Linkages Between Debt Sustainability and Debt Strategies

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Multidimensional Nature of Public Debt Risks
Sovereign balance sheets are vulnerable to a variety of risks.

Source: IMF (2016). Based on the survey of fiscal risks to date, looking at sources of shocks to government debt in 80 countries between the period 1990 and 2014.
Public debt dynamics: starting from the budget constraint

\[ D_{t+1} = \frac{e_{t+1}}{e_t} * (1 + i^f_{t+1}) * D^f_t + (1 + i^d_{t+1}) * D^d_t - (T_{t+1} + G_{t+1} - S_{t+1}) + O_{t+1} + RES_{t+1} \]

Obligations associated with the stock of debt from the previous period

Primary Fiscal Balance

Other one-time factors

D = public debt
\( e = \) exchange rate
\( i = \) interest rate
\( T + G = \) tax revenue and grants
\( S = \) non-interest fiscal expenditure

O = one-off transactions such as privatization receipts, bank recapitalization
\( RES = \) residual

Superscripts: \( f = \) foreign, \( d = \) domestic
Debt Sustainability: Central to IMF’s Surveillance and Lending

• For surveillance purposes (Article IV consultations), the DSA is a key input:
  • Article IV focus: the economic situation, the authorities’ policies and how these affect the country’s stability—as well as global stability through spillovers where relevant—and desirable policy adjustments.
  • DSA: identifies liquidity and solvency risks that can impinge on stability

• For lending purposes, the DSA is a key input into Fund decisions:
  • Cannot lend if debt is unsustainable
  • Cannot lend “exceptional” amount of resources unless debt is sustainable with “high” probability
IMF Debt Sustainability Framework

- Two frameworks:
  - Market access countries (MAC DSA)
  - Low Income Countries (LIC DSF)

- Why two frameworks?
  - Difference in debt tolerance
  - Debt on concessional vs. market terms
  - Emphasis on external financing
  - Use of LIC DSF external debt risk rating by WB and other creditors

- LIC DSF is currently under review

- MAC DSA
  - Implementation of revamped version started in 2013
  - Review planned for 2017: good opportunity to incorporate feedback
Key Features of MAC DSA

Lower scrutiny

- Basic DSA

- where relevant customized and contingent liabilities analysis

Higher scrutiny

- Basic DSA

- Realism of baseline assumptions
  - Heat map, stress tests, debt profile, fan charts

- DSA write-up
Stress Tests: Macro-Fiscal Shocks

- Real Exchange Rate Shock
- Combined Macro-Fiscal Shock
- Additional Stress Tests
- Baseline
- Contingent Liability Shock
- Primary Balance Shock
- Real Interest Rate Shock

Gross Nominal Public Debt (in percent of GDP)
- 2014 to 2019
- Baseline
- Real GDP Growth Shock

Gross Nominal Public Debt (in percent of Revenue)
- 2014 to 2019
- Baseline
- Primary Balance Shock
- Real Exchange Rate Shock

Public Gross Financing Needs (in percent of GDP)
- 2014 to 2019
- Baseline
- Combined Macro-Fiscal Shock
- Contingent Liability Shock

Gross Nominal Public Debt (in percent of GDP)
- 2014 to 2019
- Baseline
- Combined Macro-Fiscal Shock

Gross Nominal Public Debt (in percent of Revenue)
- 2014 to 2019
- Baseline
- Combined Macro-Fiscal Shock

Public Gross Financing Needs (in percent of GDP)
- 2014 to 2019
- Baseline
- Combined Macro-Fiscal Shock
### Key MAC DSA Features: Heat Map

#### Debt level
- **Red**: Debt or GFN above threshold under baseline (and shock) scenario(s)
- **Yellow**: Debt or GFN above threshold under shock scenario but not baseline
- **Green**: Debt or GFN below threshold in baseline and shock scenarios

#### Gross financing needs
- **Red**: Debt or GFN above threshold under baseline (and shock) scenario(s)
- **Yellow**: Debt or GFN above threshold under shock scenario but not baseline
- **Green**: Debt or GFN below threshold in baseline and shock scenarios

#### Debt profile
- **Red**: Debt or GFN above threshold under baseline (and shock) scenario(s)
- **Yellow**: Debt or GFN above threshold under shock scenario but not baseline
- **Green**: Debt or GFN below threshold in baseline and shock scenarios

