



fondation

Cournot

centre

COURNOT'S LEGACY

“ *The actions of intelligent and moral beings cannot be explained, given the state of our knowledge, and we can boldly say that they will never be explained by the mechanics of geometers. They do not, therefore, fall within the domain of numbers by reason of geometry or mechanics, but inasmuch as the notions of combination, chance, cause and randomness are superior in abstraction to geometry and mechanics, and can be applied to the events of nature, to those in the intellectual and moral realms, as well as to phenomena produced by the motion of inert matter.* ”

Augustin Cournot, *Exposition of the Theory of Chance and Probability [Exposition de la théorie des chances et des probabilités]*, 1843



The Cournot Centre is an independent, non-profit, French-based research institute. It is supported by the Cournot Foundation, which operates under the aegis of the Fondation de France. The Centre takes its name from the pioneering economist, mathematician and philosopher **Antoine Augustin Cournot** (1801–1877).

Neither a think tank nor a research bureau, the Centre enjoys the special independence of a catalyst. My old student dictionary (dated 1936) says that catalysis is the “acceleration of a reaction produced by a substance, called the catalyst, which may be recovered practically unchanged at the end of the reaction”. The reaction we have in mind results from bringing together (a) an issue of economic policy that is currently being discussed and debated in Europe and (b) the relevant theoretical and empirical findings of serious economic research in universities, think tanks and research bureaux. Acceleration is desirable, because it is better that reaction occurs before minds are made up and decisions taken, not after. We hope that the Cournot Centre can be recovered practically unchanged and used again and again.

Notice that “policy debate” is not exactly what we are trying to promote. To have a policy debate, you need not only knowledge and understanding, but also preferences, desires, values and goals. The trouble is that, in practice, the debaters often have only those things, and they invent or adopt only those “findings” that are convenient. The Cournot Centre hopes to inject the findings of serious research at an early stage.

It is important to realize that this is not easy or straightforward. The analytical issues that underlie economic policy choices are usually complex. Economics is not an experimental science. The available data are scarce and may not be exactly the relevant ones. Interpretations are therefore uncertain. Different studies, by uncommitted economists, may give different results. When those controversies exist, it is our hope that the Centre’s conferences will discuss them. Live debate at that fundamental level is exactly what we are after.



Robert M. Solow

Robert M. Solow, Co-Founder of the Cournot Foundation and Centre

COURNOT'S HERITAGE

THE CENTRE AND FOUNDATION

The Cournot Foundation takes its inspiration from the French mathematician and philosopher Augustin Cournot (1801–1877), whose work was a precursor to the fields of economics and probability. Under the aegis of the Fondation de France, the Foundation puts into perspective the probabilistic paradigm shift originating in mathematics and spreading across disciplines. The Foundation was created by Cournot Centre originators **Jean-Louis Beffa**, **Robert Solow** and **Jean-Philippe Touffut**, who continue to guide its work.

With the support of the Foundation, the Cournot Centre advances theory and publishes in the economic and social science tradition of Cournot. Since 2000, the Cournot Centre has been contributing to the development of theories and stimulating critical thinking about their hypotheses and reasoning. It is guided by a Scientific Team of renowned economists, scholars and scientists.

Catalysing ideas

The Centre organizes conferences and panel discussions to explore contemporary issues from a theoretical perspective.

The role of probability in the sciences is a special focus of the Centre's transdisciplinary research seminar. Scientists present the development of the study of randomness in their disciplines, comparing definitions, methods and results.

Publishing theoretical contributions

Selected by the scientific team, contributors of the Cournot Centre's conferences, panels and seminars write essays focused on timely theoretical issues. Their original contributions are published as part of conference proceedings in an edited volume, as a monograph in book form, or as a booklet in the *Prisme* series. Cournot Centre publications are published in English and in French and are available on-line or in bookstores. They can also be found in Francophone and Anglophone university libraries.

Since March 2020, the Cournot Centre's network of researchers – both mathematicians and economists – have been publishing their reflections on the development of the pandemic, with particular focus on its modelling and economic consequences. Their writings can be found on the Cournot blog "Les Cournotiennes".

To access videos of the Centre's conferences, panel discussions and seminars, or the blog, go to www.centre-cournot.org or cournotiennes.blogspot.com.



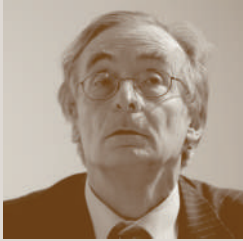
Jean-Louis Beffa
Founder and President
Cournot Foundation



Jean-Philippe Touffut
Founder
Cournot Centre



THE SCIENTIFIC TEAM



Robert Boyer is an economist at the Institute of the Americas in Paris and Vice-president of its scientific committee. Former Director of Research at the French National Centre for Scientific Research (CNRS) and Professor at the School for Advanced Studies in the Social Sciences (EHESS), he is President of the association *Recherche et Régulation*.



Alice Guionnet is a mathematician and a CNRS Director of Research at the Unit of Mathematics, Pure and Applied (UMPA), a mathematics laboratory of the École Normale Supérieure de Lyon. She sits on the editorial boards of *Annales de l'Institut Henri Poincaré* and *Annals of Probability*. Professor Guionnet was awarded the Loève Prize in 2009. She is a member of the French Academy of Sciences, of the European Academy of Sciences, and of Academia Europaea.



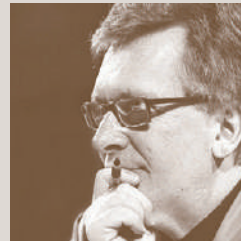
Jean-Bernard Chatelain is an economist and Professor in the Economics Department at the University Paris I Panthéon-Sorbonne and at the Paris School of Economics. He is Director of the European Research Group (GdRE) "Money, Banking and Finance" and is Treasurer of the Cournot Centre.



