Macro-prudential and financial stability statistics to improve financial analysis of exposures and risk transfers

Fifth ECB Conference on Statistics, Frankfurt, 22-23 April 2010

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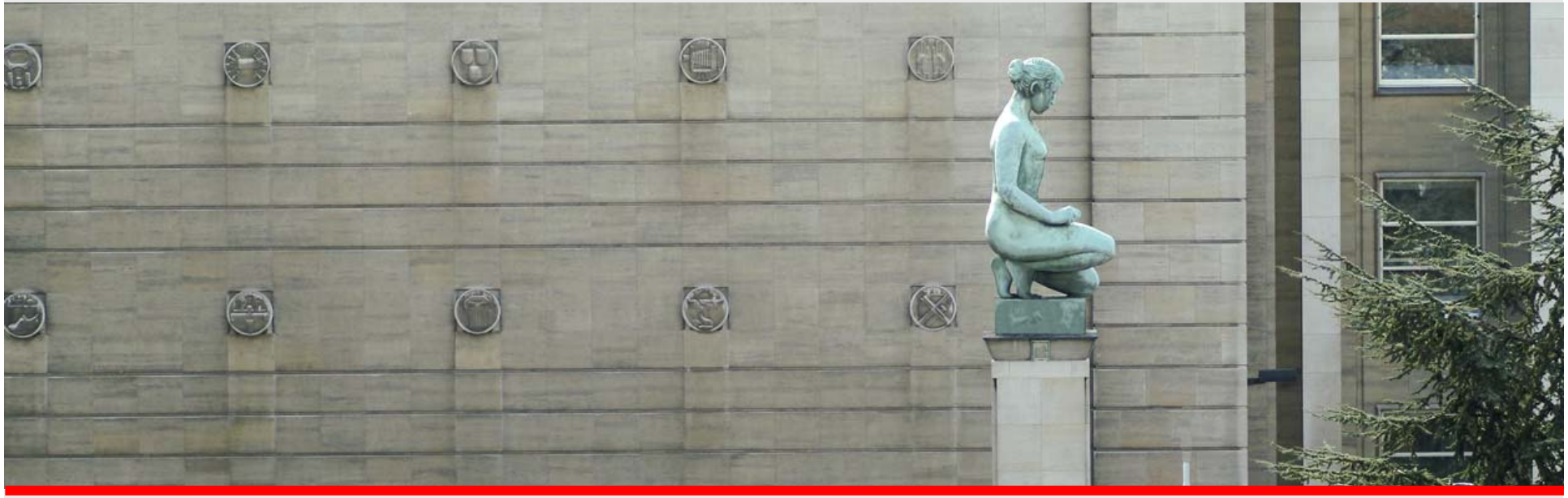

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Outline

1. Difficulty of measuring "risk"
   - Institution level
   - System-wide level
2. Measurement of systemic risk and systemic importance
   - Data gaps
   - Use of market information
3. Statistical initiatives to meet data demands
4. Challenges ahead

