Capital Account Crises: Lessons for Crisis Prevention

High-Level Seminar on Crisis Prevention in Emerging Market Countries

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Themes of the Presentation

1. Towards a framework for understanding capital account crises:
   - Balance sheet vulnerabilities
   - Plus specific trigger

2. Implications for crisis prevention

3. Role of the IMF in crisis prevention
1. Towards a framework for understanding crises

Recent Capital Account Crises

Uruguay 2002
Korea 1997
Mexico 1994
Argentina 2002

Indonesia 1997
Korea 1997
Turkey 2000

Argentina 1995
Brazil 1999
Thailand 1997

Russia 1998
I. Towards a framework for understanding crises

Crisis have common consequences ...

- Real GDP growth (In percent per year)
- Inflation (In percent per year)
- Real Exchange Rate (Percent change)
- Current account balance (In percent of GDP)
Crisis have different sources...

**Funding crisis**
- Mexico 1994
- Russia 1998

**Corporate sector**
- Thailand 1997
- Korea 1997
- Indonesia 1997

**Banking crisis**
- Argentina 1995
- Uruguay 2002

**Public debt dynamics**
- Brazil 1999
- Turkey 2000
- Argentina 2002
Each crisis seems to require a new generation of models

**First generation models:** deficit financing and fixed exchange rate

But, European ERM crises of 1992/93

**Second generation models:** inconsistent policy stance and self-fulfilling shifts in investor sentiment → multiple equilibria

But, Asian crises of 1997

**Third generation models:** FX exposure of private and corporate sectors

But, Argentine crisis of 2002

*does not even conform to first generation*
Understanding capital account crises...

• Requires a more general framework ...
• Crises are caused by balance sheet weaknesses in the economy:
  • Currency and maturity mismatches
  • Capital structure
  • Solvency
• And a specific crisis trigger:
  • Contagion, terms of trade shock, shift in market sentiment
  • Inconsistent macroeconomic policy stance
• Sources of weaknesses and triggers vary widely across crisis episodes
<table>
<thead>
<tr>
<th>Crisis</th>
<th>Balance sheet vulnerability</th>
<th>Crisis trigger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico (1994)</td>
<td>Government's short-term external (and FX-denominated) liabilities</td>
<td>U.S. monetary policy; political shocks (Chiapas; assassination)</td>
</tr>
<tr>
<td>Korea (1997)</td>
<td>Financial sector external liabilities (with substantial maturity mismatch) and concentrated exposure to chaebols; high corporate debt/equity ratio</td>
<td>Terms of trade deterioration; profitability of chaebols; contagion from Thailand's crisis</td>
</tr>
<tr>
<td>Indonesia (1997)</td>
<td>Corporate sector external liabilities; concentration of banking system assets in real estate lending; high corporate debt/equity ratio.</td>
<td>Contagion from Thailand's crisis; banking crisis</td>
</tr>
<tr>
<td>Crisis</td>
<td>Balance sheet vulnerability</td>
<td>Crisis trigger</td>
</tr>
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<td>----------------</td>
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<tr>
<td>Brazil (1999)</td>
<td>Government's short-term external liabilities</td>
<td>Doubts about ability to implement budget cuts; current account deficit; contagion from Russian default.</td>
</tr>
<tr>
<td>Argentina (2002)</td>
<td>Public and private sector external and FX-denominated liabilities.</td>
<td>Inconsistency between currency board arrangement and fiscal policy; Russian default.</td>
</tr>
<tr>
<td>Turkey (2000)</td>
<td>Government short-term liabilities, banking system FX- and maturity mismatches</td>
<td>Current account deficit, real exchange rate appreciation, uncertainty about political will to undertake financial sector reforms</td>
</tr>
</tbody>
</table>
2. Implications for Crisis Prevention

• Minimize vulnerabilities of sectoral balance sheets
  – Government sector (including central bank)
  – Private financial sector
  – Private non-financial (households/corporations)
  – External Sector (rest of the world)