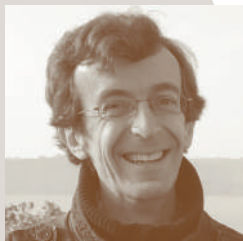
Hans-Helmut Kotz is an economist and a Resident Fellow of the Center for European Studies and a Visiting Professor of Economics, both at Harvard University. A Senior Fellow of the Center for Financial Studies and a Program Director of the SAFE Policy Center at Goethe University, Frankfurt, he is also a member of Freiburg University's Economics Faculty where he teaches monetary policy. In addition to his academic positions, Professor Kotz sits on the board of Caixa Geral de Depósitos.



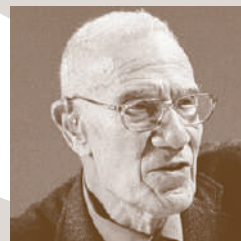
Laure Dumaz is a mathematician and junior researcher at the French National Centre for Scientific Research (CNRS). She works in the field of probability theory. She has been in the Department of Mathematics and Their Applications (DMA) at the École Normale Supérieure (ENS) in Paris since 2020, where she currently holds a professorship.



Thierry Martin is a philosopher and Professor emeritus of Philosophy of Science at the University of Franche-Comté. Serving as its Director from 2004 to 2018, he is a researcher at the Centre on the Logic of Action in Besançon, France, and a research associate at the Institute for History and Philosophy of Science and Technology (IHPST). He is a founding member of the French Society for the Philosophy of Science (SPS). Professor Martin is co-editor of the complete works of Augustin Cournot and Vice-president of the Cournot Centre.



Josselin Garnier is a mathematician and Professor at École Polytechnique and a researcher at the Centre de Mathématiques Appliquées (CMAP). Professor Garnier received the Blaise Pascal Prize in 2007, the Felix Klein Prize in 2008 and the *Grand prix scientifique*, awarded by the French Academy of Sciences, in 2021. He has published works of reference in pure and applied mathematics in over 250 articles.



Robert Solow is an economist and Institute Professor emeritus at the Massachusetts Institute of Technology. In 1987, he received the Nobel Memorial Prize in Economic Sciences for his contribution to economic growth theory. In 1999, he received the US National Medal of Science, and in 2014, the Presidential Medal of Freedom. He is former President of the American Academy of Sciences and of the Econometrics Society. Professor Solow is Founder of the Cournot Foundation and Centre.



Bernard Gazier is an economist and Professor emeritus at the University Paris I. He was a member of the Institut Universitaire de France from 2007 to 2012. He is a researcher at the Sorbonne Economic Centre (CES), a joint research team of the University Paris I and the CNRS. Professor Gazier is President of the Société de Port-Royal and Co-president of the Cournot Foundation.

February 2022

Sloan Conference Series

2nd Conference: From Microscopic Models to Rough Macroscopic Models

Programme:

- Quadratic Hawkes processes: A microfoundation for rough volatility models?
Jean-Philippe Bouchaud (Capital Fund Management/École Polytechnique)
- From no-arbitrage to rough volatility via market impact
Mathieu Rosenbaum (École Polytechnique)
- Modeling rough covariance processes
Christa Cuchiero (University of Vienna)

December 2020

Sloan Conference Series

Kick-off Conference: Fractional Calculus in Finance

Speakers: Jean-Bernard Chatelain (Paris School of Economics), Rama Cont (University of Oxford), Josselin Garnier (École Polytechnique), Antoine Jacquier (Imperial College), Knut Sølna (University of California at Irvine), Jean-Philippe Touffut (Cournot Centre)



Louis Bachelier

December 2020

Insights from US Antitrust Enforcement History (1918–1941) for Competition Law and Economics in Times of Crisis

Speakers: Robert Boyer (Cournot Centre/Institute of the Americas), Daniel Crane (University of Michigan), Thierry Kirat (CNRS/Université Paris Dauphine), Naomi R. Lamoreaux (Yale University), Frédéric Marty (CNRS/Université Côte d'Azur), Dina Waked (Sciences Po Law School), Spencer Weber Waller (Institute for Consumer Antitrust Studies, University of Chicago)

November 2020

Data and Society: The Role of Women?

Co-organization with Institut Louis Bachelier, LPSM Sorbonne University and ENSAE Paris

Speakers: Emmanuel Bacry (CNRS), Alexandra Boussomier-Calleja (ImVitro), Meriem El Karoui (University of Edinburgh), Nicole El Karoui (Sorbonne University), Josselin Garnier (École Polytechnique), Charles-Albert Lehalle (Capital Fund Management), André Lévy-Lang (Institut Louis Bachelier), Françoise Soulie-Fogelman (HUB France), Anne-Sophie Taillandier (IMT)

May 2019 (Sorbonne University, Paris)

Women scientists Step Out of the Shadows

Co-organization of the international conference held in honour of Nicole El Karoui for her 50 years of scientific contributions. A day was dedicated to Women in Science (WiSE), and three to the advancement of Nicole's mathematical heritage.

March 2019 (Saclay)

The Game of Maximum

As part of its Initiation to Probability programme for middle-school students from Priority Education networks (REP) in France, the Cournot Foundation sponsored students from the Collège des Petits Ponts in Clamart, near Paris, to attend the annual national conference of the association Math en Jeans at CentraleSupélec Higher Education and Research Institution in Saclay. The students had a stand, presenting the methods and results of their work through interactive games.

