Intertemporal distortions in the second best by Stefania Albanesi and Roc Armenter

Discussion by Tatiana Kirsanova

The set-up of the problem

- Find allocation (x_t,k_t) that maximises criterion subject to constraints – standard optimization problem
- General non-linear setup
- No private information assumed

The setup continued

- The are feasibility constraints – the best (wrt policy criterion) feasible allocation is *The First Best*
- There are additional (admissibility) constraints on allocations – the best (wrt policy criterion) allocation that satisfies both feasibility and admissibility constraints is *The Second Best*
  - These constraints also include corresponding terminal conditions

Set up continued

- There are additional constraints/conditions: Limited History Dependence and regularity conditions
- Several examples how some models fit into the set up

Main Result (deterministic case)

- Allocations = Trajectories
- Suppose the First Best trajectory converges to some steady state point

  $\lim_{t\text{->}infty} (x_t,k_t)= (x^*,k^*)$
- Suppose there exist an admissible trajectory that converges to (x*,k*)
- It follows that the Second Best trajectory will converge to (x*,k*)

Discussion

- The result is not surprising as if there are no constraints binding in infinity around the best steady state then why not to go there? The total loss = the level bias + stabilization bias, at least we minimize the level bias
- Also, if there is no private information and constraints are not binding, perhaps we can attain The First Best, at least in infinity
- The result *is* surprising, let’s consider an example

Example: LQ RE model of optimal control, infinite-horizon problem

- There is a solved out household reaction function, i.e. Euler equations and Phillips curve
- The policymaker chooses instruments to minimize *discounted* quadratic loss
- There are additional constraints, i.e. government solvency constraint
- There are non-predetermined and predetermined state variables (i.e. those without and with initial conditions)

Example continued

- The Outcome: under the fully optimal solution (commitment solution, The Second Best) all variables are *unit-root* variables (Benigno and Woodford, 2004).
- We can modify the problem slightly (Blanchard-Yaari consumers) and get that it is optimal to have *slow explosion* (at a rate less than 1/sqrt(β)) so the loss in a discounted problem is finite.

- The reason
  - discounting
  - infinite horizon (transversality conditions are necessary conditions)
  - *Not* linearization
- The role of capital