Economic Theory II
Lecture 1 [1]

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[1] Content of current lecture slides derives on slides prepared by Dr Valentin Jouvanceau previously.

About the course

- 6 weeks taught by me, after that by Dr Benjamin Hemingway.
- Course based on the book "Intermediate Macroeconomics" by Julio Garin, Robert Lester, and Eric Sims (hereafter GLS).
- Additional material:
  - Macroeconomics: Institutions, instability, and the financial system by Wendy Carlin and David Soskice.
  - Monetary policy, inflation, and the business cycle by Jordi Gali.
- Advanced material: Recursive Macroeconomic Theory by Thomas J. Sargent and Lars Ljungqvist.

Course structure

Study models for:

- The long run:
  - Also known as 'growth' models. Frequency considered is of several decades.
  - Principal framework for studying growth is the Solow model.
- The medium run:
  - Focuses on a frequency of several years.
  - Nominal frictions not relevant for this time horizon.
  - Principal framework for studying medium run is the Neoclassical model.
- The short run:
  - Frequency of several month to years. Study business cycle fluctuations.
  - Nominal rigidities important, which generates role for policy intervention. Principal framework is the New Keynesian model.

Models [2]

What is an economic model?

- A simplified representation of the economy.
- A tool to understand the functioning of an economic system.
- A tool for forecasting.
- A tool for studying counterfactual scenarios.
- One model cannot answer all questions and replicate all data facts! We need to ask a good question, and design a model to answer that specific question.

[2] Chapter 2 of GLS.

Models

Types of models:

- Broadly;
  - Econometric models (eg: VAR models)
  - Structural models (eg: DSGE models)
  - Something in between (eg: Semi structural models)
  - Other types of models (eg: State space models)
- We will focus on Structural models.
- We will build models consistent with economic theory and attempt to explain what we observe in data.

Models

What does 'building' and 'solving' models entail?

- We describe economic relationships and phenomena of interest using mathematical equations. Putting all these equations together describes the economy, and that is how we 'build' a model.
- We can 'solve' simple models analytically, but more complex models are solved using a range of specialised techniques and algorithms written in software like MATLAB©, Julia, Python, etc.
- For our purposes, a 'solution' is when all parts of the economy interact with each other to produce output which we can compare to data, or which answers our questions regarding some counterfactual scenarios, etc.
- We use mathematics extensively, including multivariate calculus, optimisation techniques, log-linearisation techniques, solving systems of simultaneous equations, etc.

History of Economic thought [3]

1936-1968 :

- Keynes' theory of the functioning of an economy had an active role for policy.
- His theory implied relationships between economic variables (for example between consumption and income, between consumption and saving, dependence on interest rates, etc.).
- Relationships were static and not subject to updating, but were testable on data.
- Researchers attempted to estimate these relationships and forecast the future path of variables after shocks, with the aim of informing policy.

[3] Chapter 3 of GLS.

History of Economic thought

- Phillips (1958) showed one such (negative) relationship between unemployment and inflation, named the 'Phillips curve'.
- Implication was that government could use monetary and fiscal policy to alter inflation and, in turn, unemployment.
- The broad theme seemed to be that relationships can be found from data processing, and can be exploited for policy purposes.
- Did not consider any feedback from policy to these relationships, and that they would adapt / change accordingly.
- In 1968, Milton Friedman questioned this understanding of policy-making based on historical relationships in data with a counter argument.

History of Economic thought

1968-1981:

- The element missing in Keynes' theory was that of consumer behaviour: relationships between variables were ad-hoc, and not determined by optimising behaviour.
- Many researchers were adding these behavioural elements in their models now, but several other elements were being treated in an ad-hoc manner (eg : consumer optimising behaviour studied taking interest rate as given).
- Expectations about the future and their impact on the macroeconomy did not play an important role as yet.

History of Economic thought

- 'The Lucas critique': Robert Lucas questioned the validity of relying on past data relationships for policy making without considering the effects of optimising behaviour by households on these relationships.
- Example: if a tax cut today will lead to higher taxes tomorrow, and people know that, will they still respond to the tax cut by spending more? Or will they save more? Depends on if household is myopic or not!
- Key message: relationship between macro variables cannot be assumed to be invariant to policy.
- Lucas said optimisation by agents happens not just for current period, but also over expectations of the future: the 'rational expectations' hypothesis.
- Clearly, the conventional Keynesian view of policy doesn't work. So now what?

History of Economic thought

1982-present:

- Kydland and Prescott (1982) developed a model which reconciled long run and short run concerns in the model: 'The Real Business Cycle model'.
- More micro-founded features like labour choice, firm profit maximisation, and rational expectations.
- Shortcomings:
  - Only one source of fluctuations: productivity shocks.
  - No market failures, so no role for policy.
- Researchers since have included different sources of fluctuations as well as market failures.

History of Economic thought

- Neoclassical core + price rigidities = New Keynesian models.
- We also have models with coordination problems, sticky wages, imperfect information,....
- These models are called **DSGE**: **D**ynamic **S**tochastic **G**eneral **E**quilibrium models.
- We have developed large scale models that have several sectors including the Financial sector, and are rich in detailing the economy and its characteristics. Large scale models contain hundreds of variables.
- So, what are the motivating questions, and how do we model them? Let's start with the long run in the next discussion...

End