November 2018 (CIRM, Marseille)

Mathematical Economics after WWI

Within the framework of the conference commemorating the end of WWI: "Mathematical Communities in the Reconstruction after the Great War (1918–1928)"

Michel Armatte (Alexandre Koyré Center): Economic Cycles: From Descriptive Statistics to Formalization

Irina Konovalova-Peaucelle (French National Centre for Scientific Research – CNRS): The history of Russian Economic and Mathematical Thought through 1928

Pierre-Charles Pradier (University Paris I): Were the Foundations of "Measurement without Theory" Laid in the 1920s?

June 2018 (Niort)

International Conference on Economic and Financial Risks

Participation in the international conference organized by IRIAF (Institute of Industrial, Insurance and Financial Risk) and CRIEF (Research Centre on Economic and Financial Integration), both of the University of Poitiers.

Cournot Centre speakers: Nicole El Karoui (Sorbonne University): Longevity Risks: A Brief Overview of the State of Our Knowledge

Knut Sølna (University of California at Irvine/École Polytechnique; Cournot senior scholar 2017–2018): On Memory, Regimes and Risk

June 2018 (École Polytechnique, Palaiseau)

Fractional Processes in Finance

Organizers: Josselin Garnier (École Polytechnique), Mathieu Rosenbaum (École Polytechnique) and Knut Sølna (University of California at Irvine/École Polytechnique; Cournot senior scholar 2017–2018)

Speakers: Eduardo Abi Jaber (University Paris-Dauphine), Elisa Alòs (Pompeu Fabra University, Barcelona), Alexandre Brouste (University of Le Mans), Omar El Euch (École Polytechnique), Archil Gulisashvili (Ohio University), Blanka Horvath (Imperial College, London), Antoine Jacquier (Imperial College, London), Josef Teichmann (ETH, Zurich)

3 October 2017 (New York)

What's Happening on World Energy Markets?

Hosted by the Alfred P. Sloan Foundation

Gérard Ben Arous, Josselin Garnier, Antoine Halff, Lutz Kilian, Michael Levi, Amy Myers Jaffe, Knut Sølna, Robert Solow

26-27 November 2015 (Tokyo)

Kiyosi Itô's Legacy from a Franco-Japanese Perspective

Jean-Pierre Bourguignon, Nicole El Karoui, Masatoshi Fukushima, Tadahisa Funaki, Josselin Garnier, Daniel Goroff, Shigeo Kusuoka, Glenn Shafer, Jean-Philippe Touffut

29 September 2014 (Paris)

Financing Science or Innovation? Lessons from Europe, Japan and the U.S.

Jean-Louis Beffa, Jean-Pierre Bourguignon, Daniel Goroff, Yuko Harayama, Thibaut Kleiner, Julia Lane, Beth-Anne Schuelke-Leech, Robert Solow

2 December 2013 (Cambridge, MA)

Organized with Harvard Medical School

Are There Limits to the Probabilization of Science?

Vincent Danos, Josselin Garnier, Alice Guionnet, Andreas Hilfinger, Johan Paulsson

17 December 2012 (Boston)

Organized with Harvard Medical School

The Limits of the Probabilization of Science

Rémi Catellier, Meriem El Karoui, Josselin Garnier, Andreas Hilfinger, Johan Paulsson

2 & 3 December 2010

What's Right with Macroeconomics?

Robert Boyer, Wendy Carlin, Jean-Bernard Chatelain, Giancarlo Corsetti, Giovanni Dosi, Robert Gordon, Paul De Grauwe, Gerhard Illing, Xavier Ragot, Willi Semmler, Robert Solow, Xavier Timbeau, Volker Wieland

12 & 13 November 2009

The New International Division of Labour

Bina Agarwal, Martin Baily, Jean-Louis Beffa, Richard Cooper, Matthieu Crozet, Jan Fagerberg, John Gabriel Goddard, Elhanan Helpman, Shelly Lundberg, Mathilde Maurel, Valentina Meliciani, Peter Nunnenkamp, Robert Solow

18 & 19 December 2008

The Economic Cost of Climate Change

Masahiko Aoki, Michel Armatte, Jean-Pierre Dupuy, Olivier Godard, Jean-Charles Hourcade, Inge Kaul, Philippe Quirion, Thomas Schelling, Robert Solow, Nicholas Stern, Thomas Sterner, Martin Weitzman

29 & 30 November 2007

Does Company Ownership Matter?

Masahiko Aoki, Jean-Louis Beffa, Margaret Blair, Wendy Carlin, Christophe Clerc, Simon Deakin, Ekkehard Ernst, Jean-Paul Fitoussi, Donatella Gatti, Gregory Jackson, Hans-Helmut Kotz, Xavier Ragot, Antoine Rebérioux, Lorenzo Sacconi, Robert Solow

31 & 2 December 2005

Augustin Cournot, Economic Models and Rationality

Michel Armatte, Robert Aumann, Alain Desrosières, Jacques Drèze, Jean-Pierre Dupuy, Jean Magnan de Bornier, Thierry Martin, André Orléan, Glenn Shafer, Robert Solow, John Vickers, Bernard Walliser

9 & 10 December 2004

France and Germany in the International Division of Labour

Bruno Amable, Patrick Artus, Robert Boyer, Anton Brender, Jérôme Clément, Stefan Collignon, Noël Forgeard, Hubertus von Grünberg, Gustav Horn, Hans-Helmut Kotz, Pascal Lamy, Robert Solow, Christian Streiff

2 & 3 October 2003

Public Sector, Private Sector: New National and International Frontiers

Patrick Artus, Avner Ben-Ner, Jacques Fournier, Louis Gallois, Bernard Gazier, Xavier Greffe, Claude Henry, Philippe Herzog, Inge Kaul, Dominique Plihon, Robert Solow, Joseph Stiglitz

