



THE CENTRAL BANK OF HUNGARY



BUDAPEST SCHOOL FOR CENTRAL BANK STUDIES

Courses 2014





Concept of training for central bankers

The **Budapest School for Central Bank Studies**, established by the Magyar Nemzeti Bank (the central bank of Hungary) in 2008, offers intensive weekly courses for 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 public policy institutions. Interested academic participants are also welcome to attend. All courses are in English.

The **programme director** is Professor **Fabio Canova** (EUI), 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 two weeks in the **Spring 2014** term (March 31–April 11) are devoted to **intermediate level** courses. These courses cover essential topics in macroeconomics, monetary economics, international economics and quantitative methods in order to endow staff with diverse educational backgrounds with the fundamental tools of modern macroeconomics. The 2014 titles are Advanced Time Series Methods, Closed Economy Macroeconomics, and Open Economy Macroeconomics. These courses are aimed at people with a Masters Degree, e.g. mid-career officials who want to refresh their general knowledge, and especially young staff members who desire a



systematic introduction to the language and working tools needed to do research-based policy work.

The two weeks in the **Summer 2014** term (July 28–August 8) are devoted to **advanced** courses. These courses cover topics in macroeconomics, monetary economics, international economics and quantitative methods that build on the intermediate level courses and develop knowledge on a wide range of topics of interest to central bankers. The 2014 titles are Forecasting with Bayesian DSGE and Time Series Models and Macro-Financial Linkages. These courses are directed at (i) staff who want to fill gaps in their knowledge about important macroeconomic issues, (ii) mid-career officials who want to re-establish links with the frontiers of current macroeconomic research, and (iii) anyone interested in refreshing or acquiring knowledge about recent developments in academic macroeconomics and their application in policy analysis and debates.

Price of the courses

A **1,200 euro fee per full week**, and 700 euro /half week will be charged for the courses. A weekly session consists of five days with **five hours** of classes **per day**. The fee includes course materials and a social event. Computers with Matlab will be available, but participants are also encouraged to bring their own laptop with Matlab installed.



Organisation of the courses

The number of participants is limited to 30 per course. Spaces are allocated on a first come, first served basis. Courses are held in the conference centre of the Magyar Nemzeti Bank in downtown Budapest, Hungary. Participants pay for their own travel and accommodation expenses, and meals. The Bank can provide assistance in arranging accommodation.

Application and further information

Please fill out the application form and return it by email to budapestschool@mnb.hu by **7 March 2014** for the Spring courses and by **4 July 2014** for the Summer courses. For the application form and for further information please email us at budapestschool@mnb.hu, or visit the School's website at <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 2014 Week 1

Advanced Time Series Methods

March 31-April 4, 2014

Fabio Canova (European University Institute)

<http://www.eui.eu/DepartmentsAndCentres/Economics/People/Professors/Canova.aspx>

Objectives:

- to make participants familiar with standard VAR, BVAR and SVAR models;
- to introduce recent advances such as factor augmented VARs, panel VARs, global VARs, Kalman filtering, time varying coefficient models and stochastic volatility;
- to acquaint participants with Matlab implementation of these techniques.

Topics covered:

- Classical and Bayesian VARs
- Classical and Bayesian panel models
- Classical Factor models and FAVARs
- Classical and Bayesian state space models
- Models with time varying parameters and stochastic volatility

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

- understand the working of simple and extended VARs;
- be able to estimate such models in Matlab;
- be able to employ these techniques in policy analysis, such as the transmission of monetary policy shocks, the estimation of potential output, the international effects of oil price changes.



