Insurance Market Risk Metrics

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Presentation to International Association of Insurance Supervisors
Financial Stability Committee

December 2010

Agenda

- Nature of Insurance Business Model
- Nature of Insurance Group Business Model
- Insurance Market Risk Metrics

Nature of Insurance Business Model

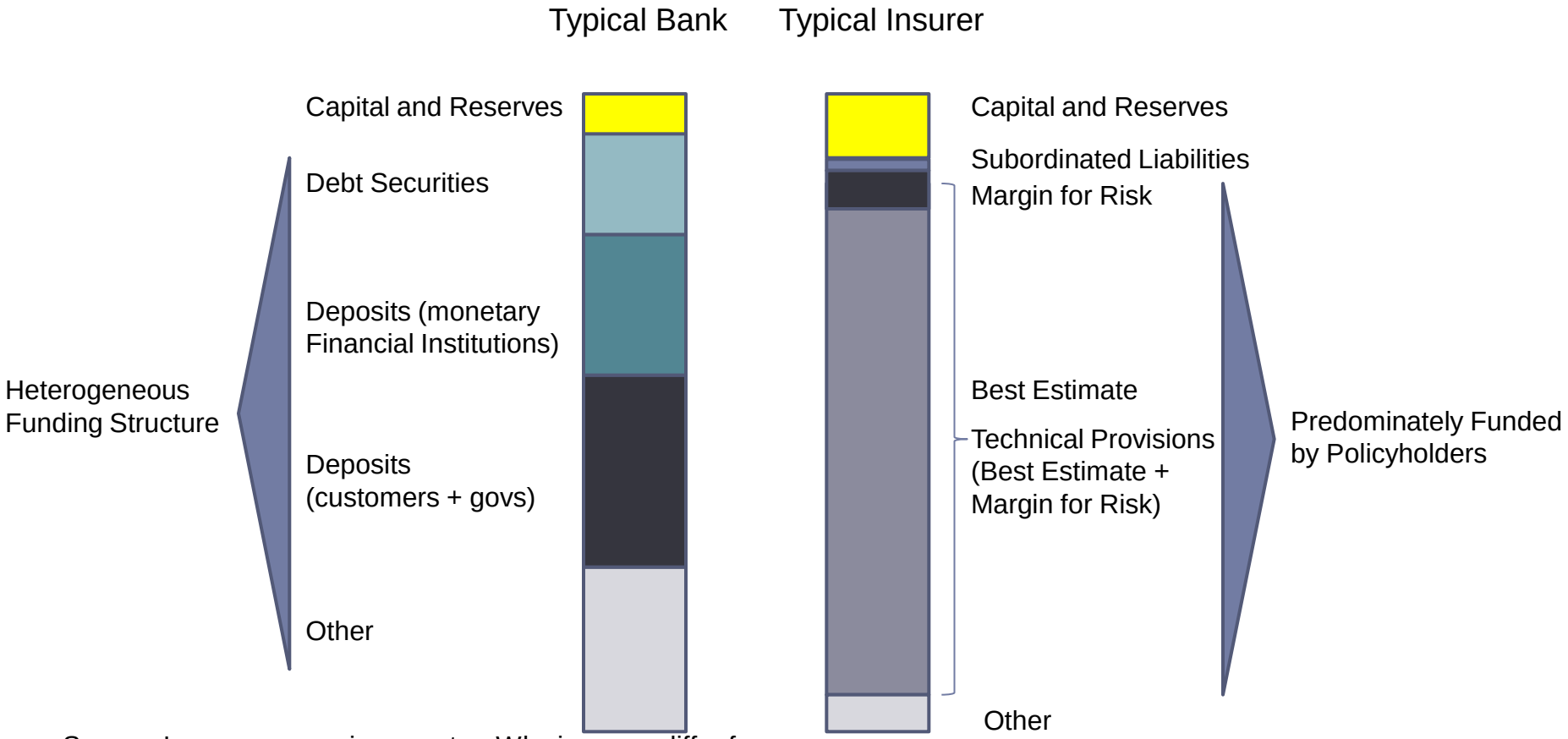
- Essential characteristics of insurance include:
  - Prefunding
    - Satisfaction of insurance obligations are prefunded by premiums, charges and fees according to forward looking methods
  - Method of settlement
    - Insurer obligations are triggered by the insurable event or protected by insurability provided by life insurance contracts
    - Life savings products (ex. Endowment) have fixed settlement dates
    - Few number of claims become payable instantly on occurrence of the trigger event