• Avoid “home-grown” crisis triggers (poor policies); insulate against external triggers (reduce contagion by differentiation through adherence to standards, data transparency, etc.).
2. Implications for crisis prevention

Balance Sheet Vulnerabilities

1. Balance sheet problems can propagate from sector to another, often to, or through, the banking sector
   – Corporate sector → banking system  Asian crisis 1997
   – Public sector → banking system  Russia, Turkey, Argentina
   – Banking system → public sector  Uruguay 2002

2. If government’s balance sheet sufficiently strong → can act as “circuit breaker” or if weak →  Argentina (2002)

3. Maturity and currency mismatches hidden in indexed or floating rate instruments  Brazil (1999)
4. Balance sheet mismatch can transform one type of risk into another without reducing the risk:
   – Fx to credit risk: Thailand 1997, Turkey 2000, Argentina 2002
5. Off-balance sheet items may alter the risk exposure
6. Pegged exchange rates might encourage greater risk taking in the form of mismatched FX positions
   – Carry trade Thailand 1997, Turkey 2000
   – Domestic dollarization Argentina?
7. Availability of foreign exchange reserves may be crucial:
   – Provide confidence, lower likelihood of a “run” on country
   – Cover short-term financing needs of the public sector
   – Allow partial LOLR operations in dollarized economies
   – Help close the private sector FX-exposure Brazil 1999
Towards Crisis Prevention

Some FX- and maturity mismatches on domestic balance sheets may be unavoidable ...

And crisis triggers—especially external—are difficult to predict ...

Therefore, crisis prevention requires:
- Minimizing balance sheet vulnerabilities, including through
  - Financial sector surveillance
  - Transparency
  - Systematic debt sustainability analysis
- Pursuing sound macroeconomic policies ... And signaling markets
- Building up, or having available, foreign exchange reserves
3. Role of IMF in crisis prevention

IMF-supported programs and crisis prevention

- Do IMF-supported programs have a role to play in crisis prevention (as opposed to crisis resolution)?
- Channels:
  - Provide liquidity—reduce likelihood of a “run” on the country by atomistic creditors
  - Incentive for stronger policies
  - Enhance credibility of policies through conditionality
  - Signal markets, including by putting IMF resources on the line.
- Examine periods of heightened vulnerability—in panel of 27 emerging market countries over 1994-04, identify 32 high market pressure episodes. Of these 11 turned into capital account crises, and 21 avoided a crisis. Why?

For econometric details, see IMF-Supported Programs and Crisis Prevention (model classifies 87 percent of cases correctly)
### 3. Role of IMF in crisis prevention

Data: Capital Account Crises Countries

<table>
<thead>
<tr>
<th></th>
<th>Country</th>
<th>Beginning date</th>
<th>End date of market pressures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Argentina</td>
<td>2001 July</td>
<td>2002 May</td>
</tr>
<tr>
<td>2</td>
<td>Brazil</td>
<td>1998 August</td>
<td>1999 January</td>
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<tr>
<td>3</td>
<td>Bulgaria</td>
<td>1996 May</td>
<td>1996 May</td>
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<tr>
<td>4</td>
<td>Ecuador</td>
<td>2000 January</td>
<td>2000 January</td>
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<td>5</td>
<td>Indonesia</td>
<td>1997 October</td>
<td>1997 December</td>
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<tr>
<td>6</td>
<td>Korea</td>
<td>1997 July</td>
<td>1998 January</td>
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<td>7</td>
<td>Malaysia</td>
<td>1997 July</td>
<td>1998 January</td>
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<td>8</td>
<td>Russia</td>
<td>1998 August</td>
<td>1998 September</td>
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<td>9</td>
<td>Thailand</td>
<td>1997 July</td>
<td>1997 August</td>
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<td>10</td>
<td>Turkey</td>
<td>2000 November</td>
<td>2001 March</td>
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<td>11</td>
<td>Uruguay</td>
<td>2002 July</td>
<td>2002 July</td>
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3. Role of IMF in crisis prevention

