Understanding Financial Stability – Towards A Practical Framework

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Bank of Spain Seminar
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Road Map

- Growing Need for Financial Stability (FS) Framework
- Getting FS Definitions Right
- Framework for FS Assessment
- Future Needs
Road Map

- Growing Need for FS Framework
  - Getting FS Definitions Right
  - Framework for FS Assessment
  - Future Needs
Need for FS Framework

- Financial structural changes in recent decades
- Financial disturbances in 1990s and early 2000s
- Growing gaps in oversight regimes for finance
- Need for better monitoring and assessment to safeguard stability
Financial Structural Changes

- Larger balance sheets relative to size of economy
Finance Has Outpaced GDP

- **1970**
  - Total assets: 100% of GDP
  - Banks, pension funds, insurance companies: 50% of GDP
  - Total bank assets: 200% of GDP
  - M3: 50% of GDP
  - M1: 25% of GDP
  - Currency: 10% of GDP

- **2000**
  - Total assets: 200% of GDP
  - Banks, pension funds, insurance companies: 100% of GDP
  - Total bank assets: 200% of GDP
  - M3: 100% of GDP
  - M1: 50% of GDP
  - Currency: 50% of GDP
Financial Structural Changes

- Larger balance sheets relative to size of economy
- Changing composition of assets: increased share of non-monetary assets
Finance Has Outpaced Monetary

The graph illustrates the growth of various financial assets over time from 1970 to 2000. The assets include securities, financial institution (Fin inst) assets, bank assets, M3, M1, and currency. The chart shows a clear upward trend for all categories, with securities and financial institution assets experiencing the most significant growth.
Financial Structural Changes

- Larger balance sheets relative to size of economy
- Changing composition of assets: increased share of non-monetary assets
- Globalization: greater global integration of financial markets and banking systems
- Complexity: of instruments and markets
- Complex dynamics, volatility, and turbulence in the 1990s and early 2000s
### Need for FS Framework

#### Financial Challenges 1992-2002

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Exchange rate crisis involving Italy and United Kingdom.</td>
</tr>
<tr>
<td>1994</td>
<td>Bond market turbulence in G-10 countries.</td>
</tr>
<tr>
<td>1994-95</td>
<td>Mexican (tesobono) crisis.</td>
</tr>
<tr>
<td></td>
<td>Failure of Barings.</td>
</tr>
<tr>
<td>1996</td>
<td>Bond market turbulence in United States.</td>
</tr>
<tr>
<td>1997</td>
<td>U.S. equity market correction.</td>
</tr>
<tr>
<td>1997-98</td>
<td>Asian crises (Thailand, Indonesia, Republic of Korea).</td>
</tr>
<tr>
<td>1999</td>
<td>Argentina crisis, Turkey crisis.</td>
</tr>
<tr>
<td>2001</td>
<td>Corporate governance problems – Enron, WorldCom, Marchoni, Global Crossing, other.</td>
</tr>
<tr>
<td></td>
<td>September 11th events.</td>
</tr>
<tr>
<td>2001-02</td>
<td>Argentina crisis and default.</td>
</tr>
<tr>
<td></td>
<td>Parmalat.</td>
</tr>
</tbody>
</table>
## Need for FS Framework

### Policy Issues and Risks

<table>
<thead>
<tr>
<th>Issue/Risk</th>
<th>Cross-Border Institutions</th>
<th>FX (Global) Markets</th>
<th>Hedge Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection/Integrity?</td>
<td>Investor Protection</td>
<td>Market Integrity</td>
<td>No; Possibly for Retail Investors (of funds of funds)</td>
</tr>
<tr>
<td>Moral Hazard from Safety Net?</td>
<td>Yes; &amp; Home/Host Burden Sharing Issues</td>
<td>Possibly from G-3 Central Bank Liquidity</td>
<td>No</td>
</tr>
<tr>
<td>Cross-Border and Systemic Risks?</td>
<td>Maybe; Depends on Size, Complexity, etc.</td>
<td>Yes, via OTC markets and infrastructure linkages</td>
<td>Yes?, via opacity, complexity, and w/ institutions and markets</td>
</tr>
</tbody>
</table>
## Need for FS Framework Oversight Regimes

<table>
<thead>
<tr>
<th>Type of Oversight</th>
<th>Domain of Oversight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cross-Border Institutions</td>
</tr>
<tr>
<td>Regulation</td>
<td>National with cooperation</td>
</tr>
<tr>
<td>Supervision</td>
<td>National &amp; Home/Host</td>
</tr>
<tr>
<td>Surveillance</td>
<td>Indirect, as participant</td>
</tr>
<tr>
<td>Market Discipline</td>
<td>Partially</td>
</tr>
</tbody>
</table>