7 & 8 November 2002

Organizational Innovation within Firms

Masahiko Aoki, Carliss Baldwin, Jean-Louis Beffa, Stefano Brusoni, Eve Chiapello, Giovanni Dosi, Takahiro Fujimoto, Richard Locke, Luigi Marengo, Keith Pavitt, Xavier Ragot, Mari Sako, Robert Solow, Edward Steinfeld

20 & 21 June 2002

Work and Work Skills in a Changing Economy

Peter Auer, Robert Boyer, Jean-Christophe Le Duigou, François Eymard-Duvernay, Richard Freeman, Jérôme Gauthié, Bernard Gazier, Tom Kochan, David Marsden, Mari Sako, Fritz Scharpf, Karen Shire, Robert Solow, Arndt Sorge, Wolfgang Streeck, Eric Verdier

8 & 9 November 2001

The Transformations of Finance in Europe

Michel Aglietta, Patrick Artus, Jean-Louis Beffa, Joseph Bisignano, Christian De Boissieu, Giampaolo Galli, Charles Goodhart, Henri Guillaume, Jacques Hamon, Hans-Helmut Kotz, John Llewellyn, Ariane Obolensky, André Orléan, Michel Prada, Robert Solow, Neil Soss

7 & 8 June 2001

The Sources of Technical Change

Philippe Aghion, Bruno Amable, Masahiko Aoki, Tim Bresnahan, Geneviève Berger, Paul David, Giovanni Dosi, Robert Gordon, Dominique Guellec, Jacques Mairesse, Franco Malerba, Dirk Pilat, Denis Ranque, AnnaLee Saxenian, Roger-Gérard Schwartzberg, Robert Solow

9 & 10 November 2000

Institutions and Growth

Michel Aglietta, Robert Boyer, Olivier Favereau, Jean-Paul Fitoussi, Robert Gordon, Dominique Guellec, David Marsden, Colin Mayer, Jean Peyrelevade, Günther Schmid, Luc Soete, Robert Solow, Wolfgang Streeck, Michel Volle

SEMINARS

2022/2021

March 2022: The Geography of the Pandemic Crisis in France: the Suburbs at the Forefront?

Jean-Philippe Touffut (Cournot Centre)

February 2022: Are Taxes on Production Responsible for the Growth Deficit of French Companies?

Nadine Levratto (EconomiX, CNRS-Université Paris-Nanterre) and Matthieu Leprince (Université de Bretagne Occidentale)

January 2022: Macroeconomic Modeling in the Face of the Pandemic

Robert Boyer (Cournot Centre/Institute of the Americas) and Bernard Walliser (EHESS)

December 2021: The Territorial Dynamics of the Pandemic Crisis in France

Olivier Portier (Observatoire des impacts territoriaux de la crise) and Nadine Levratto (EconomiX, CNRS-Université Paris-Nanterre)

October 2021: How to Monitor Debt

Xavier Timbeau (OFCE) and Hans-Helmut Kotz (Goethe University/Harvard University)

June 2021: The Impact of Public Policy on Economic Activity: Micro/Macro Perspectives

Céline Chicot (G MBA Walter Allinial), Mathieu Plane (OFCE) and Cédric Audenis (France Stratégie)

June 2021: What is Happening to the Productive Fabric in France?

Xavier Timbeau (OFCE), Céline Chicot and Michel Gire (G MBA Walter Allinial)

April 2021: Statistics of the Pandemic: What Should We Be Looking At?

Josselin Garnier (École Polytechnique), Jean-Philippe Touffut (Cournot Centre) and Pierre Vallois (Université de Lorraine)

April 2021: The Metamorphoses of Neoliberalism: The Italian Case

Stefano Palombarini (Université Paris VIII) and Ekkehard Ernst (ILB)

April 2021: 4th Meeting - Girls and Mathematics: A Bright Equation

Women mathematicians meet with high-school girls to discuss math as a path to success.

Cournot Centre speaker: Anne Gruz (Iggak)

March 2021: From Unequal Societies to Unjust Societies:

The Effects of the Pandemic in Developed Countries

Giovanni Dosi (Sant'Anna School of Advanced Studies, Pisa)

February 2021: Le temps retrouvé de l'économie

Jean-Luc Gaffard (Université Côte d'Azur/OFCE)

and Pierre Dockès (Université Lyon II)

July 2020: Why Has National Accounting Withstood the Pandemic (But Not Its Diffusion Models?)

Josselin Garnier and Xavier Timbeau

May 2020: EU Reaction to the Coronavirus Crisis: Dispersed Order or Applied Subsidiarity?

Hans-Helmut Kotz and Xavier Ragot

May 2020: Modelling the Pandemic, Health and Economic Responses to the Crisis: Elements of Comparison

Josselin Garnier and Jean-Philippe Touffut

May 2020: The Concentration of Economic Power: The Current State of Affairs and Potential Paths Out of the Crisis

Frédéric Marty

April 2020: Which Data for Which Models? A Look at Employment

Ekkehard Ernst and Bernard Gazier

April 2020: Uncertainties Regarding the Modelling of the Pandemic

Josselin Garnier

April 2020: Which Data for Which Models? Diagnosis of the Pandemic, Diagnosis of the Crisis

Christophe Baillet, Robert Boyer, Josselin Garnier and Xavier Ragot



December 2020: 3rd Meeting – Girls and Mathematics: A Bright Equation

Cournot Centre speaker: Caroline Hillairet

November 2020: The Pandemic and Managing the New Trilemma: Health, Economy and Freedom – What solutions?