Data: Control Group Countries

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<tr>
<td>1</td>
<td>Argentina</td>
<td>1998 August</td>
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<td>Brazil</td>
<td>2002 July</td>
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<td>3</td>
<td>Bulgaria</td>
<td>1998 August</td>
<td>1998 August</td>
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<tr>
<td>4</td>
<td>Chile</td>
<td>1999 June</td>
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<td>5</td>
<td>Chile</td>
<td>2002 June</td>
<td>2002 June</td>
</tr>
<tr>
<td>6</td>
<td>Colombia</td>
<td>1998 April</td>
<td>1998 September</td>
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<tr>
<td>7</td>
<td>Colombia</td>
<td>2002 July</td>
<td>2002 August</td>
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<tr>
<td>8</td>
<td>Hungary</td>
<td>2003 June</td>
<td>2003 June</td>
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<td>9</td>
<td>Indonesia</td>
<td>2004 January</td>
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<td>10</td>
<td>Mexico</td>
<td>1994 December</td>
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<td>11</td>
<td>Mexico</td>
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<td>12</td>
<td>Peru</td>
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<td>1998 December</td>
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<td>13</td>
<td>Philippines</td>
<td>1997 August</td>
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<td>14</td>
<td>Poland</td>
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<tr>
<td>15</td>
<td>South Africa</td>
<td>1996 April</td>
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<td>1998 July</td>
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<td>2001 December</td>
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<td>18</td>
<td>Turkey</td>
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<td>1994 June</td>
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<td>1998 August</td>
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<tr>
<td>21</td>
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<td>2003 January</td>
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Key Estimation Results

- Balance sheet vulnerabilities (debt/GDP, short-term debt/reserves), pegged exchange rate regimes, exchange rate overvaluation, political instability—all significantly associated with higher crisis probability
- Stronger monetary and fiscal policies are significantly associated with lower crisis probability
- IMF disbursements (or accumulated drawing rights under precautionary) are significant in crisis prevention
  - There is an important liquidity effect as it is disbursements (or availability under precautionary arrangements) of IMF resources that matters, rather than just an on-track program or possible future drawings.
  - Benefits go beyond liquidity effects, since IMF financing variable is significant even controlling for the country’s foreign exchange reserves. This must reflect stronger policies under programs and the signal to markets (which also depends on the IMF putting its “money on the line”)

3. Role of IMF in crisis prevention
3. Role of IMF in crisis prevention

Estimated probability of crisis (conditional on market pressure event) with and without IMF financing

Countries that averted a crisis

- ARG 1998
- BRA 2002
- BGR 1998
- IDN 2003
- PHL 1998
3. Role of IMF in crisis prevention

Estimated probability of crisis (conditional on market pressure event) with and without IMF financing

Capital Account Crises
### 3. Role of IMF in crisis prevention

**Money matters... but it is not just money**

Marginal Impact of IMF Financing, Given Country Fundamentals

[Graph showing the marginal impact of IMF financing on the probability of a crisis, with different lines representing different covariate scenarios.]

- **Probability of crisis**
- **Average Fund financing among KAC episodes**
- **Maximum level of Fund financing among KAC episodes**

- **P(crisis; best covariates)**
- **P(crisis; median covariates)**
- **P(crisis; worst covariates)**

**Fund financing (as share STD)**

- **0.00**
- **0.05**
- **0.10**
- **0.15**
Conclusions

• Most capital account crises are caused by foreign currency and maturity mismatches on private or public sector balance sheets coupled with a specific (domestic or external) trigger.

• Crisis prevention requires minimizing balance sheet vulnerabilities and avoiding crisis triggers (good macro policies, insulation from contagion by differentiating through adherence to standards, data transparency).

• The IMF can contribute to crisis prevention through surveillance, technical assistance, and programs—by providing liquidity, inducing stronger policies, enhancing credibility and discipline, and signaling markets.

• Money matters...but policies matter as well—and if policies are poor and existing balance sheet vulnerabilities are large, then the marginal impact of IMF resources on crisis prevention is also low.