Discussion of "Disasters and Defaults" by Phan and Schwartzman

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A simple variation of the model

- 2 states, H and L
- Output is either y_H or y_L, with $y_H > y_L$
- Probability of switching to a different state is $\psi < 1/2$

A simple model

- Expected punishment from default is smaller in state L
- Borrowing capacity is smaller in state L

A simple model

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- But country suffers default punishment with probability ψ

So borrowing is expensive (if default occurs in state L)

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- Optimal debt relief

$$b_H - b_L = \frac{\bar{b}}{\bar{y}} \frac{1 - q^*}{1 - q^*(1 - 2\psi)} (y_H - y_L)$$

where $\bar{b} = (b_H + b_L)/2$ and $\bar{y} = (y_H + y_L)/2$ (Guimaraes, RED 2011)

- There is never default (no default penalty)
- Borrowing capacity is maximized

A simple model

Optimal debt payment in state L is a convex combination of

- optimal payment in state H
- zero

So the optimum can be implemented with

- non-contingent bond
- bond that is worth zero in state L

Qualitative results of the simple model

Hence

1. Disaster risk affects default and bond prices
2. Pareto improvement with (optimal) debt relief
3. With CAT bonds, planner's solution can be implemented

Phan and Schwartzman

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- Same qualitative points
- "Calibrated examples", "numerical illustrations"