Implementing Macroprudential Policies
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Federal Reserve Board

MFM and Macroeconomic Fragility Conference
Oct. 10-12, 2013

The views expressed in this presentation are those of the author and not necessarily those of the Federal Reserve Board or the Federal Reserve System.
Macroprudential Tools and Objectives

Selected policy issues

1. Reducing runs in shadow banking
2. Designation of systemically important financial institutions (SIFIs)
3. Countercyclical capital to prevent adverse feedback loops between firm distress and economic activity
Short-term Wholesale Debt

- Systemic risk arises from maturity or credit transformation without a government backstop
- Ex ante regulation to reduce the incidence and costs of ex post fire sales
  Reform of tri-party repo and MMFs
  Margin requirements for secured funding
  Bank liquidity and capital regulations
Financial Institutions
Credit market debt held, by firm type

- **Guidance:** How a firm’s distress could transmit to and cause a broader impairment of financial intermediation and harm to the real economy

- **Key transmission channels:**
  - Exposures and interconnectedness
  - Asset liquidation, fire sales
  - Critical function
  - Other – ease of resolvability

- **Questions:**
  - Systemic risk measures from correlations or contagion
  - Network effects – direct and indirect connections
  - Fire sales
Capital and Macroprudential Goals

• Microprudential goal to ensure solvency
  o Regulatory – minimum and capital conservation buffer
  o Supervisory -- stress tests provide a forward-looking measure of capital under severe conditions, and address structural problem that investors lose confidence when conditions are changing rapidly

• Macroprudential goal to mitigate externalities
  o SIFI surcharge – calibrated to reduce expected costs to system from the firm’s distress
  o Countercyclical capital buffer and stress test scenario design
  o Both CCB and stress tests scenarios lead to time-varying capital
    ▪ Build resilience by requiring more when capital is cheap, and when building risks are obscured by good economic conditions
    ▪ Lean against the wind to prevent further buildup of visible imbalances
Transmission Map for Stress Tests

Stress scenario

- Income
- Net profits
- Losses

Voluntary buffers ↓

Potential capital shortfall (relative to pro-forma levels)

Arbitrage away

Options to address shortfall

- ↑ Lending spreads
- ↓ Dividends and bonuses
- Raise equity, SEoS
- ↓ Assets

Loan market

- Reprice loans
- ↓ Credit demand
- ↓ Credit supply

Impact on the credit cycle

- Leakages to non-banks
- Asset prices

Expectation channel

- ↑ Loss Absorbency
- Tighter risk management

Increase resilience

Income Stress scenario

Net profits

Losses

Voluntary buffers ↓

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Increase resilience

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Implementation of Stress Tests

• **Scenario specifications and process**

• Specify macro scenarios and trading book scenarios
  
  o Reflects initial shock and amplification
  
  o **Baseline macro** - macroeconomic projection reflecting views of government agencies, other public-sector organizations, and private-sector forecasters.
  
  o **Severely adverse** – sufficiently severe to instill confidence
  
  o **Adverse** (required by DFA) – not tied to capital actions

• Estimate losses and revenue to determine post-stress capital

• Post-stress capital under **severely adverse** determines capital actions, such as dividends

• Repeat each year (Nov to Mar)
Probabilistic Approach

Note: This chart shows the path of the unemployment rate in the CCAR 2012 baseline and stress scenarios. The 70th, 90th, and 98th confidence intervals are from the FRB-US macro model.
## Recession Approach

<table>
<thead>
<tr>
<th>Peak</th>
<th>Trough</th>
<th>Severity</th>
<th>Duration (quarters)</th>
<th>Real GDP Growth</th>
<th>Change in Unemp. Rate During Recession</th>
<th>Total Change in Unemp. Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957Q3</td>
<td>1958Q2</td>
<td>Severe</td>
<td>4 (Medium)</td>
<td>-3.1</td>
<td>3.2</td>
<td>3.2</td>
</tr>
<tr>
<td>1960Q2</td>
<td>1961Q1</td>
<td>Moderate</td>
<td>4 (Medium)</td>
<td>-0.5</td>
<td>1.6</td>
<td>1.8</td>
</tr>
<tr>
<td>1969Q4</td>
<td>1970Q4</td>
<td>Moderate</td>
<td>5 (Medium)</td>
<td>-0.1</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>1973Q4</td>
<td>1975Q1</td>
<td>Severe</td>
<td>6 (Long)</td>
<td>-3.1</td>
<td>3.4</td>
<td>4.1</td>
</tr>
<tr>
<td>1980Q1</td>
<td>1980Q3</td>
<td>Moderate</td>
<td>3 (Short)</td>
<td>-2.2</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>1981Q3</td>
<td>1982Q4</td>
<td>Severe</td>
<td>6 (Long)</td>
<td>-2.6</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>1990Q3</td>
<td>1991Q1</td>
<td>Mild</td>
<td>3 (Short)</td>
<td>-1.3</td>
<td>0.9</td>
<td>1.9</td>
</tr>
<tr>
<td>2001Q1</td>
<td>2001Q4</td>
<td>Mild</td>
<td>4 (Medium)</td>
<td>0.7</td>
<td>1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>2007Q4</td>
<td>2009Q2</td>
<td>Severe</td>
<td>7 (Long)</td>
<td>-4.7</td>
<td>4.5</td>
<td>5.1</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>Severe</strong></td>
<td><strong>6</strong></td>
<td><strong>-3.8</strong></td>
<td><strong>3.7</strong></td>
<td><strong>3.9</strong></td>
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Severely Adverse Macro Scenario Design

**Severely adverse scenario**

- Recession approach rather than “probabilistic” approach
- Setting the unemployment rate equal to the path typically followed in a recession of some specified severity
- A path that increases by 3 to 5 p.p. from its initial level over 6 to 8 quarters
- Using models and judgment to calculate the paths of other variables

- To reduce pro-cyclicality
  - *Floor* for the unemployment rate -- a path that increases to a level of 10 percent over 6 to 8 quarters.
  - Cyclical systemic risks build up in robust expansions
  - These risks are easily obscured by buoyant conditions

- But when to reduce the severity if unemployment is high?
Macroprudential Elements of Stress Tests

• Salient risks – could lead to more atypical co-movements among variables.
  o An elevated asset price vulnerable to an abrupt decline
  o Foreign vulnerabilities weaker than typical in a severe U.S. recession
  o Could be included in severely adverse or adverse, to lean against or build resilience

• Systemic importance - trading book puts more scrutiny on larger, more systemic firms

• Disclosure could enhance discipline

• Amplification and feedback
  o Horizontal - can help to capture common exposures
  o Interconnectedness - trading shock embeds failure of a major interconnected counterparty
  o Credit availability - help to identify possibility of an adverse feedback loop
Some Implementation Questions

- Amplification: Incorporate funding stresses and possible fire sale dynamics
- Feedback: If losses are greater than expected, implementing an explicit feedback loop
  - With other banks and financial system
  - With the real economy
- When does time-varying capital dominate fixed capital?
- Determination of the severity of the scenario –
  - When to release a buffer? What would be good indicators?
  - Judgment or rule? Gains from credibility?
- Are we introducing greater systemic risk? All are positioned for a macroeconomic shock
- Does our choice of scenarios determine their hedging strategies?