Measuring "risk" has become more difficult

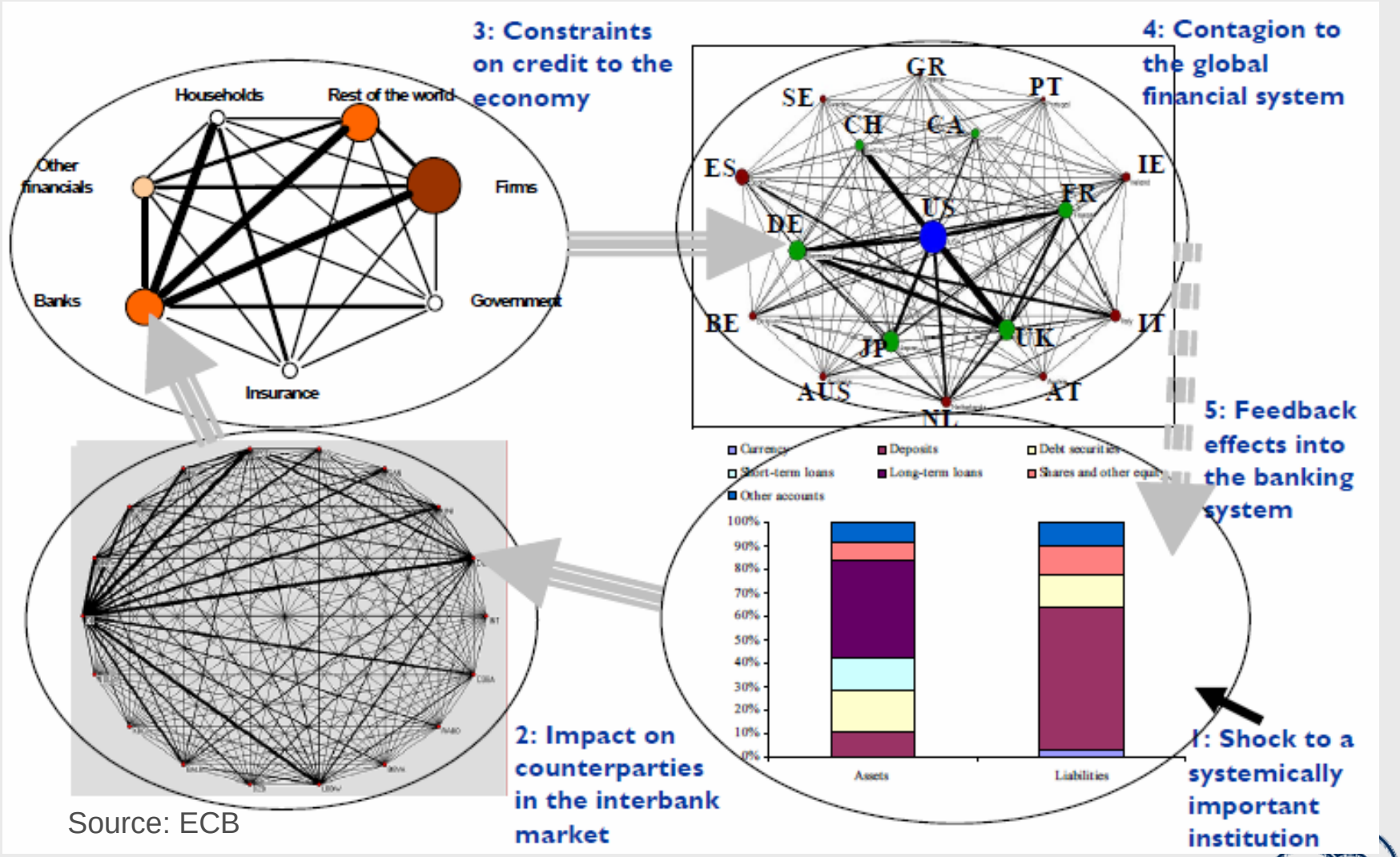
- Risk is a probabilistic concept
  - Many dimensions (2nd, 3rd, 4th moments of distribution)
  - Dynamic process with multiple equilibria (need for stress testing/scenario analysis)

  ⇒ *What level of ambition?*

- At the level of individual institutions:
  - Balance sheets provide useful but limited information
  - Development of instruments of risk transfer
  - New hedging strategies with basis risk
  - Financial product complexity
- At the system-wide level:
  - Interconnectedness between institutions and markets

Cross-sectional vs. time dimension of risk

Understanding risk at the system-wide level



Source: ECB

Understanding risk at the system-wide level

- Two related but distinct concepts:

  Systemic risk: the risk of a crisis affecting all or a significant proportion of institutions in the financial system

  Systemic importance: measures *impact* on the financial system of the failure of an institution

  - Probability of failure of an institution affects level of systemic risk but not degree of systemic importance
  - Even in the absence of individually systemically important institutions, the level of systemic risk may be high

- Determinants of systemic risk and systemic importance

  - *Determinants of systemic risk:* probabilitiy of default of individual institutions and default correlations
  - *Determinants of systemic importance*: institution's size, interconnectedness, and substitutability

Data gaps for measuring systemic risk and systemic importance

- Interconnectedness: lack of data on
  - *interbank exposures*
  - *entities falling outside the regulatory perimeter*
  - *risk transfer instruments*
- More generally: need for
  - *more granular data, covering the EU and beyond*
  - *timely, harmonised and high frequency data*

How to address these gaps?

