options practices
  - Leading examples in Oil / Energy / Weather
  - Ex. of calculation and how they plug into bayesian networks
- Bayesian framework
  - First time risk analysis and quantification
  - Update of early estimates by experience
- Other upgrades
  - A handle on risk management?
    - Stochastic control simulation: "sample path" to learn from experience in uncertain environment
    - Intuitive "martingale" reasoning and risk mitigation
  - Mapping the factors
    - Heat map vs. Process map
Thank you!

• Questions may be directed at:

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