

Syllabus for MA Advanced Macroeconomics

Overview

The main focus in this course will be on how modern macroeconomists attempt to model and understand time series fluctuations in the major macroeconomic variables. Given the importance of banking and financial sector developments in recent years, we will also cover material related to the banking sector, financial crises and credit crunches. It is probably best to warn that the class is more technical than some of the other options available this term. I assume people have a good familiarity with the statistics, econometrics and mathematical methods taught last semester.

Plan

A rough outline of the course is as follows. How many of these topics we cover will depend on how things go. A more detailed reading list is provided in the following pages. Where possible, links to these papers will be provided on the class website.

1. **Time Series and Macroeconomics:** How time series can be used as a framework for the questions of modern macroeconomics. Vector Autoregression (VAR) models as a way of understanding how various types of shocks affect the macroeconomy.
2. **Dynamic Stochastic General Equilibrium (DSGE) Models:** These are a popular class of models currently used to explain macroeconomic fluctuations: We will discuss how to formulate these models, how to simulate them on a computer and estimate their parameters. Two main classes of DSGE models will be presented: Real Business Cycle models and New-Keynesian models.
3. **Financial Markets, Banking and Systemic Risk:** Risk spreads, credit rationing, financial intermediation, bank runs, banking regulation, systemic risk and bank balance sheet adjustments.

Assessment

There will be a midterm, which will count for 30% of your grade with a final exam accounting for the remaining 70%. The midterm will be a one hour exam that will take place at a date to be announced later.

Course Materials

There is no textbook. The main source of material for this course will be the lecture notes that will be available on my webpage (www.karlwhelan.com) and academic research papers. I will provide links to papers on the course website and all material should be available via the internet. Some of the papers will be discussed more than others. Some you will need to read in depth; others are useful as historical references or as extra reading.

Contacting Me

My office is G211 in the Newman Building. Email (karl.whelan@ucd.ie) is the best way to contact me to ask questions or to arrange a meeting. I am generally good at replying quickly but send me a reminder if I haven't gotten back to you in 24 hours.

Part 1: Time Series and Empirical Macro

- Time series modelling as a framework for understanding macro.
- Introducing VARs.
- Reduced form versus structural VARs.
- Recursive VARs. Cholesky decomposition.
- Estimating VARs.
- Identifying the effects of oil shocks, monetary policy shocks, fiscal policy shocks.
- VARs with long-run restrictions and identifying the effects of technology shocks.
- Examples of estimating VARs with RATS.
- Latent variable models: The Kalman filter.

Readings:

- John Cochrane (2005). Time Series for Macroeconomics and Finance (Chapters 2, 3, 5 and 7). Lecture notes, available at faculty.chicagobooth.edu/john.cochrane/research/papers/time_series_book.pdf
- Christopher Sims (1980). "Macroeconomics and Reality," *Econometrica*, Vol. 48, pages 1-48.
- Marta Banbura, Domenico Giannone, and Lucrezia Reichlin (2008). Large Bayesian VARs. ECB Working Paper 966. Available at <http://www.ecb.int/pub/pdf/scpwps/ecbwp966.pdf>.
- Lutz Killian (2008). "Not All Oil Price Shocks are Alike: Disentangling Demand and Supply Shocks in the Crude Oil Market," *American Economic Review*, 99(3), June 2009, 1053-1069.
- Olivier Blanchard and Roberto Perotti (2002). "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output," *Quarterly Journal of Economics*, Volume 117, 1329-1368. Available at www.jstor.org/pss/4132480.

- James Stock and Mark Watson (2001). “Vector Autoregressions,” *Journal of Economic Perspectives*, Volume 15(4), pages 101-115.
- Glenn Rudebusch (1998). “Do Measures of Monetary Policy in a Var Make Sense?” *International Economic Review*, Volume 39, pages 907-931.
- Christopher Sims (1980). “Comment on Glenn Rudebusch’s Do Measures of Monetary Policy in a Var Make Sense?” *International Economic Review*, Volume 39, pages 933-941.
- Christina Romer and David Romer (2004). “A New Measure of Monetary Shocks: Derivation and Implications” *American Economic Review*, Volume 94, pages 1055-1084.
- Olivier Coibion (2012). “Are the Effects of Monetary Policy Shocks Big or Small?” *American Economic Journal: Macroeconomics*, Volume 4, pages 1-32.
- Olivier Blanchard and Danny Quah (1989). “The Dynamic Effects of Aggregate Demand and Supply Disturbances,” *American Economic Review*, Volume 79, pages 655-673. www.jstor.org/pss/1827924
- Jordi Galí (1999). “Technology, Employment and the Business Cycle: Do Technology Shocks Explain Aggregate Fluctuations?” *American Economic Review*, Volume 89, pages 249-271.
- Thomas Laubach and John C. Williams (2003). “Measuring the Natural Rate of Interest,” *Review of Economics and Statistics*, Volume 85, pages 1063-1070.

Part 2. Dynamic Stochastic General Equilibrium (DSGE) Models

- Implications of rational expectations.
- Solving linear rational expectations models.
- Log-linearization methods.
- The Real Business Cycle model.
- Simulating DSGE models using Dynare

Readings:

- Robert Lucas (1976). Econometric Policy Evaluation: A Critique. *Carnegie-Rochester Conference Series on Public Policy*, Vol. 1(1), pages 19-46,

- Michael Binder and M. Hashem Pesaran (1996). “Multivariate Rational Expectations Models and Macroeconomic Modelling: A Review and Some New Results”, *Handbook of Applied Econometrics: Macroeconomics*, edited by M. Hashem Pesaran and Mike Wickens.
- Harald Uhlig (1995). A Toolkit for Analyzing Nonlinear Dynamic Stochastic Models Easily. Available online at www2.wiwi.hu-berlin.de/institute/wpol/html/toolkit/toolkit.pdf
- Timothy Cogley and James Nason (1995). “Output Dynamics in Real-Business-Cycle Models,” *American Economic Review*, Volume 85, pages 492-511.

