Overview of Day One Workshops

Workshops I-A & II-A: Systemic Risk Measurement

Workshops I-B & II-B: The Systemic Risk Data Framework

Workshops I-C & II-C: Systemic Operational Risk

THE MACROPRUDENTIAL TOOLKIT: MEASUREMENT AND ANALYSIS

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Workshop I-A: Systemic Risk Measurement I

Clint Lively, RBC • Dilip Madan, University of Maryland • Til Schuermann, Oliver Wyman

Workshop I-A: Systemic Risk Measurement I

Clint Lively, RBC • Dilip Madan, University of Maryland • Til Schuermann, Oliver Wyman

- Question:
  - As risk manager of a financial system, what information is required to oversee:
    - Risk to Capital
    - Risk to Liquidity
    - Contagion in the system?
- Start with Supervised Firms
- Collect internal risk information of firms to construct a risk report for the financial system covering Credit, Counterparty, and Market Risks
- Data collected by regulators in conducting stress tests is a reasonable first draft:
  - http://www.federalreserve.gov/reportforms/formsreview/FRY14Q_20110907_f.pdf
  - http://www.federalreserve.gov/reportforms/formsreview/FRY14A_20110907_f.pdf

Financial System Risk Report

	Risk Factors					Stress Analysis	
	Interest Rates	Spreads	Currencies	Equities	Commodities	Scenario 1	Scenario 2…
Total System							
Firm 1							
Firm 2							
Firm 3…							

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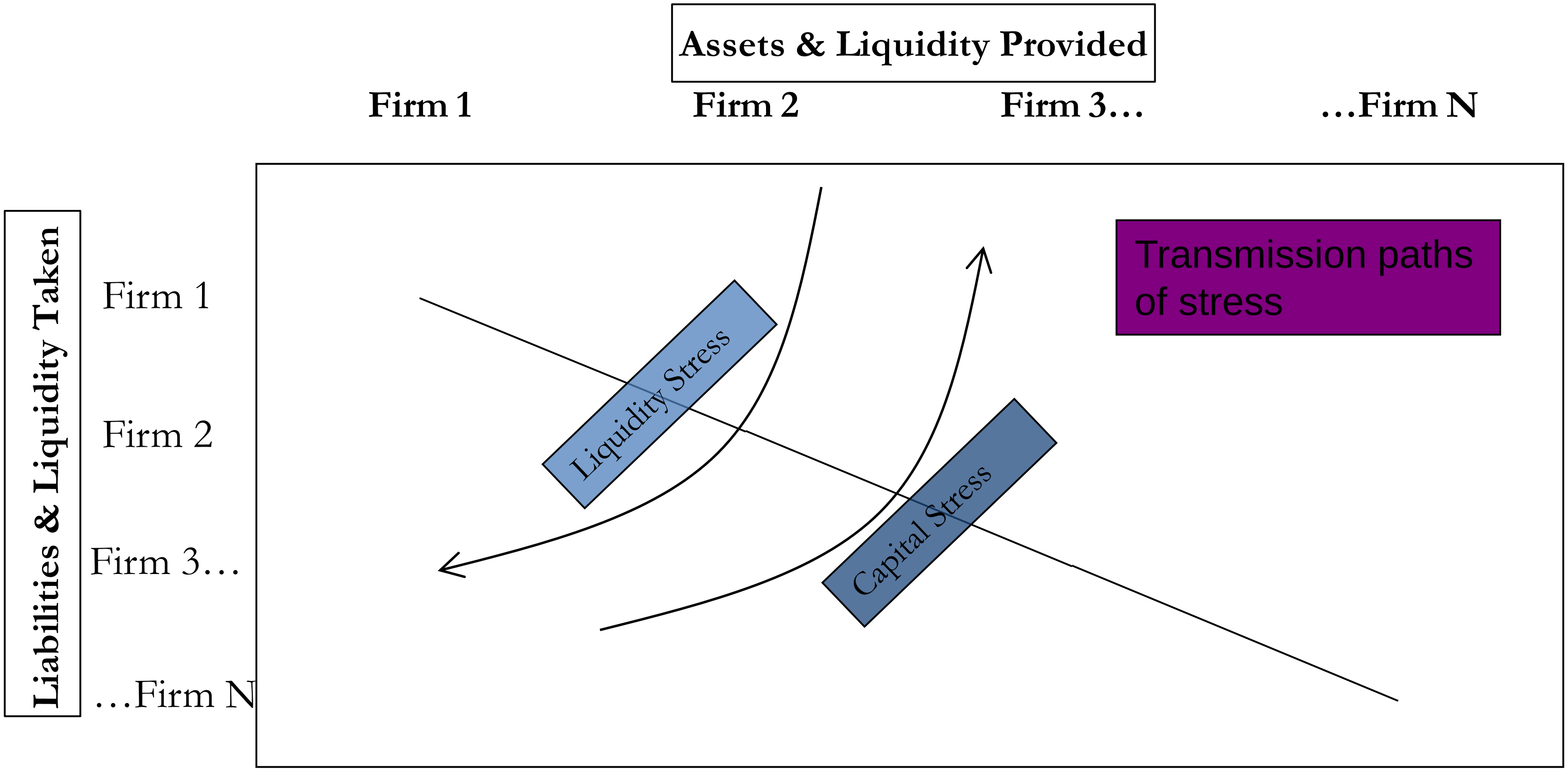
Network Map of Capital & Liquidity Dependencies



