Barcelona Graduate School of Economics

11th Economics Summer School

Barcelona June 26 - July 7 2017

Banking

Competition Economics

Corporate Finance
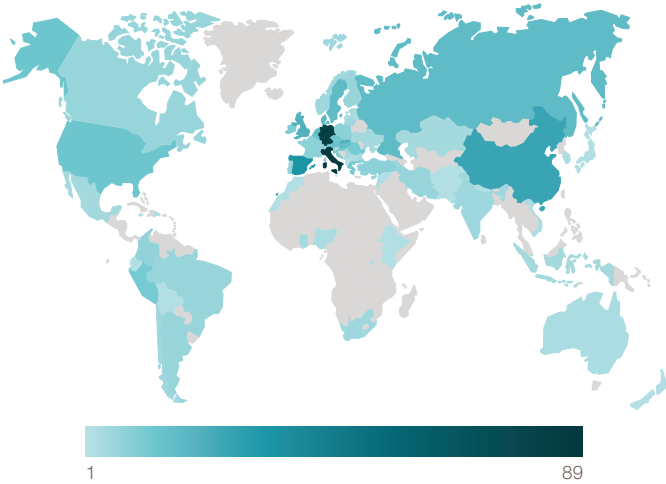
Data Science

Labor Economics

Macroeconometrics

Macroeconomics CREi

Microeconometrics

Barcelona
GSE
Summer School

Participant Profile
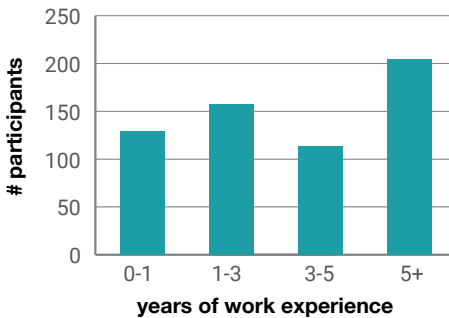
Participant countries

Top 10 countries

Italy
Germany
Spain
China
Slovakia
United Kingdom
Denmark
Netherlands
Russian Federation
Sweden

1   89

Participants' years of experience

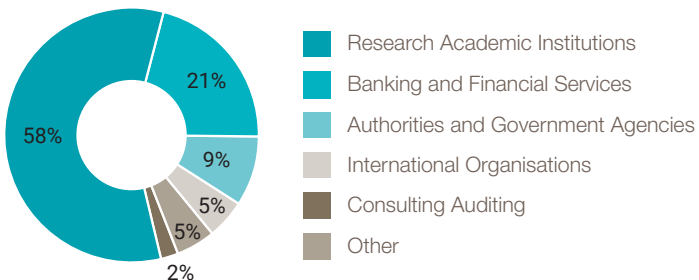**# participants**

250
200
150
100
50
0

0-1   1-3   3-5   5+

years of work experience

Age and gender

Average age	31 years
Female	31%
Male	69%

Participants' sector

58%
21%
9%
5%
5%
2%

- Research Academic Institutions
- Banking and Financial Services
- Authorities and Government Agencies
- International Organisations
- Consulting Auditing
- Other

Color Key

- BBSS
- BMaSS
- BMiSS
- BMSS-CREI
- BCSS
- BCFSS
- BLSS
- BDSSS

Key

- ⓟ Practical

Monday, June 26

	9:00-11:00	11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Banking Theory	Empirical Banking - Applications					
Macroeconometrics	Bayesian Time Series Methods: Intro	Time Series Methods for Financial Time Series		Bayesian Methods for DSGE Models	Bayesian Time Series ⓟ	Time Series Methods ⓟ	Bayesian Methods ⓟ
Microeconometrics	Panel Data Linear Analysis	Econometrics of Cross-section Data		Panel Data ⓟ	Econometrics ⓟ		
CREI Macroeconomics A	Economic Growth and Inequality	The Macroeconomics of Credit and Asset Bubbles	Sovereign Debt Crises				
CREI Macroeconomics B	The Macroeconomics of Financial Globalization	Government Inefficiency and Reform					
Competition Policy	Horizontal Mergers	Competition in the Digital Sector					
Finance	Asset Pricing	Advanced Portfolio Management		Asset Pricing ⓟ	Econometrics ⓟ		
Data Science	DS (Data Science Toolbox)		DS (Data Science Toolbox)				

(Coffee break between 9:00-11:00 and 11:30-13:30)

Tuesday, June 27

	9:00-11:00	11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Banking Theory	Empirical Banking - Applications		Paper Presentations			
Macroeconometrics	Bayesian Time Series Methods: Intro	Time Series Methods for Financial Time Series		Bayesian Methods for DSGE Models	Bayesian Time Series ⓟ	Time Series Methods ⓟ	Bayesian Methods ⓟ
Microeconometrics	Panel Data Linear Analysis	Econometrics of Cross-section Data		Panel Data ⓟ	Econometrics ⓟ		
CREI Macroeconomics A	Economic Growth and Inequality	The Macroeconomics of Credit and Asset Bubbles	Sovereign Debt Crises				
CREI Macroeconomics B	The Macroeconomics of Financial Globalization	Government Inefficiency and Reform					
Competition Policy	Horizontal Mergers	Competition in the Digital Sector					
Finance	Asset Pricing	Advanced Portfolio Management		Asset Pricing ⓟ	Econometrics ⓟ		
Data Science	DS (Data Science Toolbox)		DS (Data Science Toolbox)				

(Coffee break between 9:00-11:00 and 11:30-13:30)

Wednesday, June 28

	9:00-11:00	11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Banking Theory	Empirical Banking - Applications		Paper Presentations			
Macroeconometrics	Bayesian Time Series Methods: Intro	Time Series Methods for Financial Time Series		Bayesian Methods for DSGE Models	Bayesian Time Series ⓟ	Time Series Methods ⓟ	Bayesian Methods ⓟ
Microeconometrics	Panel Data Linear Analysis	Econometrics of Cross-section Data		Panel Data ⓟ	Econometrics ⓟ		
CREI Macroeconomics A	Economic Growth and Inequality	The Macroeconomics of Credit and Asset Bubbles	Sovereign Debt Crises				
CREI Macroeconomics B	The Macroeconomics of Financial Globalization	Government Inefficiency and Reform					
Competition Policy	Horizontal Mergers	Competition in the Digital Sector					
Finance	Asset Pricing	Advanced Portfolio Management		Asset Pricing ⓟ	Econometrics ⓟ		
Data Science	Intro to Machine Learning for Recommender Systems		Intro to Machine Learning for Recommender Systems				

(Coffee break between 9:00-11:00 and 11:30-13:30)

Thursday, June 29

	9:00-11:00	11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Banking Theory	Empirical Banking - Applications					
Macroeconometrics	Bayesian Time Series Methods: Intro	Time Series Methods for Financial Time Series		Bayesian Methods for DSGE Models	Bayesian Time Series ⓟ	Time Series Methods ⓟ	Bayesian Methods ⓟ
Microeconometrics	Panel Data Linear Analysis	Econometrics of Cross-section Data		Panel Data ⓟ	Econometrics ⓟ		
CREI Macroeconomics A	Economic Growth and Inequality	The Macroeconomics of Credit and Asset Bubbles	Sovereign Debt Crises				
CREI Macroeconomics B	The Macroeconomics of Financial Globalization	Government Inefficiency and Reform					
Competition Policy	Horizontal Mergers	Competition in the Digital Sector					
Finance	Asset Pricing	Advanced Portfolio Management		Asset Pricing ⓟ	Econometrics ⓟ		
Data Science	Intro to Machine Learning for Recommender Systems		Advanced Data Science and Machine Learning Topics				

(Coffee break between 9:00-11:00 and 11:30-13:30)

Friday, June 30

	9:00-11:00	11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Banking Theory	Empirical Banking - Applications					
Macroeconometrics	Bayesian Time Series Methods: Intro	Time Series Methods for Financial Time Series		Bayesian Methods for DSGE Models	Bayesian Time Series ⓟ	Time Series Methods ⓟ	Bayesian Methods ⓟ
Microeconometrics	Panel Data Linear Analysis	Econometrics of Cross-section Data					
CREI Macroeconomics A	Economic Growth and Inequality	The Macroeconomics of Credit and Asset Bubbles	Sovereign Debt Crises				
CREI Macroeconomics B	The Macroeconomics of Financial Globalization	Government Inefficiency and Reform					
Competition Policy	Horizontal Mergers	Competition in the Digital Sector					
Finance	Asset Pricing	Advanced Portfolio Management					
Data Science	Advanced Data Science and Machine Learning Topics		Advanced Data Science and Machine Learning Topics				

(Coffee break between 9:00-11:00 and 11:30-13:30)

