

Queen Mary, University of London
ECM056 Empirical Macroeconomics
2011/2012

Lecturer: Dr. **Ana Galvao** (a.ferreira@qmul.ac.uk).
Office Hours: Tuesday, 11-12; Friday: 11-12.
Lectures on Monday, 9-11, and classes 11-12; both in Queens W316.

Aim:

This course studies modern econometric methods to estimate, evaluate and forecast with structural macroeconomic models. It covers methods that are popular in Central Banks and in policy institutions.

Learning Outcomes:

On the successful completion of the course you should be able to:

1. apply adequate techniques to solve, simulate, estimate and evaluate different specifications of structural macroeconomics models;
2. choose and implement adequate techniques to measure different types of business cycle features;
3. apply adequate methods to forecast macroeconomic variables.

Outline of Topics:

Vector Autoregressive Models: recursive, structural and Bayesian; Business Cycles Filtering; Dynamic Stochastic General Equilibrium Models: Real Business Cycle Model and New-Keynesian Model; Approximating and Solving DSGE models; Estimation of DSGE models: calibration, matching moments, maximum likelihood and Bayesian methods; Forecasting.

Course Organization:

The course has 11 2-hour lectures and 10 one-hour classes. Lectures' slides and problem sets will be available at **Blackboard** (www.elearning.qmul.ac.uk) every Thursday afternoon, so you can bring the printed slides for the lecture to write your notes on them.

Assessment:

75% of the final mark for the course is the mark of the May exam. 25% of the overall mark of an individual empirical project that has to be submitted via Blackboard on April 2nd with results presented in the lecture of March 28th. More details on the empirical project instructions sheet. Deadline for submitting the topic of the research project is February 27th.

Reading List:

Main text-book:

(DD) *Structural Macroeconometrics*. David DeJong and Chetan Dave. 2011. 2nd Edition. Princeton University Press. (You can also use the 1st edition; chapter numbers have changed).

Additional text-books (only a couple of chapters of each book):

(C) *Methods for Applied Econometric Research*. Fabio Canova. 2007. Princeton University Press.

(L) *New Introduction to Multiple Time Series Analysis*. Helmut Lutktepohl. 2007. Springer.

Survey Papers:

(CEE) Christiano, L. J., Eichenbaum, M. and Evans, C.L. (1999) Monetary policy shocks: what have we learned and to what end? In: *Handbook of Macroeconomics*, vol 1. Elsevier. p: 67-148.

(K) Koop, G. and Korobilis, D. (2010) *Bayesian Multivariate Time Series Methods for Empirical Macroeconomics*. University of Strathclyde.

http://personal.strath.ac.uk/gary.koop/koop_korobilis_Foundations_and_Trends_2010.pdf

(SW1) Stock, J. and Watson, M. (2001) *Vector Autoregressions*. The Journal of Economic Perspectives, Vol. 15, No. 4, pp. 101-115

Research Papers:

(BGR) Banbura, M., Giannone, D. and Reichlin, L. (2010) Large Bayesian Vector Autogressions. *Journal of Applied Econometrics*. 25: 71-92.

(BM) Bernanke, B. and Mihov, I. (1998) Measuring Monetary Policy. *The Quarterly Journal of Economics*, Vol. 113, No. 3, pp. 869-902

(BQ) Blanchard, O. and Quah, D. (1989) The Dynamic Effects of Aggregate Demand and Supply Disturbances. *The American Economic Review*, Vol. 79, No. 4, pp. 655-673.

(CGG) Clarida, R., Gali, J., and Gertler, M. (1998) Monetary policy rules in practice; some international evidence. *European Economic Review*. 42: 1033-1067.

(DS) Del Negro, M. and Schorfede, F. (2004) Priors from General Equilibrium Models for VARs. *International Economic Review*. Vol. 45, No. 2, p: 643-673.

(EE) Eichenbaum, M. and Evans, C. L. (1995) Some Empirical Evidence on the Effects of Shocks to Monetary Policy on Exchange Rates. *The Quarterly Journal of Economics*, Vol. 110, No. 4, pp. 975-1009.

