ECON736. Report 1

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Paper: Chari, V.V. and Kehoe, P.J., 1990. Sustainable plans. Journal of political economy, 98(4), pp.783-802.

Summary

Chari and Kehoe present an infinite horizon general equilibrium model to study a time-inconsistency problem. In the model there are competitive private agents and a government. The private agents decide how much to save and consume in the first sub-period and how much to work and consume in the second sub-period. The government sets the capital and labor tax rates to maximize the average welfare of the agents.

The main focus is on studying possible equilibria under the absence of the government commitment. Chari and Kehoe introduce the definition of the "sustainable equilibrium" and prove the necessary and sufficient condition for arbitrary values of endogenous variables (agents' and government's choice variables) to create a sustainable equilibrium (Proposition 2).

The paper reformulates the problem in a game-theoretic context (as an anonymous game). It shows the equivalence between the subgame perfect equilibrium policies and allocations of the commitment game and the Ramsey policies and allocations (Proposition 4), and between the set of symmetric perfect Bayesian equilibrium outcomes of the no-commitment game and the set of sustainable equilibrium outcomes.

What I have learned and how the paper relates to what we discussed in the class

The paper closely relates to what we discussed in the class on September 7. It presents the same environment and gives the same capital taxation problem as an example. I think that the paper closes the discussion about the infinite horizon environment, which we started in the class. I

have noticed several minor differences between the material presented in the class and in the paper. We introduced the definition of a "time-consistent equilibrium", but the paper calls this type of the equilibrium "sustainable". Another difference is that Chari and Kehoe do not include consumers' decisions in the histories in the infinite-horizon setup, while in the class we included agent's choice and the average choice in the histories.
Reading this paper, I have learned how the time consistency notion relates to the standard notion of perfection in game theory. Besides, Proposition 2 (necessary and sufficient condition for sustainable equilibrium) and Proposition 3 (sustainability of Ramsey allocations and discount factor) were new results for me.

Ideas/papers that I can work on that are influenced by the paper

It may be useful to study the papers, which use the modelling approach of a no-commitment game and a corresponding definition of a "sustainable equilibrium" as Chari and Kehoe introduced. One of such papers is "International business cycles with endogenous incomplete markets"(Kehoe and Perri, Econometrica 2002). Another interesting for me paper is "A theory of macroprudential policies in the presence of nominal rigidities" (Farhi and Werning, Econometrica 2016). It uses the idea of competitive private agents in the no-commitment environment.