

Macroeconomic Policy Games

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The views expressed in this presentation don't necessarily reflect the views of the BIS.
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What this paper does

- ▶ Luca and co-authors have written a very nice paper!
- ▶ I see two main contributions in this paper
 1. Providing a Dynare toolbox that computes cooperative and non-cooperative equilibria in DSGE models
 2. Providing some interesting applications where gains from cooperation can be substantial.
- ▶ The paper offers an excellent guide to the solution of (non-)cooperative games and food-for-thoughts on sources of gains from cooperation
- ▶ This contribution is very timely: There is a new wave of interest in the subject, particularly from policy institutions



Comments & Summary



1: (Non-)cooperative games and the toolbox

Is the focus of the paper right?



Cooperative and open-loop non-cooperative games

- ▶ This part of the paper reminds the reader what these two equilibrium concepts are
 - ▶ Cooperative equilibrium

$$\max_{\mathcal{Y}_t \supset \{u_t^e, u_t^c\}} E_0 \sum_{i=0}^{\infty} \beta_{CB}^i (n U(C_{t+i}^e, H_{t+i}^e) + (1-n) U(C_{t+i}^c, H_{t+i}^c))$$

subject to all the equations characterizing the decentralized equilibrium, where \mathcal{Y} is the set of all endogenous variables (including policy instruments u_t and u_t^*).

- ▶ Open-loop Nash equilibrium

$$\max_{\mathcal{Y}_{1,t} \not\supset u_t^c} E_0 \sum_{i=0}^{\infty} \beta_{CB}^i U(C_{t+i}^e, H_{t+i}^e)$$

subject to all the equations characterizing the decentralized equilibrium and where $\mathcal{Y}_{1,t}$ does not include the set foreign country's instruments (e.g. interest rates, inflation, macro-pru, taxes etc.)



Toolbox as main focus of the paper

- ▶ “To facilitate the study of strategic interactions, we develop a toolbox...” (Abstract etc.).
- ▶ “The toolbox is designed to extend Dynare...” (Introduction etc.)
- ▶ “Two examples for the use of our toolbox offer some novel results” (Abstract etc.)
- ▶ **Q: Why this emphasis on the toolbox when you have potentially “novel” results?**
- ▶ Looks a bit like emphasizing the Appendix and moving economics to the bottom of the paper



Toolbox as main focus of the paper

- ▶ Why do I think that the order should be switched?
- ▶ The literature (duly cited in the paper) provides sufficient clarity of the theory behind the solution on these types of games
- ▶ It's all about taking FOCs of the policy problem and combining them with the rest of the model (e.g. in place of rules). This algorithm is well understood and used in the literature.
- ▶ You can then solve the model with Dynare, YADA, Symbsolve, AIM, Uhlig etc.
- ▶ **This being said, progress in facilitating computations is wholeheartedly welcome!!.**