Robert Boyer, Hans-Helmut Kotz and Xavier Ragot

October 2020: The Coronavirus Crisis: Adjustments to Employment and Unemployment in Europe and the United States

Bernard Gazier and Eric Heyer

March 2020: 2nd Meeting – Girls and Mathematics: A Bright Equation

Cournot Centre Speaker: Laure Dumaz

February 2020: 1st Meeting – Girls and Mathematics: A Bright Equation

Cournot Centre speaker: Anne Gruz

January 2020: Initiation to Probability: Middle-School Students Test Games of Chance

Clément Martin and Josselin Garnier

November 2019: Book Launch: *Économie du travail et de l'emploi* by Bernard Gazier and Héloïse Petit

Bernard Gazier and Héloïse Petit

Commentators: Philippe Askenazy and Jean-Marc Vittori

October 2019: Financial Regulation of Online Games

Frédéric Marty and Mathieu Rosenbaum

July 2019: How to Found a European Welfare State

Xavier Ragot

Commentator: Hans-Helmut Kotz

May 2019: Modelling the Transformation of the Age Pyramid

Sarah Kaakai

April 2019: Probability in France: From Disdain to Triumph

Martin Andler

Commentator: Laurent Mazliak

March 2019: The Microeconomic Turning Point at the OECD

Vincent Gayon

Commentator: Xavier Timbeau

February 2019: Middle-School Students Take on Martingales

Clément Martin and Josselin Garnier

November 2018: How to Model the Trajectories of Debris in Space

George Papanicolaou

October 2018: Foundations and Challenges of the Platform Economy

Robert Boyer and Michel Volle

September 2018: Fractional Randomness and Statistics

Charles Tapiero and Pierre Vallois

June 2018: The Social Sciences Face Up to the Abundance of Digital Data

Julien Boelaert and Étienne Ollion

May 2018: Estimating Persistence and Regimes in Economics

Knut Sølna and Jean-Bernard Chatelain

March 2018: EU Competition Law and Policy in Light of the Genealogy of US Antitrust Law

Dina Waked

October 2017: The End of Oil?

Antoine Halff

May 2017: Is the Slowdown in Productivity the Sign of the Exhaustion of Technical Change? Lessons from the French Automobile Industry since 1945

Michel Freyssenet

April 2017: Political Economy of the French Crisis

Stefano Palombarini

March 2017: Can We Learn Something Philosophical from Experimental Philosophy?

Pascal Engel

February 2017: Modelling Wind Ressource with Diffusion

Alexandre Brouste

February 2017: Why Europe Needs a Funding Markets Union

Régis Breton

November 2016: Economic Crises and the Lender of Last Resort: Evidence from 19th Century France

Vincent Bignon

October 2016: Bugs, Tariffs and Colonies: France and the Mediterranean Wine Trade in the 19th and 20th Centuries

Giulia Meloni

September 2016: What Forces Govern the Evolution of CEO Pay in France?

Lionel Almeida

June 2016: Growth Theory and the Environment: Dematerializing Economic Analysis?

Antonin Pottier

May 2016: Jevons and the Dynamics of Industrialization

Raimund Bleischwitz

April 2016: "Prouver et gouverner": Presentation of Desrosières' Posthumous Book

Michel Armatte, Emmanuel Didier, Bernard Guibert, Thierry Martin, Laurent Mazliak

March 2016: Have We Entered a New Energy Price Regime?

Robert Boyer, Raimund Bleischwitz, Jean-Philippe Touffut, Han Wang

February 2016: The Role of Sector Dynamics in Financial Crises

Yannick Kalantzis

December 2015: The Implications of Prudential Regulation for Competition and Consumer Policy in the Banking Sector

Jacob Seifert

June 2015: "Social Dialogue" and Varieties of Capitalism: A Long-Term Analysis

Bernard Gazier

May 2015: Why Speech and Language Technology (almost) Works

Mark Liberman

April 2015: A Historical Analysis of Transnational Company Agreements

Udo Rehfeldt

March 2015: How to Identify an Object Using Electric or Acoustic Sense

Han Wang

February 2015: Where Does a Random Walk Lead?

Laure Dumaz

January 2015: Counting in Single Cells

Burak Okumus

November 2014: Three Kinds of Crisis, Three Ways Out: Viewpoints from the Disciples of Keynes, Polanyi and Marx

Gilles Raveaud

June 2014: What We Can Learn from the Electric Sense of Fish
Thomas Boulier

May 2014: Can the U.S. Shale Revolution Be Duplicated in Europe?
Aurélien Saussay

April 2014: Quantum Turing Testing
Elham Kashefi

March 2014: The Role of Economic Models in Low-carbon Policymaking
Frédéric Gherzi

January 2014: The Nature of Oil Shocks Matters
Jérôme Créel

November 2013: Proximity as a Source of Comparative Advantage
Elizaveta Archanskaia

October 2013: Does France Have a Productive Model?
Xavier Ragot

September 2013: Correlation-based Imaging in Random Media
Josselin Garnier

June 2013: 30 Years of Developing Public-Private Partnerships: A Macroeconomic Assessment
Frédéric Marty

May 2013: Exiting Deflation: When and How?
Robert Boyer and Xavier Timbeau

April 2013: Can Energy Be Reduced to Probability?
Vincent Danos

February 2013: Co-determination and the Crisis
Bernard Gazier

January 2013: Making Noise to Hear Better? Regularization by Noise in Analysis
Rémi Catellier

November 2012: Is Co-determination Compatible with French Capitalism?
Robert Boyer

October 2012: Co-determination à la française
Christophe Clerc and Jean-Louis Beffa

September 2012: The Universality of Probability Methods in Systems Biology
Johan Paulsson

March 2012: Is Probability Redefining Biology?
Raul Fernandez-Lopez

February 2012: A State of Macroeconomics: Is Economics already Probabilistic?
Xavier Timbeau

