



MAGYAR NEMZETI BANK

THE CENTRAL BANK OF HUNGARY



BUDAPEST SCHOOL FOR CENTRAL BANK STUDIES

Courses 2011



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**Magyar Nemzeti Bank
Budapest School for Central Bank Studies
Courses 2011**

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The 2011 program of the Budapest School for Central Bank Studies

The **Budapest School for Central Bank Studies**, established by the Magyar Nemzeti Bank (the central bank of Hungary) in 2008, offers intensive weekly courses to central bank and government economists in macroeconomics, monetary economics, international economics, banking and financial economics and quantitative and econometric methods specifically tailored to the needs of policy institutions. All courses are in English.

The **programme director** is **Professor Fabio Canova** (ICREA Research Professor at UPF and CEPR), a world leading expert in the field of macroeconomics and quantitative methods, who has taught numerous courses in central banks and international institutions for almost two decades.

The aim of the **first week** in the **Spring 2011** (April 4-8, 2011) is to make the participants familiar with the state of the art macroeconomic framework that allows studying both monetary and fiscal policy questions. At the end of the week participants will understand the working of the New Keynesian open economy model, they will be able to analyze the interaction between monetary and fiscal policy with this model, and they will be able to apply the framework to practical policy problems. The aim of the **second week** in the Spring 2011 (April 11-15, 2011) is to make the participants familiar with the currently used theoretical and practical tools



of model evaluation, calibration and to learn how to use time series methods in applied policy analysis. At the end of the week participants will be able to deploy first or second order approximation in calibration and evaluation of DSGE models, and to use modern time series methods in practical policy analysis.

The aim of the **first week** in the **Fall 2011** is to teach the participants the basic concepts of learning in macroeconomics and to analyze how business cycle properties, asset prices behavior and monetary policy design is affected by the departure from the assumption of full rationality. At the end of the week participants will be able to build simple DSGE models with learning and to apply it to monetary policy analysis. The aim of the **second week** is to make participants familiar with the state of the art statistical and econometric tools of business cycle analysis such as Markov switching models and VECMS, and to show how to use these tools to characterize the cyclical properties of macroeconomic time series. At the end of the week participants will be able to use these tools to characterize statistically the properties of business cycles, to evaluate DSGE models and to use model based indicators to predict recessions for practical monetary policy analysis.

Price of the courses

A **1,200 euro fee per week** and 700 euro/half week will be charged for the courses. A weekly session consists of **25 hours of classes per week** (usually five days with five hours of classes per day). The fee includes course



material and a social event per week. Computers with Matlab will be available but participants are encouraged to bring their own laptop with Matlab installed.

Organization of the courses

The number of participants is limited to 30 per course. Spaces are allocated on the first come first serve basis. Courses are held in the conference center of the Magyar Nemzeti Bank in downtown Budapest, Hungary. Participants pay for their own travel, accommodation expenses and meals. The Bank helps with arrangements of the accommodation.

Application and further information

Please fill out the application form and return it by email to budapestschool@mnb.hu by **18 March 2011** for the Spring courses and by **12 August 2011** for the Fall courses. For the application form and for further information please email us, budapestschool@mnb.hu, or visit the School's web site <http://english.mnb.hu/Kutatas/budapest-school-for-central-bank-studies>.

We look forward to meeting you in the Budapest School for Central Bank Studies.



Spring 2011 Week 1

Monetary and fiscal policy in the New Keynesian open economy framework

Prof. Tommaso Monacelli

Università Bocconi, IGIER and CEPR

<http://www.igier.uni-bocconi.it/monacelli>

April 4-8, 2011

Objectives:

- to make participants familiar with the state of the art macroeconomic framework that allows studying both monetary and fiscal policy questions,
- to provide a framework for analyzing the interaction between monetary and fiscal policy in applied policy work.

Topics covered:

- The New Keynesian open economy framework.
- Monetary and fiscal policy in a NK model; Incomplete exchange rate pass-through.
- Estimating the effects of fiscal policy.
- Fiscal policy and the real exchange rate.

Intended learning outcomes: at the end of the course participants will

- understand the working of the New Keynesian open economy model,
- be able to analyze the interaction between monetary and fiscal policy with this model,
- be able to apply and use the framework to answer practical monetary policy questions.



