

12E003

6 ECTS

## Advanced Macroeconomics I

### Overview and Objectives

The main goal of this course is to introduce students to the workhorse models of economic growth, which form the core of modern dynamic macroeconomics.

### Course Outline

#### **PART I: Overlapping generations models (Prof. Jaume Ventura)**

##### **1. The Diamond Model**

Overlapping generations, dynamic inefficiency, asset bubbles. Government debt and social security. Redistributive politics.

Lecture notes 1.

Acemoglu (2009), Ch. 9 and 17.5.

Abel, A., N. Mankiw, L. Summers and R. Zeckhauser (1989), "Assessing Dynamic Efficiency: Theory and Evidence," *Review of Economic Studies*.

Geerolf, F. (2013), "Reassessing Dynamic Inefficiency," Unpublished manuscript.

Piketty, T. and G. Zucman (2014), "Capital is Back: Wealth-Income Ratios in Rich Countries 1700-2010," *Quarterly Journal of Economics*.

Tirole, J. (1985), "Asset Bubbles and Overlapping Generations," *Econometrica*.

Martin, A. and J. Ventura (2012), "Economic Growth with Bubbles," *American Economic Review*.

Lindbeck, A. and M. Persson (2003), "The Gains from Pension Reform," *Journal of Economic Literature*.

Hassler, J., J. V. Rodríguez Mora, K. Storesletten and F. Zilibotti (2003), "The Survival of the Welfare State," *American Economic Review*.

Grossman, G. and E. Helpman (1998), "Intergenerational Redistribution with Short-Lived Governments," *Economic Journal*.

Rangel, A. (2003), "Forward and Backward Intergenerational Goods: Why is Social Security Good for the Environment?" *American Economic Review*.

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### 2. International Capital Flows

International borrowing and lending. International risk sharing. The effects of financial globalization.

Lecture notes 2.

Acemoglu (2009), Ch. 19.1-19.2.

Kose, A., E. Prasad, K. Rogoff, and S. Wei (2009), "Financial Globalization: A Reappraisal," IMF Staff Papers.

Henry, P.B. (2007), "Capital Account Liberalization: Theory, Evidence and Speculation," Journal of Economic Literature.

Broner, F. and J. Ventura (2016), "Rethinking the Effects of Financial Globalization," Quarterly Journal of Economics.

Martin, A. and J. Ventura, "The Macroeconomics of Rational Bubbles: A User's Guide," Annual Review, 2018.

### PART II: Infinite-horizon models (Prof. David Nagy)

#### 1. A cake-eating problem

Infinite-horizon dynamic optimization in discrete time; the Bellman equation; contraction mappings. Infinite-horizon optimal control, the maximum principle, transversality conditions

Acemoglu (2009), Ch. 5, 6 and 7

#### 2. The Ramsey model

Euler equations; dynamic competitive equilibrium; optimal growth; transition dynamics  
The Ramsey model with human capital accumulation

Acemoglu (2009), Ch. 8 and 10.4

#### 3. Endogenous growth

The AK model; the AK model with physical and human capital; two sectors; externalities

Acemoglu (2009), Ch. 11

#### 4. Horizontal innovation

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Growth with expanding product variety

Acemoglu (2009), Ch. 12 and 13

### **5. Vertical innovation and firm dynamics**

Models of Schumpeterian growth and firm dynamics

Acemoglu (2009), Ch. 14

### **6. Factor accumulation in a world with trade: convergence**

The Armington model of international trade; trade, specialization and the world income distribution

Acemoglu (2009), Ch. 19.4

Acemoglu, D. and Ventura, J. (2002): The world income distribution. Quarterly Journal of Economics 117, 659-694.

### **7. Factor accumulation in a world with trade: factor proportions and growth miracles**

The Heckscher-Ohlin model with two countries and two sectors; economic growth in a Heckscher-Ohlin world

Acemoglu (2009), Ch. 19.3

Ventura, J. (2002): Growth and interdependence. Quarterly Journal of Economics 112(1), 57-84.

### **8. Learning by doing and endogenous comparative advantage**

Country- and sector-specific learning by doing; the Dornbusch-Fisher-Samuelson model; sector-specific but only partially country-specific learning by doing

Acemoglu (2009), Ch. 19.7

Brezis, E., Krugman, P. and Tsiddon, D. (1993): Leapfrogging in international competition: A theory of cycles in national technological leadership. American Economic Review 83(5), 1211-1219.

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Krugman, P. (1987): The narrow moving band, the Dutch disease, and the competitive consequences of Mrs. Thatcher: Notes on trade in the presence of dynamic scale economies. *Journal of Development Economics* 27, 41-55.

### 9. International technology diffusion and trade

The Eaton-Kortum model; international idea flows, trade and growth

Alvarez, F., Buera, F. and Lucas, R. Jr. (2017): Idea flows, economic growth and trade. Unpublished manuscript.

Eaton, J. and Kortum, S. (2002): Technology, geography and trade. *Econometrica* 70(5), 1741-1779.

### 10. Within-country technology diffusion and trade

The Melitz model; within-country technology diffusion, selection and growth

Melitz, M. (2003): The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica* 71, 1695-1725.

Sampson, T. (2016): Dynamic selection: An idea flows theory of entry, trade and growth. *Quarterly Journal of Economics* 131(1), 315-380.  
Stochastic dynamic programming

### Required Activities

Problem Sets with the TA

### Evaluation

Final exam

### Materials

There is no textbook for this course. But we highly recommend that you complement the lectures and/or obtain a different perspective on the topics with the following textbook:

Acemoglu, D. *Introduction to Modern Economic Growth*, Princeton University Press, 2009.

Lecture notes will also be distributed online. All articles mentioned above are required as well.