ECON4310

Intertemporal Macroeconomics
Fall 2006

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1 Objective

This course gives an introduction to basic tools of modern dynamic macroeconomic theory. It is based on general equilibrium theory and consists of several self-contained modules. The focus will be on real, frictionless economies, and the aim is to apply the theoretical tools of dynamic macroeconomics to data in order to give quantitative answers to topical questions.

This course consists of two parts. The first part starts with the representative agent model, including the neoclassical growth model, its recursive formulation and its extension in the stochastic environment. We then move to its application in business cycle theory and asset pricing. The second part includes the overlapping generations model and its application in fiscal policy and social security.

There will be both theoretical exercises and numerical assignments.

2 Content

1. Representative agent model:

    (a) Consumption, savings and labor supply decisions.

    (b) Neoclassical growth model and its recursive formulation

    (c) Stochastic growth and business cycle theory

    (d) Asset pricing (c-capm)

2. Overlapping generations model:

    (a) Overlapping generations model

    (b) Fiscal policy

    (c) Social Security

3 Administrative

3.1 Web-page

http://www.uio.no/studier/emner/sv/oekonomi/ECON4310/h06/

3.2 Lectures – time and place

Mondays 10:15-12:00, Auditorium 4 Eilert Sundts hus, A-blokka.

3.3 Term paper (compulsory)

Hand-out: October 5th. Due: October 23rd.

3.4 Final exam

December 6th 2006, 14:30-17:30 (3 hours).

3.5 Office hours

Tuesdays 13.30-14.30.

4 Software for numerical exercises

In order to enhance the understanding of the theory and apply the the concepts to interesting dynamic macroeconomic questions, our ambition is to give students an easy introduction to the use of simple numerical methods.

Matlab can be accessed on the cluster computers on the 4th floor of Eilert Sundts hus. Further instructions will be posted on the course web-page.

GNU Octave, http://www.octave.org/, is a free high-level language, resembling Matlab. It can be downloaded from SourceForge:

http://prdownloads.sourceforge.net/octave/octave-2.1.50a-inst.exe

For students with no or very little previous programming experience we will offer a four-hour Matlab crash-course in Week 34 and 38.

5 Syllabus

Our main text will be Stephen Williamson's *Notes on Macroeconomic Theory* and several outstanding sets of lecture notes written by Dirk Krueger. These will be supported by a few articles. Parts of David Romer's textbook might provide additional perspectives on the material. For advanced students Per Krusell's lecture notes might prove interesting.

All pages of all these texts will *not* be required readings for the final exam. The required readings will be marked * in the `Lecture Plan`. In addition, all material explicitly covered during the lectures will also be expected known before the final exam.

Please note that the set of required readings might be modified during the semester, in which case we will update this document on the course web-page.

5.1 Books and prepared lecture notes

- Stephen Williamson: *Notes on Macroeconomic Theory.*

  `http://www.biz.uiowa.edu/faculty/swilliamson/courses/2001/notes01.pdf`

  A version with figures is available from Tony Smith's web-page:

  `http://www.econ.yale.edu/smith/econ510a/notes99.pdf`

- Dirk Krueger: *Consumption and Savings: Theory and Evidence* (ref: Krueger-CS)

  `http://www.wiwi.uni-frankfurt.de/Professoren/krueger/teaching/ws0506/macrofield/consbookdirk.pdf`

  Dirk Krueger: *Dynamic Fiscal Policy* (ref: Krueger-DFP)

  `http://www.wiwi.uni-frankfurt.de/Professoren/krueger/teaching/ws0506/fiscal/GoetheFiscalTotal.pdf`

  Dirk Krueger: *Quantitative Macroeconomics* (ref: Krueger-QM)

  `http://www.wiwi.uni-frankfurt.de/Professoren/krueger/teaching/QuantMacro.pdf`

- Per Krusell: *Lecture Notes for Macroeconomics.*

  `http://www.econ.yale.edu/smith/econ510a/newbook.pdf`

  Per Krusell: *Asset pricing*

  `http://www.econ.yale.edu/smith/econ510a/book9.pdf`

- David Romer (latest edition): *Advanced Macroeconomics.* McGraw-Hill. Available at Akademika (Older versions of this book can be used).

- *Matlab Primer*

  `http://www.cs.cmu.edu/afs/cs.cmu.edu/misc/matlab/common/www/matlab_primer.pdf`

5.2 Articles

- Finn E. Kydland and Edward C. Prescott. Business cycles: Real facts and a monetary myth. *Federal Reserve Bank of Minneapolis, Quarterly Review*, 14(2):3–18, Spring 1990.

  `http://minneapolisfed.org/research/QR/QR1421.pdf`

- Thomas F. Cooley. Calibrated models. *Oxford Review of Economic Policy*, 13(3):55–69, 1997.

  `http://pages.stern.nyu.edu/~tcooley/PhDCourse/calibrate.pdf`

- Assar Lindbeck and Mats Persson. The gains from pension reform. *Journal of Economic Literature*, 41(1):74–112, 2003.
  http://folk.uio.no/kjstore/teaching/4310/Lindbeck_Persson_JEL2003.pdf

- Gadi Barlevy. The cost of business cycles and the benefits of stabilization. *Federal Reserve Bank of Chicago Economic Perspectives*, 29(1):32–49, 2005.
  http://www.chicagofed.org/publications/economicperspectives/ep_1qtr2005_part3_barlevy.pdf

- Victor E. Li. Can market-clearing models explain U.S. labor market fluctuations? *Federal Reserve Bank of St. Louis Review*, pages 35–49, July 1999.
  http://research.stlouisfed.org/publications/review/99/07/9907vl.pdf

5.3 Core curriculum

- Williamson Chapters 1-3 and 5-7.