Spring 2011 Week 2

Solving, calibrating and evaluating structural models

Prof. Fabio Canova

ICREA Research Professor at UPF and CEPR

<http://www.crei.cat/people/canova/welcome.html>

April 11-13, 2011

Objectives:

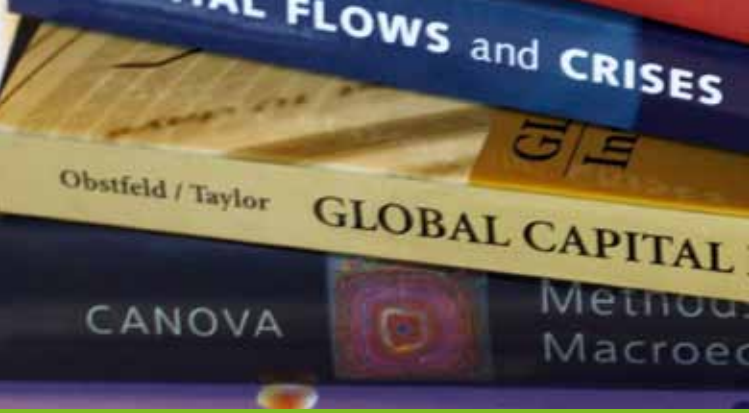
- to make participants familiar with the currently used theoretical and practical tools of calibration and model evaluation,
- to learn how to use time series methods in applied policy analysis.

Topics covered:

- Solving DSGE models: first and second order approaches.
- Introduction to Dynare with applications.
- Calibration of DSGE models.
- Evaluation of calibrated models. Conditional forecasting.

Intended learning outcomes: at the end of the course participants will

- understand the principles of calibration, model evaluation and conditional forecasting,
- be able to apply first or second order approximation in calibration of DSGE models,
- be able to apply calibration and forecasting tools in applied quantitative policy analysis.



Spring 2011 Week 2

Empirical time series methods for policy analysis

Prof. Fabio Canova

ICREA Research Professor at UPF and CEPR

<http://www.crei.cat/people/canova/welcome.html>

April 13-15, 2011

Objectives:

- to make participants familiar with the tools of modern time series analysis,
- to provide practical knowledge about how to deploy these tools in applied policy environment using Matlab.

Topics covered:

- VARs and structural VARs: policy analyses and forecasting.
- Bayesian VARs.
- FAVAR and Factor models: estimation and interpretations.
- Applications and examples (with Matlab).

Intended learning outcomes: at the end of the course participants will

- understand the principles of VAR, SVAR, BVAR and factor models,
- know how to use these methods in policy analysis and forecasting,
- be able to implement these methods in Matlab,
- be able to use these methods to answer practical quantitative policy questions.



Fall 2011 Week 1

Monetary policy, asset prices and learning

Klaus Adam

University of Mannheim

www.klausadam.net

August 29-September 2, 2011

Objectives:

- to introduce participants to the basic concepts of learning and expectations in macroeconomics,
- to demonstrate that introducing learning into a DSGE model affects monetary policy design,
- to show how learning affects asset prices.

Topics covered:

- Learning and near-rational expectations: formulation and concepts.
- Conditions for convergence to rational expectations.
- Learning and monetary policy design.
- Learning and the cyclical response to shocks in DSGE models.
- Asset price behaviour and learning.

Intended learning outcomes: at the end of the course participants will

- understand the principles of learning in macroeconomics, and how learning affects the response of the aggregate economy to monetary policy changes,
- be able to design macroeconomic models with learning for asset price and monetary policy analysis,
- be able to apply DSGE models with learning in applied quantitative policy analysis.

Some International Evidence on Output-Inflation Tradeoffs

This paper reports the results of an empirical study of real output-inflation tradeoffs, based on annual time-series from ten countries over the years 1951-67. These data are examined from the point of view of the hypothesis that average tradeoffs are invariant under changes in the rate of

presumption is that inferences on relevant, unobserved prices are optimally (or "rationally") in light of the stochastic character of the economic process. As I have argued elsewhere, these theories developed along these lines do not place testable restrictions on the coefficients of estimated Phillips curves. They will not, for example, be able to explain changes in the rate of

Fall 2011 Week 2

Analyzing business cycles

Adrian Pagan

University of Technology, Sydney

<http://datasearch.uts.edu.au/business/staff/finance/details.cfm?StaffId=9958>

September 5-9, 2011

Objectives:

- to make participants familiar with the state of the art statistical and econometric tools of business cycle analysis,
- to show how to use these tools to characterize economic fluctuations,
- to show how to use these tools in model evaluation and forecasting.

