

## Advanced Macroeconomic Theory I

Lectures: Prof. Nicola Fuchs-Schündeln, Ph.D.  
House of Finance, Room 3.55  
[fuchs@wiwi.uni-frankfurt.de](mailto:fuchs@wiwi.uni-frankfurt.de)  
Office hours: by appointment (just send me an email)

Classes: Dr. Sigrid Röhrs  
House of Finance, Room 3.42  
[Sigrid.Roehrs@hof.uni-frankfurt.de](mailto:Sigrid.Roehrs@hof.uni-frankfurt.de)  
Office hours: Thursdays 8.30-10 am, and by appointment

Winter Semester 2012/13

Our regular meeting times are Tuesday, Thursday, 10.15 to 11.45 am, in E.20/DZ-Bank. However, there are three exceptions to this. We do not meet on October 18, October 23, and November 29, and make-up classes are scheduled for October 15, October 17, and November 5. Please see the list below for the exact meeting dates, times, and rooms. Exceptions are marked in red.

date	time	room
Monday, October 15	12.00-13.30	E.20/DZ-Bank
Tuesday, October 16	10.15-11.45	E.20/DZ-Bank
Wednesday, October 17	8.30-10.00	E.021/Paris
Thursday, October 18	NO CLASS	
Tuesday, October 23	NO CLASS	
Thursday, October 25	10.15-11.45	E.20/DZ-Bank
Tuesday, October 30	10.15-11.45	E.20/DZ-Bank
Thursday, November 1	10.15-11.45	E.20/DZ-Bank
Monday, November 5	12.00-13.30	E.20/DZ-Bank
Tuesday, November 6	10.15-11.45	E.20/DZ-Bank
Thursday, November 8	10.15-11.45	E.20/DZ-Bank
Tuesday, November 13	10.15-11.45	E.20/DZ-Bank
Thursday, November 15	10.15-11.45	E.20/DZ-Bank
Tuesday, November 20	10.15-11.45	E.20/DZ-Bank
Thursday, November 22	10.15-11.45	E.20/DZ-Bank
Tuesday, November 27	10.15-11.45	E.20/DZ-Bank
Thursday, November 29	NO CLASS	

### Course Objectives

This is the first half of the first semester course in graduate macroeconomics. It is intended for PhD and MSQE students only, with no exceptions. The purpose of the course is to present some of the basic questions macroeconomists seek to answer and to

introduce standard models used to explain these stylized facts, like representative and heterogeneous agent models. One emphasis of the course lies on introducing helpful techniques, especially dynamic programming, a tool that is useful in analyzing many questions in macroeconomics and beyond. We will also discuss some empirical studies of macroeconomics.

### **Organization**

Problem sets, announcements, etc., will be posted on the course webpage in OLAT. Please send an email with your HRZ account to Sigrid Röhrs at [Sigrid.Roehrs@hof.uni-frankfurt.de](mailto:Sigrid.Roehrs@hof.uni-frankfurt.de), who will then register you for the website.

### **Requirements**

There are two requirements for this course.

First, you have to hand in three problem sets one week after the assignment. These problem sets will not be graded and returned, but they are still part of the course requirements. Not handing in a problem set will lead to a reduction in the points awarded for the final exam by 3 percent (i.e. not handing in any of the problem sets will lead to a reduction of 9 percent in the points awarded on the final exam). The problem sets will be discussed in the classes held by Sigrid Röhrs roughly every two weeks. Please keep photocopies of your problem sets prior to submitting them for your own exam preparation. The problem sets are meant as a preparation for the exam, so please make an effort to answer them on your own. Of course, discussing the problem sets as well as other material with your fellow classmates is a very good idea.

Second, the grade for this part of the course will be based on an exam which is scheduled to be held on Thursday, December 6, 2012, at 10.15 am in room HoF E.20/DZ-Bank.

### **Readings**

The syllabus contains links to the readings. We will discuss some of the readings in class. I also list further references, especially classic papers or good overview papers.

There is no required textbook for this part of the class. There are however four good textbooks which I recommend in general and which show up on the syllabus. The first two are more methodologically focused than the second two:

Ljungqvist, Lars and Thomas J. Sargent (2004): Recursive Macroeconomic Theory, MIT Press, Cambridge/London.

Stokey, Nancy L. and Robert E. Lucas (1989): Recursive Methods in Economic Dynamics, Harvard University Press, Cambridge/London.

