Back to Sovereign Debt

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- Much work in the last decade, starting with Arellano (2008) and Aguiar and Gopinath (2006) have instead focused on the ability of sovereign debt models to rationalize stylized business cycle facts.

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- The representative agent has preferences

$$E \sum_{t=0}^{\infty} \beta^t u(C_t)$$

Feasible Allocations

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- If the country reneges on its debt, it is *permanently excluded* from the world market

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- The question: is this self enforcing?

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- The country will never default if the former is always greater than the latter

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- This says that the short run gain from default must be more than compensated with the long run gain from consumption smoothing

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3. The gains from consumption smoothing are bound to be small
4. Default is never observed

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- "Proof ": suppose $\varepsilon_t = \bar{\varepsilon}$. Then the country can default, deposit $P_t(\bar{\varepsilon})$ abroad, and initiate a series of fully collaterized contracts that replicate the reputational contract.
- The country then gets to realize at least the reputational outcome *plus* r times $P_t(\bar{\varepsilon})$

Recent lit: Eaton-Gersovitz and Cycles in Emerging Economies

Stylized facts to explain quantitatively:

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Stylized facts to explain quantitatively:

1. Frequency of default (about 3 every 100 years)
2. Size of debt (70 percent)
3. Business cycle facts, especially the positive relation between the interest rate (inclusive of spread) and the trade balance

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- Agent receives a stochastic, nonstorable endowment y_t, $t = 0, 1, 2, \ldots$
- Endowment follows

$$y_t = Ae^{z_t}\Gamma_t$$

where z_t is a *transitory* process and $\log \Gamma_t$ is $I(1)$.

Recursive Formulation of Country's Problem

Let d_t = debt at the beginning of period t.
The state at t is given by (y_t, d_t). The value function is denoted by $V(y_t, d_t)$
Let $V^B(y_t)$ be the value of ending the period in default. Then it must be that:

$$V^B(y_t) = u((1-\delta)y_t) + \beta E_t \left\{ \lambda V(y_{t+1}, 0) + (1-\lambda) V^B(y_{t+1}) \right\}$$

Let $V^G(y_t, d_t)$ be the value of ending the period in good standing, so:

$$V(y_t, d_t) = Max\{V^G(y_t, d_t), V^B(y_t)\}$$

and

$$\begin{aligned} V^G(y_t, d_t) &= Max \quad u(c_t) + \beta E_t V(y_{t+1}, d_{t+1}) \\ s.t. \;\; c_t &= y_t + q_t d_{t+1} - d_t \end{aligned}$$

where q_t is the price at which the country can sell debt in period t.

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$$q_t = \frac{1}{1+r^*} E_t \left[1 - \chi(y_{t+1}, d_{t+1})\right]$$

- Hence $q_t = q(y_t, d_{t+1})$