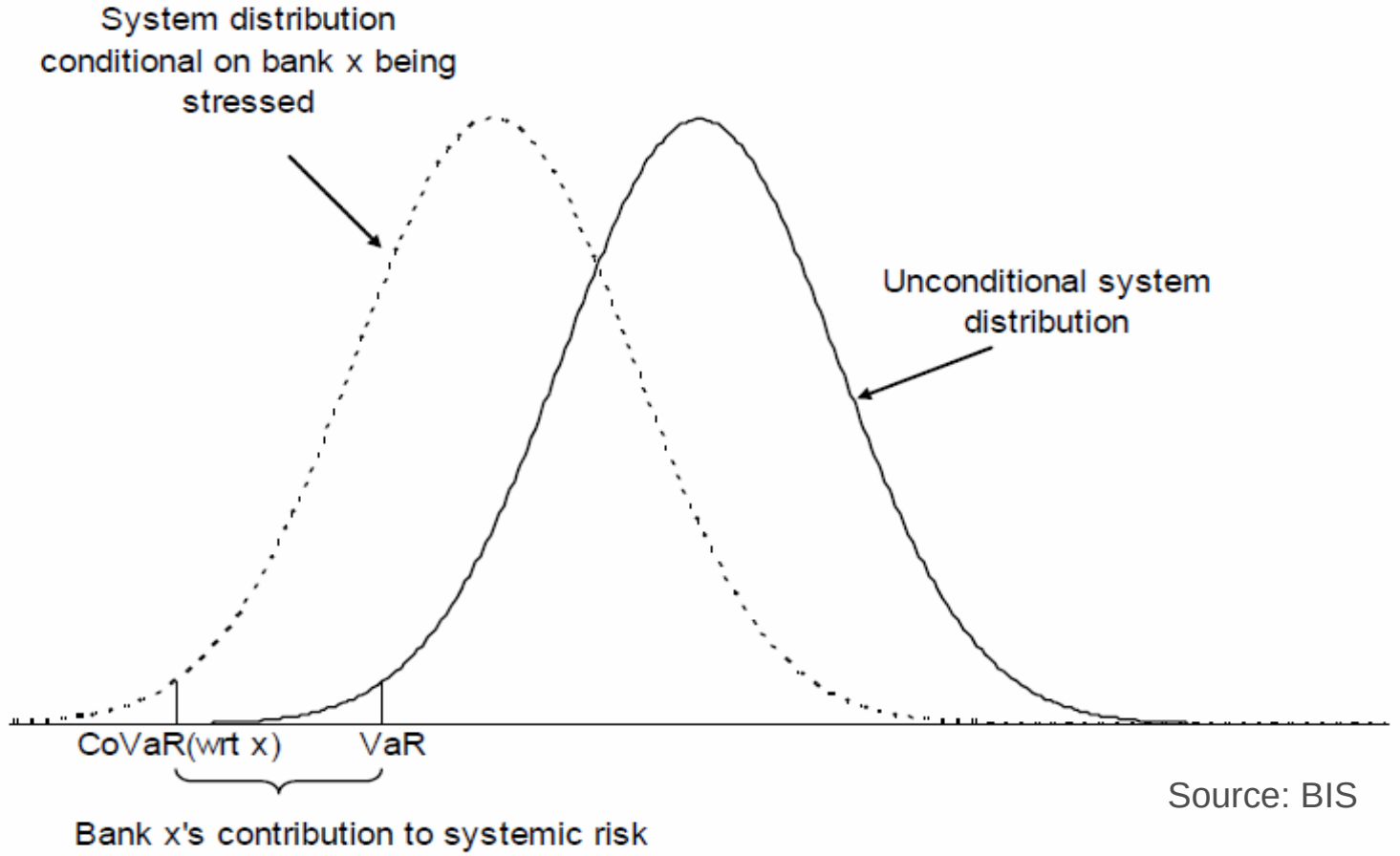
- Better use of market information:
  - *Pros: market data are widely available*
  - *Cons: information content of prices may reflect market sentiment or liquidity and not fundamentals*
- Supervisory information
- New statistical initiatives

Use of market information in measuring systemic risk and systemic importance

- One technique uses structural model of portfolio credit risk (Merton)
- Measurement of systemic risk: Financial system can be considered as a portfolio of institutions
  - First, individual institution PDs and asset correlations estimated
  - Then, portfolio (system) loss distribution estimated: aggregate system losses are the sum of losses of individual defaulting institutions.
- Measurement of systemic importance: Use technique (e.g. Shapley value) to allocate systemic risk among institutions

Another technique for measuring systemic importance CoVaR ('Conditional Value at Risk')

CoVar provides a measure of a bank's contribution to systemic risk:



Source: BIS

Statistical initiatives to meet data demands

STC (in cooperation with BSC) is working in order to:

- Enhance the collection of Consolidated Banking Data (CBD)
  - *Improved timeliness and frequency for key indicators*
  - *More granular data on bank exposures*
- Focus on systematically important financial institutions
  - *Large Complex and Financial Groups*
- Improve the measurement of credit risk transfer
  - *Harmonized statistics on bank's securitization and loan sales integrated with FVCs' statistics*

Additional statistical initiatives

- Statistics on credit derivatives
  - *BIS statistics and US Depository Trust and Clearing Corporation (DTCC) data*
- Use of data from credit registers
  - *Financial sector credit developments at a high level of granularity*
- A fully integrated set of financial and non-financial accounts for the euro area
  - *Allowing to measure financial linkages between all sectors of the economy*

The SHS initiative

Securities Holdings Statistics:

- a dataset combining both individual and system wide perspectives
- Large potential for macro-prudential analysis:
  - *Information collected on a security by security basis*
  - *Holding data to be linked to information on individual securities and their issuers (using the Centralised Securities Database)*
  - *Prototype database created in 2009*
  - *Production of experimental statistics in the course of 2010*

SHS tables: examples

		Holding countries			
Holding sectors		BE	FR	…	Euro area/ EU Totals
	MFIs (banks)	…	…		…
	Investment funds	…	…		…
	…	…	…		…
	Total	…	…	…	…

		Issuing Sectors			
Holding sectors		MFIs	IFs	HHs	Euro area/ EU Totals
	MFIs (banks)	…	…		…
	Investment funds	…	…		…
	…	…	…		…
	Total	…	…	…	

Main challenges ahead

- Integrate the frameworks based on micro-supervisory and statistical information sources
  - *Work done by the Joint Expert Group on Reconciliation (JEGR)*
- Cooperation with CEBS is vital
  - *Templates reflecting data for micro and macro-prudential purposes*
  - *Helping national compilers to develop more integrated information systems*