Advanced Macroeconomics II: New Keynesian DSGE framework and Monetary Policy

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Wang Yanan Institute for Studies in Economics
Xiamen University

Instructor
Linlin Niu, Wang Yanan Institute for Studies in Economics, Economics Building A306, Tel.: 2182839, Email: linlin.niu@gmail.com.

Course webpage
http://teach.xmu.edu.cn/DirList.aspx?DirID=3089

Prerequisite
Intermediate macroeconomics

Lecture Time and Locations
TBA

Office Hours
TBA

Grading
There will be bi-weekly assignments, a midterm exam and a final. In addition, some quizzes will be given in class. They will count toward the final score as follows.

Assignments+Quizzes	40%
Midterm	30%
Final	30%

1 Course content

This course aims to introduce students to the recent development in the macroeconomic research, within the framework of dynamic stochastic general equilibrium (DSGE) models in general, and New Keynesian DSGE models in particular. With these tools at hand, we will discuss monetary policy, inflation and business cycle (Gali, 2008) and some recent advancement on quantitative easing. At the end, we will introduce some basic empirical techniques on data preparation and diagnosis specific to macroeconomic research. The course, with a brief introduction to MATLAB, will be structured into three parts.

1.1 Numerical methods and macroeconomic models

Approximating and solving DSGE models with an emphasis to solution methods based on logarithmic approximations. At the end of the course, students should be able to solve simple DSGE models by hand, and to solve medium-to-large scale DSGE models with computer programs.

1) Motivation and introduction: growth and business cycles.

- Mankiw 2006.

2) Approximating and solving DSGE Models with numerical method.
   - Uhlig 1999.

3) Simple DSGE Models: Examples including simple RBC models, extended with labor supply, adjustment cost of investment, etc.
   - Uhlig 1999.

4) An RBC model application to China on the economic effects of political movements.
   - Kwan and Chow 1996.

1.2 New Keynesian DSGE models and monetary policy

This part deals with the New Keyensian DSGE framework to discuss inflation, monetary policy and the business cycle.

1) From RBC to New Keynesian evolvement
   - Gali 2008, Chapter 1.
2) A classical monetary model
   - Gali 2008, Chapter 2.
3) New Keynesian model with monopolistic competition and nominal rigidity
   - Gali 2008, Chapter 3.
4) Monetary policy design in the basic New Keynesian model
   - Gali 2008, Chapter 4.
5) Monetary policy tradeoffs: discretion vs. commitment
   - Gali 2008, Chapter 5.

1.3 Empirical methods that bring models to the data

This includes topics on basic techniques of data preparation and parameter calibration specific to macroeconomic research.

1) Removing trends and isolating cycles
   - DeJong and Dave 2007, Chapter 3.
2) Spectral analysis
   - Hamilton 1994, Chapter 6.
3) Calibration (Optional if time allows)
   - DeJong and Dave 2007, Chapter 6.

2 Main references

2.1 Papers

- Gertler, M. and P. Karadi, 2011, "A Model of Unconventional Monetary Policy", *Journal of Monetary Economics*, vol. 58-1, pages 17-34, January.

- Kwan, Y.K. and G. Chow, 1996, "Estimating Economic Effects of Political Movements in China", *Journal of Comparative Economics*, vol. 23, 192-208.

- Mankiw, N.G., 2006, "The Macroeconomist as Scientist and Engineer", *Journal of Economic Perspectives*, vol. 20-4, pp. 29-46.
- Uhlig, H. "A Toolkit for analyzing Nonlinear Dynamic Stochastic Models easily", in *Computational Methods for the Study of Dynamic Economies*, Ramon Marimon and Andrew Scott (editors), Oxford University Press 1999 (February), pp.30-61.
- Other readings assigned during the course.

2.2 Books

- D. N. Dejong and C. Dave, *Structural Macroeconometrics*. Princeton University Press, 2007. Chapter 3 and 6.
- Jordi Gali, *Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework*. Princeton University Press, 2008. Chapter 1 - 5.
- James D. Hamilton, Time Series Analysis, Princeton University Press, 1994. Chapter 6.

3 Software, programs and data

- Software: MATLAB
- Programs: H. Uhlig, Toolkit Matlab programs
- Data:
  - A dataset provided by D. N. Dejong at: http://www.econ.pitt.edu/dbook/