Macroeprudential Policy: What Instruments and How to Use Them?
Lessons from Country Experiences

Monetary and Capital Markets Department
Road Map

I. Country experiences with macroprudential instruments

II. Effectiveness of macroprudential instruments

III. Lessons and Policy Messages

IV. Next Steps: Remaining Gaps
I. Country Experiences with Macroprudential Instruments
What Instruments Are Used?

- 10 of the most frequently used instruments are examined

- Mostly prudential instruments

- Those capable of addressing systemic risk are considered macroprudential
  - Procyclicality (time dimension)
  - Interconnectedness (cross-sectional dimension)
The 10 Instruments

- **Credit-related:**
  - Caps on the loan-to-value (LTV) ratio
  - Caps on the debt-to-income (DTI) ratio
  - Caps on foreign currency lending
  - Ceilings on credit or credit growth

- **Liquidity-related:**
  - Limits on net open currency positions/currency mismatch (NOP)
  - Limits on maturity mismatch
  - Reserve requirements

- **Capital-related:**
  - Countercyclical/time-varying capital requirements
  - Time-varying/dynamic provisioning
  - Restrictions on profit distribution

- **Risks generated by strong credit growth and asset price inflation:**

- **Systemic liquidity risk:**

- **Risks arising from excessive leverage and the consequent de-leveraging:**

- **Risks related to large and volatile capital flows and currency fluctuations:**
Objectives of Macroprudential Instruments

Credit growth/asset price inflation

Capital flows/currency fluctuation

Excessive leverage

Systemic liquidity risk

Source: IMF Financial Stability and Macroprudential Policy Survey, 2010
What Affects the Choice of Instruments?

(% of countries in each group using each type of instruments)

<table>
<thead>
<tr>
<th>Economic Development Stage</th>
<th>Credit-related</th>
<th>Liquidity-related</th>
<th>Capital-related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>43</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Emerging Market</td>
<td>68</td>
<td>93</td>
<td>68</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exchange Rate</th>
<th>Credit-related</th>
<th>Liquidity-related</th>
<th>Capital-related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible</td>
<td>48</td>
<td>55</td>
<td>40</td>
</tr>
<tr>
<td>Managed/Fixed</td>
<td>100</td>
<td>89</td>
<td>56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of Financial Sector</th>
<th>Credit-related</th>
<th>Liquidity-related</th>
<th>Capital-related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>48</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>Small</td>
<td>67</td>
<td>88</td>
<td>67</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of Capital Inflow</th>
<th>Credit-related</th>
<th>Liquidity-related</th>
<th>Capital-related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>58</td>
<td>54</td>
<td>29</td>
</tr>
<tr>
<td>Large</td>
<td>56</td>
<td>68</td>
<td>56</td>
</tr>
</tbody>
</table>
How Are the Instruments Used?

- Single Multiple: 36%, 64%
- Broad-based Targeted: 45%, 55%
- Fixed Time-varying: 45%, 55%
- Rule Discretion: 8%, 92%
- Coordination No coordination: 41%, 59%
II. Effectiveness of Macroprudential Instruments
Effectiveness of the Instruments

- Dampening pro-cyclicality of
  - credit growth?
  - leverage?

- Limiting interconnectedness in exposures to
  - wholesale funding?
  - foreign sources of funding?
Three Approaches

1. The case study
2. The simple approach
3. The panel regression
1. Case Study

- Small but diverse group of countries:
  - China, Colombia, Korea, New Zealand, Spain, the United States and some Eastern European countries.

- Instruments seem to have achieved, to various degrees, their intended objectives
  - Effectiveness does not depend on size of financial sector or exchange rate regime
2. Simple Approach

Change in Credit Growth After the Introduction of Instruments (average across countries)
2. Simple Approach

Credit Growth vs. GDP Growth

With and Without Caps on Loan-To-Value Ratios
- No Caps on LTV (blue)
- Caps on LTV (red)

Credit Growth (Percent Quarterly) vs. GDP Growth (Percent Quarterly)

With and Without Caps on Debt-to-Income Ratios
- No Caps on DTI (blue)
- Caps on DTI (red)

Credit Growth (Percent Quarterly) vs. GDP Growth (Percent Quarterly)

With and Without Reserve Requirement
- No Reserve Requirements (blue)
- Reserve Requirements (red)

Credit Growth (Percent Quarterly) vs. GDP Growth (Percent Quarterly)

With and Without Dynamic Provisioning
- No Dynamic Provisioning (blue)
- Dynamic Provisioning (red)

Credit Growth (Percent Quarterly) vs. GDP Growth (Percent Quarterly)
## 3. Panel Regression

**Estimates of effects**

<table>
<thead>
<tr>
<th>Reductions in:</th>
<th>Procyclicality of Credit</th>
<th>Leverage</th>
<th>Foreign Liabilities / Assets</th>
<th>Credit/Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caps on LTV</td>
<td>80%</td>
<td>34% (NS)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Caps on DTI</td>
<td>100%</td>
<td>100%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Limits on Credit Growth</td>
<td>100%&gt;</td>
<td>80%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Limits on NOP</td>
<td>N/A</td>
<td>N/A</td>
<td>15%</td>
<td>NS</td>
</tr>
<tr>
<td>Limits on Maturity Mismatch</td>
<td>N/A</td>
<td>N/A</td>
<td>NS</td>
<td>5%</td>
</tr>
<tr>
<td>Reserve Requirements</td>
<td>92%</td>
<td>100%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Time-varying/Dynamic Provisioning</td>
<td>100%&gt;</td>
<td>100%&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Countercyclical/Time-varying Capital Requirements</td>
<td>NS</td>
<td>100%&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A: Not Applicable  
NS: Non-significant
3. Panel Regression: Caveats

- Regression coefficients are:
  - Averages of country performances
  - Affected by small sample size
  - Not an indication of equal effectiveness in all countries

- Country-specific circumstances important for effectiveness

- Use of instruments is new: limited number of observations
III. Lessons and Policy Messages
Lessons and Policy Messages

Instruments may be effective addressing risks generated by:

- Credit growth/asset price inflation:
  - credit-related instruments

- Systemic liquidity risk:
  - liquidity-related instruments

- Excessive leverage:
  - capital-related instruments

- Capital flows:
  - all three types of instruments
Lessons and Policy Messages

- Useful to adjust the instruments at different phases of the cycle

- Instruments that vary through the cycle have advantages and should be used when possible

- Well coordinated policy actions: necessary condition for success
Lessons and Policy Messages

Macroprudential Instruments

How to use

- Single
- Multiple
- Broad-based
- Targeted
- Coordination with other policies
- Fixed
- Time-varying
- Rules
- Discretion

Do's and Don'ts

- Use when risk is well-defined from a single source
- Do not overdo the use of multiple instruments or impose costs that are too high
- Use if granular data are not available and risks are generalized
- Be ready to adjust fine-tuning; anticipate channels for evasion
- Establish mechanisms to resolve conflict and assign clear accountability and governance arrangements
- Adjust parameters if needed with changing circumstances
- Design sound and transparent principles governing the adjustment
- Use when risk of inaction is high and risk management and supervision capacity is weak
- Use when have deep structural changes and rapidly evolving risks
- Re-assess calibration periodically
- Avoid excessive complexity
- Do not overdo discretion
Next Steps: Remaining Gaps

• Deeper analysis of **interconnectedness** (cross-section dimension)
  – Data availability is a constraining factor.
• Deeper understanding of **design and calibration** of instruments
• Estimates of **cost of implementation**: distortions, unintended consequences
• Relationship between **macroprudential and microprudential** regulation