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PRESENTATION

Founded in 1966, the **CENTER FOR OPERATIONS RESEARCH AND ECONOMETRICS (CORE)** is an interdisciplinary and interfaculty research center of the Université catholique de Louvain. Its main objectives are the development of scientific research in the fields of expertise of its academic and research staff, the training of young researchers at the doctoral and postdoctoral stages of their career, and the promotion of inter-university and international scientific exchanges and collaborations. In this introduction, I briefly survey the progress made in these missions during the academic year 2008-2009 and I indicate where more detailed information can be found in this report.

As of September 2009, Professor Mathieu VAN VYVE has become a member of CORE. His teaching will be in the Louvain School of Management. He will reinforce the operations research group.

RESEARCH ACTIVITIES

One hundred and twenty-eight journal articles have been published, and eighty-four new discussion papers have appeared. A summary of the main results contained in the discussion papers can be found in Section 3 by research discipline. These cover econometrics, economic geography and international economics, industrial organization, macroeconomic policies, microeconomic theory, optimization methods and operations research, and public economics. Interactive research in these disciplines, unified by mathematical modeling and reasoning, has generated new theoretical results and offered applications in the fields of mathematical engineering, economics and management, the main targets of CORE activities.

RESEARCH TRAINING

An important facet of CORE activities is educational. It is CORE professors' fundamental responsibility to transfer their knowledge and research abilities to the younger generation, and to provide scientific training to young researchers in their areas of specialization by means of individual supervisions, seminars, workshops, conferences and participation to doctoral programs and networks. CORE serves as a host institution for the European Doctoral Program in Quantitative Economics (see Section 5) and for the Early Stage four-year Training Marie Curie project "Public Policy, Market Organization and Transition Economies" carried out in cooperation with the Central European University in Budapest and the Center for Economic Research and Graduate Studies at Charles University in Prague, and funded by the European Commission. About forty students are completing their doctoral studies under the supervision of CORE members, and benefit from CORE facilities. The detailed list of these students and their projects can be found in Section 5. Seven

students have defended their Ph.D. theses under the supervision of a CORE member this year. They have acquired positions in a variety of institutions.

SCIENTIFIC EXCHANGES AND EXTERNAL LINKS

An essential part of CORE activities centers on developing inter-university and international scientific exchanges and collaborations. Since its foundation, CORE has always benefited from the CORE membership of academics and researchers of neighboring universities. This important collaboration policy is actively maintained. These exchanges are also promoted by the fellowship and visiting professorship programs offering support for periods of a few months to two years for foreign researchers. In this respect, a new policy has been implemented to enhance that attraction of CORE for candidate postdoctoral fellows. It consists in offering two year contracts and a research budget. As usual, CORE offers an office for short and regular visits to professors and researchers from UCL and other nearby universities, and to the short-term visitors coming either to present their work at one of the weekly research seminars, to participate in CORE workshops or conferences, or simply to work with a co-author. The list of all visitors, either long or short term, and of all research seminars organized in 2008-2009 can be found in this report (sections 1 and 4). These activities are supported by CORE participation in many cooperative programs and research contracts that are financed either by the University, the Belgian Federal Government, the Belgian French-speaking Community, the European Commission or industry. All contracts are listed in Section 2.

ACKNOWLEDGMENTS

We are grateful for the support of the Université catholique de Louvain, which is indispensable in helping to maintain the stimulating and exceptional research environment of CORE. Finally, all the activities listed in this report would not be possible without the dedicated work of CORE permanent staff, both academic and administrative. They are all warmly thanked for their continuing efforts.

Luc BAUWENS

PERSONNEL

- MANAGEMENT
- THE FACULTY
- ADMINISTRATIVE STAFF
- DOCTORAL STUDENTS AND RESEARCH ASSISTANTS
- RESEARCH FELLOWS
- ASSOCIATE FELLOWS
- RESEARCH ASSOCIATES
- SHORT TERM VISITORS
- RESEARCH FELLOWS AND VISITING FACULTY MEMBERS FOR 2009-2010
- OTHER ITEMS

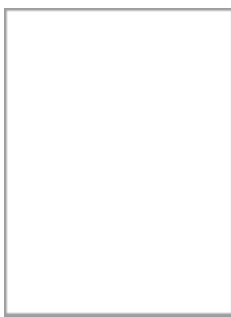
■ MANAGEMENT

Officers for the period covered by this report:

President	Claude d'ASPREMONT
Research Director	Luc BAUWENS
Co-directors	François MANIQUET Laurence WOLSEY
Administrative Director	Francisco SANTANA FERRA and Sheila WEYERS

■ THE FACULTY

During the academic year 2008-2009, the permanent staff of CORE consisted of **FACULTY MEMBERS** of the Université catholique de Louvain (UCL), Katholieke Universiteit Leuven (KUL), the Université Libre de Bruxelles (ULB), the Facultés Universitaires Saint-Louis, Bruxelles (FUSL), the Université de Liège (ULG) and the Facultés Universitaires Notre-Dame de la Paix, Namur (FUNDP).



PER AGRELL

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, IAG-Louvain School of Management), Belgium; senior researcher, Fondazione Eni Enrico Mattei (FEEM).

Ph.D. (production economics), Linköping University, Sweden, 1995.

Researcher, International Institute for Applied Analysis (IIASA), Laxenburg, Austria, 1993-1994; post doctoral researcher, University of Georgia, Athens (GA), USA; visiting associate professor in operations research, Copenhagen University, Denmark; 1997-1999; associate professor in managerial economics, Copenhagen University, Denmark, 1998-2001; senior researcher, Universitat Autònoma de Barcelona, Spain, 2008.

Operations management (supply chain management, network regulation).

Associate editor, *International Journal of Production Economics*.

ANTON BARTEN

Professor emeritus, Katholieke Universiteit Leuven and Université catholique de Louvain, Belgium.

Ph.D. (economische wetenschappen), Nederlandse Economische School, Rotterdam, The Netherlands, 1996.

Visiting professor, University of California, Berkeley (CA), USA, 1962-1963; University of Wisconsin, Madison (WI), USA, 1963; University of Pennsylvania, Philadelphia (PA), USA, 1964; University of Chicago (IL), USA, 1969-1970.

Econometrics and macroeconomic models.

