Allievi Program, Master in Economics, and Ph.D. in Economics
Winter 2023

Dynamic Macroeconomics

Instructor: Fabio C. Bagliano

Course Description
The course presents basic dynamic macroeconomic models in several specific fields of macroeconomics: consumption and investment theory, growth theory and labor economics. The aim is to provide key methodological tools for the dynamic analysis of a broad range of macroeconomic issues, mainly based on dynamic optimization techniques. Lecture note handouts and problem sets (with answers) will be available on the web page of the course.

Exam
There will be a two-hour, closed-book, written exam at the end of the course.

Course outline and reference material

1. Dynamic consumption theory

- Permanent income theory with rational expectations
- Empirical issues and puzzles
- The role of uncertainty: precautionary savings
- Intertemporal consumption and portfolio allocation

General references:
Romer (2012) *Advanced Macroeconomics*, fourth edition, ch. 8
Bagliano F.C.-Bertola G. (2007) *Models for dynamic macroeconomics*, ch. 1

Specific references:
Deaton A. (1992) *Understanding consumption*, especially ch. 3, 4
Attanasio O. (1999) "Consumption demand", in *Handbook of Macroeconomics*, vol. 1B, ch. 11
Campbell J. (1999) "Asset prices, consumption, and the business cycle", in *Handbook of Macroeconomics*, vol. 1C, ch. 19
Carroll C. (2001) "A theory of the consumption function, with and without liquidity constraints", *Journal of Economic Perspectives* ("graduate students version" NBER wp 8387)
Angeletos et al. (2001) "The hyperbolic consumption model: calibration, simulation and empirical evaluation", *Journal of Economic Perspectives*
Meghir C. (2004) "A retrospective on Friedman's theory of permanent income", *Economic Journal*
Attanasio O. and G. Weber (2010) "Consumption and saving: models of intertemporal allocation snd their implications for public policy", *Journal of Economic Literature*
Jappelli T. and L. Pistaferri (2010) "The consumption response to income changes", *Annual Reviews of Economics*
Jappelli T. and L. Pistaferri (2017) *The Economics of Consumption,* Oxford University Press

2. Dynamic investment models

- Dynamic optimization in continuous time
- Adjustment costs and Tobin's forward-looking "q"
- Investment dynamics, interest rates, productivity and wages in partial equilibrium

General references:
Romer (2012) *Advanced Macroeconomics*, fourth edition, ch. 9
Bagliano-Bertola (2007) *Models for dynamic macroeconomics*, ch. 2
On mathematical methods:
Barro-Sala-i-Martin (1995) *Economic Growth*, Mathematical Appendix

Specific references:
Yoshikawa H. (1980) "On the `q' theory of investment", *American Economic Review*, 70, 4, 739-743
Hayashi F. (1982) "Tobin's marginal q and average q: a neoclassical interpretation", *Econometrica*, 50, 1, 213-224
Abel A. - Blanchard O.J. (1983) "An intertemporal model of saving and investment", *Econometrica*, 51, 3, 675-692
Caballero R. (1999) "Aggregate Investment", *Handbook of Macroeconomics*, vol. 1B, ch 12

3. Economic growth in dynamic general equilibrium

- Balanced growth, steady state and optimal convergence
- Decentralization of production and investment decisions
- Endogenous growth and market imperfections.

General references
Romer (2012) *Advanced Macroeconomics*, fourth edition, ch. 1, 2 (Part A), 3
Bagliano-Bertola (2007) *Models for dynamic macroeconomics*, ch. 4

Specific references
Mankiw N.G., D. Romer, D. Weil (1992) "A contribution to the empirics of economic growth", *Quarterly Journal of Economics*, May
Romer P. (1994) "The origins of endogenous growth", *Journal of Economic Perspectives*, 8, Winter
Barro-Sala-i-Martin (1995) *Economic Growth*, ch. 1, 2, 4
Aghion-Howitt (1998) *Endogenous Growth Theory*, ch. 1

4. Flow dynamics in the labor market

- Participation externalities in the labor market
- Features of search models of the labor market
- Job matching and unemployment dynamics

General references:
Romer (2012) *Advanced Macroeconomics*, fourth edition, chapter 10
Bagliano-Bertola (2007) *Models for dynamic macroeconomics*, chapter 5, sections 5.2-5.4

Specific references:
Pissarides (2000) *Equilibrium Unemployment Theory*, 2^{nd} ed., ch. 1-3
Petrongolo-Pissarides (2001) "Looking into the black box: a survey of the matching function", *Journal of Economic Literature*
Nickell S., Nunziata L., Ochel W., Quintini G. (2002) "The Beveridge curve, unemployment and wages in the OECD from the 1960s to the 1990s", Centre for Economic Performance, LSE
Hornstein A., Krusell P., G.L. Violante (2005) "Unemployment and Vacancy fluctuations in the matching model: inspecting the mechanism", Federal Reserve Bank of Richmond *Economic Quarterly*
Shimer R. (2005) "The cyclical behavior of equilibrium unemployment and vacancies", *American Economic Review*, March
Hall R. (2005) "Employment fluctuations with equilibrium wage stickiness", *American Economic Review*, March
Pissarides C. (2011) "Equilibrium in the labor market with search frictions", *American Economic Review*
Diamond P. (2011) "Unemployment, vacancies, wages", *American Economic Review*
Elsby M., R. Michaels, D. Ratner (2015) "The Beveridge curve: a survey", *Journal of Economic Literature*