January 2012: The Probabilistic Shift in Biology
Francesca Merlin

November 2011: Information and Probability in Biology
Pierre-Henri Gouyon

October 2011: Noise from a Stochastic Perspective
Josselin Garnier

September 2011: The Emergence of French Probabilistic Statistics
Laurent Mazliak

October 2010: Is Everything Stochastic?
Glenn Shafer

September 2010: Quantification of the Brain
Pascal Legendre

July 2010: Speech Recognition as a Probability Science
Alexander Waibel

May 2010: Spurious Regressions
Jean-Bernard Chatelain

March 2010: What Do Probability Applications Say About Their Meaning?
Thierry Martin

January 2010: Probabilities of Probabilities
Bernard Walliser

November 2009: The Keynesian Concept of Uncertainty
André Orléan

October 2009: Three Sources of Probability Calculations in the 18th Century
Michel Armatte

September 2009: The Probabilization of Risk
Pierre-Charles Pradier

May 2009: An Economic Analysis of Panics
Desiree Desierto and John Nye

March 2009: Bayesian Confirmation Theory
Mikaël Cozic

February 2009: Stochastic Models of Decision Making
Jérôme Sackur

November 2008: Probabilism Theories: From Bayes to Reichenbach
Alexis Bienvenu

October 2008: Determinism and Freedom
Ted Honderich

September 2008: How Probability Became Its Own Science
Nicole El Karoui

June 2008: Probabilism in Natural History
Guillaume Lecointre and Pierre Darlu

June 2008: Probability Theories of Causality
Isabelle Drouet

March 2008: The Random Expression of Genes
Thomas Heams

June 2007: Controversies of Quantification since Cournot
Alain Desrosières



PANELS

Winter 2022

How to Model the Trajectory of Space Debris and Destroy Them

Speakers: Gérard Mourou (École Polytechnique, Nobel Prize in Physics 2018) and George Papanicolaou (Stanford University)

January 2021

Economic Outlook 2021

Xavier Timbeau, Hans-Helmut Kotz, Robert Boyer, Ekkehard Ernst, Bernard Gazier



March 2020

The Coronavirus Shock: A Look at an Unprecedented Crisis

Robert Boyer, Ekkehard Ernst and Xavier Ragot

December 2018 (Paris)

Is It All About Risk? From Life Insurance to Space Surveillance

Nicole El Karoui and George Papanicolaou

June 2017 (Paris)

Organized with the OFCE

Market Volatility in a Rough State?

Nicole El Karoui, Josselin Garnier, Mathieu Rosenbaum

December 2016 (Paris)

Have Big Data Really Changed Financial Mathematics?

Nicole El Karoui, Mathieu Rosenbaum, Knut Sølna

December 2015 (Paris)

Would France Be Better Off with Two Germanys?

Robert Boyer, Ekkehard Ernst, Baptiste Françon, Bernard Gazier, Xavier Ragot

December 2014 (Paris)

Does Social Democracy Have Economic Foundations?

Jean-Louis Beffa, Olivier Boylaud, Bernard Gazier, Xavier Ragot, Udo Rehfeldt, Jean-Marc Vittori

June 2012 (Paris)

Redefining Potential Growth

Olivier Boylaud, Ekkehard Ernst, Xavier Timbeau

December 2011 (Washington, D.C.)

Organized with Johns Hopkins University

Europe's Economic Crisis: Transatlantic Perspectives

Martin Baily, David Calleo, Benjamin Friedman, John Gabriel Goddard, Daniel Hamilton, Hans-Helmut Kotz, Robert Solow

October 2010 (Washington, D.C.)

Organized with Johns Hopkins University

The Feasibility of Monetary and Fiscal Policies

Martin Baily, David Calleo, John Gabriel Goddard, Daniel Hamilton, Jacob Kirkegaard, Hans-Helmut Kotz, Xavier Ragot, Robert Solow, Jérôme Vandenbussche

February 2009 (Berlin)

Towards a Common Fiscal Policy: Relaunching the Eurozone Economies

Jean-Louis Beffa, Gerhard Illing, Inge Kaul, Günther Schmid, Robert Solow

February 2008 (Munich)

A Call for a European Macroeconomic Policy

Jean-Louis Beffa, Robert Boyer, Bernard Gazier, Gerhard Illing, Robert Solow

December 2007 (Munich)

The Search for a Macroeconomic Policy for Europe

Jean-Louis Beffa, Robert Boyer, Edouard Challe, Gerhard Illing, Xavier Ragot, Robert Solow, Eloïse Stéclébout

May 2006 (Paris)

Fiscal Harmonization in Europe: Laying the Foundation

Patrick Artus, Alain Bassière, Lars Feld, Philipp Genschel, Gebhard Kirchgässner, Hans-Helmut Kotz, Amina Lahrèche-Révil, Évelyne Serverin

June 2005 (Paris)

Defining the Foundations for a New European Industrial Policy

Jean-Louis Beffa, Robert Boyer, Lionel Fontagné, Andreï Klepach, Hans-Helmut Kotz, Mario Monti

March 2004 (Paris)

Fair-Value Accounting at Stake

Jean-Louis Beffa, Vincent Bignon, Yuri Biondi, Robert Boyer, Eve Chiapello, Nicole El Karoui, Alain Joly, Michel Pébereau, Michel Prada, Xavier Ragot

March 2003 (Paris)

Interpreting the European Takeover Bid Directive

François Bayrou, Jean-Louis Beffa, Robert Boyer, Nicholas Clegg, Simon Deakin, Philippe Herzog, Hans-Helmut Kotz, Frédéric Lordon, Antoine Rebérioux, Ieke Van Den Burg

RESEARCH THEME

NON-MARKOVIAN PROCESSES

Sloan Research Grant (2020–2022) **How to Define and Detect Regime Shifts**

The analysis of market mechanisms has a long history. In 1905, Louis Bachelier established that prices on financial markets follow a random walk: neither buyers nor sellers can systematically make a profit. It was in this vein that Paul Samuelson built a definition in response to an empirical study that revealed the random character of stock prices, providing the mathematical foundation for what has become known as the efficient-market hypothesis.

