Supplementary Notes on Chapter 7 of D. Romer's Advanced Macroeconomics Textbook (4th Edition)

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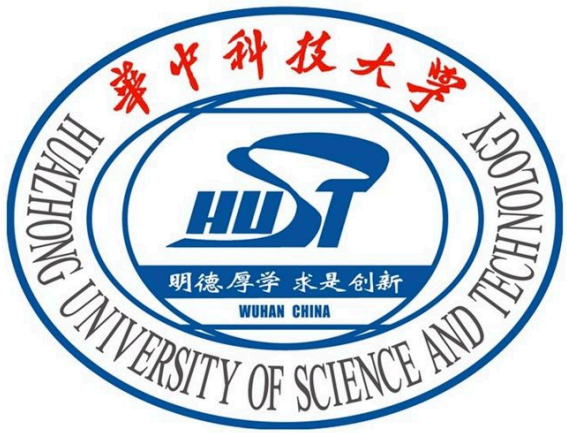

Dynamic Stochastic General-Equilibrium Models

- DSGE models, sometimes SDGE or DGE.
- Dynamic: multiple-periods. Stochastic: uncertainties.
  General-Equilibrium: Micro-foundations.
- Consider the model in Section 5.3. Is it a DSGE model?
  Yes. However, money shocks are not embedded and its predictions are so unrealistic.
- For the economic system depicted by (6.27) – (6.30). A DSGE model?
  Hint: Where are equations (6.27) and (6.28) from?

Why bother with micro-foundations?

"Given that the structure of an econometric model consists of optimal decision rules of economic agents, and that optimal decision rules vary systematically with changes in the structure of series relevant to the decision maker, it follows that any change in policy will systematically alter the structure of econometric models."

— The Lucas Critique

- It is thus naive to try to predict the effects of a change in economic policy entirely on the basis of relationships observed in historical data, especially highly aggregated historical data.
- A canonical example: the Phillips Curve.
  Question: What is the changed "decision rule" in this case?
- Discussion: the Big-Data mania?

Then how should we predict the effects of a policy?

- Model the "deep parameters", like preferences, technology, and resource constraints, that are assumed to govern individual decisions. (micro-foundations!)
- Taking into account the change in policy, and then aggregate the individual decisions to calculate the macroeconomic effects of the policy change.
- For the aggregation process, we often assume a *representative agent*.

To be continued $\cdots$