- **Domain of Oversight**
  - Cross-Border Institutions: National with cooperation
  - Global Markets: Not really; OTC
  - Hedge Funds: No
  - National & Home/Host: n.a.
  - Surveillance: Indirect, as participant
  - Market Discipline: Partially
  - Primarily
  - Exclusively

- **Need for FS Framework Oversight Regimes**

- **Regulation**
  - National with cooperation
  - Not really; OTC
  - No

- **Supervision**
  - National & Home/Host
  - n.a.
  - No

- **Surveillance**
  - Indirect, as participant
  - Direct; National and International
  - Indirect, as participant

- **Market Discipline**
  - Partially
  - Primarily
  - Exclusively
Need for FS Framework
Systematic Assessment

- Discipline
- Defining of key concepts
- Measuring the degree of financial stability
- Ensuring internal consistency
Road Map

- Growing Need for FS Framework
- **Getting FS Definitions Right**
- Framework for FS Assessment
- Future Needs
Getting Definitions Right

- Financial system
- Financial stability
- Systemic risk
- Understanding the complexities
- Challenge of safeguarding financial stability.
Getting Definitions Right

Financial System

- All financial intermediaries *(including banks, insurance, pension funds, etc)*

- Financial markets *(as alternative sources of finance and as sources of links between institutions)*

- Financial system infrastructures *(including clearance, payment and settlement as well as legal, regulatory, accounting and supervisory infrastructures)*
... the financial system consists of the monetary system with its official understandings, agreements, conventions, and institutions as well as the processes, institutions, and conventions of private financial activities.”

Adaptation of “international financial system” in Truman (2003).
Getting Definitions Right

Financial Stability

- At least three aspects (Schinasi, 2004):
  - Financial resources are being efficiently and smoothly reallocated from savers to investors
  - Financial risks are being assessed and priced accurately and they are being efficiently managed
  - Financial shocks can be comfortably absorbed

- All three have exogenous and endogenous elements

- First two also highlight dynamic and forward-looking aspects of finance
Financial instability

“. . . connotes the presence of market imperfections or externalities in the financial system that are substantial enough to create significant risks for real aggregate economic performance.”

“Risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to probably have significant adverse effects on the real economy.”

G-10 report on Financial Consolidation.
Getting Definitions Right
Understanding the Complexities

- Financial stability (FS) occurs along a continuum.
- FS cannot be summarized in a single quantitative indicator.
- Developments in FS are difficult to forecast.
- FS is only partially controllable.
- Policies aimed at FS often involve trade-offs between efficiency and resiliency.
- FS policies may be time inconsistent.
Maintain smooth functioning of financial system and its ability to facilitate and support efficient functioning and performance of economy.

Prevent systemic threats and resolve problems when prevention fails.
Road Map

- Growing Need for FS Framework
- Getting FS Definitions Right
- Framework for FS Assessment
- Future Needs
Framework For Stability

Objectives

- Early identification of potential vulnerabilities
- Promote preventive and remedial policies to eliminate threats to financial stability
- Resolve instabilities went preventive and remedial measures fail
Framework For Stability
Sources Of Risks And Vulnerabilities

- **Endogenous (within financial system)**
  - Institutions based
  - Market based
  - Infrastructure based

- **Exogenous (macro-economic, events)**
## Framework for Stability
### Sources of Risk

<table>
<thead>
<tr>
<th>Endogenous</th>
<th>Exogenous</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutions-based</strong></td>
<td><strong>Macroeconomic disturbances</strong></td>
</tr>
<tr>
<td>• Financial risks (credit, market, liquidity)</td>
<td>• Economic-environment risk</td>
</tr>
<tr>
<td>• Operational risk</td>
<td>• Policy imbalances</td>
</tr>
<tr>
<td>• Information technology weaknesses</td>
<td><strong>Event risk</strong></td>
</tr>
<tr>
<td>• Legal or integrity risk</td>
<td>• Natural disaster</td>
</tr>
<tr>
<td>• Reputation risk</td>
<td>• Political events</td>
</tr>
<tr>
<td>• Business strategy risk</td>
<td>• Large business failures</td>
</tr>
<tr>
<td>• Concentration risk</td>
<td></td>
</tr>
<tr>
<td>• Capital adequacy risk</td>
<td></td>
</tr>
<tr>
<td><strong>Market-based</strong></td>
<td></td>
</tr>
<tr>
<td>• Counterparty risk</td>
<td></td>
</tr>
<tr>
<td>• Asset price misalignment</td>
<td></td>
</tr>
<tr>
<td>• Run on markets (Credit, Liquidity)</td>
<td></td>
</tr>
<tr>
<td>• Contagion</td>
<td></td>
</tr>
<tr>
<td><strong>Infrastructure-based</strong></td>
<td></td>
</tr>
<tr>
<td>• Clearance, payment, and settlement risk</td>
<td></td>
</tr>
<tr>
<td>• Infrastructure fragilities (legal, regulatory, accounting, supervisory)</td>
<td></td>
</tr>
<tr>
<td>• Collapse of confidence leading to runs</td>
<td></td>
</tr>
<tr>
<td>• Domino effects</td>
<td></td>
</tr>
</tbody>
</table>
Framework For Stability
Three Step Process