Barcelona GSE Summer School 2017

Monday, July 3

	9:00-11:00		11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Bank Regulation	Coffee break	Empirical Banking - Methodological Aspects					
Macroeconometrics	Bayesian Time Series Methods: Advanced		Empirical Time Series Methods for Macro Analysis		Modeling Time Series	Modeling TS Ⓟ	Bayesian Advanced Ⓟ	Empirical Advanced Ⓟ
Microeconometrics	Quant Methods for Public Policy Evaluation		Dynamic and Non-Linear Panel Data Models		Quant Methods for Policy Ⓟ	Dynamic and Non-Linear Ⓟ		
Labor	Lectures on the Economics of Education		Labor Market Outcomes		Gender Economics	Worker Mobility in Globalized Markets		
CREI Macroeconomics A	An Introduction to the New Keynesian Framework and its Monetary Policy ...		Firms, Networks and Macroeconomic Fluctuations		Financial Intermediation, Macroeconomics and Public Policy			
CREI Macroeconomics B	Finance, Firm Dynamics and The Business Cycle		Numerical Methods for Fiscal and Monetary Policy Analysis		Recent Developments in Forecasting	Numerical Methods Ⓟ	Forecasting Ⓟ	
Data Science	Bayesian Machine Learning in Social Sciences				Bayesian Machine Learning in Social Sciences			
Finance	Empirical Corporate Finance		Theory of Corporate Finance		Empirical Corporate Fin Ⓟ			

Tuesday, July 4

	9:00-11:00		11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Bank Regulation	Coffee break	Empirical Banking - Methodological Aspects		Paper Presentations			
Macroeconometrics	Bayesian Time Series Methods: Advanced		Empirical Time Series Methods for Macro Analysis		Modeling Time Series	Modeling TS Ⓟ	Bayesian Advanced Ⓟ	Empirical Advanced Ⓟ
Microeconometrics	Quant Methods for Public Policy Evaluation		Dynamic and Non-Linear Panel Data Models		Quant Methods for Policy Ⓟ	Dynamic and Non-Linear Ⓟ		
Labor	Lectures on the Economics of Education		Labor Market Outcomes	Paper Presentations	Gender Economics	Worker Mobility in Globalized Markets		
CREI Macroeconomics A	An Introduction to the New Keynesian Framework and its Monetary Policy ...		Firms, Networks and Macroeconomic Fluctuations		Financial Intermediation, Macroeconomics and Public Policy			
CREI Macroeconomics B	Finance, Firm Dynamics and The Business Cycle		Numerical Methods for Fiscal and Monetary Policy Analysis		Recent Developments in Forecasting	Numerical Methods Ⓟ	Forecasting Ⓟ	
Data Science	Bayesian Machine Learning in Social Sciences				Bayesian Machine Learning in Social Sciences			
Finance	Empirical Corporate Finance		Theory of Corporate Finance		Empirical Corporate Fin Ⓟ			

Wednesday, July 5

	9:00-11:00		11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Bank Regulation	Coffee break	Empirical Banking - Methodological Aspects		Paper Presentations			
Macroeconometrics	Bayesian Time Series Methods: Advanced		Empirical Time Series Methods for Macro Analysis		Modeling Time Series	Modeling TS Ⓟ	Bayesian Advanced Ⓟ	Empirical Advanced Ⓟ
Microeconometrics	Quant Methods for Public Policy Evaluation		Dynamic and Non-Linear Panel Data Models		Quant Methods for Policy Ⓟ	Dynamic and Non-Linear Ⓟ		
Labor	Lectures on the Economics of Education		Labor Market Outcomes	Paper Presentations	Gender Economics	Worker Mobility in Globalized Markets		
CREI Macroeconomics A	An Introduction to the New Keynesian Framework and its Monetary Policy ...		Firms, Networks and Macroeconomic Fluctuations		Financial Intermediation, Macroeconomics and Public Policy			
CREI Macroeconomics B	Finance, Firm Dynamics and The Business Cycle		Numerical Methods for Fiscal and Monetary Policy Analysis		Recent Developments in Forecasting	Numerical Methods Ⓟ	Forecasting Ⓟ	
Data Science	Bayesian Machine Learning in Social Sciences				Bayesian Machine Learning in Social Sciences			
Finance	Empirical Corporate Finance		Theory of Corporate Finance		Empirical Corporate Fin Ⓟ			

Thursday, July 6

	9:00-11:00		11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Bank Regulation	Coffee break	Empirical Banking - Methodological Aspects					
Macroeconometrics	Bayesian Time Series Methods: Advanced		Empirical Time Series Methods for Macro Analysis		Modeling Time Series	Modeling TS Ⓟ	Bayesian Advanced Ⓟ	Empirical Advanced Ⓟ
Microeconometrics	Quant Methods for Public Policy Evaluation		Dynamic and Non-Linear Panel Data Models		Quant Methods for Policy Ⓟ	Dynamic and Non-Linear Ⓟ		
Labor	Lectures on the Economics of Education		Labor Market Outcomes	Paper Presentations	Gender Economics	Worker Mobility in Globalized Markets		
CREI Macroeconomics A	An Introduction to the New Keynesian Framework and its Monetary Policy ...		Firms, Networks and Macroeconomic Fluctuations		Financial Intermediation, Macroeconomics and Public Policy			
CREI Macroeconomics B	Finance, Firm Dynamics and The Business Cycle		Numerical Methods for Fiscal and Monetary Policy Analysis		Recent Developments in Forecasting	Numerical Methods Ⓟ	Forecasting Ⓟ	
Data Science	Bayesian Machine Learning in Social Sciences				Bayesian Machine Learning in Social Sciences			
Finance	Empirical Corporate Finance		Theory of Corporate Finance		Empirical Corporate Fin Ⓟ			

Friday, July 7

	9:00-11:00		11:30-13:30	14:00-15:00	15:00-16:15	16:15-17:45	17:45-18:45	18:45-19:45
Banking	Bank Regulation	Coffee break	Empirical Banking - Methodological Aspects					
Macroeconometrics	Bayesian Time Series Methods: Advanced		Empirical Time Series Methods for Macro Analysis		Modeling Time Series	Modeling TS Ⓟ	Bayesian Advanced Ⓟ	Empirical Advanced Ⓟ
Microeconometrics	Quant Methods for Public Policy Evaluation		Dynamic and Non-Linear Panel Data Models		Quant Methods Paper Presentations			
Labor	Lectures on the Economics of Education		Labor Market Outcomes		Gender Economics	Worker Mobility in Globalized Markets		
CREI Macroeconomics A	An Introduction to the New Keynesian Framework and its Monetary Policy ...		Firms, Networks and Macroeconomic Fluctuations		Financial Intermediation, Macroeconomics and Public Policy			
CREI Macroeconomics B	Finance, Firm Dynamics and The Business Cycle		Numerical Methods for Fiscal and Monetary Policy Analysis		Recent Developments in Forecasting	Numerical Methods Ⓟ	Forecasting Ⓟ	
Data Science	Bayesian Machine Learning in Social Sciences				Bayesian Machine Learning in Social Sciences			
Finance	Empirical Corporate Finance		Theory of Corporate Finance					

Color Key

- BBSS
- BMaSS
- BMiSS
- BMSS-CREI
- BCSS
- BCFSS
- BLSS
- BDSSS

Key

Ⓟ Practical

Schedules are subject to changes. Please check the Barcelona GSE summer school webpage for updated information.

Economics Summer Schools at Barcelona GSE

The Barcelona Graduate School of Economics welcomes the summer with a diverse range of summer schools in economics and related fields.

These short summer programs are addressed to **researchers**, **professionals** and **graduate students** who want to improve their competencies in specific fields of knowledge. **Renowned academics** and **leading practitioners** teach our summer school courses, which draw participants from all over the world.

Practical Information

Language

All Barcelona GSE Economics Summer Schools are taught in English.

Location

Barcelona GSE Economics Summer Schools are presented at Barcelona GSE Ciutadella facilities located within the University Pompeu Fabra (UPF) Ciutadella campus. The campus is located in downtown Barcelona, within walking distance of both the beach and the city's financial, cultural, and governmental centers.

Registration Process

Application Period Begins: February 2017
Application Deadline: June 2017

After May 30, registration may not be guaranteed.

Applications will be evaluated by the Barcelona GSE's Summer School Directors, and candidates will be informed of their acceptance decision on a rolling basis. At the conclusion of the Summer School program, participants will receive a certificate for the number of hours attended. Interested students should check with their universities to see if these hours are transferable into ECTS credits.

Fees and discounts

Discounts	
Early bird (book and pay before 1 April 2017)	10%
2 courses*	15%
3 courses*	25%
Barcelona GSE alumni	10%
Barcelona GSE partner organizations	10%

* Multiple course fee discounts will only be applied to named individuals booking and paying for more than one course for their own use.

Notes about Summer School fees:

- Fees vary by program: please check summer school program pages for individual course fees.
- Reduced fee applies to PhD/Masters students, including current Barcelona GSE students.
- **Fees include any material required for the course as indicated, coffee breaks every day of the week, networking dinner on Tuesday, and farewell dinner on Thursday.**

You can register and check for all details on the Barcelona GSE Summer School in our website **www.barcelonagse.eu/summerschools**. You can also contact **summerschool@barcelonagse.eu** to request more information.