The early work of Benoît Mandelbrot showed that an efficient market situation with uncorrelated returns may not be observed and that long-range correlations and heavy-tailed return distributions may be typical. This analysis contrasts with the seminal work of Fischer Black and Myron Scholes. The strong impact of their work can partly be explained by the explicit approaches it provides for pricing and hedging. The Black-and-Scholes theory and associated pricing models assume a situation in which future returns are uncorrelated with respect to past information. Is it possible to reconcile such contradictory theories?

The project addresses the question of how deviations from an idealized efficient market situation can be understood from both economic and mathematical viewpoints. Appropriate tools are being developed for analysing historical data, with the aim of detecting such inefficiencies and developing market models that take into account such information. The project is interdisciplinary in nature. It is motivated and driven by data analysis and seeks to understand, from an economic perspective, the resulting observations. Sophisticated mathematical and probabilistic modelling is being developed to capture the essence of such markets. The data used to date come from the period following the establishment of the Black–Scholes framework; data from the pre-Black–Scholes period are also under examination.

From a statistical viewpoint, modelling and analysis of locally stationary processes via time-frequency analysis are central ingredients. The modelling is carried out in terms of multifractal stochastic processes, where both a time-varying “memory effect” of returns and local market volatility can be incorporated.

From an economic perspective, a method is being developed to understand what mathematicians call “intermittent” markets, mainly quiet periods that occasionally turn into periods of intense activity. The method focuses on characterizing such periods and on understanding how they can be correlated with specific economic conditions. How can these periods – for instance, in crude oil prices – be explained via collective behaviour resulting from actions of small and large agents in the market place?

MIDDLE SCHOOL INITIATION TO PROBABILITY

The “Initiation to Probability” programme introduces probability theory and economics to middle-school students in Priority Education Networks (REP) in France. The volunteer students from 6th to 9th grades are guided by mathematician and École Polytechnique Professor Josselin Garnier.

The aim of the Cournot workshops is to have the students work on a probability research project throughout the school year. The workshops take place at the school.

At the end of their research project, the students participate in an annual conference organized by the French association for the promotion of mathematics, Math en Jeans. They present the results of their work using different media: an auditorium presentation, a stand with posters and interactive games, and an article published in the conference proceedings.



PUBLICATIONS BOOKS



- **How Itô Changed Chance**

Contributors: Nicole El Karoui, Josselin Garnier, Daniel Goroff, Glenn Shafer
Forthcoming in 2022

- **What's Right with Macroeconomics?**

Contributors: Wendy Carlin, Jean-Bernard Chatelain, Giancarlo Corsetti, Giovanni Dosi, Robert Gordon, Paul De Grauwe, Xavier Ragot, Xavier Timbeau, Volker Wieland
Edited by Robert Solow & Jean-Philippe Touffut
Edward Elgar 2012

- **Europe's Economic Crisis: Transatlantic Perspectives**

A joint project with the Center for Transatlantic Relations (Johns Hopkins University)
Contributors: Martin Baily, David Calleo, John Gabriel Goddard, Daniel Hamilton, Hans-Helmut Kotz, Natalie McGarry, Xavier Ragot
Edited by Robert Solow & Daniel Hamilton
Johns Hopkins University Press, 2011

- **The Shape of the Division of Labour: Nations, Industries and Households**

Contributors: Bina Agarwal, Martin Baily, Jean-Louis Beffa, Richard Cooper, Jan Fagerberg, Elhanan Helpman, Shelly Lundberg, Valentina Meliciani, Peter Nunnenkamp
Edited by Robert Solow & Jean-Philippe Touffut
Edward Elgar 2010

- **Changing Climate, Changing Economy**

Contributors: Michel Armatte, Jean-Pierre Dupuy, Olivier Godard, Inge Kaul, Thomas Schelling, Robert Solow, Nicholas Stern, Thomas Sterner, Martin Weitzman
Edited by Jean-Philippe Touffut
Edward Elgar 2009

- **Does Company Ownership Matter?**

Contributors: Jean-Louis Beffa, Margaret Blair, Wendy Carlin, Christophe Clerc, Simon Deakin, Jean-Paul Fitoussi, Donatella Gatti, Gregory Jackson, Xavier Ragot, Antoine Rebérioux, Lorenzo Sacconi, Robert Solow
Edited by Jean-Philippe Touffut
Edward Elgar 2009

- **Central Banks as Economic Institutions**

Contributors: Patrick Artus, Alan Blinder, Willem Buiter, Barry Eichengreen, Benjamin Friedman, Carl-Ludwig Holtfrerich, Gerhard Illing, Otmar Issing, Takatoshi Ito, Stephen Morris, André Orléan, Nouriel Roubini, Robert Solow
Edited by Jean-Philippe Touffut
Edward Elgar 2008

- **Augustin Cournot: Modelling Economics**

Contributors: Robert Aumann, Alain Desrosières, Jean Magnan de Bornier, Thierry Martin, Glenn Shafer, Robert Solow, Bernard Walliser
Edited by Jean-Philippe Touffut
Edward Elgar 2007

- **Advancing Public Goods**

Contributors: Patrick Artus, Avner Ben-Ner, Bernard Gazier, Xavier Greffe, Claude Henry, Philippe Herzog, Inge Kaul, Joseph Stiglitz
Edited by Jean-Philippe Touffut
Edward Elgar 2006

