The DSGE Modelling Approach to the Business Cycle
Motivation & Course Contents

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Presentation #1
Motivation

- Business (or economic) cycle as economy-wide fluctuations in economic activity over several months or years.
- Business cycle as upward and downward movements of GDP.
- Expansions and contractions around a long-term growth trend.
- Despite being termed cycles, these fluctuations do not always follow a predictable periodic pattern.

What drives the business cycle? How can we explain economic fluctuations?
Theoretical approaches to economic fluctuations

- Real business cycle approach (real shocks)
- New Keynesian approach (nominal shocks)
- New neoclassical synthesis or new synthesis (i.e. a fusion of the first two)
New neoclassical synthesis

- New neoclassical synthesis combines new classical (real business cycle theory) and new Keynesian elements to explain short-run fluctuations
- The new synthesis as the basic theoretical foundation of contemporary mainstream economics
- Major features
  - rational expectations
  - intertemporal optimization
  - imperfect competition
  - nominal rigidities
- In this context:
  - monetary policy can affect real output in the short-run, while money neutral in the long-run
  - the importance of credibility of central bankers
New neoclassical synthesis: deep discussion

- Coherent intertemporal general-equilibrium foundations. These make it possible to analyze both short-run fluctuations and long-run growth within a single consistent framework (microeconomic and macroeconomic perspectives)
- Importance of basing quantitative policy analysis on econometrically validated structural models
- Full acceptance of the methodological precepts of the “rational expectations revolution”: expectations as endogenous; models address the Lucas (1976) critique
- Shocks of varying types cause economic fluctuations (many different sources of uncertainty)
- Central banks can control inflation through the use of monetary policy. The trade-off of the Phillips curve from Keynesianism revitalized is modern version
Many Models


- **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).
Summing up

- 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)

- Data related results: quantitative approach to evaluate policy decisions

- 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 worlds? Of course not... many shortcomings... many inconsistencies... many ad hoc assumptions... etc.
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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 Using Lagrange Multipliers (I lecture)
  - Business Cycle Facts (I lecture)
  - Basic RBC Model (II lecture)
  - RBC with Frictions (habit, adjustment costs on investments and labour) (III lecture)
  - Basic New Keynesian Model (III-V lectures)
References


Other informations

- Presentations available at:
  http://www.barbarannicchiarico.eu/BC.htm

- Office hour and e-mail policy see:
  http://www.economia.uniroma2.it/nuovo/didattica/MaterialeDidattico/380/email_policy.pdf

- References provided at the end of each presentation