Nature of Insurance Business Model

- Essential characteristics of insurance include
  - Risk management
    - Enterprise risk management is the first line of defense
    - Appropriate product design and liabilities
    - Adequate capital
  - Risk transfers
    - Some insurer reporting schemes disclose transfer of risks and their holders
    - Information often focuses on a stable, rather than a financially stressed environment

Nature of Insurance Business Model

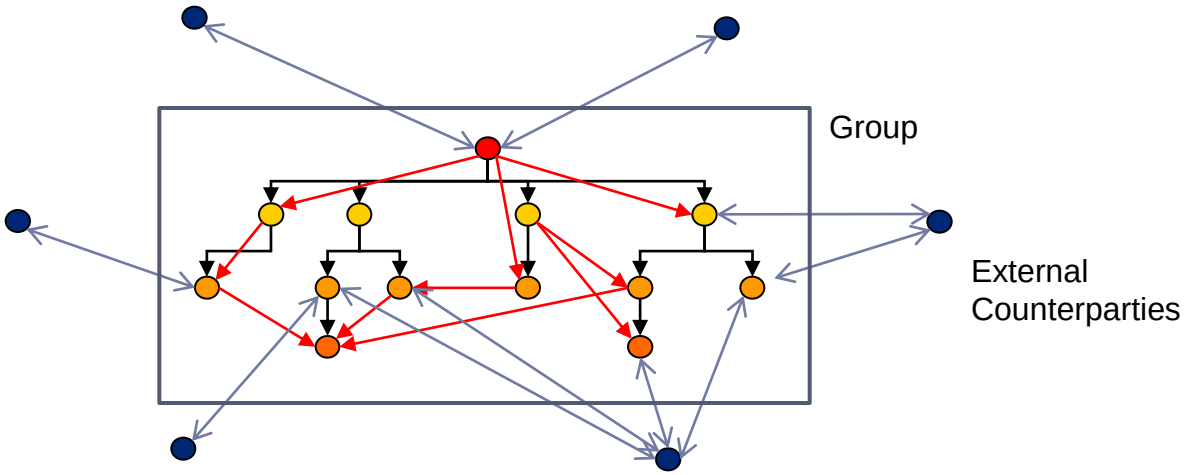
The funding structure of banks and insurers differ materially, reflecting different business models



Soruce: Insurance: a unique sector: Why insurers differ from banks, June 2010

Nature of Insurance Group Business Model

- Insurance Groups consist of legal entities and a web of intra-group commitments
- The legal entities of the group are connected to
  - External counterparies
  - Group legal entities via ownership relations and intra-group commitments



- To assess the group‘s interconnectedness to external counterparties, information on the group‘s legal entities is necessary, as legally binding contracts and exposures are via legal entities, not via the consolidated group.
- The structure of the group becomes particularly relevant in times of financial stress, when the legal entity view becomes dominant

Nature of Insurance Group Business Model

- Analysis of an insurer‘s interconnectedness requires the analysis of
  - Group structure, including the web of intra-group commitments
  - Risk Exposures of the different legal entities comprising the group
  - Exposures and situation in case of financial stress, taking into account potentially limited capital mobility within the group

Insurance Market Risk Metrics

- Risk metrics should be based on an assessment of risk and exposures, reflecting both on and off balance sheet items
- Global metrics should be based on a consistent measurement framework, ideally the identical for everyone
- Scenario and stress testing are important to enable assessment of the financial situation in case of financial stress
- Regulatory methodology that builds off of ORSA process to identify emerging risks not currently being captured

Insurance Market Risk Metrics

- Major drivers of systemic risk (defined by the FSB and IMF) are leverage and unknown counterparty exposures
  - A key insurer priority is to identify any non-insurer exposures that could financially hurt the insurer
    - Identification of leverage
      - Financial option products (guarantees, financial guarantee insurance, CDS)
    - Identification of counterparties
      - Corporate, sovereigns, other insurers, banks, etc.
      - Total exposure, net and gross of available risk mitigation
      - Total exposure in case of specified scenarios

Insurance Market Risk Metrics Assessment

1. Identification of risks from exposures in case of stress scenarios
   - Predefined scenarios to assess market wide risk exposure
   - Company specific scenarios to assess specific risks of single insurers
2. Defining scenarios for the analysis would be the next steps
   - Ideally assessed on a global level, applied to both insurers and banks, to assess interconnectedness

Insurance Market Risk Metrics Models

- In many cases, even simple metrics do not obviate the need for sophisticated models
- Complex insurers with complex risk exposures will have to assess the impact of changes of risk factors / scenarios, using models
  - For example
    - Embedded options in variable annuities change value non-linearly when financial market risk factors changes (e.g. equity markets drop)
    - The impact of intra-group guarantees on the financial states of guarantors and the legal entity receiving the guarantee can be highly non-linear