Topics covered:

- Types of cycles and measurement of state. Bry and Boschen and Markov Switching datings.
- Summarizing characteristics of univariate cycles - duration, amplitude, variability, symmetry.
- Summarizing characteristics of multivariate cycles - synchronization, reference cycle, aggregating turning points, heatmaps.
- Analysing the cyclical characteristics of statistical and economic models - VARs, VECMs, DSGE.
- Predicting recessions - Model based, leading indicators.

A CONTRIBUTION TO THE THEORY OF ECONOMIC GROWTH

I. Introduction, 65. — II. A model of long-run growth, 66. — III. growth patterns, 68. — IV. Examples, 73. — V. Behavior of interest rates, 78. — VI. Extensions, 85. — VII. Qualifications, 91.

I. INTRODUCTION

All theory depends on assumptions which are not quite that is what makes it theory. The art of successful theorizing is to make the inevitable simplifying assumptions in such a way that the final results are not very sensitive to the assumptions on which they are based.

Intended learning outcomes: at the end of the course participants will

- understand the modern statistical methods of business cycle analysis, and the difference between the various business cycle indicators,
- be able to use the tools introduced in the course to construct various statistics to characterize the business cycle,
- be able to use model based leading indicators to predict recessions in an applied policy environment.



Instructors 2011

Tommaso Monacelli

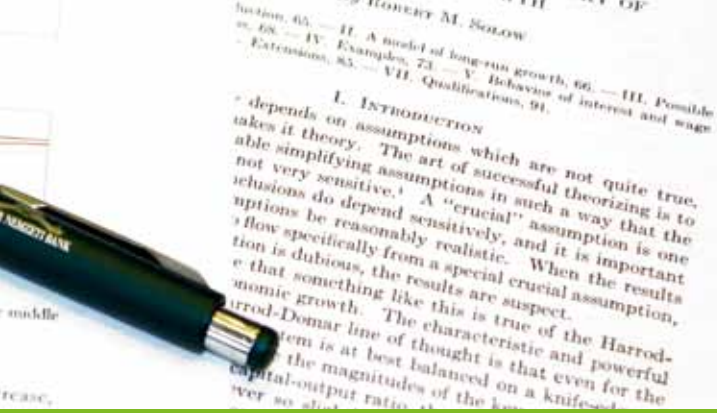


Tommaso Monacelli is Tenured Associate Professor of Economics at Università Bocconi, Milan and Research Fellow at IGER. He holds a Ph.D. from New York University (1999), has been Assistant Professor at Boston College (1999-2002) and at Iger-Bocconi (2002-2005). He is Research Fellow of CEPR and

Associate Editor of the *Journal of Money, Credit and Banking*. He has been research consultant for the ECB and the OECD, Visiting Scholar at IMF, ECB and Sveriges Riksbank, and Visiting Professor at CEU. He has taught courses in central banks such as the Central Bank of Brasil, the Oesterreichische Nationalbank, and the Norges Bank. He has also been instructor in the EABCN Training School program. His research interests range from open economy macroeconomics to monetary economics and fiscal policy.

Recent publications

- “New Keynesian Models, Durable Goods, and Collateral Constraints”, *Journal of Monetary Economics*, March 2009, Volume 56:2.
- “The International Dimension of Inflation: Evidence from Disaggregated Data” (with Luca Sala), *Journal of Money, Credit and Banking*, 2009.



- “Optimal Monetary and Fiscal Policy in a Currency Union” (with Jordi Gali), *Journal of International Economics* 76, December 2008, pp. 116-132.
- “Monetary Policy and Exchange Rate Volatility in a Small Open Economy” (with J. Gali), *Review of Economic Studies*, Volume 72, Number 3, 2005.
- “Optimal Monetary Policy in a Small Open Economy with Home Bias” (with E. Faia), *Journal of Money, Credit and Banking* Vol 40, No 4, June 2008.



Fabio Canova



Fabio Canova got his Ph.D. in economics from the University of Minnesota. He has been assistant professor at Brown University and University of Rochester; associate professor at EUI and Brown University; and full professor at the University of Catania, Modena, Southampton at Universitat Pompeu

Fabra. He has held a Chair in Monetary Economics at the University of Bern, and he is currently a ICREA research professor, an associate researcher with CREI, CREMed and €Prism and a researcher with the CEPR.