Workshop I-A: Systemic Risk Measurement I (cont.)

Clint Lively, RBC • Dilip Madan, University of Maryland • Til Schuermann, Oliver Wyman

- Issues
  - Risk = Loss in Fair Value or Accounting Value?
  - Data collected should enable modeling impact of behavioural feedback loops.
  - Selective disclosure to inform market discipline?
  - Avoid complexity – just look at leverage ratios.
- Collect high quality options price data and use to:
  - Generate credible stress scenarios for economic factors
  - Construct indicators of market stress that could assist in managing leverage
  - ➢ Markets are not always accurate predictors, but still hard to beat

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Workshop I-B: The Systemic Risk Data Framework I

Gregg Berman, SEC • Bill Hodash, DTCC • Nancy Wallace, U.C. Berkeley

Workshop I-B: The Systemic Risk Data Framework I

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- Financial Institutions won't "organically standardize" like other industries. So, if regulators want standardized data they will have to mandate
  - Far easier, and cheaper for financial firms to avoid or cheat, with fewer penalties
  - Without standards in manufacturing, parts wouldn't fit; in communications, devices wouldn't connect; but financial firms would still connect
- LEI should be the first and highest standards priority, but even this "most basic" standard will pose complex implementation issues
  - The practical and technical tasks are enormous, and must not be underestimated
  - There is complexity around standardizing even the simplest concepts, such as the dozens of kinds of and ways to represent the concept of "date"
- Need to consider the data needed during crisis state, vs. non-crisis
  - But, crisis-data needs must be driven by crisis models and tools, which don't yet exist widely

Workshop I-B: The Systemic Risk Data Framework I (cont.)

Gregg Berman, SEC • Bill Hodash, DTCC • Nancy Wallace, U.C. Berkeley

- A significant problem in standardizing data, and especially for derivatives, is that the language of legal contracts isn't comparable to language of cash flow
  - Solutions, such as semantic technologies, are available, but require substantial development
- Need to develop common financial and risk data terms and definitions across government agencies, international jurisdictions, and financial firms
  - If the concepts are standardized, it will be easier to standardize the data
  - OFR is well-suited to coordinate and drive this process, and should not wait on firms

Workshop I-C: Systemic Operational Risk I

Rick Bookstaber, SEC • Walter Lukken, NY Portfolio Clearing • Larry Tabb, Tabb Research