Fellow of the Econometric Society, 1980; member of the International Statistical Institute, 1977; corresponding member of the Royal Netherlands Academy of Sciences; foreign member of the Royal Belgian Academy of Sciences.

LUC BAUWENS

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium.

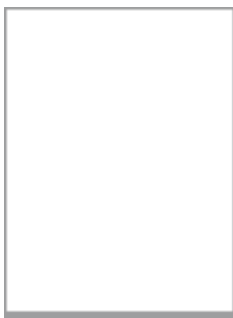
Docteur en sciences économiques, Université catholique de Louvain, Belgium, 1983.

World Bank, Washington (DC), USA, 1983-1984; senior researcher at Facultés Catholiques de Mons, Belgium, 1984-1987; senior lecturer at Ecole des Hautes Etudes en Sciences Sociales (EHESS), Marseille, France, 1987-1991.

Econometrics and statistics.

Leonard J. Savage Thesis Award, 1984; chairman, Département des sciences économiques, Université catholique de Louvain, Belgium, 2000-2003; Francqui Chair, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium, 2005-2006; research director, CORE, Université catholique de Louvain, Belgium, 2006-to date.

Associate editor, *Computational Statistics*, *Empirical Economics*, *Journal of Applied Econometrics*, *Journal of Financial Econometrics* and *Risk Letters*.



PAUL BELLEFLAMME

Professor, Université catholique de Louvain (Louvain School of Management, Louvain-la-Neuve campus), Belgium; research affiliate, Center for Economic Studies and Ifo Institute for Economic Research (CESifo), München, Germany; member of the board of AIDE (Association Internationale de Droit Economique).

Docteur en sciences économiques, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium, 1997.

Research fellow, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium, 1997-1999; Lecturer in economics, Queen Mary, University of London, United Kingdom, 1999-2002.

Microeconomics (industrial organization, game theory).

Associate editor, *Information Economics and Policy* and *E-economics*.



RAOUF BOUCEKINE

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium; part-time chair in economics, University of Glasgow, United Kingdom.

Docteur en sciences économiques, Université Paris I (Panthéon-Sorbonne), France, 1993.

Associate professor, Universidad Carlos III de Madrid, Spain, 1993-1998; visiting professor, Université Louis Pasteur de Strasbourg, France, 2000-2003; Katholieke Universiteit Leuven, Belgium, 2001-2005; HEC-Paris, France, 2003-2007.

Mathematical and computational methods in economics, growth theory and development, economic and mathematical demography.

Associate editor of *Mathematical Population Studies*, *Mathematical Social Sciences*, *Journal of Public Economic Theory* and *Investigaciones Economicas*.

THIERRY BRÉCHET

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, IAG-Louvain School of Management), Belgium; holder of the Chair Lhoist Berghmans in Environmental Economics and Management.

Docteur en sciences économiques, Université Paris I (Panthéon-Sorbonne), France, 2000.

Environmental economics.



PHILIPPE CHEVALIER

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, IAG-Louvain School of Management), Belgium.

Ph.D. (operations research), Massachusetts Institute of Technology, Cambridge (MA), USA, 1992.

Associate Professor, Universidad de Chile, 1992-1994.

Operations research: stochastic models, supply chain and management.



CLAUDE D'ASPREMONT

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium and Facultés universitaires Saint-Louis, Bruxelles, Belgium.

Ph.D. (decision sciences), Graduate School of Business, Stanford University, (CA), USA, 1973.

Visiting professor, Université d'Aix Marseille III, France, 1984-1996; Université Louis Pasteur, Strasbourg, France, 1988-1999; Ecole Polytechnique de Paris, France, 1995; visiting scholar, Graduate School of Business, Stanford (CA), USA, Summer 1987 and Spring 1995.

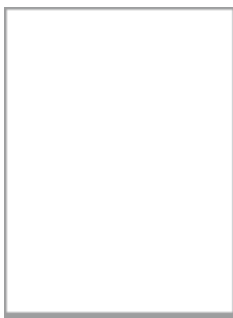
Mathematical economics, social choice theory, industrial organization.

Chairman, Department of Economics, Université catholique de Louvain, Belgium, 1991-1994; research director, CORE, 1995-1998, Université catholique de Louvain, Belgium; fellow of the



Econometric Society, 1984; Francqui Prize 1995; Doctor Honoris Causa, Université Louis Pasteur, Strasbourg, France, 2002; president, CORE, Université catholique de Louvain, Belgium, 2006-to date.

Associate editor, *Games and Economic Behavior*, *Journal of Mathematical Economics*, *Social Choice and Welfare*, *Journal of Public Economic Theory* and *Revue de philosophie économique*; past associate editor, *European Economic Review* and *Journal of Economics/Zeitschrift für Nationalökonomie*.



PIERRE DEHEZ

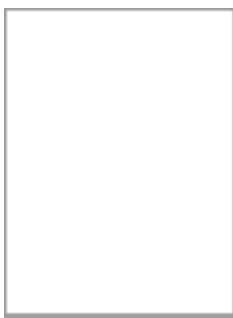
Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium.

Docteur en sciences économiques, Université catholique de Louvain, Belgium, 1980 (European Doctoral Program).

Professor, European University Institute, Florence, 1983-1990 and Erasmus Universiteit Rotterdam, The Netherlands, 1991-1992; visiting professor, University of Illinois, Urbana-Champaign (IL), USA; Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium; Université de Cergy-Pontoise, France, Université de Strasbourg, France; Université de Nancy, France.

Microeconomics, general equilibrium theory, game theory.

Chairman, Département des sciences économiques, Université catholique de Louvain, Belgium, 1994-2000; European University Institute, Firenze, Italy, 1985-1987 and 1989; prorector in charge of the sector of human and social sciences, Université catholique de Louvain, Belgium, 2001-2004.



DAVID DE LA CROIX

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium.

Docteur en sciences économiques, Université catholique de Louvain, Belgium, 1992.

Research fellow, Universiteit Maastricht, The Netherlands, 1992; visiting professor, University of California, Los Angeles (CA), USA, 2000-2001.

Growth theory, human capital and demography, overlapping generations.