Spring 2014 Week 2

April 7-11 (in two parts, with no overlap)

Closed Economy Macroeconomics

April 7-9, 2014 (2.5 days)

Claudio Michelacci (CEMFI)

<http://www.cemfi.es/~michela/>

Objectives:

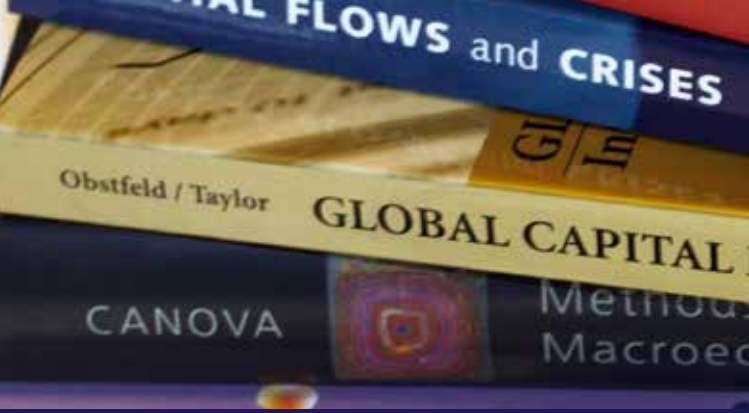
- to make participants familiar with the state of the art closed economy macroeconomic frameworks;
- to be able to study policy questions within those frameworks.

Topics covered:

- The neoclassical growth model. Endogenous growth models
- Real business cycle models
- Models with nominal price rigidities. New Keynesian models
- Labor market models with search frictions

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

- understand the structure and the working of the workhorse growth models;
- understand the structure and the working of the workhorse business cycle models;
- acquire knowledge of models with labor market search.



Spring 2014 Week 2

Open Economy Macroeconomics

April 9-11, 2014 (2.5 days)

Evi Pappa (European University Institute)

<http://www.eui.eu/DepartmentsAndCentres/Economics/People/Professors/Pappa.aspx>

Objectives:

- to make participants familiar with the state of the art open economy macroeconomic frameworks;
- to be able to study policy questions within those frameworks.

Topics covered:

- Business-cycle facts in poor, emerging, and rich countries
- The small-open-economy real-business-cycle model. Terms of trade shocks
- Interest rates, productivity shocks, and financial frictions
- Sovereign debt

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

- understand the structure and the working of the workhorse international real business cycle model;
- understand the determinants of exchange rates and monetary policy in open economies;
- acquire knowledge of open economy models with financial frictions;
- understand models explaining the emergence and consequences of sovereign debt.



Summer 2014 Week 3

Forecasting with Bayesian DSGE and Time Series Models

July 28-August 1, 2014

Marco Del Negro (Federal Reserve Bank of NY)

<http://www.newyorkfed.org/research/economists/delnegro/>

Objectives:

- to introduce participants to the main identification and estimation issues of structural VARs and DSGE models;
- to be able to use these models for economic forecasting and policy analysis.

Topics covered:

- Basics of Bayesian methods
- DSGE and time series models
- Model evaluation
- Forecasting
- Topics: non-gaussianity, time variations, prior elicitation

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

- understand the usage of Bayesian methods in estimating DSGE and time series models;
- be able to use DSGE and time series models for policy analysis and forecasting.

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 efficiency of estimated Phillips curves. They will not, for example, be able to explain other single equation expressions. They will not, for example, be able to explain changes

Summer 2014 Week 4

Macro-Financial Linkages

August 4-8, 2014

Vincenzo Quadrini (University of Southern California)

<http://www.marshall.usc.edu/faculty/directory/quadrini>

Objectives:

- to make participants familiar with the workhorse models of financial frictions in open economy models;
- to acquaint students with new research and techniques in this area.

Topics covered:

- Traditional models of macro-financial linkages (BGG, Kiyotaki and Moore)
- New models of macro-financial linkages
- Solving non-linear models with macro-financial linkages
- Macro-financial linkages in open economies
- Financial markets and labor market linkages

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

- understand the working of open economy macro-finance models;
- possess a toolkit for addressing financial amplification and crises in open economies;
- be able to use the tools introduced in the course to analyse issues in macro-prudential policy, financial development and global imbalances.

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.

Instructors 2014

SPRING

Fabio Canova



Fabio Canova obtained the Ph.D. from the University of Minnesota, 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, Universitat Pompeu Fabra.

He has held a Chair in Monetary Economics at the University of Bern, and he has been ICREA research professor, and he currently holds the Pierre Werner chair in Monetary Union at the EUI. He has been an associate researcher with CREI, CREMeD, and Eprism and he is currently a researcher with the CEPR.