Barcelona Banking Summer School (BBSS)

The **Barcelona Banking Summer School** offers a variety of courses taught by recognized experts in their fields. Summer courses cover recent developments in different areas of banking, including theoretical and empirical aspects of banking, banking regulation and supervision, financial markets and payment systems. During the courses, the faculty are available to discuss research ideas and projects with the program participants.

It is directed by **Xavier Freixas** (UPF and BGSE) and **José-Luis Peydró** (ICREA-UPF and BGSE).

Fees	Regular fee: **1200 €**	Reduced fee: **675 €**

Course offering summer 2017

All courses are 10 hours long.

Course	Dates	Instructor
Banking Theory	June 26 - 30	Xavier Freixas
Empirical Banking - Applications	June 26 - 30	José-Luis Peydró
Regulation of Banks and Risk Management in a Post-Crisis World	July 3 - 7	Robert DeYoung
Empirical Banking - Methodological Aspects	July 3 - 7	Steven Ongena

Instructors

Xavier Freixas is Dean of the Undergraduate School of Economics and Business Administration and Professor at Universitat Pompeu Fabra, Research Professor of the Barcelona GSE, and Research Fellow at CEPR. He is Chairman of the Risk Based Regulation Program of the Global Association of Risk Professionals (GARP) and past president of the European Finance Association.

José-Luis Peydró is Professor at Universitat Pompeu Fabra and Barcelona GSE. His research on Banking and Systemic Risk has been published in the top journals in Economics and in Finance. Professor Peydró has presented his research in top universities including Harvard, MIT, NYU, LSE, and LBS and in policy organizations such as the Federal Reserve Board, New York Fed, IMF, ECB, BIS, Bundesbank, and Bank of England.

Dr. Robert (Bob) DeYoung is the Capitol Federal Distinguished Professor in Financial Markets and Institutions at the University of Kansas School of Business. He is also co-editor of the *Journal of Money, Credit and Banking*; a research program coordinator at the FDIC's Center for Financial Research; and an adjunct member of the economics faculty at the University of Limoges.

Steven Ongena is a Professor in Banking at the University of Zurich and the Swiss Finance Institute. He is also a Research Fellow of CEPR. He has published more than 45 papers in refereed academic journals, including in the *American Economic Review*, *Econometrica*, *Journal of Finance*, *Journal of Financial Economics*, *Journal of International Economics*, *Management Science and Review of Finance*.

Banking Theory
Instructor: Xavier Freixas

The objective of this course is to understand different aspects of the banking theory: The specifics of banking, the bank runs, and the role in the economy of imperfect information and financial institutions.

Selected Topics
- Why do financial intermediaries exist?
- The industrial organization approach to banking
- Macroeconomic consequences of financial intermediation
- Individual bank runs and systematic risk
- Banking regulation

Empirical Banking - Applications
Instructor: José-Luis Peydró

The objective of this course is to present empirical applications of relevant questions for both banking theory and policy, mainly related to Systemic Risk, Crises, Macroprudential and Monetary Policy. An important objective is to read and understand scientific papers in empirical banking.

Course Outline
- Credit cycles
- Securities and credit registers; large datasets
- Fire sales, market and funding liquidity
- Bank capital and macroprudential regulation
- Risk-taking and credit channels of monetary policy
- Real effects of financial shocks
- Moral hazard vs. behavioral based risk-taking
- Secular stagnation, banking and debt crises
- Interbank contagion, bank runs and systemic risk
- Banking globalization
- Capital controls and capital flows to emerging markets
- Macro vs. micro prudential policy

Regulation of Banks and Risk Management in a Post-Crisis World
Instructor: Robert DeYoung

The banking system is an essential, but unpredictably fragile, foundation for our market economies. To prevent this foundation from collapsing, we regulate banks more extensively than any other market sector. But our regulatory efforts have too often been unsuccessful. In this course, we examine the good and bad performance record of bank regulation and analyze the challenges facing bank regulation in the post-crisis world.

Course Outline
The main issues and arguments will be based on bank regulations from both Europe and the US. Academic and government research studies will be presented to provide evidence in favor of, or opposed to, these regulations.

Empirical Banking - Methodological Aspects
Instructor: Steven Ongena

The objective of this course is to read and understand scientific papers in empirical banking. To accomplish this objective, emphasis is placed on illustrating basic research methodologies used in empirical banking and learning the application of these methodologies to selected topics. The research methods that are specifically discussed in the class are cross-sectional research methods and the inter-temporal event study methodology. It is evident that any empirical research should be based on theoretical foundations. All students are therefore expected to have an active interest in banking theory. Opportunities are offered during the course to explore selected theoretical models upon which empirical applications are based.

Course Outline
- General methodologies
- Cross-sectional research methods
- Discrete Choice, Multinomial Logit, Duration, Simultaneous Equations
- Event Study Methodology
- Geography of Banking

Barcelona Competition Economics Summer School (BCSS)

The **Barcelona Competition Economics Summer School** will offer two courses: *Horizontal Mergers – Theory and Empirics* and *Competition in the Digital Sector*.

It is directed by **Juan-José Ganuza** (UPF and Barcelona GSE).

Fees	Regular fee: **1050 €**	Reduced fee: **650 €**

Course offering summer 2017

Course	Dates	Instructor
Horizontal Mergers - Theory and Empirics	June 26 - 30	Albert Banal Christian Michel
Competition in the Digital Sector	June 26 - 30	Massimo Motta Juan-José Ganuza

Instructors

Albert Banal is Associate Professor at the Universitat Pompeu Fabra, program director of the MSc in Corporate Finance and Banking at the UPF-Barcelona School of Management, affiliated Reader at City University London, visiting professor at the IFP-Energies Nouvelles in Paris and research fellow at the SP-SP Public-Private Sector Research Center at the IESE Business School. Albert's research areas span across Economics, Management and Finance and his work makes use of theoretical, empirical, experimental and simulation techniques.

Christian Michel is Assistant Professor at UPF and a Barcelona GSE affiliated professor. In his research, he studies topics on the border between Empirical Industrial Organization and Organizational Economics. A second strand of his research focuses on the consequences of consumer biases on market outcomes and the effectiveness of consumer protection policies.

Juan-José Ganuza is Professor of Economics and Business at UPF. He is Director of the Barcelona GSE Master Program in Competition and Market Regulation. Previously, he was visiting researcher at the University California Los Angeles, and Institut D'Economie Industrielle (Toulouse). He has published in the main international economics journals in his research field (*RAND Journal of Economics*, *International Journal of Industrial Organization*, *Journal of Industrial Economics*, *Journal of Economics Management and Strategy*, etc) as well as in general interest economics journals (such as *Econometrica*), law journals (such as the *Journal of Legal Studies*), and business publications (such as *Management Science*). Prof. Ganuza has been a consultant on procurement issues for the Spanish government. He has collaborated on several books related with procurement and regulatory issues, among them, The Handbook of Procurement (Cambridge University Press, 2006)

Massimo Motta is ICREA Research Professor at UPF and Barcelona GSE Research Professor. He served as Chief Competition Economist at the European Commission's Directorate General for Competition from September 2013 to August 2016. Professor Motta is Fellow of the European Economic Association, Research Fellow of the Centre for Economic Policy Research (CEPR), London, and of CESifo, Munich, as well as member of the Executive Committee of the Association of Competition Economists, of the Economic Advisory Group on Competition Policy at the European Commission, and of the Expert Academic Panel of Ofcom, London. Professor Motta's main areas of research are industrial organisation and in particular competition policy, but he has also worked on international trade and multinational firms. His work, widely cited and influential, has been published in the leading international economic journals.

Horizontal Mergers - Theory and Empirics
Instructors: Albert Banal and Christian Michel

This course will focus on introducing important theoretical models and empirical methods for the analysis of the competitive aspects of horizontal mergers.

Selected Topics
- The economics of horizontal mergers: unilateral and coordinated effects
- New developments in the theory and practice of horizontal mergers
- Basic empirical tests of market power
- Discrete choice demand estimation
- Modern empirical supply side methods to assess horizontal mergers

Competition in the Digital Sector
Instructors: Massimo Motta and Juan-José Ganuza

This course will focus on analyzing the firms' competitive behavior in digital markets and its implication for competition policy and regulation.

Selected Topics
- Understanding platform competition: theory and cases
- Vertical agreements in online markets
- Recent cases of abuse of dominance in digital markets
- Challenges for competition policy, I: big data
- Challenges for competition policy, II: sharing economy

Barcelona Finance Summer School (BFSS)

The **Barcelona Finance Summer School** offers an in-depth analysis of the current state of research in the main areas of empirical and theoretical corporate finance and asset pricing.

The objective of the school is to bring students up to date on the current debate in theoretical corporate finance and asset pricing, and to illustrate the best practice for the analysis of empirical issues in corporate finance and portfolio choice.