Francqui Chair, Gent Universiteit, Belgium, 2004; chercheur qualifié honoraire, Fonds National de la Recherche Scientifique (FNRS), Belgium.

Associate editor of the *Journal of Economic Dynamics and Control*.

MATHIAS DEWATRIPONT

Professor, Université Libre de Bruxelles, Belgium; part-time visiting professor, Massachusetts Institute of Technology, Cambridge (MA), USA, 1998-to date; founding member of the Scientific Council of the European Research Council, 2005-to date.

Ph.D. (economics), Harvard University, Cambridge (MA), USA, 1986.

Economic theory and applications.

Fellow of the Econometric Society, 1993; Francqui Prize, 1998; Research director of the Centre for Economic Policy Research (CEPR), London, United Kingdom, 1998-to date; co-director, European Center for Advanced Research in Economics and Statistics (ECARES), Université Libre de Bruxelles, Belgium, 1991-2002; Jahnsson Medal 2003; president of the European Economic Association, 2005; Honorary Foreign Member of the American Academy of Arts and Sciences, 2009.

JACQUES DRÈZE

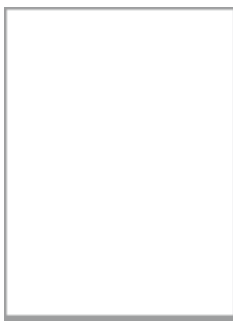
Professor emeritus, Université catholique de Louvain, Belgium.

Ph.D. (economics), Columbia University, New York (NY), USA, 1958.

Visiting professor, Carnegie Institute of Technology, Pittsburgh (PA), USA, 1957-1958; Northwestern University, Evanston (IL), USA, 1962; University of Chicago (IL), USA, 1963-1968.

Economic theory and econometrics.

Fellow, 1964 and president, 1970 of the Econometric Society; Francqui Chair, Université Libre de Bruxelles, Belgium, 1970-1971 and Katholieke Universiteit Leuven, Belgium, 1982-1983; Andrew D. White professor at large, Cornell University, Ithaca (NY), USA, 1971-1977; president of the European Economic Association, 1985-1986; president of the International Economic Association 1996-1999.



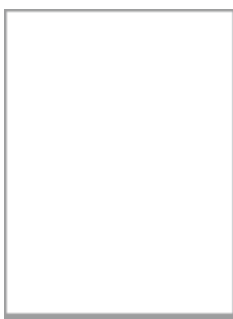
LOUIS EECKHOUDT

Professor emeritus, Facultés Universitaires Catholiques de Mons, Belgium.

Ph.D. (economics), Michigan State University, East Lansing (MI), USA, 1970.

Decisions under risk and health economics.

Associate editor *Geneva Risk and Insurance Review*, *Journal of Risk and Insurance* and *Revue Economique*.



JEAN J. GABSZEWICZ

Professor emeritus, Université catholique de Louvain, Belgium .

Docteur en droit, Université catholique de Louvain, Belgium, 1961; docteur en sciences économiques, Université catholique de Louvain, Belgium, 1968.

Visiting professor, Polish Academy of Sciences, Warszawa, Poland, 1973; University of Tel-Aviv, Israël, 1973; Université de Paris IX

(Dauphine), France, 1973; Université d'Aix-Marseille, France, 1973; Université de Paris XII (Val de Marne), France, 1979; Université d'Aix-en Provence, France, 1981; Université de Lyon, France, 1981; Université de Strasbourg, France, 1982; Université de Dijon, France, 1983; European University Institute, Firenze, Italy, 1984; Université de Paris I (Panthéon-Sorbonne), France, 1999-2000; Université de Paris II (Panthéon-Assas), France, 1999-2001.

Economic theory.

Fellow of the Econometric Society; 1979; administrator of CEPREMAP, Paris, France; member of the Council of the European Economic Association, 1986-1989; Doctor Honoris Causa, Université d'Aix-Marseille II, France, 2003; Fellow of the European Economic Association, 2004.

Associate editor *Journal of Economics* and *Ricerche Economica*; past associate editor *Journal of Economic Theory* and *European Economic Review*.

VICTOR GINSBURGH

Professor emeritus, Université Libre de Bruxelles, Belgium.

Docteur en sciences économiques, Université Libre de Bruxelles, Belgium, 1972.

Researcher, Yale University, New Haven (CT), USA, 1975; visiting professor, Université catholique de Louvain, Belgium, 1973, 1978 and 1985; University of Virginia, Charlottesville (VA), USA, 1979; Université Paris I (Panthéon-Sorbonne), France, 1986-1987 and 1991-1992; Université Paris II (Panthéon-Assas), France, 1986-2004; Université d'Aix-Marseille, France, 1986-1989; University of Chicago (IL), USA, 1996.

Economic theory and cultural economics.

Franco Chair, Université de Liège, Belgium, 1992-1993; president of the International Association of Cultural Economics, 2002-2004; co-director, European Center for Advanced Research in Economics and Statistics (ECARES), Université Libre de Bruxelles, Belgium, 2002-to date.

Co-editor, *Journal of Wine Economics*; associate editor, *Recherches Economiques de Louvain - Louvain Economic Review*; past associate editor, *Annales d'économie et de statistique*, *European Economic Review* and *Journal of Cultural Economics*.

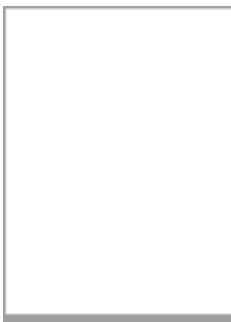
PIERRE GIOT

Professor, Louvain School of Management, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium.

Ph.D. in Economics (financial econometrics), Université catholique de Louvain, Belgium, 1999.

Assistant professor, Department of Quantitative Economics, Universiteit Maastricht, The Netherlands, 2000-2001; visiting professor, Université catholique de Louvain, Belgium, 2000-to date and Université Paris I (Panthéon-Sorbonne), France, 2002.

Financial econometrics, modeling volatility and risk, market microstructure, venture capital economics.

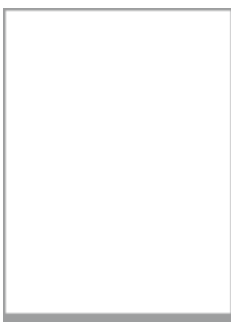


FRANÇOIS GLINEUR

Professor, Université catholique de Louvain (Ecole Polytechnique de Louvain, Département d'ingénierie mathématique), Belgium.

