

Eurosystem's financial crisis simulation exercises

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High-level conference on “Simulating financial instability

Stress-testing and financial crisis simulation exercises”

Frankfurt, 13-14 July, 2007

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EU framework for crisis management

- **Regulatory arrangements:**
 - Provisions under the Capital Requirements Directive and Financial Conglomerates Directive for cooperation and exchange of information also in the events of crises
- **Eurosystem arrangements:**
 - Procedures for the core central banking functions, including monetary policy operations, oversight of payment and securities settlement systems and financial stability
 - Procedures regarding Emergency Liquidity Assistance (ELA), which is provided by the national central banks, to ensure consistency with monetary policy stance
- **Memoranda of Understanding:**
 - 2001 MoU between payment systems overseers and banking supervisors
 - 2003 MoU between central banks and banking supervisors
 - 2005 MoU between central banks, banking supervisors and finance ministries
 - Regional MoUs (e.g. Nordic MoU, Belgium/Netherlands MoU)
- **Crisis simulation exercises:**

Testing the functioning and fostering the operational effectiveness of the existing arrangements; enhancing preparedness of competent authorities with a focus on information-sharing, assessment of systemic risk at cross-border level and coordination of decision-making;
- **Practical arrangements:**

Reports with recommendations endorsed by the relevant EU committees, i.e. joint BSC/CEBS report on crisis management, upcoming report by the BSC in collaboration with the CEBS on developing an analytical framework for assessing the systemic implications of a financial crisis

Cooperation arrangements between the authorities responsible for safeguarding financial stability

| | Authorities responsible for financial stability | | |
|-------------------------------------------|-------------------------------------------------|----------------------------|---------------------------|
| | <i>Central banks</i> | <i>Banking supervisors</i> | <i>Finance ministries</i> |
| Regulatory arrangements | Capital Requirements Directive (CRD) | | |
| | Financial Conglomerates Directive (FCD)* | | |
| Voluntary cooperation arrangements | 2005 MoU on crisis management | | |
| | 2003 MoU on crisis management | | |
| | 2001 MoU on payment systems | | |
| | Regional MoUs ** | | |
| | National MoUs** | | |
| Central banking arrangements | Eurosystem | | |
| EU committees | BSC and CEBS | | FSC |
| | EFC | | EFC |
| Tools for practical implementation | Financial crisis simulation exercises | | |
| | Development of practices by EU Committees | | |

* The exchange of information between supervisory authorities and finance ministries regarding the regulated entities of a financial conglomerate is subject to the sectoral rules in EU legislation for credit institutions, insurance companies and securities firms.

** Regional and national memoranda of understanding (MoUs) may involve different sets of authorities, including either or both central banks and banking supervisors. In some Member States, finance ministries are also party to MoUs.


Simulation exercises at the EU / Eurosystem level

- **EU-wide exercises:**

- **September 2003:** EU-15 simulation exercise under the aegis of the BSC, with the participation of EU banking supervisors and central banks – 31 participants at the premises of the Sveriges Riksbank
- **April 2006:** EU-25 simulation exercise under the aegis of the EFC, with the participation of EU banking supervisors, central banks and finance ministries – 76 participants at the premises of the ECB