He has taught classes in numerous universities around the world and given professional courses at the Bank of England, Sveriges Riksbank, Banca d'Italia, Deutsche Bundesbank, ECB, Bank of Canada, Banco de España, Banco de Portugal, Magyar Nemzeti Bank (the central bank of Hungary), Bank of Argentina, Banco do Brazil, Banco de Peru, South African Central Bank, Central Bank of Indonesia, Swiss National Bank, Banco de Mexico, Banco de La Republica de Colombia, Bank of Israel, Banco de Venezuela, the EABCN, the Central Bank course in Genzersee, the EU commission, the IMF, the UK Foreign Office and UK treasury, among others. He has held consultancy positions with the Bank of England, the ECB, the Banca d'Italia, Banco de Venezuela, the Banco de España and the IMF.

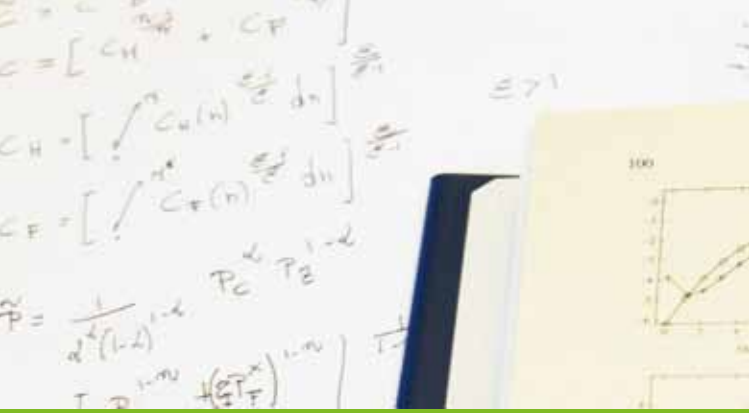


He is a member of the CEPR Dating Business Cycle Committee, of the Applied Macroeconomic Network (AMeN), and of the scientific committee of several international conferences. He has been ranked in the Econometrics and Applied Econometrics Hall of Fame and in the Top 100 most productive economists. He is also program director of the Budapest School of Central Bank Studies and member of the scientific committee of the EABCN and ESOBE.

He has held editorial positions with the *European Economic Review* and the *Journal of Applied Econometrics*, he is currently coeditor of the *Journal of the European Economic Association* and has participated in a number of international conferences. He has published over 70 articles in international journals and his graduate textbook, *Methods for Applied Macroeconomic Research*, has been published in 2007 by Princeton University Press.

Recent publications

- "The Effects of Technology Shocks on Hours and Output: A Robustness Analysis" (with D. Lopez-Salido and C. Michelacci), *Journal of Applied Econometrics*, 25(5), 2010, pp. 755-773.
- "Do Expectations Matter? The Great Moderation Revisited" (with L. Gambetti), *American Economic Journal: Macroeconomics*, 2(3), 2010, pp. 183-205.
- "Estimating Multi-country VAR Models" (with M. Ciccarelli), *International Economic Review*, 50(3), 2009, pp. 929-961.



- “Back to Square One: Identification Issues in DSGE Models” (with L. Sala), *Journal of Monetary Economics*, 56(4), 2009, pp. 431-449.
- “What Explains the Great Moderation in the U.S?” A Structural Analysis, *Journal of the European Economic Association*, 7(4), 2009, pp. 1-25.
- *Methods for Applied Macroeconomic Research*, Princeton University Press, 2007.
- “Similarities and Convergence of G-7 Cycles” (with M. Ciccarelli and E. Ortega), *Journal of Monetary Economics*, 54(3), 2007, pp. 850-878.



Klaus Adam



Klaus Adam received his Ph.D. from the European University Institute in Florence, Italy. He held assistant professor positions at University of Salerno and Goethe University in Frankfurt before moving to the Research Department of the European Central Bank as Economist. After promotions to

Senior Economist and Principal Economist positions, he left the ECB in 2008 to take up a chaired professorship in economics at Mannheim University, Germany.

Klaus Adam is associate editor at various academic journals, including the *Journal of Monetary Economics*, the *Economic Journal*, the *Journal of Economic Dynamics and Control* and at *Macroeconomic Dynamics*. Based on his research output, he has been ranked amongst the top 5 economists below the age of 40 within Germany by the Handelsblatt newspaper.

