Econ 712 Macroeconomics I
Fall 2016, University of Wisconsin-Madison
Instructor: Dean Corbae

Summary of Topics/Methods Covered in First Half of Macro 1

Topics

- Incomplete markets due to matching, commitment, or information frictions.
- The role of government to implement pareto superior outcomes in competitive economies with frictions.
  - One example is the introduction of fiat money in overlapping generations models. Fiat money is an example of a rational bubble (its equilibrium value can differ from its fundamental value (which is zero)).
- Ricardian equivalence (conditions for the irrelevance of the timing of lump sum taxes).
- The effect of distortionary taxes on equilibrium output.
- Time inconsistent government policy.

Methods

- Environment: A statement of population, preferences, technologies (which includes not only endowment/production, but also commitment, matching, and information)
- Social Planner's Problem: A planner solves a constrained optimization problem (objective is weighted population welfare subject to constraints (e.g. economywide resources) to obtain a pareto optimal allocation.
- Competitive Equilibrium: Allocation and price sequence which satisfies atomless agent optimization (both households and firms) and market clearing. In the presence of government (which is not atomless), we need to include its budget constraint.
  - Atomless agent actions do not affect aggregate outcomes. With a unit measure of identical agents, the solution method is to take all other's actions as given (say K), allow an atomless agent to choose their own best action (say k), and then check equilibrium consistency (i.e. $k = K$). In macro, this is called a Big K, little k problem.

- In macro, often the planner's problem is simpler to solve than the competitive equilibrium (since we do not have to compute prices). The second welfare theorem, when applicable, provides an implementation result.
- Labor/leisure choice problems.
- Indirect utility functions, the envelope condition, and finite dynamic programming.
- Existence and uniqueness of competitive equilibrium. Pareto ranked equilibria and equilibrium selection in the presence of multiple equilibria.
- Stationary and nonstationary equilibria. Nonlinear difference equations.
- Irrelevance results for government policy with perfect financial markets:
  - Conditions for a sequence of budget constraints to be equivalent to a consolidated budget constraint.
  - Conditions for equivalence between overlapping generations economies with bequests and the infinitely lived agent problem.
- Government policy with commitment (Ramsey equilibrium) versus sequentially rational behavior (sustainable equilibrium) without the ability to commit.
  - Dynamic punishment can help sustain good outcomes which are not sustainable in static environments. We saw how one shot deviations which are punished by reversion to bad equilibrium outcomes "off-the-equilibrium path" may sustain good behavior "on-the-equilibrium path".