Comments on Session “Risk monitoring approaches”

Pierre Monnin

Swiss National Bank
Agenda

- Which variable should be used as a target?
- How to aggregate the banking sector?
- Which type of crisis are we talking about?
- Are current macro-models adequate?
- Which feedback effects should we include in macro models?
Stress in the Swiss banking sector

- Regional Bank Crisis
- LTCM Russian Crisis
- Stock market Crisis
- Subprime "Crisis"
Market data

[Graph showing market data with data points from 1987 to 2007]
Book data

![Graph showing book data across years from 1987 to 2007. Key years are highlighted with red ovals, and the x-axis represents years from 1987 to 2007, while the y-axis represents data values from -3 to 3.]
Market and book data
Aggregation of financial sector

- Sum of assets/liabilities or losses implicitly implied that one bank results compensate the other (= portfolio view)

- But one bank good condition does not automatically compensate for another bad condition
Aggregation of financial sector

\[ S_t = \sum_{i=1}^{N} \text{Profit}_{i,t} \]

\[ S_t = \sum_{i=1}^{N} \text{Loss}_{i,t} \]

\[ S_t = \sum_{i=1}^{N} \left( \text{Loss}_{i,t} \mid \text{Loss}_{i,t} > \bar{L}_i \right) \]
Aggregation of financial sector

\[ E_t = \max \left( \sum_{i=1}^{N} A_{i,t} - \sum_{i=1}^{N} D_{i,t}, 0 \right) \]
Aggregation of financial sector

- Multi barrier discount certificate
Definition of crisis

- Aggregate losses
- Simultaneous defaults
- Credit crunch
- Shortage of liquidity
- Bank run
Adequacy of macro-models

- General equilibrium models are by construction stable…
- … and thus no made to generate imbalances or disruptions.
- Are they adequate to detect extreme events that can impair financial stability?
Non linear link with economy

- Traditionally, we look for linear relations between macro variables and bank condition.

- If we think of the banking sector as a barrier discount certificate, then its stability is non linear.

- Empirical evidence on the Swiss banking sector show the importance of non linear relations.
Feedback effects

- Influence of distressed bank on other banks (direct or indirect)
- Influence of one sector on another
- Influence of the financial sector on the economy and vice-versa