- Krueger-DFP Chapters 4-6.

- Krueger-QM Chapter 8-11.

- Matlab Primer, pp. 1-10.

- Kydland and Prescott [1990], Barlevy [2005], Li [1999]

6 Lecture Plan

For each lecture, the starred reference is required reading (*pensum*). The non-starred references give additional useful material for the more advanced study of the topic.

1. **Monday August 21, 2005 – Henriksen**

   Simple representative agent models. Consumption, savings and labor supply decisions

   - Williamson Chapter 1*
   - Krusell Chapter 1, 2, 3.1
   - Romer: Chapter 1, Chapter 2.1-2.9 (Part A), Chapter 7.1-7.4.

2. **Monday August 28, 2005 – Henriksen**

   Simple representative agent models. Consumption, savings and labor supply decisions – same as above

3. **Monday September 4, 2005 – Henriksen**

   Neoclassical Growth and Dynamic Programming

   - Williamson Chapter 3*

- Krusell Chapter 3.2, 3.3, 5

4. **Monday September 11, 2005 – Henriksen**

   Choice Under Uncertainty

   - Williamson Chapter 5*
   - Krusell Chapter 6

5. **Monday September 18, 2005 – Chen**

   Stochastic Growth and Business Cycles

   - Krueger-QM Chapter 9* and 10*
   - Kydland and Prescott [1990]*

6. **Monday September 25, 2005 – Chen**

   Business Cycles, Calibration

   - Krueger-QM Chapter 8* and 11*
   - Cooley [1997]
   - Li [1999]*

7. **Monday October 2, 2005 – Henriksen**

   Asset Pricing

   - Williamson Chapter 6*
   - Krusell Asset Pricing Chapter
   - Romer Chapter 7.5-7.6.

8. **Monday October 9, 2005 – Henriksen**

   Asset pricing puzzles and Hansen-Jagannathan bounds

   - Williamson Chapter 6*
   - Krusell Asset Pricing Chapter
   - Romer Chapter 8.1-8.6
   - Barlevy [2005]*

9. **Monday October 16, 2005 – No class, term-paper**

10. **Monday October 23, 2005 – Chen**

    Overlapping Generations model

- Krueger-DFP Chapter 2*, 3*.
- Romer: Chapter 2.8-2.12 (Part B).
- Krusell Chapter 7.

11. **Monday October 30, 2005 – Chen**

    Overlapping Generations model

    – same as last lecture

12. **Monday November 6, 2005 – Chen**

    Ricardian Equivalence

    - Krueger-DFP Chapter 1* and 4.2*
    - Romer, Chapter 11.3

13. **Monday November 13, 2005 – Chen**

    Social Security: Theoretical Analysis

    - Krueger (DFP) 5*
    - Lindbeck and Persson [2003]

14. **Monday November 20, 2005 – Chen and Henriksen**

    Q&A, Overview

7 Seminar Schedule

1. **Representative Agent Models, Consumption and Savings Decisions Introduction to MatLab**

   (a) Seminar 1: Wednesday September 6th 16:15 - 18:00
   (b) Seminar 2: Thursday September 7th 12:15 - 14:00

   Recitation leader: Henriksen

2. **Stochastic extensions and computational methods**

   (a) Seminar 1: Wednesday September 20th 16:15 - 18:00
   (b) Seminar 2: Thursday September 21st 12:15 - 14:00

   Recitation leader: Henriksen

3. **Business Cycles**

(a) Seminar 1: Wednesday October 4th 16:15 - 18:00

(b) Seminar 2: Thursday October 5th 12:15 - 14:00

Recitation leader: Chen

4. **Asset Pricing**

(a) Seminar 1: Wednesday October 18th 16:15 - 18:00

(b) Seminar 2: Thursday October 19th 12:15 - 14:00

Recitation leader: Henriksen

5. **The Term Paper**

(a) Seminar 1: Wednesday November 8th 16:15 - 18:00

(b) Seminar 2: Thursday November 9th 12:15 -14:00

Recitation leader: Chen

6. **The Overlapping-Generations Model**

(a) Seminar 1: Wednesday November 22nd 16:15 -18:00

(b) Seminar 2: Thursday November 23rd 12:15 -14:00

Recitation leader: Chen

8 Matlab crash course

Location: 035 Harriet Holters hus.

1. (a) Seminar 1: Monday August 21st 12:15 -14:00

   (b) Seminar 2: Tuesday August 22nd 12:15 -14:00

   Recitation leader: Henriksen

2. (a) Seminar 1: Monday September 18th 18:15 -20:00

   (b) Seminar 2: Tuesday September 19th 16:15 -18:00

   Recitation leader: Chen

References

Gadi Barlevy. The cost of business cycles and the benefits of stabilization. *Federal Reserve Bank of Chicago Economic Perspectives*, 29(1):32–49, 2005.
http://www.chicagofed.org/publications/economicperspectives/ep_1qtr2005_part3_barlevy.pdf.

Thomas F. Cooley. Calibrated models. *Oxford Review of Economic Policy*, 13(3):55–69, 1997.
http://pages.stern.nyu.edu/~tcooley/PhDCourse/calibrate.pdf.

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Victor E. Li. Can market-clearing models explain U.S. labor market fluctuations? *Federal Reserve Bank of St. Louis Review*, pages 35–49, July 1999.
http://research.stlouisfed.org/publications/review/99/07/9907vl.pdf.

Assar Lindbeck and Mats Persson. The gains from pension reform. *Journal of Economic Literature*, 41(1):74–112, 2003.
http://folk.uio.no/kjstore/teaching/4310/Lindbeck_Persson_JEL2003.pdf.