He has taught classes in numerous universities around the world and given professional courses at the Bank of England, Riksbank, Bank of Italy, Bundesbank, ECB, Bank of Spain, Bank of Portugal, 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, Banco de Venezuela, Banco de Chile,



Bank of Israel, Monetary and Banking Institute of Iran, Waifem, Central Bank of Chile, Central Bank of Korea, at the EABCN, at the Central Bank course in Genzersee, the EU Commission, the UK Foreign Office and UK treasury, among others. He has held consultancy positions with the Bank of England, the ECB, the Bank of Italy and the Bank of Spain and the IMF.

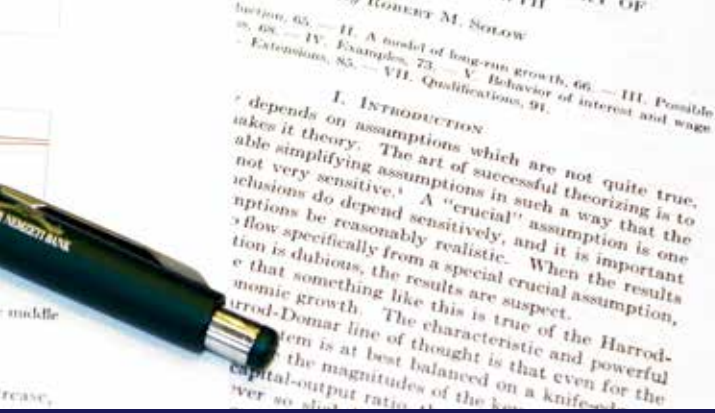
He has been ranked in the Econometrics and Applied Econometrics Hall of Fame and in the Top 100 most productive economists of the world in several polls over the last 10 years. He is also program director of the Budapest School of Central Bank Studies, member of the scientific committee of the EABCN, program chair for the European Meetings of the Econometric Society 2014, panelist of ANVUR and a referee for ERC, NSF, ESRC among others.

He is currently coeditor of the Journal of the European Economic Association and of the Journal of Applied Econometrics.

He has published over 85 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 Inns and Outs of Unemployment: A Conditional Analysis' (with D. López-Salido and C. Michelacci), *The Economic Journal*, 123, 515–539, 2013.



- ‘ClubMed? Cyclical fluctuations in the Mediterranean basin’ (with M. Ciccarelli), *Journal of International Economics*, 88, 162–175, 2012.
- ‘Business cycle measurement with some theory’ (with M. Paustian), *Journal of Monetary Economics*, 48, 345–361, 2011.
- ‘Multiple Filtering Devices for the Estimation of Cyclical DSGE Models’ (with F. Ferroni), *Quantitative Economics*, 2, 73–98, 2011.
- ‘Back to Square One: Identification Issues in DSGE Models’ (with L. Sala), *Journal of Monetary Economics*, 56 (4), 431–449, 2009.



Claudio Michelacci



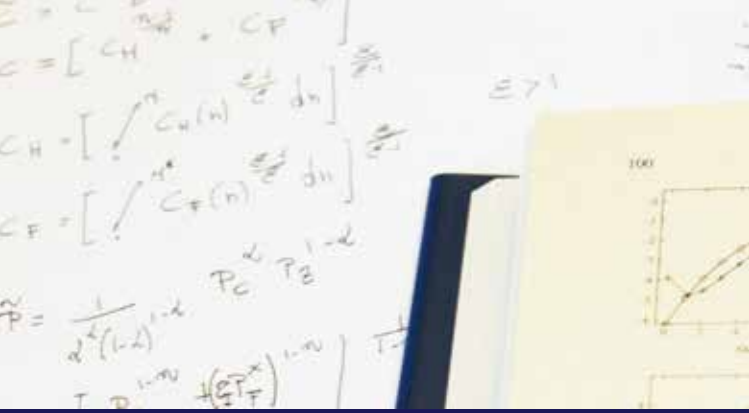
Claudio Michelacci is Professor of economics at CEMFI and Research Fellow at CEPR. He obtained his PhD from London School of Economics. He has held visiting appointments at MIT, University of Southern California the London School of Economics and the University College London. His