A Quibble

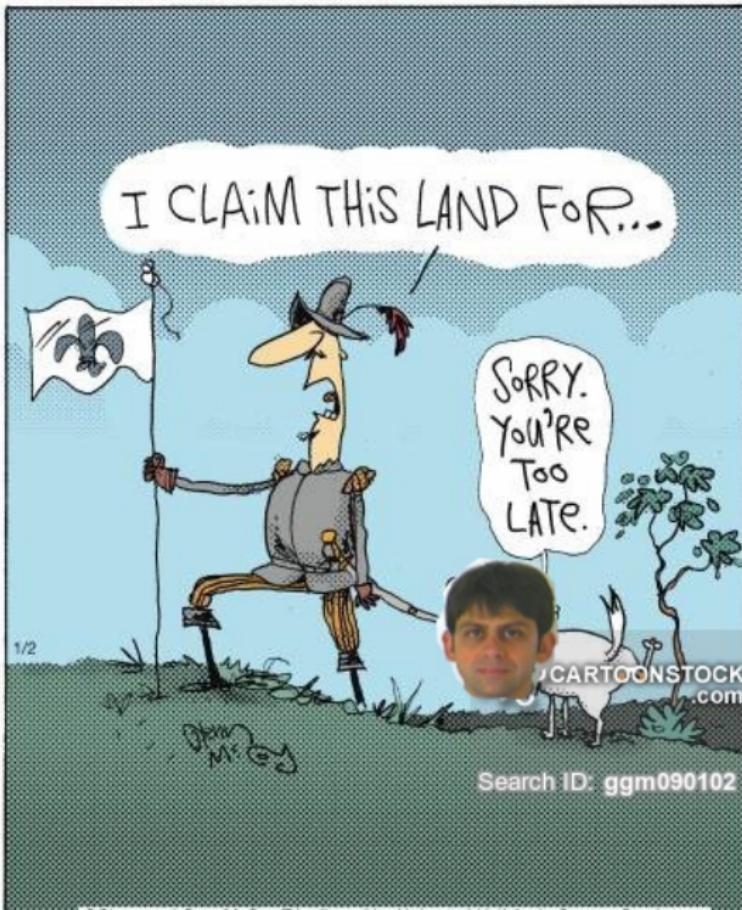
- ▶ “Finally, the optimal policy implications for models... [like] Coenen, Lombardo, Smets and Straub (2007) can also be analyzed and extended with the help of our toolbox” (page 4)

?

- ▶ “The cooperative and noncooperative (open-loop Nash) nonlinear first- order conditions of the policymakers’ problem were derived using our Matlab code (compatible with DYNARE [Juillard 1996]). This code (‘Lq- solution’) is available from the authors on request.” (Coenen et al. 2007, p. 189)



Shame on me!!



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2: Applications

The best part of the paper



Trade-offs and distorted preferences

- ▶ An (almost) ubiquitous result in the literature is that cooperative and non-cooperative monetary policy **yield very similar outcomes** (“keep-own-house-in-order” policy prescription)
- ▶ The well understood reason is the **lack of sufficiently strong trade-offs** (e.g. Canzoneri-Cumby-Diba, JIE 2005)
- ▶ Another well understood problem: How can we define policy objectives with **one policymaker (instrument) at a time**? (related to standard Public Finance problems).



Trade-offs and distorted preferences

- ▶ Is it correct to identify the objective of e.g. CB or Macro-Pru policy makers with household preferences?
- ▶ Even assuming they are benevolent (**AND THEY ARE!!!**) , they might have well defined, limited mandates.



- ▶ Q: But who sets these mandates?
- ▶ Is it correct to assume sub-optimal (non-benevolent) mandates as opposed to limited mandates within an overall benevolent policy plan?



Trade-offs: The holy-grail of policy analysis



- ▶ After almost 30 years of



Are trade-offs self-inflicted?

*“There are more things in heaven and earth,
Horatio, Than are dreamt of in [policymakers’]
philosophy” (Hamlet, Shakespeare)*

- ▶ The emphasis on preferences posed by Luca and co-authors is correct: goes in the right direction!
- ▶ **It could be tempting though to take shortcuts and see too much beef**



Are trade-offs self-inflicted?

- ▶ Some papers ascribe the gains from cooperation to **political economy** constraints (e.g. Frieden and Broz, 2011; Mayer et al. 2002)
- ▶ This deserves much more rigorous theoretical and empirical investigation.
- ▶ At the same time we should not give-up on thinking about the trade-offs generated by earthly and heavenly phenomena (e.g. capital flows, mis-pricing, externalities, permanent consequences of boom-bust cycles, bubbles etc.).



Conclusion

- ▶ This is an important paper
- ▶ It takes a stab at generating gains from cooperation from constrained policy objectives.
- ▶ As a by-product (☺) it provides a useful, and well documented Dynare-toolbox for the solution of policy games.



Thank you!



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