Debt Sustainability Assessments—Current Efforts at the International Monetary Fund

Atish Rex Ghosh
Policy Development and Review Department
International Monetary Fund
DSA at the Fund

- Concerns about medium-term balance of payments and fiscal sustainability has traditionally been at the core of Fund work.
- More recently, the focus has been increasingly on stocks—and its dynamics—in addition to flows.
Sustainability assessments are important in Fund staff work

- Exchange rate and current account assessments
- Fiscal policy advice
- Use of Fund Resources: inform decisions on capacity to repay the Fund, access levels
- Surveillance: crisis prediction, prevention → anticipate problems several years ahead to recommend policies to prevent crisis
- Distinction between insolvency and liquidity crisis → affects policy prescription
Objectives of the Framework

- Ensure that surveillance adequately focuses on risks to debt dynamics
- Promote consistency and discipline/realism in sustainability analyses
- Provide basis for better judgments on:
  - Vulnerabilities
  - Plausibility of debt dynamics articulated in programs
  - Required degree of restructuring (countries that have defaulted)
Public debt projection: Brazil
Two different DSA frameworks

- Countries with market access: advanced and middle-income countries
- Countries relying on official financing (low-income countries)
Template for public and external DSA for countries with market access

- Baseline (program) projections for debt dynamics and gross financing needs over 5-year period
- Underlying macroeconomic assumptions
- Stress tests for debt ratios
- Historical scenario (historical parameter averages)
- Possible country-specific alternative scenario
Stress tests to check realism of projections...

- Use of small but persistent shocks
- Shocks applied to the baseline
- Shocks applied to interest rate, growth rate, current account (external), primary balance (public), real depreciation, contingent liabilities (public). Also combined shock.

- Graphical presentation
  - Lists baseline assumption, historical average, and bound test assumption
Stress tests—examples:

Figure 1. Country: External Debt Sustainability: Bound Tests

1/ (In percent of GDP)

Sources: International Monetary Fund, Country desk data, and Staff estimates.

1/ Shaded areas represent actual data.

2/ Permanent 1/4 standard deviation shocks applied to the real interest rate, growth rate, and current account balance.

3/ One-time real depreciation of 30 percent occurs in 2006.

Baseline and historical scenarios

Gross financing need (right scale)

Historical
Baseline

Real depreciation shock 3/

Baseline: -0.4
Scenario: -1.9
Historical: 0.3

Combined shock 2/

Baseline:

Scenario:

Historical:

Growth shock

Baseline: 4.0
Scenario: 2.7
Historical: 2.1

Current account shock

Baseline:

Scenario:

Historical:

CA shock
How are sizes of shocks chosen?

- **Stochastic simulation** used to determine appropriate size of shocks. Key concern:
  - large enough to capture potential risks
  - small enough to have reasonable likelihood of occurrence
- Historical data from emerging market economies used to simulate distribution of debt
- Sample: 14 emerging market countries (public debt); 41 middle-income market borrowers (External debt).
- ½ standard deviation shocks chosen as they reflect realistic p-values (to capture medium term risks)
Simulated probability distribution
Interpretation of debt ratios

Factors to examine:
- Explosive dynamics
- Threshold on levels (and primary surplus required to stabilize debt)
- Gross financing needs
- Contingent claims

Other notable approaches:
- Fan chart approach: Celasun, Ostry, and Debrun (2006)
- Value at Risk (VaR) approach: Barnhill and Kopits (2003)
- Contingent claims approach: Gapen, Gray, Lim, and Xiao (2005)
Why different framework for LICs?

- Debt mainly official
  - Different “rollover risk”
  - Different definition of crisis/ “debt distress” (arrears, Paris Club rescheduling, defensive lending)

- Concessional nature of debt—need to think in present value terms

- Different purpose—guide official lending in addition to policy advice (hence, jointly with World Bank)

- Caveat: Heterogeneity—some LICs are near-emerging markets (judgment)
LICs: Relevant Debt-Burden Indicators

- **Numerator**
  - NPV of debt (public/external)
  - Debt service

- **Denominator** = measure of debt-servicing capacity
  - Total resource base (GDP)
  - Foreign exchange (exports)
  - Administrative capacity (revenues)
LICs: Basic Elements of Framework

Indicative thresholds for PPG external debt

- Policy dependent (CPIA); supported by empirical analysis
- Less problematic than in EMs (official debt, no market reaction)
- Justified to guide official lending decisions
- Interpret with caution (political choice, distress definition, errors)