Romer, David (2006): Advanced Macroeconomics, McGraw-Hill Irwin.

Blanchard, Olivier Jean and Stanley Fischer (1996): Lectures on Macroeconomics, MIT Press, Cambridge/London.

### **Programming Skills**

As part of the course, you will learn how to numerically solve stochastic dynamic programming problems. We will use Matlab as a programming language, but you are free to use other programming languages.

## 1. Basic Consumption Theory

### A The Permanent Income Hypothesis and the Life Cycle Model of Consumption

Blanchard/Fisher, Chapter 6.1 and 6.2.

Browning, Martin and Thomas Crossley (2001): [The Life-Cycle Model of Consumption and Saving](#), Journal of Economic Perspectives, 15(3), 3-22.

Dynan, Karen E. (1993): [How Prudent Are Consumers?](#), Journal of Political Economy, 101(6), 1104-1113.

Hall, Robert E. (1978): [Stochastic Implications of the Life Cycle-Permanent Income Hypothesis](#), Journal of Political Economy, 86 (6), 971-87.

Ludvigson, Sydney C. and Alexander Michaelides (2001): [Does Buffer-Stock Saving Explain the Smoothness and Excess Sensitivity of Consumption?](#), American Economic Review, 91(3), 631-647.

Modigliani, Franco, and Richard Brumberg (1954): Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data, in: Kurihara, Kenneth (ed.): Post-Keynesian Economics, New Brunswick: Rutgers University Press, 388-436.

Romer, Chapter 7.1 to 7.4.

### B Taxation and Overlapping Generations

Blanchard/Fisher, Chapter 3.

Carroll, Christopher D., and Lawrence H. Summers (1991): Consumption Growth Parallels Income Growth: Some New Evidence, in: Bernheim, B. Douglas and John B. Shoven (eds.): National Saving and Economic Performance, Chicago University Press, Chicago.

Romer, Chapter 11.1 to 11.4.

### C Natural Experiment Studies of the Permanent Income Hypothesis

Browning, Martin, and Dolores Collado (2001): [The Response of Expenditures to Anticipated Income Changes: Panel Data Estimates](#), American Economic Review, 91(3), 681-692.

Hsieh, Chang-Tai (2003): [Do Consumers React to Anticipated Income Changes? Evidence from the Alaska Permanent Fund](#), American Economic Review, 93(1), 397-405.

Johnson, David, Jonathan Parker and Nicholas S. Souleles (2006): [Household Expenditure and the Income Tax Rebates of 2001](#), American Economic Review, 96(5), 1589-1610.

Parker, Jonathan A. (1999): [The Reaction of Household Consumption to Predictable Changes in Social Security Taxes](#), American Economic Review, 89(4), 959-973.

Paxson, Christina H. (1993): [Consumption and Income Seasonality in Thailand](#), Journal of Political Economy, 101(1), 39-72.

Shapiro, Matthew D. and Joel Slemrod (1995): [Consumer Response to the Timing of Income: Evidence from a Change in Tax Withholding](#), American Economic Review, 85(1), 274-83.

Shea, John (1995): [Union Contracts and the Life Cycle-Permanent Income Hypothesis](#), American Economic Review, 85(1), 186-200.

Souleles, Nicholas S. (1999): [The Response of Household Consumption to Income Tax Refunds](#), American Economic Review, 89(4), 947-958.

Souleles, Nicholas S. (2000): [College tuition and household savings and consumption](#), Journal of Public Economics, 77(2), 185-207.

Souleles, Nicholas S. (2002): [Consumer response to the Reagan tax cuts](#), Journal of Public Economics, 85(1), 99-120.

Stephens, Melvin Jr. (2003): ["3rd of the Month": Do Social Security Recipients Smooth Consumption between Checks?](#), American Economic Review 93(1), 406-422.

## **2. One-Sector Growth Model and Dynamic Programming**

### **A Bellman Equation and Solution Methods**

Ljungqvist/Sargent, Chapter 3.

Stokey/Lucas, Chapter 5.

Bellman, Richard (1957): Dynamic Programming, Princeton University Press.

## **B Stochastic Growth Model and Numerical Dynamic Programming**

Brock, William, and Leonard Mirman (1972): [Optimal Economic Growth and Uncertainty: The Discounted Case](#), *Journal of Economic Theory*, 4(3), 479–513.