Docteur en sciences appliquées, Faculté polytechnique de Mons, Belgium, 2001.

Optimization (algorithms and modeling, in particular convex optimization, conic optimization, duality and interior-point methods).



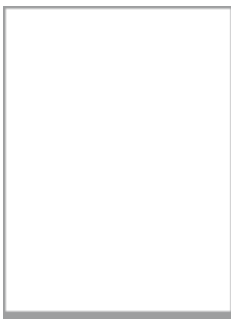
ISABEL GRILO

Associate Professor, Université de Lille III, France, 1995-2005. Deputy Head of Unit, European Commission (Enterprise Directorate-General), Belgium, 2000-to date.

Docteur en sciences économiques, Université catholique de Louvain, Belgium, 1994 (European Doctoral Program).

Visiting professor, Université catholique de Louvain, Belgium, 1994-2001.

Economic theory, industrial organization, entrepreneurship.



CHRISTIAN HAFNER

Professor, Université catholique de Louvain (Institut de statistique), Belgium.

Docteur en sciences économiques, Humboldt-Universität zu Berlin, Germany, 1996.

Ph.D. in Economics, Humboldt-Universität zu Berlin, Germany, 1996.

Postdoctoral fellow, CORE, Université catholique de Louvain, Belgium, 1996-1997; research associate, Humboldt-Universität zu Berlin, Germany, 1997-1998; chief analyst, Electrabel, Louvain-la-Neuve, Belgium, 1999-2003; assistant professor, Erasmus Universiteit Rotterdam, The Netherlands, 2002-2005.

Econometrics and statistics.

Associate editor, *Banking and Finance Review*, *Computational Statistics and Studies in Nonlinear Dynamics and Econometrics*.

JEAN HINDRIKS

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium; Senior fellow, Itinera Institute, Bruxelles, Belgium.

Docteur en sciences économiques, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium, 1996.

Fellow, University of Essex, United Kingdom, 1997-1998; Lecturer in economics, University of Exeter, United Kingdom, 1998-2000; Queen Mary College, University of London, United Kingdom, 2000-2002.

Public economics and political economy.

SÉBASTIEN LAURENT

Professor, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium.

Ph.D. in Financial Econometrics, Universiteit Maastricht, The Netherlands, 2002.

Visiting professor at Université catholique de Louvain, Belgium, 2001-to date and visiting professor at the London School of Economics, United Kingdom, 2007-to date.

Financial econometrics, modeling volatility and risk, computational econometrics.

ETIENNE LOUTE

Professor, Louvain School of Management, Facultés Universitaires Saint-Louis, Bruxelles, Belgium.

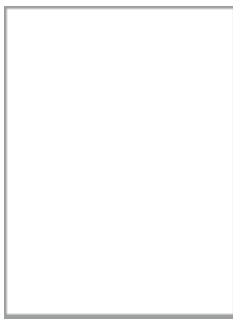
Docteur en sciences appliquées, Université catholique de Louvain, Belgium, 1976.

Visiting professor, Brookhaven National Laboratory, Upton (NY), USA, 1977; IIASA, Vienne, Austria, 1979; Ecole des Hautes Etudes

Commerciales Montréal, Canada, 1981; Université de Genève, Switzerland, 1992; Université de Savoie, France, 1992-2004; National University of Vietnam, Ho Chi Minh City, Vietnam, 1998-2002.

Mathematical programming: algorithmic and implementation issues, management and engineering applications of mathematical programming.

Dean, Faculté des sciences économiques et politiques, Facultés Universitaires Saint-Louis, Bruxelles, Belgium, 1993-1996; member of SOGESCI (Société Belge pour l'Application des Méthodes Scientifiques de Gestion, the Belgian OR society), President of SOGESCI (2004-2006), Director of Brussels Campus, Louvain School of Management, Belgium, 2007—present, member of INFORMS, SIAM, SOGESCI and Mathematical Programming Society.



FRANÇOIS MANIQUET

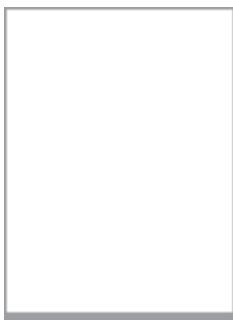
Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium.

Docteur en sciences économiques, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium, 1994.

Microeconomic theory (social choice theory, public economics and game theory).

Chercheur qualifié honoraire, Fonds National de la Recherche Scientifique (FNRS), Belgium; Member of the School of Social Science, Institute for Advanced Study, Princeton (NJ), USA, 2001-2002.

Co-editor, *Social Choice and Welfare*.



JEAN-FRANÇOIS MERTENS

Professor, Université catholique de Louvain (Faculté des Sciences, Département de mathématique), Belgium.

Docteur en sciences, Université catholique de Louvain, Belgium, 1970.

Visiting professor, Universität Heidelberg, Germany, 1970; Hebrew University of Jerusalem, Israël, 1970 and 2001; University of California, Berkeley (CA), USA, 1971 and 1972-1975; Universität Bielefeld,

Germany, 1972; Harvard Business School, Boston (MA), USA, 1981; leading professor of economics and of applied mathematics, S.U.N.Y. at Stony Brook (NY), USA, 1989-1992; Hebrew University of Jerusalem, Israël, 2001.

Economic theory and game theory.

Fellow of the Econometric Society, 1981.

Past editor, *Journal of Mathematical Economics*, *International Journal of Game Theory and Economic Theory*.

MICHEL MOUCHART

Professor emeritus, Université catholique de Louvain, Belgium.

Docteur en sciences économiques, Université catholique de Louvain, Belgium, 1973.

International professor CIENES, Santiago, Chili, 1966-1967; visiting professor, University of Chili, 1967-1968; University College, London, United Kingdom, 1976; Université de Strasbourg, France, 1981; Indian Statistical Institute, New Delhi, India, 1982; Université d'Aix-Marseille, France, 1982; Università di Bologna, Italy, 1984; Carnegie-Mellon University, Pittsburgh (PA), USA, 1985; Université des Sciences Sociales de Toulouse, France, 1991-1993; Université de Paris I (Panthéon-Sorbonne), France, 1993-1994.

