Sovereign Debt and Structural Reforms

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What is the Paper About?

I am not sure: Different Readings

- To provide a modelling framework to study sovereign debt and structural reforms.

- Characterize a family of models with limited commitment and moral hazard.

- To show how to design welfare improving institutions (like the IMF/ESM) replacing sovereign debt markets (in crisis).

- Can GDP-contingent debt markets restore efficiency?

- To evaluate different institutional scenarios for an austerity/rescue package for Greece.

The paper takes on all these issues (maybe too many?)

Impressive work

- 3 main model categories.

- 15 characterization propositions.

- A calibrated quantitative model to measure welfare gains.

- An attempt to relate the model to the practices of the IMF and/or the 'Troika'.

- You do not really want to see the Appendices.

The Model in a nutshell

- A country in recession with a given amount of debt.

- Recovery is an absorbing state. (relaxed in the quantitative model)

- Facing stochastic and pubicly observable default costs.

- Default will trigger renegotiations with full bargaining power of lenders. ⇒ Hence there is never full default.

- Can exert costly policy effort to increase the probability of recovery.

- $\beta R = 1$, (relaxed in the quantitative model)

Different Scenarios

- First-Best $\Rightarrow$ effort observable, no limited commitment.

- (Markovian) Competitive Equilibrium with
  - Defaultable not state-contingent debt.
  - Defaultable GDP-contingent Debt.
- Constrained Efficient consumption and effort path with
  - observable effort.
  - unobservable effort.
- Decentralization of Constrained Efficient allocations with
  GDP-contingent debt.

First-Best

- Full insurance of consumption both within recessions and across recession and normal times.

- Consumption is decreasing in debt.

- Reform effort is increasing in debt. $\Rightarrow$ Effort (leisure) is a normal good.

Competitive Equilibrium

- Key insight: when the cost of effort is low, the country threatens to default.
- The lender (to minimize losses) will offer him a haircut to keep him indifferent. $\Rightarrow$ The new level of debt is independent of the past debt after renegotiation.
- The higher debt the more likely that default will be initiated.
- Hence both during recession and after recovery default episodes will lead to (infrequent) increases of consumption and reduction of debt. Is this plausible?

- Key Assumption: Default cost is fully observable.
- If costs are not observable at all, each sovereign would report the lowest cost and
    - Either, the equilibrium unravels to maximum default.
    - Or the lenders need to pre-commit to a constant haircut and (with low ϕ) the country will opt to full default.

- Both the equilibrium and the constrained efficient allocation would be very sensitive to this change.

Euler Equation

The optimality condition for debt accumulation in normal times can be described as

$$Q(b')u'(c) = Repay(b')\beta u'(c')$$

Where $Q(b')$ is the equilibrium price of debt and $Repay(b')$ is the probability of 'full' repayment.

- $Q(b') > \frac{Repay(b')}{R} = Repay(b')\beta$ as long as some debt is repaid after renegotiations.

- This implies that consumption decreases and debt accumulates when no credible threat of default is present.

- Intuition: The sovereign is betting on receiving a low value of default cost next period and frontloads consumption.

- In recessions, it also bets on recovery.

- Consumption is going down during recessions until a default episode happens, then it jumps. Debt is accumulated until a default episode arrives, then it drops.

Policy Effort

Key result of the paper.

- In equilibrium, at low level of debt, increasing debt provides discipline for the sovereign to exert policy effort. (similar to first-best).

- At high level of debt, increasing debt reduces effort incentives.

- Intuition: Debt overhang creates a hold-up problem. Lenders will appropriate most of the benefits of the recovery.

- Effort is lower compared the first best always because the lender's benefits are not internalized.

Optimal Contract

- A social planner providing a path of consumption and prescribing a path of effort for the sovereign facing a sequence of default cost shocks along the path of recovery.

- The country can leave the contract any time and go back to the market.

- If effort is not observable proper incentives are needed to be provided.

- What is the interpretation: Crisis resolution with the IMF (ESM). An independent institution that can commit to a path of payments.

- Under observable effort: Textbook one-sided lack of commitment. Consumption (effort) is increasing (decreasing) stepwise during recession after renegotiation episodes.

- Unobservable effort: More similar to competitive equilibrium. Consumption decreases during recessions in the absence of renegotiations to provide dynamic incentives for exerting effort.

Decentralizations

The constrained efficient allocations can be decentralized by
GDP-contingent debt.

- In principle, this is not complete markets because assets are not
  conditioned on default cost shocks.

- Endogenous borrowing constraints are not introduced either
  although it is typical in limited commitment models.

- State-contingent renegotiations take care of both. $\Rightarrow$ They
  appropriately complete the markets.

- Interesting theoretical result on its own (see also Kehoe and
  Perri, 2004, JET).

- However, why have not this markets developed by now?

Austerity

- We can interpret austerity as the crisis resolution of the optimal contract (under unobservable effort).

- If the country stays in the recession consumption drops to give incentives to implement reforms. Not recovering is a signal about lack of effort (although in equilibrium effort can be inferred).

- This path is 'interrupted' by renegotiations triggered by low default cost realizations.

- Renegotiations are interpreted as welfare-enhancing as opposed to the common view.

- Given the assumption of observable default cost, this is justified by the model (to avoid costly default episodes).

- However, if they are not fully observable renegotiations are not useful and commitment not to renegotiate may improve on welfare.

Conclusions

- Excellent paper with a lot of 'meat'.

- (Too) many interesting and relevant theoretical (and quantitative) results.

- Relevant for designing crisis resolution institutions/plans.

- The paper may need to find its true focus, still.

- Think about default costs more.
  - Are they observable? (Adverse selection.)
  - Are they exogenous? In the model, there are great benefits from reducing the costs of default. Another dimension of moral hazard.

- If you are interested this type of research questions you may want to check as well Ábrahám, Carceles-Poveda, Liu and Marimon (new version coming soon).