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- OFR needs to be pragmatic about short term versus long term goals allowing dual paths to exist.
  - While the industry has recently rallied to agree on LEI, and the benefits to both public and private entities will be significant; it will not be easy to implement.
    - Because there is no standard LEI, all firms, and many systems within the firms, have different IDs to represent each legal entity.
    - Similar to the Millennium Project, virtually all transactional systems database fields need to be expanded
    - Implementation will be challenging due to the complex ID mapping exercise based on the varying definitions and due to the complicated system architecture issues, changes
    - There will be a high price tag associated with this project
  - Its important to convey shorter term attainable goals to ensure progress is phased and continual in support of continued confidence in the organization and its mission.
- It is critical for the OFR to both create short-term strategies to obtain critical data as well as prioritize the most critical information needed/requested, as systematic capture of all relevant data will be hard, expensive, and time consuming,
  - Develop a conceptual basis for what matters to OFR
  - The OFR understands the basic mechanisms; however, there is concern about the transmission outside oversight. There must be feedback with soft intelligence and the data as the base statistics need to be identified.
  - As the OFR is “pulling” from all of the streams, the data and processes must be prioritized.
  - As assessment processes are developed, an information prioritization schema must be included.

Workshop I-C: Systemic Operational Risk I (cont.)

Rick Bookstaber, SEC • Walter Lukken, NY Portfolio Clearing • Larry Tabb, Tabb Research

- The firm has the best understanding of its risk
  - Firms understand their data, processes, systems and risk assessments better any external parties, however, the data used to assess risk is only as good as their ability to generate good data.
  - The further away the data is from the firm, the more downstream the data, the more complex and problematic the data is, the more difficult it will be for outside entities (such as the OFR and FSOC) to understand the data.
  - OFR / FSOC need to remain close to firms to more fully understand what the data says
  - It will be necessary for the OFR / FSOC to be comfortable dealing with inaccurate data.
    - Where should the OFR go for data?
      - Is the best place to go a clearing house? Firms will have more data and will be more able to explain it.
      - It will be necessary for the OFR to think about this component.
  - While the firm has the best understanding of its risk, it will be necessary to look at the risk assessment processes and data components to determine whether the firm really understand its own risk.
- Systemic risk reporting does not require real time reporting, but during crisis OFR will probably need more granular and more real-time data.
  - Monthly risk reporting as the C-level is reasonable for a non-crisis period.
    - However, while a firm is in this state, its critical to progress the firm's infrastructure to support the level of granular detail necessary for challenging financial times.
  - During a crisis, management will require timely stress tests and results much more frequently. However, results may not show the same thing each and every time, but are usually in the same ballpark.
  - The OFR has to decide how it will interact: Will it collect and manage data up to the point of crisis? Or will the OFR help during the crisis?

Workshop I-C: Systemic Operational Risk I (cont.)

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- There are other mechanisms to efficiently understand risk including surveys and other qualitative methods such as outreach.
  - Understanding risk is not only a quantitative measure; it's a qualitative one as well.
  - One example of such a method is to send out surveys or to meet with senior management and ask what the top 5 or 10 risks they feel are relevant to their business mission and the firm.
- Outreach and collaboration are much better to leverage than enforcement authority and fines.
  - OFR must focus on fostering relationships with stakeholders.
  - Its critical to educate and partner; and to promote transparency in what and how the agency is doing things. Stakeholders will be much more responsive if they are apprised of what will be asked of them and when.
  - The use of aggressive enforcement authority (and fines) should be implemented as a last resort.
  - If the OFR fines firms for each infraction, the OFR will be less likely to get cooperation from the industry.
    - Since data will often be difficult and confusing to interpret, firm input and help will be critical

Workshop I-C: Systemic Operational Risk I (cont.)

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- Robust governance at the firm is indicative of solid risk management practices and source of information for the OFR.
  - Ensuring buy-in from the C-level (including the CEO & CRO) and board is critical
    - Gathering this data will be expensive, time consuming and challenging, so firms will need commitment from the highest levels
    - Also, before firms are in a position to send structured data, the OFR will need to gather soft data.
    - The only way this soft data will be right and interpreted correctly is if the gathering and dissemination of this data is sanctioned and championed from the very top
  - Clear, documented, accessible policies, procedures and processes are a good indicator of solid risk management practices.
  - OFR can more confidently rely on firms who have made their operational infrastructure transparent.
  - Solid governance is directly tied to effective risk management practices – which promote and instill confidence in the OFR and its ability to effectively assess financial stability.