Statistics and econometrics.

Member of the International Statistical Institute, Bernouilli Society, Société Belge de Statistique.

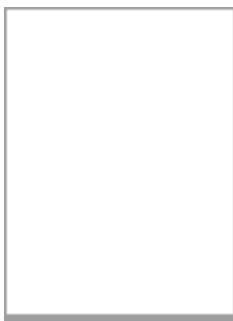
YURII NESTEROV

Professor, Université catholique de Louvain (Ecole Polytechnique de Louvain, Département d'ingénierie mathématique), Belgium.

Doctor in applied mathematics, Institute of Control Sciences, Москва, Russia, 1984.

Research associate, Central Economic and Mathematical Institute of the Russian Academy of Science, Москва, Russia, 1977-1992; visiting professor, Université de Genève, Switzerland, 1992-1993; invited professor, CORE, Université catholique de Louvain, Belgium, 1993-2000.

Convex and nonlinear optimization, complexity analysis of optimization schemes, polynomial-time algorithms, fast gradient methods, approximation of combinatorial problems, equilibrium in congested transportation networks.



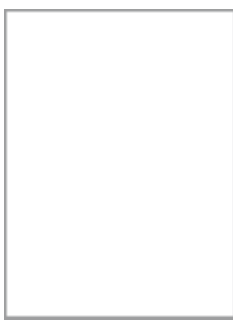
DOMINIQUE PEETERS

Professor, Université catholique de Louvain (Faculté des Sciences, Département de géographie), Belgium.

Docteur en sciences appliquées, Université catholique de Louvain, Belgium, 1980. Agrégé de l'enseignement supérieur, Université catholique de Louvain, Belgium, 1995.

Post-doctoral fellow, McMaster University, Hamilton, Ontario, Canada, 1982; visiting professor, Université du Québec, Montréal, Canada, 1986; Université de Bourgogne, France, 1991; University of Tsukuba, Japan, 1996-1997; Université Louis Pasteur, Strasbourg, France, 2006.

Location theory, economic geography, regional science, mathematical programming, operations research.



PIERRE PESTIEU

Professor emeritus, Université de Liège, Belgium.

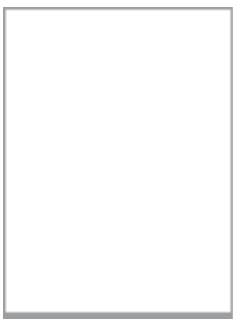
Ph.D. (economics), Yale University, New Haven (CT), USA, 1971.

Assistant professor, Cornell University, Ithaca (NY), USA, 1971-1976.

Population economics and public economics.

Co-editor, *Journal of Public Economics*; associate editor, *Journal of Public Economic Theory*, *Journal of Population Economics*, *Finanz-*

Archiv and Economica.



LÉOPOLD SIMAR

Professor, Université catholique de Louvain (Institut de Statistique), Belgium and Facultés Universitaires Saint-Louis, Bruxelles, Belgium.

Docteur en sciences appliquées (mathématiques appliquées), Université catholique de Louvain, Belgium, 1974.

Visiting professor, Cornell University, Ithaca (NY), USA, 1974; IDEI, Université des Sciences Sociales, Toulouse, France, 1991-2009;

Humbolt Universität, Berlin, Germany, 1993-2003; Texas University, Austin (TX), USA, 1995-2005; Rice University, Houston (TX), USA, 1996, 1998; ENSAI, Rennes, France, 1999-2001; Australian

National University, Canberra, Australia, 1999; Universität of Mainz, Germany, 2002-2004; University of Pisa, Italy, 2003-2006; University of Bologna, Italy, 2006; ENSAE, Paris, France, 2001-2009; Institut Français du Pétrole, Rueil, France, 1991-2009; Clemson University (SC), USA, 2007-2008; Professore di Chiara Fama, 2006 and 2007; Italian Ministry of Research, Scuola Superiore San'Anna, Pisa, Italy; Chaire d'Excellence Pierre de Permat, 2008-2009, Université des Sciences Sociales, Toulouse, France; Universität Karlsruhe (TH), Germany, 2008-2009.

Mathematical statistics, nonparametric statistics, resampling methods, production frontier.

Elected member of the International Statistical Institute; dean, Faculté des sciences économiques, sociales et politiques, Facultés Universitaires Saint-Louis, Bruxelles, Belgium, 1978-1990; Founder-Chairman, Institut de statistique, Université catholique de Louvain, Belgium, 1992-2004; past president of the Belgian Statistical Society, 1991-2001; honorary member of the Belgian Statistical Society.

Associate editor of the *Journal of Productivity Analysis*.

YVES SMEERS

Professor, Université catholique de Louvain (Ecole Polytechnique de Louvain, Département d'ingénierie mathématique), Belgium.

Master of Science (industrial administration) and Ph.D. (operations research), Carnegie-Mellon University, Pittsburgh (PA), USA, 1972.

Computational economics and risk management in the electricity and gas industries.

European editor, *Energy Journal*; associate editor, *Energy Economics*.

FRANS SPINNEWYN

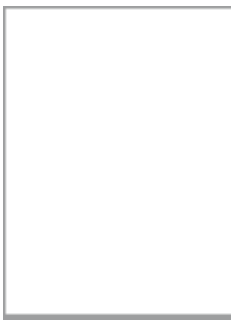
Professor, Katholieke Universiteit Leuven (Centrum voor Economische Studiën), Belgium.

Ph.D. (economics), London School of Economics, United Kingdom, 1975.

Bevoegd verklaard navorser, Nationaal Fonds voor Wetenschappelijk Onderzoek, Belgium, 1977-1979; assistant, Katholieke Universiteit Leuven, Belgium, 1979-1983; visiting professor, Cornell University, Ithaca (NY), USA, 1985.

Microeconomics.

B.A.C. prize, 1976.



JACQUES-FRANÇOIS THISSE

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium.

Docteur en sciences économiques, Université de Liège, Belgium, 1975.

