Domestic Crisis Simulation Exercises: the UK

Paul Wright
FSA
Why simulations?

- Financial stability crises are rare
- Supervisors may experience one or two in their careers
- Simulation better than teaching
- UK structures will inevitably move apart
- Not yet tested fully in a real world crisis
UK context

Regulatory Policy

HMT

Standing Committee

FSA

Bank

Monetary Policy
Monetary Operations

Emerging Risks
Surveillance
Statutory process

- **Tripartite Committee**
  - Chancellor, Governor, Chairman
  - Meets as necessary
- **Standing Committee (deputies)**
  - Meets monthly (or more often if necessary)
  - Regular items (Bank assessment of financial stability, FSA assessment of sectors)
  - Other items on risk basis
Building an exercise: what to test?

- Domestic or international?
- Financial stability or business continuity?
- UK – all tests involve tripartite structure
- Level of testing:
  - Basic contacts
  - Institutional coordination
  - Key decisions (including theology)
Building an exercise: central plot

• Keep the central plot simple – complexity comes later
• Make it plausible
  – Base on ‘stylised facts’ for simplicity
  – Difficult plausibly to isolate firms
• Keep all players busy
  – May be difficult o/a ‘life cycle’ of exercise
• Use sub plots
Crisis ‘life cycle’

• First response tends to be ‘regulatory’
  – Fact/information finding
  – Regulatory forbearance?

• Central bank more important towards end of the day
  – Will certainly involve cb balance sheet
  – Market clearing
  – Liquidity support

• Finance ministry
  – Underwrite financial support?
Crisis ‘life cycle’
Building the scenario

- **Players receive a series of stimuli**
  - Different aspects for each authority
  - Note, change in market data, phone call
- **Designers must predict (within reason) the responses**
  - Several possible reactions
  - Keep it reasonably simple
  - Don’t allow extreme ‘game over’ reactions
  - Don’t allow players to assume away problems
  - Build in breaks and listen in
### ‘Dependent and independent’ variables

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>Bank</td>
</tr>
<tr>
<td>Bank</td>
<td>HMT</td>
</tr>
<tr>
<td>HMT</td>
<td>Other Govt.</td>
</tr>
<tr>
<td>Other Govt.</td>
<td>Other Regs</td>
</tr>
<tr>
<td>Other Regs</td>
<td>Other CBs</td>
</tr>
<tr>
<td>Other CBs</td>
<td>Press</td>
</tr>
<tr>
<td>Press</td>
<td>Market</td>
</tr>
<tr>
<td>Market</td>
<td>Firms</td>
</tr>
</tbody>
</table>

**Function**: Reaction

**Imperative**: Narrative

---

**Example**: From FSA to Bank, FSA to HMT, etc.
Reaction functions

• Even simple plots can get into uncharted territory

• Will inevitably be some need to improvise
  – Can specify quantity/quality of collateral
  – Cannot always anticipate legal issues or risk appetite of players

• Also to ‘interpolate’ aspects of scenario
  – Scenario inevitably involves discrete intervals
  – What happens in between?
Anticipating reactions
• **What documents are required at each stage?**
  – Based on ‘stylised cases’ where possible
  – If not, create de novo
  – *May* need to make some up on the spot
  – Consistency with story, including time of use
  – *May* need to ‘interpolate’
  – Eg how long to produce? How to reward insight?
The design team

• Need staff capable of:
  – Understanding complex interactions
  – Predicting reaction functions
  – Building material
  – Generate market data
  – Paragons not available to play!
  – Manage difficult governance arrangements
The team

• Mission control
  – Gather feedback
  – Respond to developments
  – Interpolate
  – Real time orchestration

• Role players

• Referees
  – Senior enough to ‘yellow card’
Follow up

- Follow up plan
- Gather feedback
- Identify areas/actions for improvement
A recent example

Broad outline

• Event (ECJ judgement) affecting the value of bank A’s commercial loan portfolio and MBS programme
• Market-wide implications – bank B withdraws MBS issue
• Bank B suffers downgrades and severe liquidity shortage
• Issues
  – Will central bank provide liquidity support?
  – Can the payments system operate?
Bank B RTGS collateral is exhausted – they request liquidity based on CMBS assets, and also need a counterparty for $ swap.

Bank B conduit needs more collateral.

Bank B’s share price volatile - rumours linking it to ruling - raises suspension issues.

Bank A - statement on their Commercial Mortgage Back Securities (CMBS).

Bank B notified of 2 notch downgrade & post most of collateral in Real Time Gross Settlement System (RTGS).

Some banks withdraw deposits.

Bank B notified of 2 notch downgrade & post most of collateral in Real Time Gross Settlement System (RTGS).

Bank B conduit needs more collateral.

Playing of game starts - participants enter game.

Legal ruling announced.

Bank B withdraws its CMBS.

Payments to Bank B begin to slow.

Further liquidity drains following announcement of 3 notch downgrade (eg bank and co. deposits).

3 notch downgrade announced.

Property companies draw back-up lines.

Bank B notified of 3 notch downgrade & post most of collateral in Real Time Gross Settlement System (RTGS).

Bank B conduit needs more collateral.

Playing of game starts - participants enter game.

Legal ruling announced.

Bank B withdraws its CMBS.

Payments to Bank B begin to slow.

Further liquidity drains following announcement of 3 notch downgrade (eg bank and co. deposits).

3 notch downgrade announced.

Property companies draw back-up lines.

Bank A’s share price volatile - rumours linking it to ruling - raises suspension issues.

Bank B notified of 2 notch downgrade & post most of collateral in Real Time Gross Settlement System (RTGS).

Some banks withdraw deposits.

Bank B conduit needs more collateral.

Playing of game starts - participants enter game.

Legal ruling announced.

Bank B withdraws its CMBS.

Payments to Bank B begin to slow.

Further liquidity drains following announcement of 3 notch downgrade (eg bank and co. deposits).

3 notch downgrade announced.

Property companies draw back-up lines.

Bank A’s share price volatile - rumours linking it to ruling - raises suspension issues.

Bank B notified of 2 notch downgrade & post most of collateral in Real Time Gross Settlement System (RTGS).

Some banks withdraw deposits.

Bank B conduit needs more collateral.

Playing of game starts - participants enter game.

Legal ruling announced.

Bank B withdraws its CMBS.

Payments to Bank B begin to slow.

Further liquidity drains following announcement of 3 notch downgrade (eg bank and co. deposits).

3 notch downgrade announced.

Property companies draw back-up lines.
Liquidity: pre-shocks

Chart 1: CHAPS settlement account projection pre-crisis (9.30am)
Liquidity: by 2.30pm
Chart 3: actual position of CHAPS settlement account at 2.30pm
Lessons learned

• Modelling market reactions (eg interbank)
• Modelling others’ reactions (eg clearing house collateral requirements)
• Outcomes kept within bounds
  – No immediate collapse
  – No assuming problems away
• Make sure everyone wants to get the same thing from the exercise
• Always scope to broaden out (industry, international)
• Payments, payments, payments