Klaus Adam is a Research Fellow at the Centre for Economic Policy Research (CEPR) in London and at the Centre for Financial Studies (CFS) in Frankfurt. He has worked as consultant for the European Commission, the Organisation for Economic Co-Operation and Development (OECD), and for the Bank of Japan. He has taught professional courses in a number of occasions, including for the Euro Area Business Cycle Network (EABCN) and the Center for Latin American Monetary Studies.

Recent publications

- “Government Debt and Optimal Monetary and Fiscal Policy”, *European Economic Review* (forthcoming).
- “Internal Rationality, Imperfect Market Knowledge, and Asset Prices” (with Albert Marcet), *Journal of Economic Theory* (forthcoming).
- “Monetary Policy and Aggregate Volatility”, *Journal of Monetary Economics*, 2009, S1-S18.
- “Monetary Conservatism and Fiscal Policy” (with Roberto Billi) *Journal of Monetary Economics*, Vol. 55(8), 2008, pp. 1376-1388.
- “Discretionary Monetary Policy and the Zero Lower Bound on Nominal Interest Rates” (with Roberto Billi), *Journal of Monetary Economics*, Vol. 54(3), 2007, pp. 728-752.
- “Experimental Evidence on the Persistence of Output and Inflation”, *Economic Journal*, Vol. 117, 2007, pp. 603-636.
- “Optimal Monetary Policy with Imperfect Common Knowledge”, *Journal of Monetary Economics*, Vol. 54(2), 2007, pp. 276-301.



Adrian R. Pagan



Adrian Pagan is Professor of Economics in the School of Economics and Finance at the University of Technology, Sydney and Senior Research Fellow at Nuffield College, Oxford. He has held professorial appointments at the Australian National University, the University of Rochester, the University of New

South Wales and Oxford University. Visiting Professorships have been to UCLA, Yale and Johns Hopkins Universities. He is the author of three books and over 130 articles and has been elected to Fellowships of the Econometric Society, the Australian Academy of Social Sciences, the Modelling and Simulation Society of Australia and the Journal of Econometrics. A number of medals have been awarded: the Australian Centennial Medal, the Socio-Economic Systems Medal of the Modelling and Simulation Society of Australia, the Distinguished Fellow medal of the Economic Society of Australia. He was a member of the Reserve Bank of Australia Board from 1995-2000 and has consulted with a number of central banks on modelling issues.

He has been an Editor of *Econometric Theory* and the *Journal of Applied Econometrics* and an associate editor of *Econometrica*. He has been a Co-Editor of the series *Advanced Texts in Econometrics*, (Oxford University Press) and *Themes in Modern Econometrics* (Cambridge University Press).



He has given many short courses in the area of macro-econometrics.

Recent publications

- “An Econometric Analysis of Some Models for Constructed Binary Time Series” (with D. Harding), *Journal of Business and Economic Statistics*, (available at <http://pubs.amstat.org/toc/jbes/0/0>).
- “Exploring the Linkages Between Financial Stress and Business Cycles” (with T. Robinson), at the 4th Oslo Workshop on Economic Policy: Empirical Business Cycle Modelling and Policy in the Aftermath of the Financial Crisis, Norwegian School of Management, 2010.
- “Business Cycle Measurement” (with D. Harding) in S. N. Durlauf and L. E. Blume (eds), *The New Palgrave Dictionary of Economics* (2nd edition), Palgrave Macmillan, 2008.
- “Synchronization of Cycles” (with D. Harding), *Journal of Econometrics*, 132, 2006, pp. 59-79.
- “Dissecting the Cycle: A Methodological Investigation” (with D. Harding), *Journal of Monetary Economics* 49, 2002, pp. 365-381.
- “A Simple Framework for Analysing Bull and Bear Markets” (with Kirill Sossounov), *Journal of Applied Econometrics*, 18, 2000, pp. 23-46.

Replies from participants in previous years to the question whether they would recommend the Budapest School for their colleagues

"I would definitely recommend this school. The organization was good and the topic was interesting."

"Yes, the instructor was very good, it is a very serious programme, interesting and we learn a lot."

"Definitely yes. The course is very useful for the working agendas in our institution."

"I would strongly recommend it to our colleagues, because the course is very useful for central bankers staff doing empirical economics."

"Yes, because of its added value, level and because it is very 'up-to-date'."



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