Visiting professor, McMaster University, Hamilton, Canada, 1981; University of Pennsylvania, Philadelphia (PA), USA, 1985; INSEAD,

Fontainebleau, France, 1987; Virginia Polytechnic Institute, Blacksburgh (VA), USA, 1990; Université de Paris I (Panthéon-Sorbonne), France, 1991-1996; Institut National de Recherche Agronomique, Dijon, France, 2003; Kyoto University, Japan, 2006.

Fellow of the Econometric Society, 1992; Fellow of the Regional Science Association International, 2003; Fellow of the European Economic Association, 2004; William Alonso Memorial Prize, 2004; Prix scientifique quinquennal Ernest-John Solvay (FNRS), 2005; Doctor Honoris Causa, Université de Montréal, Canada, 2005, European Prize in Regional Science, 2007.

Economic theory, industrial organization and economic geography.

Associate editor, *International Journal of Economic Theory*, *International Journal of Industrial Organization*, *Japanese Economic Review*, *Journal of Economic Geography*, *Journal of Economics and Management Strategy* and *Regional Science and Urban Economics*.



ISABELLE THOMAS

Research Director, Fonds National de la Recherche Scientifique (FRS-FNRS), Belgium, and professor, Université catholique de Louvain (Faculté des sciences, département de géographie), Belgium.

Docteur en sciences (géographiques), Université catholique de Louvain, Belgium, 1984.

Prix Philippe Aydalot in Regional Science, 1989; BMW Scientific Award, 2001.

Presently member of the board of ERSa, ASRDLF, BIVeC/GIBET.

Economic geography; transport geography; optimal locations; cartography; quantitative analysis in geography; economic theory and game theory.

Member of the editorial board of *Economic Geography*; *Transport Geography*; *Optimal Locations*; *Cartography* and *Quantitative Analysis in Geography*.

HENRY TULKENS

Professor emeritus, Université catholique de Louvain, Belgium.

Dr. jur., Katholieke Universiteit Leuven, Belgium, 1960; Docteur en sciences économiques, Université catholique de Louvain, Belgium, 1968.

Visiting professor, Université d'Aix-Marseille II, France, 1971; Université Libre de Bruxelles, Belgium, 1971-1972 and 1973-1974; Princeton University (NJ), USA, 1973 and 1983; Stanford University (CA), USA, 1973 and 1979; Hebrew University of Jerusalem, Israël, 1976 and 1981;

Université Laval, Canada, 1977; Université Paris XII, (Val de Marne), France, 1978; Université de Montréal, Canada, 1985; Beijer Institute of Ecological Economics, Stockholm, Sweden, 1992 and 1993; Fondazione ENI Enrico Mattei, Milano, Italy, 1993; Ecole Nationale de la Statistique et de l'Administration Economique, Paris, France 1995; International Monetary Fund, Washington (DC), USA, 1997 and 2004; Université de Paris I (Panthéon-Sorbonne), France, 2003; University of the South Pacific, Suva, Fiji, 2004.

Economic theory and public finance.

Dean, Faculté des sciences économiques, sociales et politiques, Facultés Universitaires Saint-Louis, Bruxelles, Belgium 1970-1974; chairman, Département des sciences économiques, Université catholique de Louvain, Belgium 1978-1981; vice-president, International Institute of Public Finance, 1994-2000; general secretary of the European Economic Association, 1998-2004.

HYLKE VANDENBUSSCHE

Professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Chaire Jacquemin, Département des sciences économiques), Belgium.

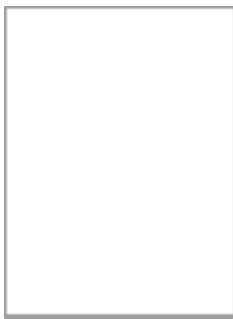
Ph.D. in Economics, Universiteit Antwerpen, Belgium, 1995.

Lecturer in Industrial Economics, Judge Institute of Management of the University of Cambridge, United Kingdom, 1994-1996;

Postdoctoral Researcher, Nationaal Fonds voor Wetenschappelijk Onderzoek, Belgium, 1996-1999; professor in Applied Economics, Katholieke Universiteit Leuven, Belgium, 1999-2005; visiting professor, Dartmouth College, Hanover (SH), USA, 2000-2001 and 2003-2004.

International economics, empirical trade, trade policy, programme evaluation, tax policy.

Vereniging voor Economie Vlaanderen (VEV-Award), 1999; panel member of the journal *Economic Policy*, 2000-2002.



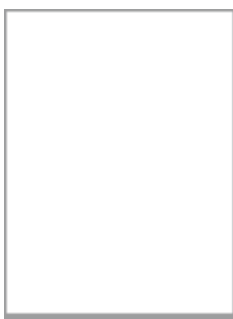
VINCENT VANNETELBOSCH

Chercheur qualifié, Fonds National de la Recherche Scientifique (FNRS), Belgium and associate professor, Université catholique de Louvain (Faculté des sciences économiques, sociales et politiques, Département des sciences économiques), Belgium.

Docteur en sciences économiques, Université catholique de Louvain, Belgium, 1996 (European Doctoral Program).

Extramural Fellow of METEOR, Universiteit Maastricht, The Netherlands, 2003-to date; associate fellow of CEREC, Facultés Universitaires Saint-Louis, Bruxelles, Belgium, 2005-to date; director of the European Doctoral Program in Quantitative Economics, 2004-to date.

Game theory and industrial organization.



XAVIER WAUTHY

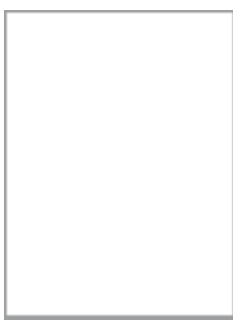
Professor, Facultés Universitaires Saint-Louis, Bruxelles, Belgium; visiting professor, Université catholique de Louvain, Belgium.

Docteur en sciences économiques, Université catholique de Louvain, Belgium, 1995.

Research fellow, Universiteit Maastricht, The Netherlands, 1996; chargé de recherches, Fonds National de la Recherche Scientifique (FNRS),

Belgium, 1997-1998.

Industrial organization, microeconomic theory.



LAURENCE WOLSEY

Professor, Université catholique de Louvain (Ecole Polytechnique de Louvain, Département d'ingénierie mathématique), Belgium.

Ph.D. (mathematics), Massachusetts Institute of Technology, Cambridge (MA), USA, 1969.

