

Discussion of Bianchi and Mondragon “Monetary Independence and Rollover Crises”

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This Paper

- Does lack of monetary independence increase prospects of default?
- Yes. Mostly due to increase in rollover risk
- Propose *novel mechanism*
- Abstract from monetization of debt
 - All debt is in foreign currency

My Discussion

- Review mechanism
- Comments
 - How robust is mechanism?
 - Other channels and relevance for eurozone crisis
 - Cheap shots
 - Law of one price?
 - Theory of nominal exchange rate determination

Environment

- Preferences

$$\sum_{t=0}^{\infty} \sum_{s^t} \beta^t \Pr(s^t | s_0) U(C_T(s^t), C_N(s^t))$$

$$U(C_T(s^t), C_N(s^t)) = u\left(\left[\omega C_T(s^t)^{-\mu} + (1-\omega)C_N(s^t)^{-\mu}\right]^{-1/\mu}\right)$$

- Technology/endowments
 - Endowment of traded good: $Y_T(s_t)$
 - Produce non-traded good: $Y_N(s^t) = H(s^t)^\alpha$
 - Endowment of labor: \bar{H}

Environment, cont.

- Downward-wage rigidity: $W(s^t) \geq \bar{W}$
 - Not “usual” $W(s^t) \geq W(s^{t-1})$
- Households are hands-to-mouth
- Government
 - Lump-sum taxes, $T(s^t)$
 - Borrow from abroad, can default
- Two monetary regimes:
 - Flexible exchange rates: law of one price $P_T(s^t) = E(s^t)$
 - Currency union/fixed exchange rates: $P_T(s^t) = 1$

Implementability Conditions

$$W(s^t) = \alpha H(s^t)^{\alpha-1} P_N(s^t)$$

$$\frac{P_N(s^t)}{E(s^t)} = \frac{1-\omega}{\omega} \left(\frac{Y_T(s^t) + \Delta B(s^t)}{H(s^t)^\alpha} \right)^{1+\mu}$$

$$W(s^t) \geq \bar{W} \text{ and } H(s^t) \leq \bar{H}$$

where

$$\Delta B(s^t) \equiv q(s^t) [B(s^t) - (1-\delta)B(s^{t-1})] - \delta B(s^{t-1}) = -NX(s^t)$$

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- Optimal to have $H(s^t) = \bar{H}$
- Not be feasible if $W(s^t)/P_N(s^t)$ too high
- Can always implement $H = \bar{H}$ by choosing E
- An increase in ΔB increases P_N so it can increase H

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$$\begin{aligned} \Rightarrow H(s^t) &= h\left(\frac{W(s^t)}{E(s^t)}, \Delta B(s^t), s_t\right) \\ &= \left(\alpha \frac{1-\omega}{\omega} (Y_T(s_t) + \Delta B(s^t))^{1+\mu} \frac{E(s^t)}{W(s^t)}\right)^{1/(1+\alpha\mu)} \end{aligned}$$

Key Insight

- Wage rigidity more likely to bind if $\Delta B < 0$
 - P_N is depressed
- Ability to undo $W(s^t) \geq \bar{W}$ via devaluation more valuable when $\Delta B < 0$
- **Positive NX (running down external debt) more costly with fixed exchange rates**

Maximal Default Region: Flexible Exchange Rates

With Cole-Kehoe timing: a crisis can happen if $V_R^-(B, s) \leq V_D(s)$

$$\begin{aligned} V_R^-(B, s) &= \text{value of repaying if cannot issue new debt, } q = 0 \\ &= \max_{H, E, W} U(Y_T(s) - \delta B, H^\alpha) + \beta \sum_{s'} \Pr(s'|s) V(B', s') \end{aligned}$$

subject to $H = h\left(\frac{W}{E}, \delta B, s\right) \leq \bar{H}$ and $W \geq \bar{W}$

$$\begin{aligned} V_D(s) &= \text{default value} \\ &= \max_{H, W, E} U(Y_T(s), H^\alpha) - \kappa(s) + \beta \sum_{s'} \Pr(s'|s) V_D(s') \end{aligned}$$