Part 3. New-Keynesian DSGE Models

- The Phillips Curve.
- The benchmark New-Keynesian Model.
- Optimal monetary policy in the benchmark model
- Empirical problems with the New-Keynesian model.
- Full-scale DSGE models.
- Estimation of modern DSGE models.

Readings:

- Milton Friedman (1968). “The Role of Monetary Policy,” *American Economic Review*, Volume 58, pages 1-17. Available at www.jstor.org/stable/1831652.
- Robert J. Gordon (2011). The History of the Phillips Curve: Consensus and Bifurcation, *Economica*, Volume 78, pages 1050. Available at http://faculty-web.at.northwestern.edu/economics/gordon/ECCA_815.pdf
- Jordi Galí (2008). *Monetary Policy, Inflation and the Business Cycle*, Princeton University Press.
- Richard Clarida, Jordi Galí, and Mark Gertler (1999). “The Science of Monetary Policy: A New Keynesian Perspective,” *Journal of Economic Literature*, Volume 37, pages 1661-1707. Available at www.nyu.edu/econ/user/gertlerm/science.pdf.
- John Cochrane (2015). Do Higher Interest Rates Raise or Lower Inflation? <http://faculty.chicagobooth.edu/john.cochrane/research/papers/fisher.pdf>

- Jeremy Rudd and Karl Whelan (2003). Inflation Targets, Credibility and Persistence in a Simple Sticky-Price Framework. Working paper available at <http://www.federalreserve.gov/pubs/feds/2003/200343/200343pap.pdf>
- Jordi Galí and Mark Gertler (1999). “Inflation Dynamics: A Structural Econometric Analysis,” *Journal of Monetary Economics*, Volume 44, pages 195-222. Available at www.nyu.edu/econ/user/gertlerm/jme99.pdf
- Jeremy Rudd and Karl Whelan (2007). “Modelling Inflation Dynamics: A Critical Review of Recent Research,” *Journal of Money, Credit, and Banking*, Volume 39, pages 155-170, working paper version available online at www.karlwhelan.com.
- Peter Ireland (2004). “A Method for Taking Models to the Data,” *Journal of Economic Dynamics and Control*, Volume 28, pages 1205-1226. Available at <http://irelandp.com/pubs/method.pdf>.
- Francisco Ruge-Murcia (2007). “Methods to Estimate Dynamic Stochastic General Equilibrium Models,” *Journal of Economic Dynamics and Control*, Volume 31, pages 2599-2636.
- Jesus Fernandez-Villaverde (2009). The Econometrics of DGSE Models. Available at <http://www.nber.org/papers/w14677.pdf>
- Frank Smets and Rafael Wouters (2007). “Shocks and Frictions in US Business Cycles: A Bayesian DSGE Approach,” *American Economic Review*, Volume 97, pages 586-606.

Part 4. Financial Markets, Banking and Systemic Risk

- Credit risk and collateral.
- Credit rationing.
- The financial accelerator.
- Banking regulation.
- Systemic risk.
- Bank balance sheet adjustments

Readings:

- Joseph E. Stiglitz and Andrew Weiss (1981). “Credit Rationing in Markets with Imperfect Information”, *American Economic Review*, Vol. 71, pages 393-410. Available at JSTOR or mcb.unlp.googlepages.com/StiglitzWeiss1981.pdf.

- Ben Bernanke, Mark Gertler and Simon Gilchrist (1999). The Financial Accelerator in a Quantitative Business Cycle Framework. *Handbook of Macroeconomics*.
- Douglas Diamond and Philip Dybvig (1983). “Bank Runs, Deposit Insurance and Liquidity”. *Journal of Political Economy*.
- Tobias Adrian and Hyun Song Shin (2008). “Liquidity and Leverage”, *Journal of Financial Intermediation*, 19 (3), 418-437, 2010. Available online at www.newyorkfed.org/research/staff_reports/sr328.html.
- Piergiorgio Alessandri and Andrew Haldane (2009): Banking on the State. Available at <http://www.bis.org/review/r091111e.pdf>
- Martin O’Brien and Karl Whelan (2014). “Changes in Bank Leverage: Evidence from US Bank Holding Companies”, UCD working paper.

Part 5. Methodology and the Future of Macro

- Macroeconomics after the crisis.
- The methodology of macroeconomics.

Readings:

- Olivier Blanchard, Giovanni DellAriccia, and Paolo Mauro (2011). Rethinking Macroeconomic Policy. Available at www.imf.org/external/pubs/ft/spn/2010/spn1003.pdf.
- Olivier Blanchard, Giovanni DellAriccia, and Paolo Mauro (2013): Rethinking Macroeconomic Policy II: Getting Granular. Available at <http://www.imf.org/external/pubs/ft/sdn/2013/sdn1303.pdf>.
- Lawrence Summers (1991). “The Scientific Illusion in Empirical Macroeconomics”, *Scandinavian Journal of Economics*.
- Ricardo Cabellero (2010). “Macroeconomics after the Crisis: Time to Deal with the Pretense-of-Knowledge Syndrome” *Journal of Economics Perspectives*. Available at <http://pubs.aeaweb.org/doi/pdf/10.1257/jep.24.4.85>.
- Karl Whelan (2014). Thoughts on Teaching Economics After the Crash, blog post <http://karlwhelan.com/blog/?p=1397>