It is directed by **Filippo Ippolito** (UPF and Barcelona GSE).

Fees

	Regular	Reduced
Theory of Corporate Finance (10h):	**1050 €**	**650 €**
Empirical, Asset Pricing and Advance Portofolio courses (10h + practical):	**1250 €**	**700 €**

Course offering summer 2017

Course	Dates	Instructor
Asset Pricing Lecture and Practical*	June 26 - 30	Javier Gil-Bazo
Advanced Portfolio Management Lecture and Practical*	June 26 - 30	Francesco Sangiorgi
Empirical Corporate Finance Lecture and Practical*	July 3 - 7	Daniel Paravisini
Theory of Corporate Finance Lecture	July 3 - 7	Filippo Ippolito

*LAPTOP REQUIRED: In order to participate in practical sessions, you must bring your own portable computer.

Instructors

Javier Gil-Bazo is Associate Professor of Finance at UPF. His research deals with the study of institutional investors and asset pricing modelling. His work has been published in academic journals such as *Journal of Finance*, *Journal of Banking and Finance*, *Quantitative Finance*, *Journal of Financial Econometrics*, *Journal of Business Finance and Accounting*, *Journal of Economic Behavior and Organization*, and *Economics Letters*.

Francesco Sangiorgi is Associate Professor of Finance at the Stockholm School of Economics. He received his PhD in Economics from UPF. His research interests span asset pricing, market microstructure, credit ratings, and the interplay between financial markets and corporate decision making. His publications have appeared in the *Review of Economic Studies*, *Review of Financial Studies*, *Management Science*, and *Economic Theory*.

Daniel Paravisini is an Associate Professor of Finance at the London School of Economics. He has a PhD in Economics from the Massachusetts Institute of Technology, and has published his research on credit markets and institutions in the *Journal of Finance*, *The Review of Economic Studies*, *Management Science*, and the *Review of Finance*.

Filippo Ippolito is Associate Professor of Financial Management at UPF and research affiliate at the Centre for Economic Policy Research (CEPR), London, and Director of the Master in Finance at the Barcelona GSE. Professor Ippolito holds a PhD in Finance from Said Business School, Oxford, and an MPhil in Russian and Eastern European Studies from the University of Oxford.

Asset Pricing
Instructor: Javier Gil-Bazo

The course provides a comprehensive introduction to asset pricing models, with a special focus on their implementation and empirical testing.

The course includes a series of practical sessions that will take place in the afternoon. In these sessions students will be exposed to practical implementation of asset pricing problems in Matlab and Stata. The practical sessions are optional and are included in the price of the course.

Selected Topics
- Introduction
- Asset pricing in equilibrium
- Empirical evidence
- The Arbitrage Pricing Theory
- Multifactor models in practice

Advanced Portfolio Management
Instructor: Francesco Sangiorgi

The purpose of this course is to cover fundamental and advanced concepts in portfolio theory, focusing both on theoretical and practical aspects of the models.

In the practical sessions students will be exposed to practical implementation of portfolio optimization in Matlab and Excel.

Course Outline
- Modern Portfolio Theory. Mean-Variance optimization. Portfolio constraints
- Time variation in returns. Present value formulas and return predictability
- Asset allocation with predictability in returns and parameter uncertainty
- Factor structures and portfolio risk decomposition
- Bayesian methods and Black-Litterman model for portfolio choice
- Robust estimation and optimization, shrinkage portfolios and out-of-sample performance
- Capital controls and capital flows to emerging markets
- Macro vs. micro prudential policy

Empirical Corporate Finance
Instructor: Daniel Paravisini

The course provides an introduction to the most common empirical methods used to answer counterfactual questions Corporate Finance.

Course Outline
This outline provides the econometric topics. Each topic will be illustrated with an application drawn, in most cases, from the literature that is broadly understood as corporate finance, but also includes financial development, banking, corporate governance, consumer finance, etc. When necessary the course will draw from simulated data or other subjects (labor economics, political economy) for illustration purposes. The topics will be taught in this order:
- Introduction
- The agnostic regression
- Causal regressions 1
- Causal regressions 2
- Accounting for unobserved confounders
- Instrumental Variables (IV)

Theory of Corporate Finance
Instructor: Filippo Ippolito

The course provides an analysis of the key topics in corporate finance, including classic issues like the optimisation of capital structure in the presence of frictions, the interaction between financing and investment, as well as topics that have received much attention lately, like the relation between liquidity management, credit lines and hedging, capital adjustment frictions, and optimal debt structure.

The course offers an introduction to models of moral hazard and adverse selection and to structural models in continuous and discrete time.

Course Outline
- Evidence on capital structure and investment
- Classic theories of capital structure
- Asymmetric information models (moral hazard and adverse selection) and costly external finance
- Structural (continuous time and discrete time) models of investment and financing (endogenous investment)
- Liquidity management and hedging

Barcelona CREI Macroeconomics Summer School (BMSS-CREI)

The Barcelona CREI Macroeconomics Summer School offers an overview of the current state of research in key areas of macroeconomics. Courses, which are taught by leading experts in their fields, cover recent developments in different areas of macroeconomics, including growth, international finance and trade, asset bubbles, political reform, financial intermediation, fiscal and monetary policy and forecasting. The courses are aimed at graduate students as well as more senior researchers and practitioners willing to brush up their knowledge and expose themselves to the latest advances in academic research. During the summer school, faculty are available for discussion of participants' research ideas, as well as the lectures' contents.

The Barcelona CREI Macroeconomics Summer School is jointly organized by the Barcelona GSE and the Center for Research in International Economics (CREI), a research institute sponsored by the Generalitat de Catalunya and Universitat Pompeu Fabra, in fulfillment of its aim to promote the dissemination of research in macroeconomics and related areas. Further information about CREI can be found at http://www.crei.cat

It is directed by **Alberto Martín** (CREI, UPF, and Barcelona GSE).

Fees	Regular fee: **1050 €**	Reduced fee: **650 €**

Course offering summer 2017

The School is composed of eleven courses, which are distributed over two weeks. Courses can be taken individually or jointly. All courses are 10 hours long.

Course	Dates	Instructor
Economic Growth and Inequality	June 26 - 30	Gino Gancia
The Macroeconomics of Financial Globalization	June 26 - 30	Alberto Martín
The Macroeconomics of Credit and Asset Bubbles	June 26 - 30	Jaume Ventura
Government Inefficiency and Reform	June 26 - 30	Giacomo Ponzetto
Sovereign Debt Crises: Theory, Evidence and Policy	June 26 - 30	Fernando Broner
An Introduction to the New Keynesian Framework and its Monetary Policy Applications	July 3 - 7	Jordi Galí
Finance, Firm Dynamics and the Business Cycle: Theory and Evidence	July 3 - 7	Andrea Caggese
Firms, Networks, and Macroeconomic Fluctuations	July 3 - 7	Julian di Giovanni
Numerical Methods for Fiscal and Monetary Policy Analysis	July 3 - 7	Davide Debortoli
Financial Intermediation, Macroeconomics and Public Policy	July 3 - 7	José-Luis Peydró
Recent Developments in Forecasting	July 3 - 7	Barbara Rossi
Numerical Methods: Computer Lab Practicals*	July 3 - 7	Davide Debortoli
Forecasting: Computer Lab Practicals**	July 3 - 7	Barbara Rossi

* This course is only available for students who enroll in the Numerical Methods for Fiscal and Monetary Policy Analysis course.

** This course is only available for students who enroll in the Recent Developments in Forecasting course.

Instructors

Gino Gancia earned his PhD in Economics at the Institute for International Economic Studies (Stockholm University) in 2003. Currently, he is Senior Researcher at the Center for Research in International Economics (CREI), an Adjunct Professor at the UPF, an Affiliated Professor at the Barcelona GSE and Research Fellow at the CEPR. He is Member of the Editorial Board of the *Review of Economic Studies* and Associate Editor of the *Journal of the European Economic Association*, the *Economic Journal and the Review of Economic Dynamics*. He has been a Visiting Scholar at MIT during 2001-2003 and has been awarded the 2009 Excellence Award in Global Economic Affairs.

Jaume Ventura earned his PhD in Economics at Harvard University in 1995. Currently he is Senior Researcher at the CREI, Research Professor at the Barcelona GSE and Professor at UPF. Previously, he has held academic positions at the MIT and the University of Chicago. He has served as a co-director of the International Macroeconomics Programme of the CEPR and also as an editor of the *Economic Journal*. He is a Research Fellow at the CEPR, a Research Associate at the NBER, and a Fellow of the European Economic Association. He has served as a consultant to the IMF, the World Bank and the Inter-American Development Bank.