Visiting researcher, Manchester Business School, United Kingdom, 1969-1971; London School of Economics, United Kingdom, 1978-1979;

Cornell University, Ithaca (NY), USA, 1983; visiting professor, Ecole Polytechnique de Lausanne, Switzerland, 1986-1987; Donders professor, Department of Computer Science, University of Utrecht, The Netherlands, Spring 1998.

Discrete optimization, operations research and applied mathematics.

Associate editor, *Mathematical Programming A*.

■ ADMINISTRATIVE STAFF

Laurent Buset ■ Micheline Delize ■ Catherine Germain ■ Alain Gillis ■ Fabienne Henry ■ Marie Hervo ■ Sylvie Mauroy ■ Eric Nahimana ■ Anne-Marie Pessieux ■ Francisco Santana Ferra ■ Caroline Theodor ■ Raphaël Tursis ■ Sheila Weyers ■ Danisa Zapparata

■ DOCTORAL STUDENTS AND RESEARCH ASSISTANTS

Ozlem Akin ■ Oscar Amerighi ■ Efthymios Athanasiou ■ Carlotta Balestra ■ Anton Belyakov ■ Olivier Bos ■ Quentin Botton ■ Filippo Calciando ■ Jean-François Carpentier ■ Robert Chares ■ Nicolas Debarsy ■ Nguyen Thang Dao ■ Gauthier De Maere d'Aertrycke ■ Rafael De Melo ■ Federico De Stefano ■ Olivier Durand-Lasserre ■ Fernanda Estevan ■ Emanuele Forlani ■ Julie Frère ■ Joachim Gahungu ■ Maia Gejadze ■ Nicolas Gillis ■ Gilles Grandjean ■ Michele Grazioli ■ Salome Gvetadze ■ Asel Isakova ■ Aysegul Kayaoglu ■ Tanja Kosi ■ Catharina Lee Li Jing ■ Mathias Lorenz ■ Sylvette Ly ■ Marco Marinucci ■ Michal Markun ■ Jean-François Maystadt ■ Bénédicte Meert ■ Tanja Mlinar ■ Deniz Nebioglu ■ Giorgia Oggioni ■ Filomena Petronio ■ Alain Pholo Bala ■ Paolo Giovanni Piacquadio ■ Joël Raucq ■ Joana Resende ■ Emma Rouetbi ■ Dzianis Rozhyn ■ Besik Samkharadze ■ Maria Eugenia Sanin ■ Géraldine Strack ■ Jean-Sébastien Tancrez ■ Dennis Tuerk ■ Hakan Umit ■ Alfonso Valdesoglo Robles ■ Giacomo Valletta ■ Jean-Christophe Van Den Schrieck ■ Laurent Vanmalderen ■ Grégory Vandenbulcke ■ Christian Viegelaahn

■ RESEARCH FELLOWS

Research Fellows are scholars who work at CORE for a predefined time period (from one to three years).

David Ardia, Universität Freiburg, Switzerland

Santanu DEY, Ernst-Moritz-Arndt-Universität Greifswald, Germany

Marco Di Summa, Università degli Studi di Padova, Italy

Claire DUJARDIN, Département de géographie, UCL, Belgium

Yassine LEFOUILI, Université Paris I (Panthéon-Sorbonne), France

Marie-Louise LEROUX, Université de Toulouse 1 Capitole, France

Giordano MION, Università di Bologna, Italy

Eve RAMAEKERS, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

Peter RICHTARIK, Cornell University, Ithaca (NY), USA
Carlo ROSA, Institute for the World Economy, Kiel, Germany
Hiroshi UNO, Osaka University, Japan
Shin-Huei WANG, University of Southern California, Los Angeles (CA), USA
Ying WEI, The Chinese University of Hong Kong, Shatin, Hong Kong
Stéphane ZUBER, Université de Toulouse 1 Capitole, France

■ ASSOCIATE FELLOWS

Associate Fellows are scholars who work at CORE on a regular weekly basis and are assigned an office for a predefined time period.

Geoffrey CARUSO, Université du Luxembourg, Luxembourg
Bernard FORTZ, Université Libre de Bruxelles, Belgium
Axel GAUTIER, Université de Liège, Belgium
Leonidas KOUTSOGERAS, University of Manchester, United Kingdom
Stéphane LAMBRECHT, Université de Lille I, France
Roland LUTTENS, Universiteit Gent, Belgium
Ana MAULEON, Facultés Universitaires Saint-Louis, Bruxelles, Belgium
Pierre PICARD, University of Manchester, United Kingdom
Erik SCHOKKAERT, Katholieke Universiteit Leuven, Belgium
Joe THARAKAN, Université de Liège, Belgium
Eric TOULEMONDE, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium
Dirk VAN DE GAER, Universiteit Gent, Belgium
Wouter VERGOTE, Facultés Universitaires Saint-Louis, Bruxelles, Belgium

■ RESEARCH ASSOCIATES

Research Associates are scholars who visit CORE on a regular yearly basis

Olivier BOCHET, Universiteit Maastricht, The Netherlands
Parkash CHANDER, University of Singapore, Singapore
Marc FLEURBAEY, Université Paris Descartes, France
Johanna GOERTZ, University of Guelph, Canada
Jean-Jacques HERINGS, Universiteit Maastricht, The Netherlands
Enrico MINELLI, Università degli Studi di Brescia, Italy
Juan MORENO TERNERO, Universidad de Malaga, Spain
Susana PERALTA, Universidade Nova de Lisboa, Portugal
Jeroen ROMBOUTS, Université de Montréal, Canada
Huasheng SONG, Zhejiang University, China

■ SHORT TERM VISITORS

In addition to the longer stays of the visiting faculty and research fellows, CORE benefited from the visit of a number of scholars whose stays ranged from a few days to a few weeks. Among them