#### Thresholds
- **EMs**: 70
- **AMs**: 85
- **EMs**: 15
- **AMs**: 20

#### Debt profile flags
- **Market Perception**: flags defined relative to upper and lower thresholds.
- **External Financing Requirements**: flags defined relative to upper and lower thresholds.
- **Change in the Share of Short-Term Debt**: flags defined relative to upper and lower thresholds.
- **Public Debt Held by Non-Residents**: flags defined relative to upper and lower thresholds.
- **Foreign Currency Debt**: flags defined relative to upper and lower thresholds.
Multidimensional Nature of Public Debt Risk Management

Can Debt Managers Do More?
The sovereign toolkit to deal with these risks includes...

**Tools to deal with risks to sovereign balance sheet**

- **Policy adjustment**
- **Self insurance**
  - Reserves, stabilization fund
- **Risk sharing**
  - Private sector
    - Marketable
    - State contingent debt instruments (SCDIs); and hedging products
    - Nonmarketable
      - Private insurance
      - Countercyclical official loans
  - Official
    - Official lending, swaps

**SCFIs:**
- Instruments with contractual net payment obligations that are explicitly linked to a state variable/trigger event
- And that seek to alleviate liquidity and/or solvency pressures during “bad” times
Public debt risk management: starting from the budget constraint

\[
\text{var} \ (D_{t+1} - D_t) = \text{var} \ (I_{t+1}) + \text{var} \ (PB_{t+1}) - 2\text{cov} \ (I_{t+1}, PB_{t+1})
\]

**Interest payment stabilization strategies**
- Long-term fixed rate nominal debt
- “Synthetic” Long-term fixed rate nominal debt

**Primary balance stabilization strategies**
- Stabilization funds
- Direct Insurance
- Use of derivatives

**“Natural” hedging strategies**
- Designed SCDIs – e.g. GDP-/commodity-linked bonds
- “optimal” portfolio of existing debt instruments to exploit co-movement with primary balance
### SCFIs: Benefits and Complications

#### Benefits

<table>
<thead>
<tr>
<th><strong>Issuers</strong></th>
<th><strong>Investors</strong></th>
<th><strong>International financial system</strong></th>
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</thead>
<tbody>
<tr>
<td>• Greater policy space in bad times</td>
<td>• Prospect of higher return in current low-yield environment</td>
<td>• More complete markets</td>
</tr>
<tr>
<td>• Esp. relevant for sovereigns: (i) with limited fiscal space; (ii) whose risk premia rise in downturns; (iii) with constraints on monetary policy</td>
<td>• Potential diversification benefits vis-a-vis other assets, liabilities in portfolio</td>
<td>• Increased risk-sharing between public and private sectors, and across countries (esp. in currency areas w/o fiscal union)</td>
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<td>• Avoid problems associated with rainy day funds</td>
<td>• Lower risk of outright debt default and related deadweight losses</td>
<td>• Efficient and timely prevention and resolution of debt crises</td>
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#### Complications

- Higher risk on private balance sheets may not be optimal in some circumstances (e.g. in GFC-type event)
- Refinancing risk from pro-cyclical pricing: higher demand for SCFIs in good times (when payout is high) than in bad times
- Political costs: premia upfront, benefits kick-in only with scale
- Pricing impact on conventional debt instruments (fragmentation of existing liquid instruments, subordination concerns)
State-contingent Debt Instruments

Benefits relative to non-debt SCFIs
• Derivatives entail counterparty risk for the sovereign.
• Hedging typically only available at short tenors.
• Insurance products require upfront annual budget appropriation.
• Better tie-in to debt management strategy (longer horizon).

Design considerations:
• State/trigger variable: GDP, commodity price, hurricane?
• Adjustment mechanism: automatic, continuous (capped), symmetric?
• Payment structure: indexation of principal and/or coupon; maturity extension?
• Other: currency, maturity, legal structure
Work on state-contingent financial instruments

• The IMF is currently exploring the role SCFIs can play in preventing/resolving sovereign debt crises (a Board discussion is expected in Q1-2017):
  • Benefits and costs of such instruments relative to alternative tools.
  • Review of past experience with SCFI issuance, both in normal times and in restructurings.
  • Survey of issuer and investor appetite for different types of SCFIs. Identifying the role of other stakeholders.

The IMF will also report on this to the G20 in 2017.
Thank you