Fernando Broner earned his PhD in Economics at the Massachusetts Institute of Technology (MIT) in 2000. Currently he is Senior Researcher at the Center for Research in International Economics (CREI), Adjunct Professor at Universitat Pompeu Fabra (UPF), and Research Professor at the Barcelona GSE. He is also co-director of the Master Program in International Trade, Finance and Development at the Barcelona GSE, Research Fellow at CEPR, and co-editor of the *Journal of International Economics*. He has been Visiting Professor at MIT, advisor at the Bank of Spain's Division of International Economics, Visiting Scholar at the IMF and World Bank, and Assistant Professor at the University of Maryland.

Alberto Martin earned his PhD in Economics at Columbia University in 2005. Currently he is Senior Researcher at the Center for Research in International Economics (CREI), Adjunct Professor at Universitat Pompeu Fabra, Research Professor at the Barcelona GSE and Research Fellow at the CEPR. He has been Research Fellow and Senior Economist at the International Monetary Fund, consultant for the United Nations Development Programme, and economist in Argentina's Ministry of Economics. He was awarded a Fulbright Fellowship (2000), a Lamfalussy Fellowship from the European Central Bank (2011), and a Consolidator Research Grant from the European Research Council (2014).

Giacomo Ponzetto is Senior Researcher at CREI, Adjunct Professor at the UPF and Affiliated Professor at the Barcelona GSE. He received his PhD from Harvard University in 2009 and has been a Research Affiliate of CEPR since 2011. His research lies at the intersection of Political Economy and International and Regional Economics. He has written on political and legal institutions, on the political economy of trade policy, on federalism and political centralization, and on entrepreneurship and the spatial distribution of economic activity.

Jordi Galí earned his PhD in Economics at the Massachusetts Institute of Technology (MIT) in 1989. Currently he is Director and Senior Researcher at the Center for Research in International Economics (CREI), Professor at Universitat Pompeu Fabra and Research Professor at the Barcelona GSE. He has held academic positions at New York University and Columbia University. He has been a Visiting Professor at MIT. He is a Research Fellow at the CEPR, a Research Associate at the NBER, and a Fellow of the Econometric Society. He has served as a co-editor of the *Journal of the European Economic Association* and co-director of the CEPR International Macroeconomics Programme.

Andrea Caggese earned his PhD in Economics at London School of Economics and Political Science in 2002. Currently he is Associate Professor at Universitat Pompeu Fabra (UPF), Affiliated Professor at the Barcelona GSE, and Research Associate at the Center for Research in International Economics (CREI). He is also the Director of the Master of Research in Economics, Finance and Management at the Department of Economics and Business at Universitat Pompeu Fabra (UPF). His work has appeared in the *Journal of Financial Economics*, the *Journal of Monetary Economics*, the *Economic Journal* and the *Review of Economic Dynamics*.

Julian di Giovanni earned his PhD in Economics at the University of California, Berkeley in 2004. Currently he is a Professor at UPF, the Deputy Director for Research and a Research Professor at the Barcelona GSE, a Research Associate at the CREI, and a Research Fellow of the CEPR. He worked for the Research Department of the International Monetary Fund from 2004-2013. He has been a Visiting Assistant Professor at the University of Toronto, and a Visiting Scholar at the Banque de France, Central Bank of the Republic of Turkey, and the IMF. He was awarded an International Incoming Fellowship from the European Research Council Marie Curie Actions (2014), and a European Research Council Consolidator Grant (2016).

Davide Debortoli earned his PhD in Economics at the UPF in 2008. Currently he is Associate Professor at UPF, Research Associate at CREI and Affiliated Professor at the Barcelona GSE. He has held an academic position at the University of California San Diego, and a visiting position at the Norges Bank. He was recently awarded a Marie Curie International Incoming Fellowship from the European Commission, and he is a member of the editorial board of the *B.E. Journal of Macroeconomics*. His research interests include Macroeconomics, Fiscal Policy and Monetary Policy, and his works has been published in the *Quarterly Journal of Economics*, the *Journal of Economic Theory*, the *Journal of the European Economic Association*, and the *American Economic Journal: Macroeconomics*.

José-Luis Peydró earned his PhD in Finance at INSEAD in 2005 and a Master in Economics from CEMFI. He won the National Award of Bachelor Studies in Economics (Premio Nacional) given by the Government of Spain for the highest GPA in Spain in Economics, 1997. He is an ICREA Professor of Economics at UPF, Barcelona GSE Research Professor, Research Associate at the CREI, Research Fellow at the CEPR and at IESE, an Associate Editor for the *Review of Finance*, the journal of the European Finance Association, and was awarded a Consolidator Research Grant from the European Research Council (2015). He has been consultant for several central banks and international organizations (including the ECB, IMF and Fed), and has held visiting appointments at MIT Sloan and Chicago.

Barbara Rossi earned her PhD in Economics at Princeton University in 2001. Currently she is an ICREA Research Professor at UPF, Affiliated Professor at the Barcelona GSE, and Research Associate at the CREI. She has held an academic tenured position at Duke University and visiting positions at University of California-Berkeley, UCSD and the Philadelphia Fed, among others. She is a Research Fellow at the CEPR and a member of the CEPR Business Cycle Committee. She is currently an Associate Editor for the *Journal of Business and Economic Statistics*, the *Journal of Economic Dynamics and Control*, and the *Journal of Applied Econometrics*. She has been awarded two National Science Foundation grants.

Economic Growth and Inequality
Instructor: Gino Gancia

This course is centered on the following questions: Why and how do countries grow? What are the distributional consequences of growth? Why are some countries so much richer than others? What explains the Chinese growth miracle? The final part will focus on policy implications, including the effects of competition and industrial policies on innovation, and how to make economic growth compatible with environmental conservation.

Selected Topics

- The world income distribution, capital and Neoclassical growth
- The economics of ideas: innovation, creative destruction and firm dynamics
- Biased technological change, structural transformation and inequality
- Explaining cross-country income differences and the Chinese growth miracle
- Policy Lessons: Competition, Redistribution and Environmental Policy

The Macroeconomics of Financial Globalization
Instructor: Alberto Martin

The last few decades have been characterized by the rise of financial globalization. In this course, we review the evidence on financial globalization and its macroeconomic effects, and contrast it with the predictions of standard economic theory. We then build a workhorse model of capital flows and use it to interpret the evidence and to shed light on current policy debates, such as the role of capital controls and the origins and implications of global imbalances.

Selected Topics

- Macroeconomic effects of financial globalization: conventional view and empirical evidence
- Rethinking the convention: a workhorse model of capital flows and financial frictions
- Financial crises in the open economy: the case for capital controls
- Causes and consequences of global imbalances: the role of China
- Capital flows and Europe's banking woes: understanding the links

The Macroeconomics of Credit and Asset Bubbles
Instructor: Jaume Ventura

This course develops a macroeconomic framework to think about the origins and effects of credit and asset bubbles. This framework is then used to shed light on current policy debates such as the role of macroprudential policy, the effects of capital controls, and the connection between bubbles, monetary policy and liquidity traps.

Selected Topics

- Review of the empirical evidence
- The theory of rational bubbles
- Credit and asset bubbles in business cycle models
- Policy design (I): the role of a lender of last resort
- Policy design (II): international policy coordination

Government Inefficiency and Reform
Instructor: Giacomo Ponzetto

The Great Recession has brought policy failures into the spotlight, especially within the European Union. Why do governments pursue inefficient policies? Why do they refrain from enacting desirable structural reforms? Why is macroeconomic stabilization delayed until acute crisis? This course seeks to answer these questions using the tools of political economics.

Selected Topics

- Explaining regulation: market failure vs. rent-seeking
- Distributive conflict and inefficient policy bargains
- Political agency and imperfect government accountability
- The politics of structural reforms

Sovereign Debt Crises
Instructor: Fernando Broner

This course provides an overview of sovereign debt crises from theoretical, empirical and policy points of view. It covers both traditional and new theories that emphasize the interplay between international and domestic financial markets, and the relevant empirical evidence. It discusses the distinction between liquidity and solvency crises and the appropriate policy responses. The last part of the course is devoted to an analysis of the European crisis.

Selected Topics
- What are the costs of sovereign default? Reputation and sanctions
- Market structure and defaults: Secondary markets and collateral damage
- Rollover crises: Lender of last resort and moral hazard
- Solvency crises: Debt overhang, buybacks and restructuring
- Lessons for Europe

An Introduction to the New Keynesian Framework and its Monetary Policy Applications
Instructor: Jordi Galí

The course will provide an introduction to the New Keynesian model and its implications for monetary policy, with both a positive and a normative perspective.

Selected Topics
- The basic New Keynesian model: Derivation and Properties
- Optimal monetary policy and simple policy rules
- Policy trade-offs: discretion vs. commitment
- Extensions and their policy implications

Finance, Firm Dynamics and the Business Cycle: Theory and Empirical Evidence
Instructor: Andrea Caggese

Do financing constraints affect firm entry, exit, and the misallocation of resources? Do they matter for innovation, and aggregate productivity and output? This course answers these questions by developing a theoretical framework and empirical applications that integrate analytical tools from finance and macroeconomics.

