Partial Defaults

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WE_ARE_IN Macroeconomics and Finance
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Overview: This paper ...

- Documents new stylized facts: EM sovereign defaults often feature:
  - Some debt repayments, i.e. sovereigns partially default.
  - Some new debt issued at high rates, i.e. sovereigns continue to borrow.
  - Haircuts for lenders, but no reductions in debt, i.e. debt accumulates.
  - Higher partial default, higher spreads and debt, and lower output.
- Proposes a model that can replicate the observed properties:
  - The decision of how much to repay is "interior".
  - Key to understand the costs and benefits from reneging on a fraction of debt.
- Is thought-provoking: we must re-think how we model sovereign defaults.

Summary of Model

At time t, the sovereign ....

- Receives random endowment, z_t, and has a total debt due, a_t,
- Chooses the fraction to partially default on: d_t,
- Issues perpetuities, b_t, to international lenders at price $q(a_{t+1}, d_t, z_t)$,

to maximize expected utility $E[\sum_{t=0}^{\infty} \beta^t u(c_t)]$, where

$$c_t = z_t \cdot \Psi(d_{t-1}, z_t) - a_t \cdot (1 - d_t) + q(a_{t+1}, d_t, z_t) \cdot b_t,$$

$$a_{t+1} = \delta \cdot a_t + (R - \delta) \cdot \kappa \cdot d_t \cdot a_t + b_t.$$

- $\Psi(d_{t-1}, z_t) \leq 1$: output cost of partial default.
- $\kappa \leq 1$: fraction of defaulted debt that accumulates (e.g., renegotiation).

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Model Mechanism

Understanding the main trade-offs

To smooth consumption when an endowment shock, z_t, is low, a sovereign can:

1. **Issue new debt b_t.**
   - Benefit: obtain $q(a_{t+1}, d_t, z_t)b_t$ at time t,
   - Cost: repay δb_t for all $\tau \geq t$ (if no default).
2. **Partially default on fraction d_t.**
   - Benefit: obtain $d_t a_t$ + debt haircut $(R - \delta)(1 - \kappa)a_t d_t$ at time t.
   - Cost: output loss of $1 - \Psi(d_t, z_{t+1})$ at $t + 1$.

Trade-off theory of partial default

- VERY Flexible model, where incentives to parially default are higher when:
  1. Bond prices, q, are low,
  2. Costs of default, Ψ, are low,
  3. Haircut, $1-\kappa$, is high.
- This is a trade-off theory of partial default:

$$\text{Mg benefit from debt issuance} = \text{Mg Benefit from partial default.}$$

- Set-back: we know a lot about the determinants of bond prices, but not so much about the determinants of costs of default or haircuts.

Taking the model to the data

- The model is VERY flexible, and able to match and explain the data well.
- Getting the costs of default right is essencial for matching the data:

$$\Psi(z', d) = (1 - \phi_0 \cdot d^{\gamma}) \cdot [1 - \phi_1 \cdot (z' - z^*)] \cdot \mathcal{I}_{d>0}$$

  and four parameters do the job: $\phi_0, \phi_1, \gamma, z^*$.

- I wish the paper discussed more ...
  - If the costs of default implied by this function are reasonable ...
  - What do we learn about the determinants of the costs of default?
  - That this function is KEY in matching and explaining the data.
- In my view, measuring these costs is the most intersting outcome of the quantitative exercise.

Counterfactuals

The estimated model is used to study the following counterfactuals:

- Market-exclusion after default.
- Debt relief: lower recovery value after default, i.e., lower κ.
- No debt-dilution: old bond holders compensated for new issuances.

The Lucas critique particularly applies to this exercise. For example,

- Market-exclusion should increase the bargaining power of creditors, $\uparrow \kappa$.
- When these policies are expected, costs of default Ψ may be lower.

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