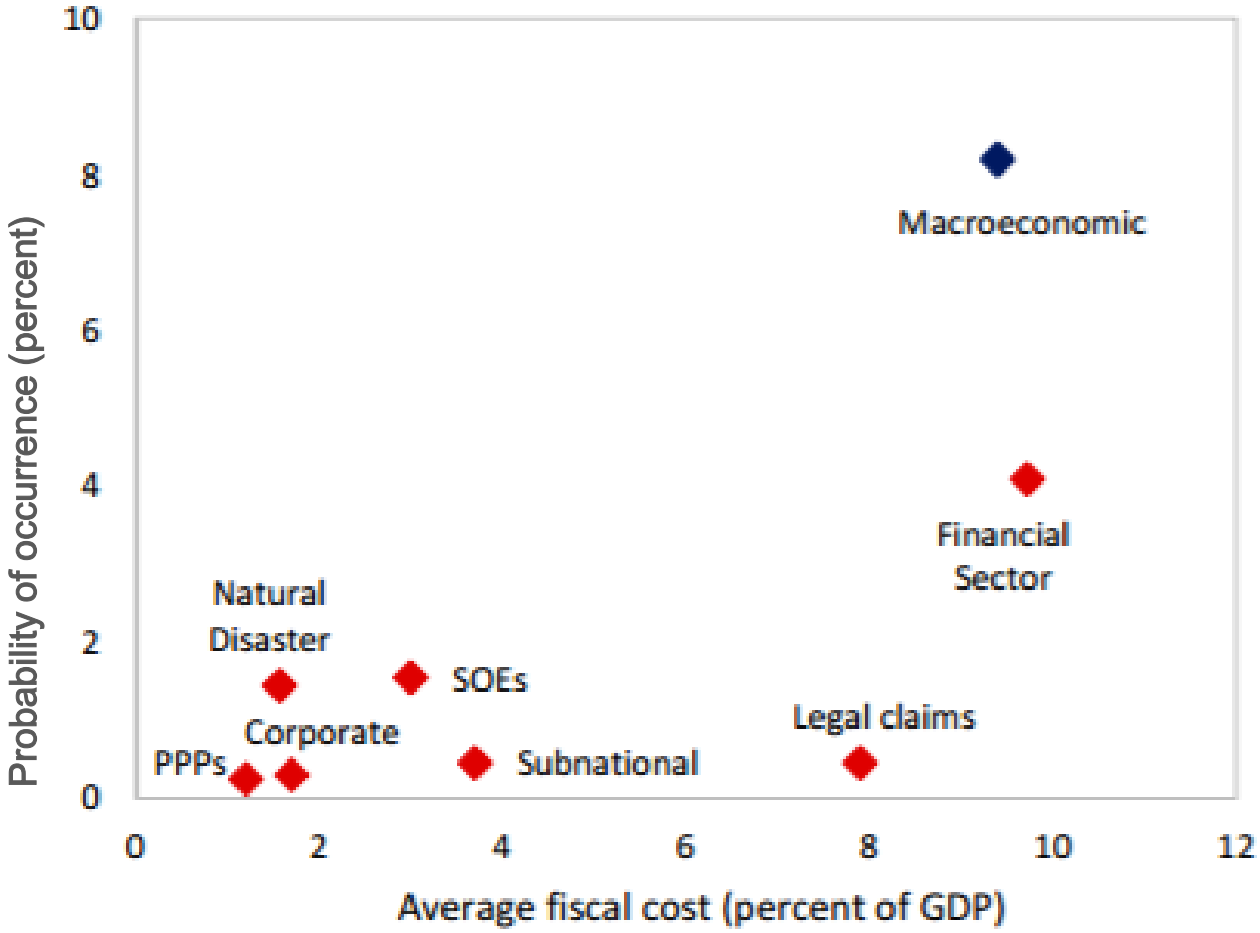
Linkages Between Debt Sustainability and Debt Strategies

Myrvin L Anthony
Strategy, Policy and Review Department
International Monetary Fund
October 20, 2016

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

$$D_{t+1} = \underbrace{\frac{e_{t+1}}{e_t} * (1+i^f_{t+1}) * D^f_t + (1+i^d_{t+1}) * D^d_t}_{\text{Obligations associated with the stock of debt from the previous period}} \underbrace{-(T_{t+1} + G_{t+1} - S_{t+1})}_{\text{Primary Fiscal Balance}} \underbrace{+ O_{t+1} + RES_{t+1}}_{\text{Other one-time factors}}$$