Selected Topics
- Finance and firm dynamics: the facts
- Entry, exit, misallocation, and innovation: from firm-level financial frictions to aggregate productivity
- Finance, firm dynamics, and business cycles: theory and applications:
  - The 2007-2009 financial crisis
  - The secular stagnation hypothesis

Firms, Networks, and Macroeconomic Fluctuations
Instructor: Julian di Giovanni

This course first introduces students to recent models that study how shocks at the firm or sector level propagate through the economy and impact macroeconomic volatility. Empirical evidence is then presented, and techniques that employ large micro-datasets to study aggregate fluctuations are introduced. Finally, linkages in the open economy and the transmission of shocks across borders are studied.

Selected Topics
- Firm/sector linkages and the transmission of shocks
- Empirical approaches for mapping micro shocks to macro fluctuations
- The globalization of production and cross-country interdependence
- Large firms and macroeconomic outcomes

Numerical Methods for Fiscal and Monetary Policy Analysis
Instructor: Davide Debortoli

This course will cover state-of-the-art techniques to solve and simulate modern macroeconomic models, with specific applications to models used for fiscal and monetary policy analysis. The applications will be illustrated in details during practice sessions (offered separately, and available only for students registered in the class).

Selected Topics
- Introduction to local and global solution methods
- Solution methods for modern monetary policy models, with zero-lower bound, financial constraints, heterogeneous agents, bubbles, etc.
- Methods for optimal monetary policy problems, with and without commitment.
- Methods for optimal debt policy and sovereign default models.

Financial Intermediation, Macroeconomics and Public Policy
Instructor: José-Luis Peydró

This course will present and discuss (mainly empirical) research on the interaction between macroeconomics and financial intermediation, banks and nonbanks. Special attention will be given to the research methodologies (mainly micro-econometrics, shocks and micro datasets), to the international channels, and to the public policy implications, mainly macroprudential and monetary policy.

Selected Topics
- Financial crises and systemic risk
- Real effects of credit for firms and households
- Risk-taking, credit and international channels of monetary policy
- Financial globalisation, emerging markets and capital controls
- Macroprudential policy
- Securities trading by banks and nonbanks, Volcker rule, public debt

Recent Developments in Forecasting: Practicals
Instructor: Barbara Rossi

This course provides an up-to-date and thorough overview of forecast estimation and evaluation.

Selected Topics
- Recent developments in forecasting methodologies (e.g. forecasting with many predictors)
- New methods for evaluating models' forecasts
- Application 1: How well can we forecast inflation and output growth?
- Application 2: Do reduced-form models forecast better than DSGE models?

Numerical Methods: Computer Lab Practicals
Instructor: Davide Debortoli

This 5 hour practical course is available only for students registered for the course Numercial Methods for Fiscal and Monetary Policy Analysis. Through specific examples of state-of-the-art monetary and fiscal policy models (e.g. models with zero-lower bound constraint, financial frictions, forward-guidance, etc.) the computer lab practicals will give participants the opportunity to familiarize with the different routines described in class, and will demonstrate their advantages and disadvantages in terms of accuracy and efficiency.

Forecasting: Computer Lab Practicals
Instructor: Barbara Rossi

This 5 hour practical course is available only for students registered for the course Recent Developments in Forecasting.

Barcelona Data Science Summer School (BDSSS)

The main aim of the **Data Science Summer School** is to introduce participants to some of the tools and methods of Data Science.

It is directed by **Omiros Papaspiliopoulos** (ICREA-UPF and Barcelona GSE).

Fees	Regular fee: **1800 €**	Reduced fee: **1100 €**

Course offering summer 2017

Course	Dates	Instructor
Data Science Toolbox and Machine Learning	June 26 - 30	Alexandros Karatzoglou Ilias Leontiadis
Bayesian Machine Learning in Social Sciences*	July 3 - 7	Stephen Hansen Omiros Papaspiliopoulos David Rossell Tim Stumpf-Fetizon

*LAPTOP REQUIRED: In order to participate in practical sessions, you must bring your own portable computer.

Instructors

Alexandros Karatzoglou is a Senior Research Scientist at Telefonica Research working on Machine Learning. Alexandros received his PhD in Machine Learning from the Vienna University of Technology (TUWIEN). During his PhD he was a frequent visitor to the Statistical Machine Learning group at the ANU/NICTA in Canberra Australia. He has over 40 papers in the field and has won 3 best paper awards at the ACM RecSys and ECMLPKDD conferences. He has developed several ranking techniques for collaborative filtering, context-aware recommendation methods and techniques for recommendations in a social network. He is also the author of the core machine learning R package kernlab, and enjoys giving lectures on Machine Learning, Recommender Systems and R.

Ilias Leontiadis is currently a Research Associate at Telefonica Research. In the past he was a researcher at University of Cambridge and received his PhD from University College London (UCL). His research interests include mobile systems, pervasive computing, wireless networks, sensor networks, mobile phone privacy and mobility modeling.

Stephen Hansen is Associate Professor of Economics at the University of Oxford. His research interests include Organizational Economics, Monetary Policy, and Empirical Methods.

David Rossell is Ramón y Cajal Fellow at UPF. He spent several years at IRB Barcelona as head of Biostatistics & Biostatistics Unit and later as Assistant/Associate professor in the Department of Statistics of the University of Warwick. His research interests include high-dimensional inference, experimental design, dimensionality reduction and applied statistical modelling, with emphasis on the Bayesian approach.

Tim Stumpf-Fetizon is a Research Assistant at UPF and a graduate of the Barcelona GSE Master's Degree in Data Science (Class of 2015).

Omiros Papaspiliopoulos is ICREA Research Professor at UPF. He is the Scientific Director of the Barcelona GSE Master's Degree in Data Science. His research has appeared in the top journals in Statistics, including several articles in the *Journal of the Royal Statistical Society Series B, Biometrika* and the *Annals of Statistics*. He has been an Associate Editor for the first two journals and Statistics and Computing. He has delivered more than 80 invited talks, and has given courses at ENSAE in Paris, the Berlin Mathematical School, the Department of Mathematics at University of Copenhagen, and the Engineering Department at Osaka University.

The Data Science toolbox
Instructors: Alexandros Karatzoglou and Ilias Leontiadis

This will be a hands-on session where a range of tools commonly used in Data Science will be introduced.

Course Outline
- Introduction to Python for Machine Learning & tools for Data, Pandas, scikit-learn, numpy through case studies
- Basic SQL (interfaces to R, Python, data extraction etc.)
- Introduction to R for Machine Learning and packages such as dplyr, tidyr, reshape2, ggplot2, through case studies

Introduction to Machine Learning for Recommender Systems
Instructors: Alexandros Karatzoglou and Ilias Leontiadis

Course Outline
- Memory based collaborative filtering
- Model-based collaborative Filtering, Matrix Factorization, Restricted Boltzmann Machines
- Context-aware collaborative Filtering, Tensor Factorization, Factorization Machines
- Learning to Rank for Collaborative Filtering
- Diversification
- Content-based recommendations

Advanced Data Science and Machine Learning Topics
Instructors: Alexandros Karatzoglou and Ilias Leontiadis

Course Outline
- Unsupervised Learning, k-means clustering, spectral methods, hierarchical clustering
- Gradient Boosted Models
- Deep Neural Networks, from Logistic Regression to Deep Belief Networks
- Convolutional Neural Networks
- Recurrent Neural Networks

Bayesian Machine Learning in Social Sciences
Instructors: Stephen Hansen, Omiros Papaspiliopoulos, David Rossell and Tim Stumpf-Fetizon

Course Outline
- Unsupervised Learning, k-means clustering, spectral methods, hierarchical clustering
- Gradient Boosted Models
- Deep Neural Networks, from Logistic Regression to Deep Belief Networks
- Convolutional Neural Networks
- Recurrent Neural Networks

Barcelona Labor Economics Summer School (BLSS)

The **Barcelona Labor Economics Summer** School offers courses that will cover recent developments within the macro-labor and micro-labor contexts. In each course, both theoretical and empirical aspects will be covered as well as economic policy. These courses should be of interest to graduate students or academics who want to expand their knowledge in the area and to practitioners interested in understanding the fundamentals of these issues. During the courses, faculty are available to discuss research ideas and projects with the program participants.

It is directed by **Maia Güell** (University of Edinburgh).

Fees	Regular fee: **1050 €**	Reduced fee: **650 €**

Course offering summer 2017

All courses are 10 hours long.

Course	Dates	Instructor
Lectures on the Economics of Education	July 3 - 7	Derek Neal
Labor Market Outcomes	July 3 - 7	Robert Shimer
Worker Mobility in Globalized Labor Markets: Causes and Consequences of Migration	July 3 - 7	Joan Llull
Gender Economics	July 3 - 7	Libertad González

Instructors

Derek Neal is a Professor in the Department of Economics and the Committee on Education at the University of Chicago. Professor Neal's current research focuses on the design of incentive systems for educators. His work explores the design flaws in current performance pay and accountability systems and also highlights the advantages of providing incentives through contests between schools.