- **Corporate Governance Adrift: A Critique of Shareholder Value**

Michel Aglietta & Antoine Rebérioux
Edward Elgar 2005

- **The Future of Economic Growth: As New Becomes Old**

Robert Boyer
Edward Elgar 2004

- **Institutions, Innovation and Growth: Selected Economic Papers**

Contributors: Philippe Aghion, Bruno Amable with Pascal Petit, Timothy Bresnahan, Paul David, David Marsden, AnnaLee Saxenian, Günther Schmid, Robert Solow, Wolfgang Streeck, Jean-Philippe Touffut
Edited by Jean-Philippe Touffut
Edward Elgar 2003

PUBLICATIONS

BOOKLETS The Cournot Centre's *PRISMES*



The impact of Public Policy on Economic Activity: Micro/Macro Perspectives
Céline Chicot and Mathieu Plane
N°42



The Concentration of Economic Power since the Pandemic
Frédéric Marty
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Technical Change and Probability Theory: How Automatic Translation Has Transformed Speech
Alexander Waibel
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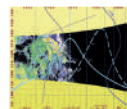
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Nicole El Karoui
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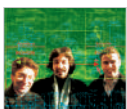
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Pierre-Charles Pradier
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Vincent Bignon, Yuri Biondi and Xavier Ragot
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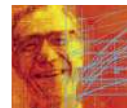
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Robert Boyer
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Robert Solow
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Thomas Heams
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Ramifications of the European Directive on Takeover Bids
Jean-Louis Beffa, Leah Langenlach and Jean-Philippe Touffut
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A MATHEMATICAL HERITAGE IN THE MAKING

YOUNG PROBABILISTS AND THEIR SCIENCE TODAY



A collection of interviews
with young
French-speaking probabilists

The Cournot Centre is collecting interviews with young probabilists. How do they define probability? How do they relate to its past, and how do they see its future? Where do they place themselves in the field? How do they work and interact with each other?

The project is based on a series of interviews with young French-speaking researchers, questioning them on their perceptions of the discipline, of their own work and of the diffusion of probability throughout society.

A film, based on the interviews, will present a collective portrait of today's young French-speaking probabilists.

SCHOLARS AND FELLOWS

The Cournot Foundation has been awarding fellowships to postdoctoral and senior researchers of all nationalities since 2003. The Cournot Centre's Scientific Team, chaired by Robert Solow, selects the fellows based on their applications.

Visiting scholars

2019

Charles Tapiero (New York University)

2018

George Papanicolaou (Stanford University)

Research fellowships

2017/2018

Knut Sølna (University of California at Irvine)

Postdoctoral fellowships

2016/2017

Lionel Almeida (Paris Nanterre University)

Giulia Meloni (University of Leuven)

2015/2016

Julia Cajal (University of Warwick)

Maddalena Cavicchioli (University of Modena)

Jacob Seifert (University of St. Andrews)

Tymon Sloczynski (Warsaw School of Economics)

2014/2015

Andrea Ariu (University of Leuven)

Baptiste Françon (University Paris I)

Bruno José Trancoso da Rocha (University of Essex)

2013/2014

Elizaveta Archanskaia (Sciences Po Paris)

Giorgia Barboni (Sant'Anna School of Advanced Studies, Pisa)

Bassel Tarbush (University of Oxford)

2012/2013

Marlène Isoré (Sciences Po, Paris)

Michela Limardi (Paris School of Economics)

Alessia Russo (University of Bologna)

2011/2012

Timo Hiller (European University Institute, Florence)

Nawid Siassi (Carlos III University of Madrid)

Fabio Verona (University of Porto)

2010/2011

Majid Al-Sadoon (University of Cambridge)

Celia Badillo Bautista (University of Essex)

Elodie Djemai (University of Michigan)

Selin Özyurt (University Paris IX)

Judit Vall Castello (Maastricht Graduate School of Governance)

2009/2010

Juan Francisco Carluccio (EHESS, Paris)

Jean-Paul Carvalho (University of Oxford)

Gaetano Gaballo (University of Siena)

Sorin Krammer (MIT)

Friedrich Pöschel (University of Rome)

2008/2009

Maria Bas (EHESS, Paris)

Tim Friehe (University of Tübingen)

Julien Grenet (EHESS, Paris)

Zacharias Maniadis (University of California, Los Angeles)

2007/2008

Mickael Béaud (University of Franche-Comté)

Daniel Danau (University of Lyon II)

Gabrielle Fack (Harvard University)

François Le Grand (EHESS, Paris)

Blandine Zimmer (University of Strasbourg)

2006/2007

Alexis Bienvenu (University Paris I)

Thanh Quang Le (Australian National University)

William Nilsson (Umeå University)

Pierre-Alain Taillard (EHESS, Paris)

Ahmed Tritah (European University Institute, Florence)

2005/2006

Emily Christi Cabegin (De La Salle University, Manila)

Camille Cornand (University of Lyon II)

Lilas Demmou (CEPREMAP, Paris)

Desiree Desierto (University of Nottingham)

Fabio Mariani (University of Leuven)

2004/2005

Mathias Hungerbühler (University of Leuven)

Alessandra Luzzi (University of Pisa)

Hind Sami (University of Lyon II)

Eloïse Stéclebout (University Paris I)

Emmanuelle Walkowiak (University Paris IX)

2003/2004

Nicolas Canry (University Paris X)

Carolina Castaldi (University of Pisa)

Paul Ehling (HEC Lausanne)

John Gabriel Goddard (University of Oxford)

Jérôme Vandebussche (EHESS, Paris)

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CONTACT :

Therese Goodlett

therese@centre-cournot.org



www.centre-cournot.org

augustin@centre-cournot.org