(G) Gali, J. (1999) Technology, Employment, and the Business Cycle: Do Technology Shocks Explain Aggregate Fluctuations? *The American Economic Review*, Vol. 89, No. 1, pp. 249-271

(GG) Gali, J. and Gertler, M. (1999) Inflation Dynamics: a structural econometric analysis. *Journal of Monetary Economics*. 44: 195-222.

(I) Ireland, P. (2004) Technology Shocks in the new keynesian model. *The Review of Economics and Statistics*, 86(4): 923-936.

(IW) Ingram, B. and Whiteman, C. (1994) Supplanting the 'Minnesota' prior: Forecasting macroeconomic time series using real business cycle model priors. *Journal of Monetary Economics* 34, p. 497-510.

(KP) Kydland, F. and Prescott, E. (1996) A Computational Experiment: An Econometric Tool. *Journal of Economic Perspectives*. 10: 69-85.

(N) "The Prize in Economic Sciences 2011 - Popular Information". Nobelprize.org. http://www.nobelprize.org/nobel_prizes/economics/laureates/2011/popular.html

(S) Sims, C. (1996) Macroeconomics and Methodology. *Journal of Economic Perspectives*. 10: 105-120.

(SWo) Smets, F. And Wouters, R (2007) Shocks and Frictions in the US Business Cycles: a Bayesian DSGE approach. *American Economic Review*. 97: 586-606.

(SW2) Stock, J. and Watson, M. (2003) How did leading indicator forecasts perform during the 2001 recession? *Federal Reserve Bank of Richmond Economic Quarterly*, Summer.

(U) Uhlig, H. (2005) What are the effects of monetary policy on output? Results from an agnostic identification procedure. *Journal of Monetary Economics* 52:381-419.

Useful link: use *e-journals* option at <http://www.library.qmul.ac.uk/> to download the above research papers.

Software for applications (exercise classes and empirical project):

(a) Filters and VARs: Eviews 7; (c) DSGE models (simulation, solution and estimation): Dynare (<http://www.dynare.org/>) running in Matlab; (d) GMM estimation: Eviews 7; (e) BVAR: "add in" package for Eviews 7.1.

Schedule:

Week	Lect. Date		Readings (bold : required)
1	09/01	Introduction to Macroeconometrics; Vector Autoregressions: specification, impulse responses and variance decomposition.	N ; Lecture Notes . L, ch. 2-3. SW1 .
2	16/01	Vector Autoregressions: estimation, inference, choosing autoregressive order, and granger causality. Introduction to Bayesian VARs: Minnesota prior.	Lecture Notes . L, ch. 2-3. K. C, 10.1-2;
3	23/01	Forecasting: ADL, and Large Bayesian VAR models for forecasting output growth and inflation.	SW2, BGR ; Lecture Notes .
4	30/01	Structural Vector Autoregressions: short-run restrictions; long-run restrictions; sign restrictions.	Lecture Notes . L, ch. 9; Long: BQ, G ; short: BM, CEE, EE ; sign: U .
5	06/02	Real Business Cycle Model: solutions and approximations	DD , ch. 3.1 and ch 2;
6	13/02	Computing Business Cycle Stylised Facts with Hodrick-Prescott filter and Band-pass filters. Calibration: application to the RBC Model	DD , ch.6; C, 3.2; DD ch. 11.1-2; 11.4; KP, S.
7	Reading Week		
8	27/02	New-Keynesian Model: solutions and approximations.	DD ch. 3.2; I .
9	05/03	GMM estimation: Euler Equation, Taylor rule and the New-Keynesian Philips Curve	DD ch. 12.2, 12.3.1, GG, CGG ;
10	12/03	Maximum Likelihood estimation: application to the NK model.	DD ch. 13.1-2; 8.3-4;13.6. I ;
11	19/03	Applications of Bayesian econometrics: model-based priors for VAR models; and estimation of DSGE Models (Smets-Wouters Model).	DD ch. 14.1-3, 14.6; IW, DS, SWo .
12	26/03	Revision; Presentation of Empirical Projects.	