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

+

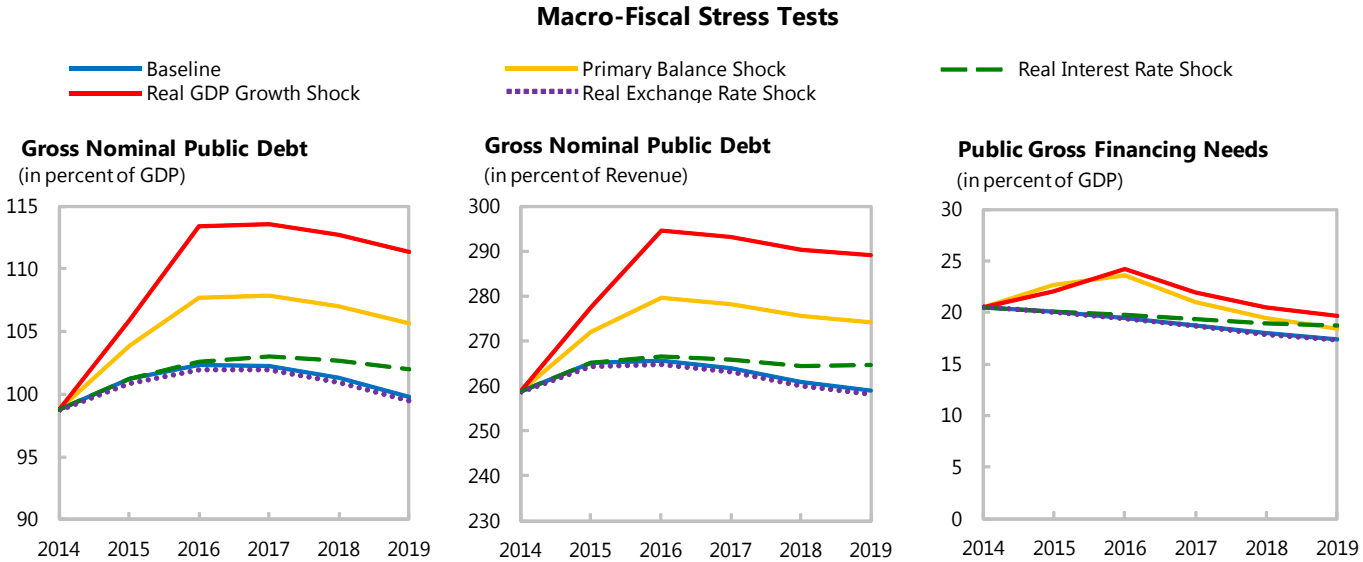
Realism of baseline assumptions

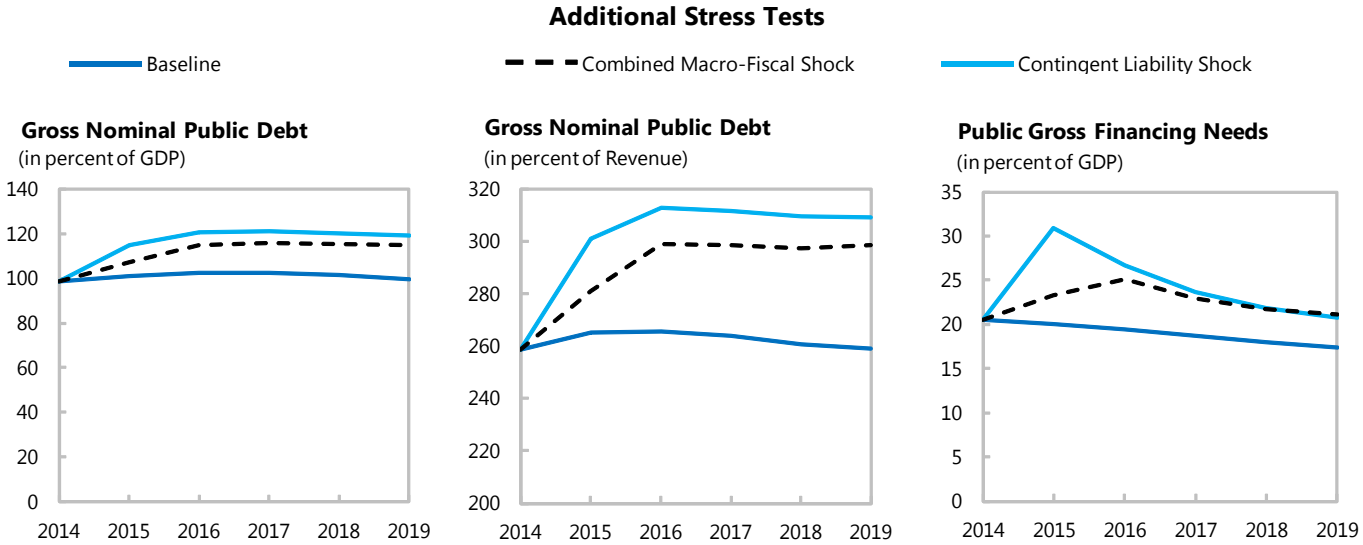
Heat map, stress tests, debt profile, fan charts