research focuses on the functioning of labor markets, the determinants of growth and the analysis of business cycles. In these fields he has edited books, organized academic conferences, and published several articles in top academic journals, including *Journal of Political Economy*, *Review of Economic Studies*, *Journal of Monetary Economics*, *Review of Economics and Statistics*, *Journal of Applied Econometrics*, *Journal of the European Economic Association*, *European Economic Review*, and *Economic Journal*. He is associate Editor of the *Journal of the European Economic Association*, and member of the program committee of the *Econometric Society European Meetings* and of the *Latin American and Caribbean Economic Association Meeting*. He participated in several publicly research projects funded by the Spanish Minister of Economics, *Europea Research Council* and by the *Ramon Areces Foundation*.



Recent publications

- ‘Does Idiosyncratic Business Risk Matter for Growth?’ (with Fabiano Schivardi), *Journal of the European Economic Association*, 11 (2), 343–368, 2013.
- ‘Intertemporal Labor Supply with Search Frictions’ (with Josep Pijoan), *Review of Economic Studies*, 79 (3), 899–931, 2012.
- ‘Financial Markets and Wages’ (with Vincenzo Quadrini), *Review of Economic Studies*, 76 (2), 795–827, 2009.
- ‘Technology Shocks and Job Flows’ (with David Lopez Salido), *Review of Economic Studies*, 74, 2007.
- ‘Incomplete Wage Posting’ (with Javier Suarez), *Journal of Political Economy*, 114 (6), 2006.
- ‘Business Creation and the Stock Market’ (with Javier Suarez), *Review of Economic Studies*, 71, 459–481, 2004.



Evi Pappa



She has been Professor of Macroeconomics in the European University Institute since September 2011, currently on leave from Universitat Autònoma de Barcelona, and also Research Professor of Barcelona GSE. After graduating from UPF, she was an assistant professor of economics at the LSE, 2001–2006, Bocconi University (Milan), 2004–2005, and UAB, 2005–2006. Her main research interests are International Macroeconomics and Monetary and Fiscal Policy. Given Evi's interest in monetary policy analysis, she has been a visiting researcher at many central banks, such as the Bank of England, the European Central Bank, the Federal Reserve Bank of Atlanta, and the Riksbank (Sweden). She is a member of the Applied Macroeconomics Network (Amen), is a MOVE (Markets Organizations and Voting in Economics) Research Fellow and a Research Affiliate with Center for Economic Policy Research (CEPR). She has received the IGIER Scholarship for Young Researchers in 2003–2004, and the Paolo Baffi Fellowship in 2008 and the Ramon Areces scholarship in 2010. She has published in international journals such as *Journal of Monetary Economics*, *International Economic Review*, *Journal of Public Economics and Economic Policy*.



Recent publications

- 'Fiscal Expansions, Unemployment, and Labor Participation' (with M. Brueckner), *International Economic Review*, 2012.
- 'Fiscal Policy, Pricing Frictions and Monetary Accommodation' (with F. Canova), *Economic Policy*, 2011.
- 'The effects of fiscal shock on employment and the real wage,' *International Economic Review*, 2009.
- 'Gains from Coordination in a Multi-Sector Open Economy: Does it Pay to be Different?' (with Z. Liu), *Journal of Economic Dynamics and Control*, 2008.
- 'Structural Dynamics of US output and Inflation: What explains the changes?' (with L. Gambetti and F. Canova), *Journal of Money, Credit and Banking*, 2008.
- 'Price Dispersions in Monetary Unions: The Role of Fiscal Shocks' (with F. Canova), *Economic Journal*, 2007.
- 'The structural dynamics of output growth and inflation: some international evidence' (with L. Gambetti and F. Canova), *Economic Journal*, 2007.

SUMMER

Marco Del Negro



Marco Del Negro is an Assistant Vice President in the Macroeconomics and Monetary Studies Function of the Research and Statistics Group. Mr. Del Negro's research ranges from international macroeconomics and finance to the use of general equilibrium models in forecasting and policy analysis.

