Introduction to Dynamic Stochastic General Equilibrium (DSGE) Models
Motivation & Course Contents

Barbara Annicchiarico  barbara.annicchiarico@uniroma2.it
Università degli Studi di Roma "Tor Vergata"

April 2012
Motivation

- During the last three decades macroeconomic modelling has recorded deep changes both in methodological and theoretical aspects.
- Basic DSGE models capture elements of the New Keynesian paradigm, of the New Classical school and of the real business cycle approach (RBC), with several features of apparently irreconcilable traditions of macroeconomic thought, reflecting the emergence of a new approach to the study of macroeconomics, known as the New Neoclassical Synthesis.
- Large scale DSGE models have found their way to policy institutions who make policy analysis and forecasts. Bank of Canada (ToTEM), Bank of England (BEQM), European Central Bank (NAWM), Norges Bank (NEMO), Sveriges Riksbank (RAMSES), the US Federal Reserve (SIGMA), the IMF (GEM), the European Commission (QUEST III).
Motivation

- Advantages of this approach
Motivation

- Advantages of this approach
  - It provides many results of a textbook IS-LM model in a fully dynamic coherent micro-founded context (better understanding of the transmission mechanisms of policy interventions and of shocks);
Motivation

- Advantages of this approach
  - it provides many results of a textbook IS-LM model in a *fully dynamic coherent micro-founded* context (better understanding of the transmission mechanisms of policy interventions and of shocks);
  - it should be possible to escape the Lucas (1976) critique, contrary to the traditional macroeconometric models in which the estimated parameters are not invariant to policy shifts or to expected policy changes;
Motivation

- Advantages of this approach
  - it provides many results of a textbook IS-LM model in a *fully dynamic coherent micro-founded* context (better understanding of the transmission mechanisms of policy interventions and of shocks);
  - it should be possible to escape the Lucas (1976) critique, contrary to the traditional macroeconometric models in which the estimated parameters are not invariant to policy shifts or to expected policy changes;
  - thanks to the developments in computational techniques, DSGE modelling is a *quite* flexible technique;
Motivation

- Advantages of this approach
  - it provides many results of a textbook IS-LM model in a fully dynamic coherent micro-founded context (better understanding of the transmission mechanisms of policy interventions and of shocks);
  - it should be possible to escape the Lucas (1976) critique, contrary to the traditional macroeconometric models in which the estimated parameters are not invariant to policy shifts or to expected policy changes;
  - thanks to the developments in computational techniques, DSGE modelling is a quite flexible technique;
  - it sheds new light on the linkages among monetary and fiscal policy, inflation and the business cycle.
Motivation

- Advantages of this approach
  - it provides many results of a textbook IS-LM model in a fully dynamic coherent micro-founded context (better understanding of the transmission mechanisms of policy interventions and of shocks);
  - it should be possible to escape the Lucas (1976) critique, contrary to the traditional macroeconometric models in which the estimated parameters are not invariant to policy shifts or to expected policy changes;
  - thanks to the developments in computational techniques, DSGE modelling is a quite flexible technique;
  - it sheds new light on the linkages among monetary and fiscal policy, inflation and the business cycle.

- In terms of modelling approach to macroeconomics, is this the best of all possible world? Of course not.... many shortcomings.... many inconsistencies.... many ad hoc assumptions... etc.
Objectives & Methodology

- The aim of these lectures is to show the main features of DSGE models in order to understand their explanatory (and predictive?) power and their shortcomings.
- Starting from *simple* models, frictions will be introduced in a gradual manner.
- Contents:
  - Dynamic Optimization Methods (I lecture)
  - Business Cycle Facts (II lecture)
  - Basic RBC model (II lecture)
  - RBC with frictions (lhabit, adjustment costs on investments and labour) (III lecture)
  - Basic New Keyensian model (III-V lecture)
Other informations

- Written exam
- Office hour: by e-mail appointment
- References provided at the end of each presentation