+

DSA write-up

Stress Tests: Macro-Fiscal Shocks





Key MAC DSA Features: Heat Map

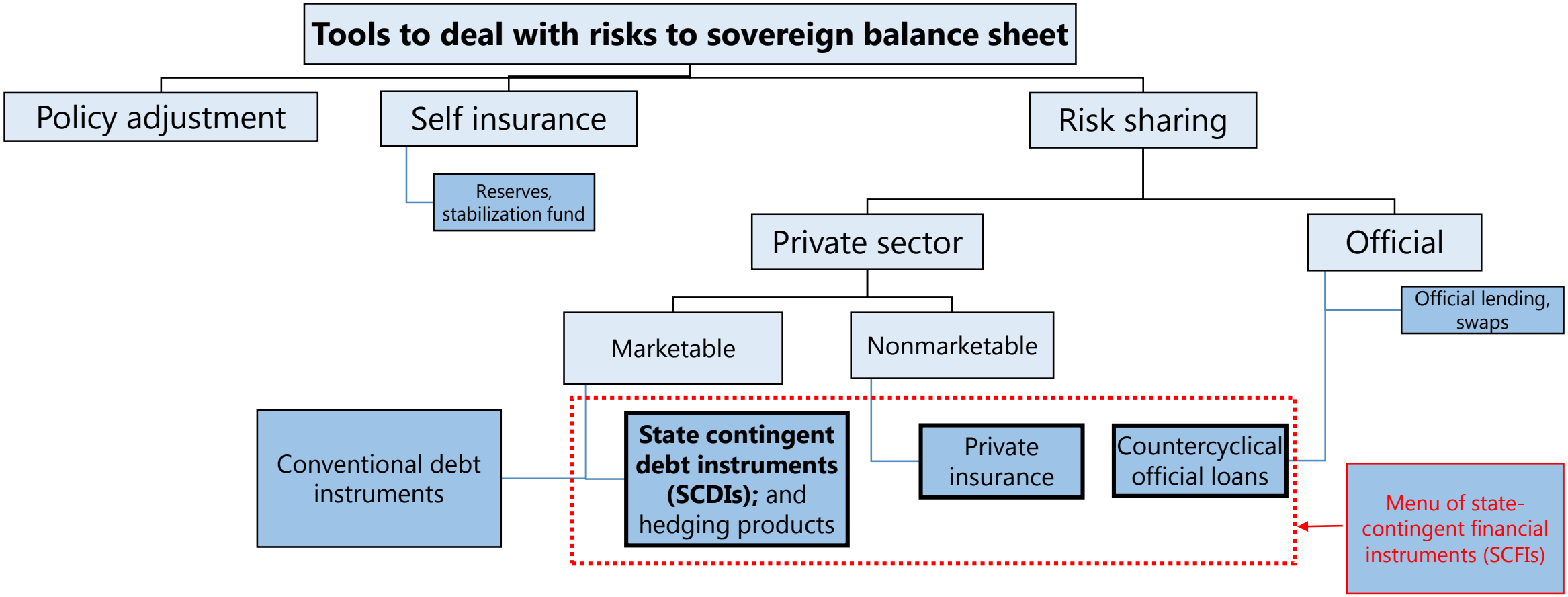
						Thresholds
Debt level	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability shock	EMs: 70 AMs: 85
Gross financing needs	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability Shock	EMs: 15 AMs: 20
Debt profile	Market Perception	External Financing Requirements	Change in the Share of Short-Term Debt	Public Debt Held by Non-Residents	Foreign Currency Debt	

- **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*: 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…



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

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

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

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

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