- **Eurosystem exercises:**

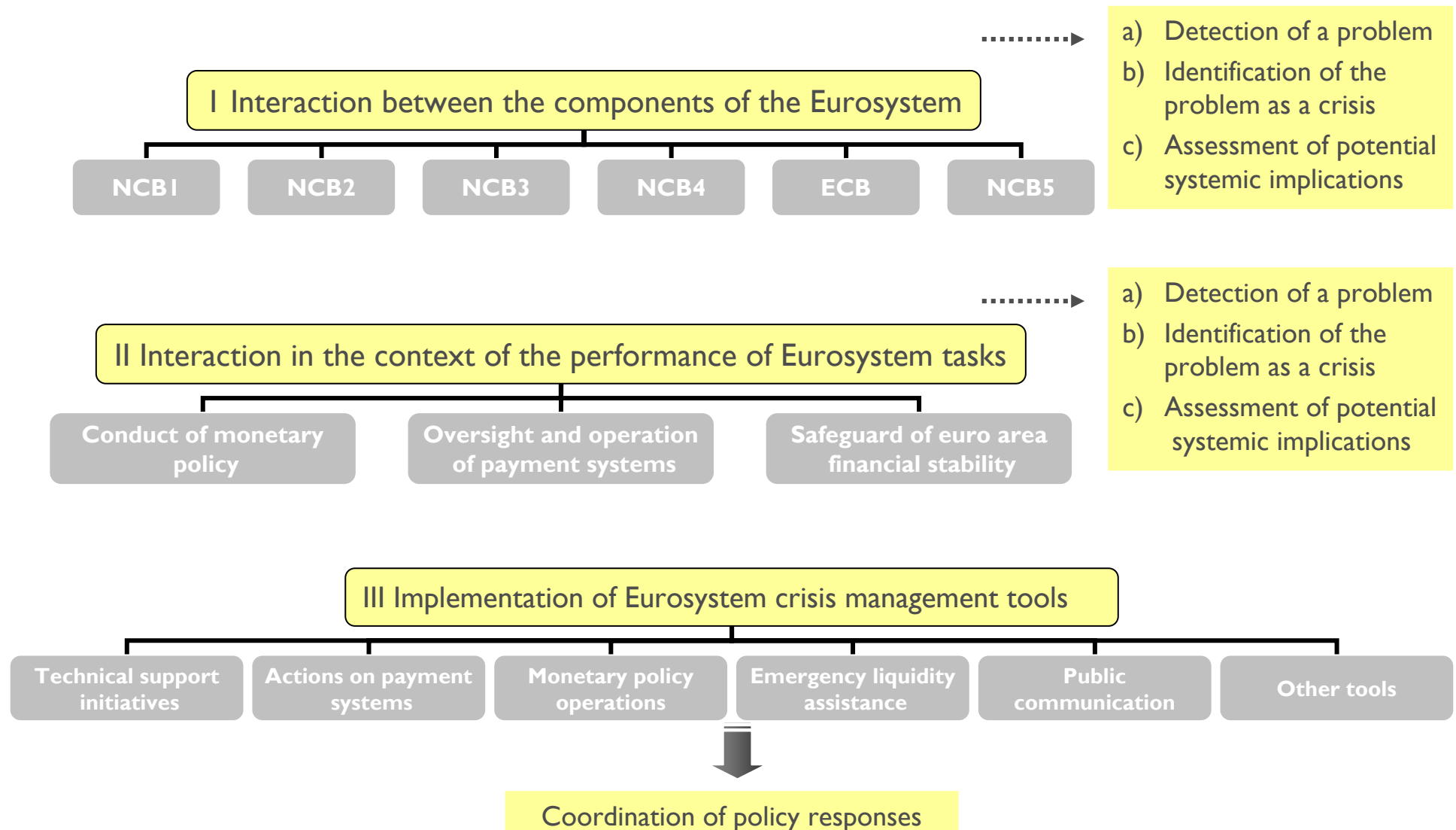
- **April 2005:** First Eurosystem stress-testing exercise, with the participation of the decision-making bodies, managers and staff of the 13 central banks – 65 participants at the premises of the ECB. It lasted 4 virtual days
- **May 2006:** Second Eurosystem stress-testing exercise, with the participation of the decision-making bodies, managers and staff of the 13 central banks in a decentralised setting - about 150 participants located at their respective central banks



Part I

Main Features of the Eurosystem Simulation Exercises

Aim of the Eurosystem simulation exercises: test the ability of the Eurosystem to address and manage a financial crisis with potential for systemic implications across the euro area financial system



Overall objective of the second exercise: increased realism (I)

Following the positive experience of the first exercise, the objective of the second exercise was to test the ability of the Eurosystem under a more realistic environment in the crisis simulation:

Decentralised setting

- Owing to the features of the scenario, the Eurosystem decision making bodies, (Executive Board, Governing Council) were more intensively involved;
- Crisis management teams (comprising senior officials) headed by Team leaders located at ECB/NCBs;
- The Eurosystem committees were involved (as in the first exercise)
- Logistical infrastructure comprising “crisis management rooms”, devoted teleconference and email systems, two dynamic websites designed for the exercise; a “control room” within the ECB (where the technical team organising the exercise and “actors”, used for authorities (supervisors, ministries) and other counterparties interacting with the Eurosystem, were located)

Greater complexity of the crisis scenario

- Several successive shocks, both general and idiosyncratic
- Cross-border contagion through several markets, four banking groups, and three key market infrastructures
- Uncertainty regarding the solvency of banks requesting ELA

Overall objective of the second exercise: increased realism (2)

A more realistic environment was simulated

- The design of the exercise put emphasis on the role of market information and intelligence in the development of the financial crisis. *Market rumours* and the flow of diversified and *sometimes conflicting information* generated uncertainty inherent in financial crisis;
- Emphasis on communication including interaction with “journalists” played by actors;
- Possibility for some form of *market solutions*;
- Simulation was based on *real time financial market developments* (money market rates, bond rates); indicators updated in real time reflecting decisions on operations, communications etc. Although no real data was used in the simulation, banks and infrastructures *mirrored real entities*, the same applied to financial systems



