Sovereign Debt

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Introduction

Sovereign debt is different. But it is different in more than one way.

1. A safe and liquid asset that can help circumvent agency problems and financial frictions
2. An asset that comes with its own frictions: particularly an enforcement (willingness to pay) problem.

Aim of this survey: to explain under what conditions either of these views may be relevant, and what they imply for the economy

- Benefits of sovereign debt as a safe asset
- Costs of living with risky sovereign debt

Plan:

- Safe sovereign debt
- Sovereign default
- Costs of sovereign default risk
- Policy implications and conclusion
Safe and liquid sovereign debt

Assumptions:

1. No or low default risk
   - Power to tax, enforcement problem solved by domestic political institutions

2. Private borrowing constraints
   - Then, buying and selling government debt acts as a substitute for private borrowing (Woodford 1990, Holmstrom-Tirole 1998)
     - Government’s power to tax enables agents to indirectly borrow against future income after all.
   - In this case sovereign debt relaxes private constraints
     - Trade-off: public good properties of sovereign debt versus timing of tax distortions (e.g. Aiyagari and McGrattan, 1998)
Safe and liquid sovereign debt

Implication: debt is valuable beyond the claim to future primary surpluses it represents (Brunnermeier et al 2020, Reis 2021)

\[
\text{value of debt stock} = E\{PV(\text{future primary surpluses})\} + E\{PV(\text{future service flow})\}
\]

• Governments get a free lunch. But the size of the lunch is limited!

• Implications for sustainability of fiscal policy in advanced countries today.
  • Debate kicked off by Blanchard (2019).

• Trade-off: \( r < g \) if marginal liquidity services are large (if debt is low)
  • Important mechanism although governments do not maximize debt prices
Sovereign Defaults/Restructurings

• **A lot.** At least 300 since 1815 (Meyer et al 2021)

• Tend to happen in **clusters**, reflecting boom-bust cycles

• Average (NPV) investor losses ("haircut"): 44%

• Haircuts/negotiation periods differ for preemptive and post-default restructurings (Asonuma-Trebesch 2016)
  - Pre: 1 year/18%
  - Post: 6 years/48%
The costs of default (for the debtor)

An obsession of the early (1980s-mid 1990s) sovereign debt literature
- Because it addresses question why sovereign debt can exist at all in the absence of contract enforcement against a sovereign.

Theory

- Exclusion from capital markets, higher borrowing costs

- Trade costs and/or sanctions

- Reputational spillovers and/or negative signals about the economy
  - Cole and Kehoe (1998); Sandleris (2008), Hébert and Schreger (2017)

- Role of secondary markets
The costs of default (for the debtor)

**Empirics:**
- Capital market exclusion, higher borrowing costs: yes, but temporary (Cruces-Trebesch 2013)
- Trade costs: yes (Rose 2005, Asonuma et al 2016) but no-one understands why
- Reputational spillovers: indirect evidence (defaults lead to generalized runs)
- Exposures of domestic financial system (Gennaioli et al 2018).

**Output costs?** (via all channels)
- Hard to separate from causes of defaults
Measuring sovereign risk

- **Probability of default** is unobserved

- Using **observed bond prices**, we can infer the (yield) compensation required by investors to hold a sovereign bond

\[ q_t = \sum_{s=0}^{\infty} \frac{d_{t+s}}{(1 + r)^s} \]

- Solve for **yield** \( r \) to match price \( q_t \) when promised payments are \( d_{t+s} \)

- Compute **sovereign spread** as the difference between the yield implicit in sovereign bonds and the yields of similar bonds that are considered risk-free

**What’s reflected in the spread?**

- Default risk and expected haircut in case of default, but also

- Liquidity premia, ambiguity premia, risk premia
When do governments default?

Anticipation of default closely related to spikes in spreads

<table>
<thead>
<tr>
<th>Resources</th>
<th>Borrowing costs</th>
<th>Political factors</th>
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<tbody>
<tr>
<td>• Business cycles (countercyclical sovereign spreads)</td>
<td>• Especially when trying to rollover debt</td>
<td>• Swifts in political preferences, reputation</td>
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<td>• Terms of trade</td>
<td>• Both risk-free rate and risk premium</td>
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<td>• Wars, civil conflicts affecting productivity</td>
<td>• Global factors</td>
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<td>• Multiple equilibria</td>
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Costs of sovereign risk

Costs related to default risk (even without default)

- Countercyclical spreads in EEs
- induce procyclical borrowing (Neumeyer and Perri, JME 2005)
  - ⇒ procyclical fiscal policy
- Evidence of “graduation”
- Public-private interactions
  - Pass-through of sovereign risk to private borrowing rates
  - Sovereign-bank nexus
Why are governments exposed to sovereign risk?

Three frictions

Incomplete markets (limited state-contingency)

Lack of commitment to repayment policies

Debt dilution: lack of commitment to future borrowing policies

Debt dilution can account for majority of risk

**Long-term debt:** prices depend on future (expected) prices

Future prices depend on **future borrowing** decisions

Time-inconsistency problem causes **overindebtedness**
### Mitigating sovereign risk

Institutions and strategies to attack the underlying frictions

<table>
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<tr>
<th>Fiscal rules</th>
<th>State-contingent Debt</th>
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<td>• Directly affect size of fiscal deficits (and borrowing)</td>
<td>• Conditional distribution of repayments</td>
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<tr>
<td>• What should be the anchor of fiscal rules?</td>
<td>• <strong>Puzzle:</strong> why is sovereign debt noncontingent?</td>
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<td>• Optimal design problem: how best to index sovereign debt?</td>
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Concluding remarks

• Sovereign debt is **different** from private debt
  • For advanced and developing economies – but for different reasons

• Sovereign risk is **costly**

• Sovereign risk is a key reason why **business cycles** look so different in developing economies

• Themes
  • **Why** does sovereign risk materialize?
  • What can be done to **mitigate** sovereign risk?