Mr. Del Negro has work in the *American Economic Review*, the *Journal of Applied Econometrics*, the *Journal of Monetary Economics*, *Journal of International Economics*, the *Journal of Money, Credit and Banking*, the *International Economic Review*, the *Journal of Empirical Finance*, the *Journal of Portfolio Management*, the *Journal of the European Economic Association*, and has chapters in the 'Handbook of Economic Forecasting II' and 'Handbook of Bayesian Econometrics'. Mr Del Negro has taught graduate level classes in applied time series at the Paris School of Economics, Princeton, and the CIDE Summer School

Recent publications

- 'DSGE Model-Based Forecasting' (with Frank Schorfheide), *Handbook of Economic Forecasting*, Vol. II, ed. by G. Elliott and A. Timmerman, Elsevier.



- ‘Bayesian Macroeconometrics’ (with Frank Schorfheide), *Handbook of Bayesian Econometrics*, ed. by Koop Geweke, and Van Dijk, Oxford University Press.
- ‘Monetary Policy Analysis with Potentially Misspecified Models’ (with Frank Schorfheide), *American Economic Review*, 99 (4), September 2009.
- ‘Forming Priors for DSGE Models (and How It Affects the Assessment of Nominal Rigidities)’ (with Frank Schorfheide), *Journal of Monetary Economics*, 55 (7), October 2008.
- ‘99 Luftballons: Monetary Policy and the House Price Boom across U.S. States’ (with Chris Otrok), *Journal of Monetary Economics*, 54 (7), October 2007.
- ‘On the Fit of New Keynesian Models’ (with Frank Schorfheide, Frank Smets, and Raf Wouters), *Invited Journal of Business and Economic Statistics Lecture*, 25 (2), April 2007.



Vincenzo Quadrini



Vincenzo Quadrini is a Professor of Economics at the Marshall School of Business of the University of Southern California. He received his M.A. in economics from Coriipe-Piemonte in Turin in 1991 and his Ph.D. in economics from the University of Pennsylvania in 1996. Prior to his current position

he was an assistant professor at New York University's Stern School of Business, Duke University, and Pompeu Fabra University. He is a faculty research affiliate at the Center for Economic Policy Research in London. His research interests are on Macroeconomics, International Economics, Financial Contracts and Entrepreneurship. Most of his work tries to understand the importance of the financial system for the real performance of an economy. He is currently an editor of the *Review of Economic Dynamics*, associate editor of the *Journal of Financial Intermediation* and an associate editor of *Quantitative Economics*. He has also served in the past as a co-editor of *Economic Inquiry*.

Recent publications

- 'Capital Mobility and International Sharing of Cyclical Risk' (with Julien Bengui and Enrique Mendoza), *Journal of Monetary Economics*, 60 (1), 2013.



- ‘Macroeconomic Effects of Financial Shocks’ (with Urban Jermann), *American Economic Review*, 102 (1), 2012.
- ‘Competition, Human Capital and Income Inequality with Limited Commitment’ (with Ramon Marimon), *Journal of Economic Theory*, 146 (3), 2011.
- ‘Financial Globalization, Financial Crises and Contagion’ (with Enrique Mendoza), *Journal of Monetary Economics*, 57 (1), 2010.
- ‘Financial Integration, Financial Deepness and Global Imbalances’ (with Enrique Mendoza and Victor Rios-Rull), *Journal of Political Economy*, 117 (3), 2009.
- ‘Financial Markets and Wages’ (with Claudio Michelacci), *Review of Economic Studies*, 76 (2), 2009.



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A question and some replies to it from the evaluation forms

‘Would you recommend the school/course to a colleague?’

Replies:

- I would definitely recommend this school.
- Absolutely. This course is excellent.
- Yes, the instructor was very good.
- The organization was good and the topic was interesting.
- Yes, because very serious programme, interesting and we learn a lot.
- Definitely yes. It is very useful for the working agendas in our institution.
- Yes. Because the course is very useful for central bank staff doing empirical economics.
- I would strongly recommend it to our colleagues.
- Yes, because of its added value, level and because it is very ‘up-to-date’.
- Yes, it was useful, instructor was great in terms of teaching these advanced topics, real good.