Part II

Assessment, findings and further enhancements

Assessment of the second Eurosystem simulation exercise

- **Objectives broadly achieved**

- **A thorough testing of the Eurosystem arrangements was performed:**

- Richness of systemic interlinkages of crisis scenario (more complex and realistic)
- Good interaction and cooperation (crisis management teams and relevant Eurosystem committees)
- Effective decision-making and information-sharing in a decentralised setting

- **The tools of the Eurosystem were used in response to the simulated financial crisis**

- Two fine-tuning operations;
- Extension of the hours for the closing of TARGET;
- Provision of ELA involving the Eurosystem procedures
- Public communication: Press releases by the Eurosystem and by NCBs

Assessment of the second Eurosystem simulation exercise (2)

- **Resources used worthwhile**
 - The use of substantial resources was considered worthwhile
 - Cost in human resources and IT infrastructure should be viewed as investment as the organisation of an exercise is a learning process which will benefit both in terms of improvements and future projects
- **Certain limitations acknowledged related to**
 - Fully modeling “reality” (e.g. interaction with supervisors or market players)
 - Replicating uncertainty regarding the financial situation of fictitious banks
 - Consideration of the specific legal framework of Member States, which may constrain crisis management

Main findings (I)

- **Overall, the exercise provided a reassurance regarding the preparedness of the Eurosystem to respond effectively in crisis situations**

More specifically the following findings may worth being mentioned:

I. Communication within the Eurosystem

- **Communication and information sharing within the Eurosystem took place in an efficient manner** (40 teleconferences took place during the exercise, also bilateral contacts between central banks), benefiting from the framework defined in internal operational procedures, the established communication infrastructure, and MoUs in place.
- However, it cannot be excluded that in case of a crisis unfolding, authorities from countries affected less than others may expect to receive more information. It is not always easy to define the “right” amount of information to be exchanged when a financial crisis is unfolding, affecting various financial systems to a different extent.

Main findings (2)

2. External communication by the Eurosystem

- The Governing Council and the Eurosystem central banks took particular care in ensuring *coordinated and consistent public communication* during the exercise. Two Eurosystem press releases approved by the Governing Council; joint press releases by the networks of NCBs regarding the provision of ELA; also press releases by NCBs regarding domestic financial markets and banks
- The fact that consistency of messages was sought at all stages, also led to some delays (e.g. in the replies to the press), thus sometimes affecting the timeliness of communication

3. Assessment of systemic implications

- The dissemination of market- and infrastructure-wide information functioned well, benefiting from already established procedures. *The Eurosystem has a wealth of information available stemming from the performance of the Eurosystem central banking functions;*
- Dissemination of financial stability information was, in relative terms, less structured, since there are less established procedures for the assessment of the systemic implications of a crisis.

Main findings (3)

4. Interaction of the Eurosystem with external entities

- The exercise confirmed the importance of establishing and maintaining good communication channels with external entities, including banking supervisors, non-euro area central banks and market participants. Broadening participation in future simulation exercises would allow to further test the interaction with external entities

5. Arrangements for the provision of ELA

- Arrangements proved to function effectively, supporting the interplay between the performance of Eurosystem's functions and the provision of ELA
- The NCBs involved in the provision of ELA to a certain banking group established among themselves **ad hoc networks, which favoured timely and effective communication and coordination of decision-making**
- The range of issues and responsibilities that central banks consider when providing ELA are manifold, including the impact on liquidity conditions, market confidence, the functioning of market infrastructures and overall systemic stability


Main findings (4)

6. Coordination of decision-making within the Eurosystem

- The majority of the decisions taken during the exercise was coordinated at the level of the Eurosystem, mainly via the Eurosystem committee-platforms
- The integrated assessment of the crisis and preparation of the decision-making at the Governing Council were carried out by the team leaders of the crisis management teams; The coordination role played by the team leaders in the exercise is not yet formalised in Eurosystem procedures
- The decision-making bodies of the Eurosystem were involved in the assessment of systemic implications for the euro area and in decision-making in accordance with the procedures for the provision of ELA

Policy and operational enhancements

- **The Eurosystem arrangements could benefit from both policy and operational enhancements on the basis of a *principles-based approach*, such as**
 - Enhancing the mutual understanding within the Eurosystem on the possible criteria for the provision of ELA
 - Developing elements of a “common language” for public communication
 - Establishment of a crisis management team in each Eurosystem central bank and the formalisation of the team-leaders’ coordination role
 - The Eurosystem may benefit from the work of the BSC/CEBS group on developing a common framework for assessing the systemic impact of financial crises
- **The conduct of a future stress-testing exercise could consider additional features which were neither fully tested nor sufficiently realistic in the 2nd exercise**