Robert Shimer is the Alvin H. Baum Professor in Economics at the University of Chicago. Prior to joining the Chicago faculty in 2003, he received his Ph.D. at M.I.T. and taught at Princeton University. He is a consultant at the Federal Reserve Banks of Atlanta, Chicago, and Minneapolis, a Research Associate in the National Bureau of Economic Research, a Fellow of the Econometric Society and the Society of Labor Economists.

Joan Llull is a Research Fellow at MOVE, Assistant Professor at UAB, and Affiliated Professor at the Barcelona GSE. He received his PhD in Economics from CEMFI in 2011, and he joined MOVE, UAB, and BGSE afterwards. He is also an external fellow of the CReAM from the University College London, and a member of the INSIDE network.

Libertad González is a professor of Economics at UPF Fabra and the Barcelona GSE. She holds a PhD in Economics from Northwestern University, and has been a visiting scholar at Columbia University and Boston University. Her research lies in the areas of Labor, Public, and Health Economics.

Lectures on the Economics of Education
Instructor: Derek Neal

Four lectures given over five sessions explore both the demand for education and the supply of education. The supply lecture will cover most of the important policy debates in modern economies concerning the K-12 education policy. The course will draw on a number of outside readings and a set of draft chapters from a book I am writing.

Course Outline
- Human Capital Models
- Empirical Impacts of Education
- Human Capital Spillovers
- Mechanism Design and the Public Funding of Education

Labor Market Outcomes
Instructor: Robert Shimer

This course explores the determination of labor market outcomes, with a particular focus on the determination of the unemployment rate and the flow of workers between employment and unemployment. Throughout the course we will use economic theory to motivate a careful analysis of relevant data sources.

Course Outline
- Unemployment and labor market flows.
- Duration dependence in the job finding rate: gross flows at different frequencies, distinguishing between structural duration dependence and heterogeneity; and the role of unemployment benefits.
- Business Cycle Fluctuations: job vacancies and the matching function; the labor wedge
- Basic search model: linear preferences and linear production technology. Quantitative evaluation of the model's performance. The role of the "value of leisure."
- Nonlinear search model: finite intertemporal elasticity of substitution in consumption; capital; search intensity; wage rigidities

Worker Mobility in Globalized Labor Markets: Causes and Consequences of Migration
Instructor: Joan Llull

Course Outline
Part I: Migration Decisions
- International migration decisions
    - Migration Decisions
    - Immigration Selection: The Roy Model
    - Empirical Evidence
- Structural estimation of models of internal migration

Part II: Economic consequences of immigration
- Wage effects of immigration
    - Effects on local labor markets
    - National level approaches
- Assimilation of immigrants

Gender Economics
Instructor: Libertad González

Men earn on average higher wages than women. Men and women concentrate in different occupations, and women are under-represented in the political sphere and high-powered occupations. Women attain on average higher levels of schooling than men, and they take on a higher share of household chores and childcare.

Course Outline
- Gender gaps in wages and employment
- Gender and education
- Risk aversion, competitiveness, and other traits.
- Family (contraception, fertility, abortion, marriage and divorce, household specialization)
- Gender and public policy

Barcelona Macroeconometrics Summer School (BMaSS)

Macroeconometrics is an important area of research in economics. Time series methods for empirical macroeconomics have become very popular and widely used in the academia as well as in public and private institutions. The goal of the **Barcelona Macroeconometrics Summer School** is to offer courses covering a wide range of topics in macroeconometrics.

It is directed by **Luca Gambetti** (UAB and Barcelona GSE)

Fees	Regular fee: **1250 €**	Reduced fee: **700 €**

Course offering summer 2017
All courses are 10 hours long of lecture and 5 hours of practical time.

Course	Dates	Instructor
Bayesian Time Series Methods: Introductory*	June 26 - 30	Gary Koop
Time-Series Methods for Financial Time Series*	June 26 - 30	Christian Brownlees
Bayesian Methods for DSGE Models*	June 26 - 30	Kristoffer Nimark
Bayesian Time Series Methods: Advanced*	July 3 - 7	Dimitris Korobilis
Empirical Time Series Methods for Macroeconomic Analysis*	July 3 - 7	Luca Gambetti
Modeling Non-stationary and Non-linear Time Series*	July 3 - 7	Laura Mayoral Gabriel Pérez-Quirós

*LAPTOP REQUIRED: In order to participate in practical sessions, you must bring your own portable computer.

Instructors

Gary Koop is a Professor in the Department of Economics at the University of Strathclyde. He received his PhD from the University of Toronto in 1989. He has held university posts in the UK, the US and Canada. His research interests lie in the field of Bayesian econometrics with a particular focus on macroeconometrics. He has a wide range of publications of theoretical and empirical work within this field. He has written several textbooks including Bayesian Econometrics and Bayesian Econometric Methods.

Christian Brownlees is Assistant Professor in the Department of Economics and Business at the UPF and Barcelona GSE Affiliated Professor. He obtained his Ph.D. degree in Statistics in 2007 from the University of Florence and was a Post-Doc Research Fellow at NYU Stern until 2011. Christian's research focuses on time-series analysis for financial and macro applications.

Kristoffer Nimark was Researcher at the Center for Research on International Economics (CREI), Adjunct Professor at Universitat Pompeu Fabra, and Affiliated Professor of the Barcelona GSE until 2014. Previously he was a Visiting Assistant Professor at New York University and Senior Research Manager at the Reserve Bank of Australia.

Dimitris Korobilis (PhD, University of Strathclyde) is an associate professor of Economics at the University of Glasgow, Adam Smith Business School. He has been a PostDoctoral Fellow at the Center for Operations Research and Econometrics (CORE) in Belgium, a visiting researcher at the Deutsche Bundesbank, and a visiting assistant professor at the University of Rennes 1.

Laura Mayoral is a Barcelona GSE affiliated professor and works at the Institute for Economic Analysis (IAE) since 2006. Before joining the institute she was Assistant Professor and Ramón y Cajal Felow at Universitat Pompeu Fabra and Universitat Autonoma de Barcelona. She has also been visiting professor at New York University (Abu Dhabi), the Paris School of Economics and the Department of Economics of the University of Gothenburg.

Luca Gambetti is Associate Professor of Economics at UAB and Barcelona GSE Associate Research Professor. He is a research fellow of MOVE (Markets, Organizations and Votes in Economics) and an external member of RECent. He obtained his PhD in Economics from Universitat Pompeu Fabra in 2006. Luca's research focuses on quantitative macroeconomics and applied time series analysis

Gabriel Pérez-Quirós has a B.A. in Economics from Universidad de Murcia (1989), Master in Economics and Finance from CEMFI (1991), and PhD in Economics from the University of California San Diego (1996). He is currently the Unit Head of Macroeconomic Research at the Research Department of the Bank of Spain. He previously worked on business cycle research at the Federal Reserve Bank of New York and the European Central Bank.

Bayesian Time Series Methods: Introductory
Instructor: Gary Koop

This is a course in introductory Bayesian econometrics with a focus on models used in empirical macroeconomics. It begins with a brief introduction to Bayesian econometrics, describing the main concepts underlying Bayesian theory and seeing how Bayesian methods work in the familiar context of the regression model. Computational methods are of great importance in modern Bayesian econometrics and these are discussed in detail.

Course Outline
- Bayesian Basics
- Bayesian Model Averaging and Model Selection
- Bayesian State Space Modelling

Time-Series Methods for Financial Time Series
Instructor: Christian Brownlees

The course provides an introduction to the state-of-the-art techniques for the analysis of financial time series. The first part of the course introduces univariate time series models used for the analysis of time-varying volatility (GARCH models) as well as multivariate timeseries models for the analysis of time-varying correlations (DCC models). The second part of the course presents empirical applications of GARCH-DCC models. The first application shows how GARCH-DCC models can be used for Value-at-Risk forecasting. In the second application, GARCH-DCC models are used to construct a number of different systemic risk measures recently proposed in the literature. These measures will then be employed to study the US financial system in the 2007–2009 financial crisis. During the practice session students will replicate the methodology as well as the empirical findings documented in the lectures using Matlab.

Requirement: basic knowledge of econometrics and time series econometrics.

Bayesian Methods for DSGE Models
Instructor: Kristoffer Nimark

The objective of the course is to teach student how to use state of the art Bayesian methods to estimate and analyze modern macroeconomic models. The course will cover the most popular methods to construct posterior estimates of structural model parameters and probability intervals for arbitrary model outputs (such as impulse response functions and variance decompositions).