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Workshop II-A: Systemic Risk Measurement II

Dale Gray, IMF • Arnaud Marès, Morgan Stanley • Carmen Reinhart, Peterson Institute

Systemic Risk Measurement II: Sovereign risk, systemic risk and national accounts

Sovereign balance sheet is central to macroprudential analysis:

- Banking sector is tightly linked to the sovereign
- Sovereign balance sheet is often and inevitably a channel of risk and loss absorption in a crisis

Need more information on the sovereign balance sheet:

- Inventory and valuation of all contractual assets, liabilities and explicit guarantees
- Hidden debt and contingent liabilities liabilities

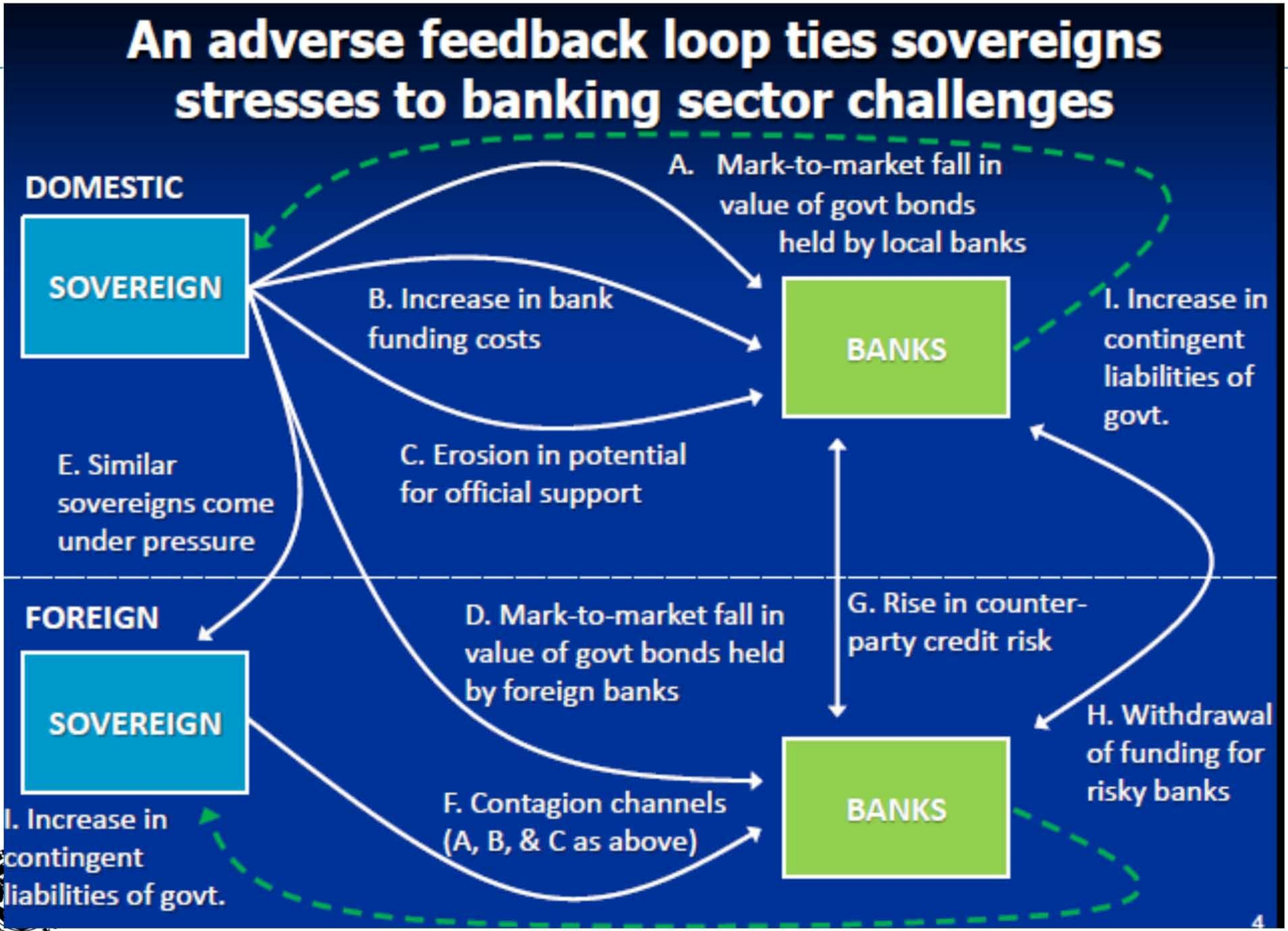
Systemic Risk Continued

Need better measures of sovereign risk (beyond debt to GDP an accounting ratio)

Better information and modeling of feedbacks between banks and sovereigns

Going forward we should consider how to stress test sovereigns risk and banking risk together

Banking-Sovereign Feedbacks Within & Between Countries



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Workshop II-B: The Systemic Risk Data Framework II

Robin Doyle, JPMorgan Chase • H.V. Jagadish, University of Michigan • Jim Wigand, FDIC

Workshop II-B: The Systemic Risk Data Framework II

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- **Granularity is Good**
  - But may have limited functionality and/or significant costs, depending on the context
  - It's required if you want to "understand the information's' DNA"

- All aggregation is done from a specific perspective and its underlying assumptions are "locked into" the resulting information, creating framing effects (potential biases) in the analysis derived from the aggregation(s)

- Aggregation and classification are intimately linked
  - Classification is the underlying basis for aggregation
  - Without regular review, classification systems may become stale quickly, leading to less trustworthy perspectives

Workshop II-B: The Systemic Risk Data Framework II (cont.)

Robin Doyle, JPMorgan Chase • H.V. Jagadish, University of Michigan • Jim Wigand, FDIC

- Aggregation of numeric data is qualitatively different than aggregation of non-numeric data. Classification and aggregation of numeric data is more easily standardized than it is for non-numeric data

- When presenting aggregated datasets, context and perspective are critical to an accurate understanding (we need a standardized way to describe this metadata)