Campbell, John (1994): [Inspecting the Mechanism: An Analytic Approach to the Stochastic Growth Model](#), *Journal of Monetary Economics*, 33, 463–506.

Ljungqvist/Sargent, Chapter 4.

Stokey/Lucas, Chapter 10.

## **3. Introduction to Heterogeneous Agent Models**

### **A Solving a Simple Heterogeneous Agent Model Under Different Market Structures**

Ljungqvist/Sargent, Chapter 8.1 to 8.8.

Krueger, Dirk and Fabrizio Perri (2006): [Does Income Inequality Lead to Consumption Inequality? Evidence and Theory](#), *Review of Economic Studies*, 73(1), 163-193.

### **B Ricardian Equivalence and Full Insurance**

Barro, Robert (1974): [Are Government Bonds Net Wealth?](#), *Journal of Political Economy*, 82, 1095–1117.

Barro, Robert (1979): [On the Determination of Public Debt](#), *Journal of Political Economy*, 87, 940–971.

Cochrane, John H. (1991): [A Simple Test of Consumption Insurance](#), *Journal of Political Economy*, 99(5), 957-976.

Ljungqvist/Sargent, Chapter 10.

Mace, Barbara J. (1991): [Full Insurance in the Presence of Aggregate Uncertainty](#), *Journal of Political Economy*, 99(5), 928-956.

Romer, Chapter 11.1 to 11.4.

## 4. Advanced Consumption Theory

### A Idiosyncratic Income Shocks and Precautionary Savings

Caballero, Ricardo (1991): [Earnings Uncertainty and Aggregate Wealth Accumulation](#), American Economic Review, 81(4), 859-871.

Carroll, Christopher D. (2001): [A Theory of the Consumption Function, With and Without Liquidity Constraints](#), Journal of Economic Perspectives, 15(3).

Carroll, Christopher (2000): [Requiem for the Representative Consumer? Aggregate Implications of Microeconomic Consumption Behavior](#), American Economic Review Papers and Proceedings, 90(2), 110-115.

Carroll, Christopher D.: [Solving Microeconomic Dynamic Stochastic Optimization Problems](#). Lecture Notes.

Gourinchas, Pierre Olivier and Jonathan Parker (2002): [Consumption over the Life-Cycle](#), Econometrica, 70 (1), 47–89.

Ljungqvist/Sargent, Chapter 17.1 to 17.7.

Romer, Chapter 7.6

### B General Equilibrium Heterogeneous Agent Models

Aiyagari, S. Rao (1994): [Uninsured Idiosyncratic Risk and Aggregate Saving](#), Quarterly Journal of Economics, 109(3), 659-684.

Castaneda, Ana, Javier Díaz-Giménez and José-Víctor Ríos-Rull (2003): [Accounting for the U.S. Earnings and Wealth Inequality](#), Journal of Political Economy, 111(4), 818-857.

Díaz, Antonia, Josep Pijoan-Mas and José-Víctor Ríos-Rull (2003): [Precautionary savings and wealth distribution under habit formation preferences](#), Journal of Monetary Economics, 50(6), 1257-1291.

Huggett, Mark (1993): [The Risk-free Rate in Heterogeneous-Agents, Incomplete Markets Economies](#), Journal of Economic Dynamics and Control, 17, 953-969.

Krusell, Per and Anthony Smith (1998): [Income and Wealth Heterogeneity in the Macroeconomy](#), Journal of Political Economy, 106(5), 867-896.

### **C Hyperbolic Discounting and Behavioral Economics**

Angeletos, George-Marios, David Laibson, Andrea Repetto, Jeremy Tobacman and Stephen Weinberg (2001): [The Hyperbolic Consumption Model: Calibration, Simulation, and Empirical Evaluation](#), Journal of Economic Perspectives, 15(3), pp. 47-68.

Laibson, David, Andrea Repetto and Jeremy Tobacman (1998): [Self-Control and Saving for Retirement](#), Brookings Papers on Economic Activity, 1998(1), 91-196.

Thaler, Richard (1994): [Psychology and Savings Policies](#), American Economic Review, 84(2), 186-192.

Thaler, Richard and Shefrin, Hersch M. (1981): [An Economic Theory of Self-Control](#), Journal of Political Economy, 89(2), 392-406.