Course Outline
- Macro models as data generating processes
- State Space Models and Likelihood based estimation
- Bayesian Estimation of DSGE models
- Bayesian analysis of DSGE models
- Structural empirical models of news, noise and imperfect information

Bayesian Time Series Methods: Advanced
Instructor: Dimitris Korobilis

The main aim of this course is to help students develop an understanding of Bayesian methods in the analysis of multivariate macroeconomic time series. The emphasis throughout this course is on Bayesian estimation and computation, and specication of exible models. Several topics will be covered including static and dynamic factor models, Bayesian shrinkage priors, multivariate stochastic volatility, vector autoregressions, panel vector autoregressions, and estimation of multivariate models for Big Data. This short course will introduce a very large spectrum of time series models used in macroeconomics and nance. Instead of focusing on the theoretical time-series properties of these popular models, we will delve deeply into estimation issues which are of practical importance for PhD students and applied researchers. As an illustration, students will learn how to estimate Bayesian linear static factor models for the mean of a time series, as well as univariate stochastic volatility models using the Gibbs sampler.

Empirical Time Series Methods for Macroeconomic Analysis: Introductory
Instructor: Luca Gambetti

The objective of the course is twofold. First, to present some of the most popular time series models designed to analyze the propagation mechanisms and measure the effects of macroeconomic shocks. In particular we will cover Structural Vector Autoregressive models as well as several extensions like the Factor Augmented VAR, Smooth transition VAR, Threshold VAR and Time-Varying Coefficients VAR. The second objective is to discuss some recent applications of these models in macroeconomics. The focus will be on monetary and fiscal policy shocks, news shocks and technology shocks among others.

Course Outline
- Structural VAR (SVAR) models
- Structural VAR (SVAR) models: Applications
- Factor Augmented VAR (FAVAR)
- Threshold VAR (TVAR) and Smooth Transition VAR (STVAR)
- Time-Varying Coefficients Models

Modeling Non-stationary and Non-linear Time Series
Instructors: Laura Mayoral and Gabriel Pérez-Quirós

The goal of this course is to introduce some popular non-stationary and non-linear time series models that have been found to be effective at modeling macroeconomic and financial time series data.

Selected Topics
- Linear models for nonstationary data. Integration and fractional integration. Univariate and panel unit root tests, non-stationary dynamic factor models
- Cointegration and Fractional cointegration
- Measuring persistence. Impulse response functions and related methods. Aggregation and persistence
- Non-linear methods. Markov Switching and Threshold models
- Univariate and multivariate analysis
- Dynamic non linear factor models
- Real time assessment of recession probabilities

Barcelona Microeconometrics Summer School (BMiSS)

The increasing availability of individual data from surveys has led not only to a significant growth in the number of academic jobs of an empirical nature using this type of information, but also to a greater number of studies commissioned by public and private institutions in which this type of data is used.

The characteristics of this type of data are such that statistical and econometric techniques appropriate for their treatment have a specific nature, generally differentiated from those appropriate for time series data.

It is directed by **Sergi Jiménez-Martín** (UPF and Barcelona GSE - on leave).

Fees	Regular fee: **1250 €**	Reduced fee: **700 €**

Course offering summer 2017

All courses include 10 hours of lecture time and 5 hours of practical time.

Course	Dates	Instructor
Panel Data Linear Analysis*	June 26 - 30	Badi Baltagi
Econometrics of Cross-section Data with Applications*	June 26 - 30	Jaume Garcia-Villar
Quantitative Methods for Public Policy Evaluation*	July 3 - 7	Stephan Litschig
Dynamic and Non-linear Panel Data Models*	July 3 - 7	Sergi Jiménez-Martín

*LAPTOP REQUIRED: In order to participate in practical sessions, you must bring your own portable computer.

Instructors

Badi Baltagi is Distinguished Professor of Economics at Syracuse University and Part-time Chair in Economics at the University of Leicester. He holds a PhD in Economics from the University of Pennsylvania. He is Senior Research Associate at the Center for Policy Research at Syracuse University and is a Research Fellow at several other institutions. He is Associate Editor of the *Journal of Econometrics* and is on the Editorial Board of *Empirical Economics* and *Econometric Reviews*.

Jaume Garcia-Villar is Professor of Economics at Universitat Pompeu Fabra and Affiliated Professor of the Barcelona GSE. He received his PhD from the London School of Economics and Political Science (1985). He was President of the Spanish National Statistics Institute from 2008 until 2011.

Stephan Litschig (PhD, Columbia University) is Associate Professor at the National Graduate Institute for Policy Studies in Tokyo, Japan. Before this he was a post-doc researcher at IAE-CSIC and Affiliated Professor of the Barcelona GSE. His research interests include development, public, and political economics, and microeconometrics.

Sergi Jiménez-Martín is Associate Professor at Universitat Pompeu Fabra and Affiliated Professor at the Barcelona GSE. He received his PhD from the Universitat Pompeu Fabra in 1994. He is currently Chair of the FEDEA-La Caixa Economía de la Salud y Hábitos de Vida. He is also a member of the Scientific Council of Applied Economic Perspectives and Policy as well as Cuadernos Económicos de ICE.

Panel Data Linear Analysis
Instructor: Badi Baltagi

This course considers methodological and substantive issues concerning the analysis of panel data. It starts by reviewing basic panel data models emphasizing the benefits and limitations of panel data over time series or cross-section data. Basic estimation and testing methods for random and fixed effects models are reviewed and illustrated using empirical applications using Stata and EViews. Next, problems of endogeneity in panel models are studied and panel instrumental variable estimation methods as well as Hausman type tests are reviewed and applied using an empirical application.

Course Outline
- Basic Review of Panel Data Methods: Estimation and Test of Hypotheses
- Simultaneous Equations and Endogeneity in Panel Data Models
- Dynamic Panel Data: introduction
- Nonstationary Panels

Econometrics of Cross-section Data with Applications
Instructor: Jaume Garcia-Villar

The use of survey data is becoming a common practice among economists and social scientists both at academic and professional level. The main characteristic of this data is that it contains qualitative information, making the use of the regression model not suitable when we deal with models where the dependent variable is either a choice or a status or where the dependent variable only takes non negative values and a significant percentage of the observations are zeroes (expenditure on some particular goods like tobacco).

In this course we deal with estimation of these models, paying special attention to the interpretation of the estimates and the limitations of the different models in the literature.

Course Outline
- Discrete Choice Models (I)
- Discrete Choice Models (II)
- Limited-Dependent Variable models (I)
- Duration models

Quantitative Methods for Public Policy Evaluation
Instructor: Stephan Litschig

The main challenge for policy evaluation is to establish a causal link between interventions and outcomes. The objective of this course is to introduce the main approaches used in the evaluation of public policies: randomized evaluations, natural experiments, the regression discontinuity design, selection on observables and difference-in- differences. The course presents strengths and weaknesses of each approach in terms of internal and external validity.

Course Outline
- Randomized Evaluations (Experiments)
- Natural or Quasi-Experiments and the Problem of Weak Instruments
- Regression Discontinuity Designs
- Selection on Observables (regression control and matching)
- Difference-in-Differences
- Work-in-progress (Presentations by Participants)

Dynamic and Non-linear Panel Data Models
Instructor: Sergi Jiménez-Martín

This course provides up-to-date coverage of dynamic panel data models, discrete choice panel data models as well as censored panel data models and the estimation of dynamic panel data models subject to selection. Apart from a review of relevant theory, the focus of the course is on the practical application of these models to various data contexts: large T –small N; small T – large N, unbalanced panels, rotating panels and pseudo panels constructed from cohort data.

Course Outline
- Linear Panel Data Models
  - Introduction to panel data
  - Dynamic linear panel data models
- Non-Linear Panel Data Models
  - Censored panel data models
  - Sample selection panel data models
- Discrete choice panel data models

Barcelona GSE Summer School

2018

June 25 - July 6
Save the Date

Barcelona
GSE
Summer School

The **Barcelona Graduate School of Economics** is one of the leading schools in postgraduate economic education promoting cutting-edge research and world-class international graduate programs in economics and related fields. The School enjoys close collaboration with its founding academic institutions (Universitat Pompeu Fabra, Universitat Autònoma de Barcelona, CSIC and CREI) in teaching and research as well as in the shared use of resources.

The Barcelona GSE offers one-year, full-time master programs that prepare students for doctoral study and provide solid training for top jobs both in the public and private sector. All programs are taught in English.

The Barcelona GSE also offers intensive, targeted short courses for researchers, professionals and graduate students.

The Master programs offer is:

- Competition and Market Regulation
- Data Science
- Economics
- Economics of Public Policy
- Finance
- International Trade, Finance, and Development
- Macroeconomic Policy and Financial Markets

Intensive Courses:

- Competition in Pharmaceuticals and Healthcare Services (March 22-24, 2017)
- Quantitative Methods for Competition Analysis (May 10-12, 2017)
- Competition Economics: Abuse of Dominance (Fall 2017)

Barcelona
GSE
Graduate
School of
Economics

Contact us:
BARCELONA GRADUATE SCHOOL OF ECONOMICS
Ramon Trias Fargas, 25-27
08005 Barcelona, Catalonia - Spain
Tel. +34 93 542 1222
summerschool@barcelonagse.eu

facebook.com/barcelonagse

twitter.com/barcelonagse

youtube.com/barcelonagse

www.barcelonagse.eu/summerschools