- Assess contemporaneous robustness of the financial system (endogenous risks)
- Identify the main sources of (downside) risk and vulnerability to financial stability (exogenous risks)
- Given (1), assess the ability of the financial system to absorb the sources of risk and vulnerability identified in (2), should they crystallize
Framework for Stability

Continuous Process

Intelligence Gathering -> Analysis
Policy Implementation
Judgment
Overall Assessment
Framework for Stability
Integrate Analyses & Assessment

- MONITORING and ANALYSIS
  - Macroeconomic conditions
  - Financial markets
  - Financial institutions
  - Financial infrastructure

- ASSESSMENT
  - Inside financial stability corridor
  - Near boundary stability corridor
  - Outside financial stability corridor

- PREVENTION | REMEDIAL ACTION | RESOLUTION

- FINANCIAL STABILITY
## Framework For Stability
### Policy Instruments

<table>
<thead>
<tr>
<th>Tools</th>
<th>Prevention</th>
<th>Remediation</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Implement existing policies to safeguard stability</td>
<td>Preventive measures to reduce risks to stability</td>
<td>Reactive policies to restore stability</td>
</tr>
<tr>
<td>Market Discipline</td>
<td>Maintain, update</td>
<td>Strengthen</td>
<td>Discretionary measures</td>
</tr>
<tr>
<td>Self-regulation</td>
<td>Maintain, update</td>
<td>Strengthen</td>
<td>Discretionary measures</td>
</tr>
<tr>
<td>Safety nets</td>
<td>Maintain, update</td>
<td>Strengthen</td>
<td>LOLR, deposit insurance</td>
</tr>
<tr>
<td>Surveillance</td>
<td>Maintain, update</td>
<td>Intensify</td>
<td>Further intensify</td>
</tr>
<tr>
<td>Sup &amp; Reg</td>
<td>Maintain, update</td>
<td>Intensify</td>
<td>Discretionary measures</td>
</tr>
<tr>
<td>Communication</td>
<td>Existing policies</td>
<td>Moral suasion</td>
<td>Restore confidence</td>
</tr>
<tr>
<td>Macro policies</td>
<td>Maintain, update</td>
<td>Lower imbalances</td>
<td>Discretionary measures</td>
</tr>
<tr>
<td>Legal System</td>
<td>Maintain, update</td>
<td>Strengthen</td>
<td>Discretionary measures</td>
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Future Needs

Internally Consistent Frameworks

- Overall assessment should take account of real-financial feedback and should be internally consistent – IMF FSAP

- Stress testing useful but limited potential without robust models of entire financial system

- Ideally, we need a dynamic general equilibrium model that is capable of measuring (possibly non-linear) interaction between financial and non-financial sectors of the economy, including at the global level
Future Needs

**Internally Consistency: Reality**

- Literature on real-financial interaction generally finds transmission of real-to-financial simpler to quantify than vice versa.

- Until we have internally consistent frameworks, we must accept second best eclectic approaches but apply them with discipline.
Future Needs

Data, Indicators And Models

- **Data-sets**
  - Micro data in particular (helps in looking beneath the surface)

- **Market data and indicators based on them:**
  - Forward looking and all encompassing nature should help in shedding light on the likelihood of adverse scenarios and their impact
  - Quantification of downside risks

- **Models and a better grip of the links:**
  - Simple and small-scale (the bursting of the 2000 bubble was predictable but maybe not the consequences for European insurance, etc)
Future Needs

- Data (distributions, etc.)
- Empirical tools and models
- Indicators of risks and vulnerabilities
- Institutional implications
- Policy instruments
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