- Aggregation is one of three primary methods of distributing sensitive information, along with anonymization and delay

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Workshop II-C: Systemic Operational Risk II

Bob Jarrow, Cornell University • Laura Kodres, IMF • Thomas Wipf, Morgan Stanley

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- Transparency and public disclosure of data
  - We do not need data from all entities to monitor systemic risk
  - When collecting and disclosing data, there must be a balance between the need to maximize transparency and to protect against:
    - Undue burden on the industry
    - Privacy violations
    - Potential disruption of markets (panics)
    - Collective and corporate wealth destruction
- Analysis on collateral data could be a useful task for OFR
  - Individual companies usually focus on individual transactions between entities
  - We need to look beyond current positions and market values and use transaction-level detail to create a broader view of the market
  - Using more complete data on hedging and counterparty agreements, OFR could simulate ultimate netting and positions resulting from multiple transactions – in other words, OFR could "follow the chain" to show exposures and imbalances
  - The data would need to be machine-readable to facilitate data loading and analysis

Workshop II-C: Systemic Operational Risk II

Bob Jarrow, Cornell University • Laura Kodres, IMF • Thomas Wipf, Morgan Stanley

- We need to examine current collections of data in order to reduce burden and redundancy
  - There are many collections of data where there is potential overlap
    - Basel II, stress tests, resolution plans, etc.
  - Data organization is key to eliminating redundancy
    - Can the industry better organize itself to show where duplication exists?
    - Can OFR or FSOC play a role in this?
    - Can organizations such as SIFMA help?
  - There is a collective benefit to all stakeholders if burden and redundancy can me mitigated or eliminated

Workshop II-C: Systemic Operational Risk II

Bob Jarrow, Cornell University • Laura Kodres, IMF • Thomas Wipf, Morgan Stanley

- We need to examine useful data aggregations the industry is already doing to measure systemic risk
  - Leverage internal risk management and accounting system data at institutions
    - Hierarchies and counterparties to positions and transactions
      - FRB uses this information to perform stress tests
  - LEI will make this exercise easier and more useful
    - Basel III will require LEI in 2015 for SIFIs