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Maximal Default Region: Fixed Exchange Rates

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Restriction $E = 1$ decrease both V^- and V_D
 \Rightarrow not obvious effect on maximal default region

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subject to $H = h\left(\frac{W}{E}, 0, s\right) \leq \bar{H}$ and $W \geq \bar{W}$ and $E = 1$

**Restriction $E = 1$ reduces V^- more than V_D because $\delta B > 0$
 \Rightarrow Maximal default area larger under fixed exchange rates**

Rollover Risk Accounts for Larger Share of Spreads

- Minimal default area larger under fixed exchange rates
 - Same logic: when indifferent b/w default or not $\Delta B < 0$
 - Value of default falls less than value of repaying with “best prices”
- Crisis zone increases
 - $\Delta B < \delta B$ so effect of wage rigidities larger in case of a rollover crisis
- Larger share of default due to rollover risk
 - Compares two regimes calibrated to hit same targets
- Interesting to do comparative statics
(what happens if change regime for given economy)
 - Transition and stationary distribution
 - Rollover risk vs. only fundamental
- Running down debt more costly under fixed exchange rates
⇒ less incentive to rundown the debt

Role of Fixed Utility Cost of Default

- Default carries a utility cost $\kappa(s)$
- Not innocuous assumption for mechanism
 - Default affects relative scarcity of traded/nontraded goods only via repayment of debt
- If output/productivity cost of default
 - If proportional in traded/nontraded sector: same logic applies
 - If instead fall in endowment of traded good only
 - ⇒ maximal (minimal) default area can shrink
 - Wage rigidity makes value of default fall more than value of repaying

Default \Rightarrow Smaller NX?

- Data: default coincides with large reversal of capital inflows
- Model: default to avoid reversal of capital inflows
- Off-path calculation
 - Absent default even larger outflow
- If default \Rightarrow gov't loses credibility
 - High expropriation risk, higher expected taxes on imports ...
then
 - Collapse in imports
 - Exports constant (or even grow as wage falls)
- Maximal default area (and crisis zone) can shrink
 - Fixed exchange rates reduce value of default more than value of repaying

Balance Sheet Cost of Devaluation

- Devaluation has adverse impact on domestic banks balance sheet
- More relevant in a default
 - Default reduces banks net-worth
 - Gov't may not devalue to not further decrease banks net-worth
 - So wage rigidity can bind even under flexible exchange rates
- Maximal default area (and crisis zone) can shrink
 - Fixed exchange rates reduce value of default more than value of repaying

Taking Stock

- Does lack of monetary independence increase prospects of default? And rollover risk in particular?
- This paper: Yes. Present novel channel. But
 - Variants of model can overturn the result
 - Other channels
- Empirical issue
- Recent European debt crisis
 - Even if it is mostly public debt crisis (at least for some countries like Italy, Portugal)

Looking at Debt Maturity

- Bocola-Dovis: Movements in maturity composition of debt to infer contribution of rollover risk
 - Over-simplifying: If $\text{corr}(\text{spread}, \text{maturity}) \uparrow$ after joining union then larger contribution of rollover risk
- Experience of Southern European countries
 - After joining union debt maturity went up (1999-2010)

Two interpretations

- Rollover risk went up \Rightarrow lengthen
- More credible monetary policy
 - Joint decision making + uncorrelated shocks (CDK, AAFG)
- \Rightarrow issue more LTD without generating incentives to inflate
- \Rightarrow less rollover risk
 - Not directly applicable because model has foreign debt only

Role of Monetary/Exchange Rates Policies

- In model: monetary/exchange rates policies very powerful
- Lack of understanding of deep issue
 - E_0 is indeterminate
 - What does it mean to choose a relative price as a policy: instruments to achieve target?
- Building blocks:
 - Law of one price: How general are results to different price setting scheme more consistent with data?
 - Downward rigid wages

Conclusion

- Paper proposes *novel mechanism* through which lack of monetary independence
 - Increases prospects of default
 - Increases contribution of rollover risk
- Try to show mechanism robust to small tweaks
- Evaluation with other forces to interpret eurozone experience
interesting avenue for future work