Part III

Challenges for the organisation and conduct of financial crisis simulation exercises

Challenges for the organisation and conduct of simulation exercises

- **Objectives of simulation exercises should be clear**
- **Financial crisis scenario should serve the purpose of the exercise**
 - **Balance between enhanced realism and complexity:** sufficiently complex for motivation and engagement, pursuing enhanced realism, but not excessively complex to be unmanageable
 - **Balance between an open and close-ended scenario:** sufficiently open-ended to allow players' decisions to influence successive events in the exercise, but not excessively open to loose control of events in the crisis scenario
 - **Neutrality:** The financial crisis scenario should be neutral in terms of its outcome (no right “answer” against which players could be judged)
- **Real versus fabricated data**
 - The use of real data may not be advisable, particularly on banks given the reputational risk if there is a leak. Real data may be combined with real players.
 - The use of fabricated data in the simulation mirroring real entities and financial systems may be advisable. However, the use of fabricated data excludes a more genuine element of surprise since the players will require time to familiarise themselves with the data

Challenges for the organisation and conduct of simulation exercises (2)

- **Location**

Centralised: facilitates the monitoring of the players' behaviour and better recording all the phases of the exercise for a better post-mortem analysis; however, if combined with players of insufficient seniority not involved in the real decision making, the value and creditworthiness of the results of the exercise may be questionable;

Decentralised setting: the focus shifts from the individual professionals to the authority itself ; not requires the people to travel. If combined with high level representatives or the real decision makers it provides a sound basis for assessments/conclusions

- **Seniority of players and involvement in real decision-making:**

Senior representatives of authorities: increase realism of decisions, ensure fair representation of the authorities but require increased organisational burden and may reduce the degree of surprise and the duration of the exercise;

Challenges for the organisation and conduct of simulation exercises (3)

- **Real time vs. compressed time**
 - Real time increases realism, but it may prolong the exercise beyond the appropriate momentum for players, also disrupting regular daily tasks
- **Representation of external entities**
 - Realism may warrant the involvement of external entities in the exercise, such as authorities, market participants, journalists etc. Limitations to extending the scope of participation (practical reasons, confidentiality, cost issues and control over the organisation of the exercise).
 - External entities may either be actually involved or be represented by “actors”, which would require adequate training. In some cases, the reactions by actors, no matter how well they are prepared, may not provide the same value added in assessing reactions, cooperation etc as the case of real participation, especially for authorities.

Challenges for the organisation and conduct of simulation exercises (4)

- **Organisation of exercises:** Simulation exercises can be organised by third parties (companies) or the authorities themselves (delegated to a steering committee and technical teams with measures for confidentiality). Pros and cons (familiarity, confidentiality, neutrality)
- **Assessment of the exercises:** Independent high level persons can be nominated to make an assessment of the simulation exercises, their findings and recommendations and proposals for improvements for future exercises. Alternatively, the assessment process can be internalised. A combination of the two may have advantages

Challenges for the organisation and conduct of simulation exercises (5)

- **Cost issues**

- The organisation and running of simulation exercises involves costs in human resources and IT infrastructure. Also, cost in the time devoted by the players (plus travel costs, if the exercise is run on a centralised fashion)
- The second Eurosystem exercise involved a High level Task Force, a Steering group from members of this Task Force, a Technical Team comprising 24 experts from NCBs and the ECB, and a substantive number of ECB staff (a special structure was created internally to coordinate the preparation of the test, comprising sub-teams on market operations, payments securities settlement, supervision and policy). The work was initiated in January 2006 and the run of the exercise was between 12-17 May 2006. (a first “self-test” and a “full test” were also conducted)

Challenges for the organisation and conduct of simulation exercises (6)

- In principle, costs should be considered as investment provided that the organisation of a simulation exercise is a learning process which will benefit future projects and help competent authorities to improve. Ad hoc “targeted” exercises should also be considered to optimise benefits versus costs. Sometimes, seminars for technical issues, (i.e. improvements in systemic assessments) may prove equally useful

Overall, the resources devoted to the organisation and conduct of simulation exercises should lead to benefits across all stages:

1. Planning phase of the simulation exercise:

- Better understanding for organisers of the transmission channels of shocks

2. Running of the exercise:

- Better understanding for participants of information flows and decision-making processes
- Enhancement of the authorities’ preparedness to cooperate

3. Evaluation phase:

- Identifying potential pressure points
- Identifying enhancements of policy and operational arrangements
- Learning experience for what to test in future exercises



Thank you for your attention