Jorge AMAYA, Universidad de Chile, Santiago de Chile, Chile
 Rabah AMIR, University of Arizona, Tucson, AZ, USA
 Antoinette BAUJARD, Université de Caen, France
 Kristian BEHRENS, Université du Québec à Montréal, Canada
 Lucien Gilles BENGUIGUI, Technion Israël Institute of Technology, Israël
 Nicolas BOCCARD, Universitat de Girona, Spain
 Eric BOND, Vanderbilt University, Nashville (TN), USA
 Xavier CALSAMIGLIA, Universitat Pompeu Fabra, Barcelona, Spain
 Jean CAVAILHES, Institut National de la Recherche Agronomique, Rennes, France
 Frank Youhua CHEN, National University of Singapore, Singapore
 Michelangelo CONFORTI, Università degli Studi di Padova, Italy
 Elena DEL REY, Universita de Girona, Spain
 Gilles DURANTON, University of Toronto, Canada
 Peter FRANKHAUSER, Université de Franche-Comté, Besançon, France
 Carl GAIGNE, Institut National de la Recherche Agronomique, Rennes, France
 Amit GAYER, University of Haifa, Israël
 Florence GOFFETTE-NAGOT, Université de Lyon, France
 Clovis GONZAGA, Federal University of Santa Catarina, Florianopolis, Brazil
 Emili GRIFELL-TATJE, Universitat Autònoma de Barcelona, Spain
 Roland HILDENBRAND, Université Joseph Fourier, Grenoble, France
 Natali HRITONENKO, Prairie View A&M University (TX), USA
 Pierre-André JOUVET, Université Paris Nanterre, France
 Edi KARNI, John Hopkins University, Baltimore (MD), USA
 Gary KOOP, University of Strathclyde, Glasgow, United Kingdom
 Jacek KRAWCZYK, Victoria University of Wellington, New Zealand
 Oussama LACHIRI, Université Paris I (Panthéon-Sorbonne), France
 Miren LAFOURCADE, Université de Valenciennes and Paris-Jourdan Sciences Economiques, France
 Didier LAUSSEL, Université de la Méditerranée, Aix-Marseille, France
 Dunia LOPEZ PINTADO, Universidad Pablo de Olavide, Sevilla, Spain
 Andrew MILLER, Université Bordeaux I, France
 Enrico MINELLI, Università degli Studi di Brescia, Italy
 Kaz MIYAGIWA, Emory University, Atlanta (GA), USA
 Elena MOLIS, Facultés Universitaires Saint-Louis, Bruxelles, Belgium
 Boris MORDUKHOVICH, Wayne State University, Detroit (MI), USA
 Mirabelle MUULS, London School of Economics, United Kingdom
 Toshiro OKUBO, Kobe University, Japan and University of Manchester, United Kingdom
 Gianmarco OTTAVIANO, Università di Bologna, Italy
 Jose PEDRO PEDROSO, Universidade do Porto, Portugal
 Fabien PRIEUR, Université de Savoie, Annecy-le-Vieux, France
 Diego PUGA, Madrid Institute for Advances Studies (IMDEA) Social Sciences, Madrid, Spain

Maria RACIONERO, Australian National University, Canberra, Australia
Dany RALPH, University of Cambridge, United Kingdom
Bee-Yan ROBERTS, Pennsylvania State University (PA), USA
Mark J. ROBERTS, Pennsylvania State University (PA), USA
Guillaume ROELS, University of California at Los Angeles (CA), USA
Suresh SETHI, University of Texas, Dallas (TX), USA
Ken Ichi SHIMORURA, Kobe University, Hyogo, Japan
Benjamin SHITOVITZ, University of Haifa, Israël
Julien THENIE, Ordecys, Genève, Switzerland
Lise TOLE, University of Strathclyde, Glasgow, United Kingdom
Tsvetomir TSACHEV, Institute of Mathematics and Informatics, Sofia, Bulgaria
Marie-Hélène VANDERSMISSEN, Université Laval, Canada
Ping WANG, Washington University, St Louis (MI), USA
Yu XIA, University of Birmingham, United Kingdom
Houmin YAN, Chinese University of Hong Kong, Shatin, Hong Kong
Zili YANG, State University of New York, Binghamton (NY), USA
Yuri YATSENKO, Houston Baptist University, Houston (TX), USA
Giacomo ZAMBELLI, Università di Padova, Italy
Skerdilajda ZANAJ, Université du Luxembourg, Luxembourg

■ RESEARCH FELLOWS AND VISITING FACULTY MEMBERS FOR 2009-2010

The following scholars will be in residence for all or part of the next academic year

Thomas BAUDIN, Paris School of Economics and Université Lille Nord, France
Claire DUJARDIN, Département de géographie, UCL, Belgium
Hamid HAMOUDI, Universidad Rey Juan Carlos, Madrid, Spain
Koen JOCHMANS, Katholieke Universiteit Leuven, Belgium
Yassine LEFOUILI, EUREQA, Université Paris I (Panthéon-Sorbonne), France
Marie-Louise LEROUX, Université de Toulouse 1 Capitole, France
Florian MAYNERIS, Paris-Jourdan Sciences Economiques, France
Eve RAMAEKERS, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium
Rüdiger STEPHAN, Technische Universität Berlin, Germany
Rodney STRACHAN, University of Queensland, Australia
Hiroshi UNO, Osaka University, Japan
Zili YANG, State University of New York, Binghamton (NY), USA
Ying WEI, The Chinese University of Hong Kong, Shatin, Hong Kong
Stéphane ZUBER, Université de Toulouse 1 Capitole, France

■ OTHER ITEMS

PRIZES AND AWARDS

Paul BELLEFLAMME has obtained the Prix bisannuel Suez-Tractebel-Environnement 2008.

Mathias DEWATRIPONT has been elected as Foreign Honorary Member of the American Academy of Arts & Sciences on April, 20, 2009.

On March 3, 2008, Jacques DRÈZE has received a Doctorat Honoris Causa from the Universitat Autònoma de Barcelona.

Louis ECKHOUDT received the prize for best "Decision Analysis" article for his paper "Putting Risk in Its Proper Place," written jointly with Professor Harris Schlesinger. The prize was awarded by the "Decision Analysis Society of INFORMS".

RESEARCH ACTIVITIES

- SURVEY OF RESEARCH TOPICS
- CHAIRS AND RESEARCH PROJECTS UNDER CONTRACTS

The first part of this section gives an overview of all contributions realized during the period covered by this report and published as CORE Discussion Papers. The second subsection discusses ongoing research projects at CORE that are sponsored by outside agencies in the form of grants and contracts.

■ SURVEY OF RESEARCH TOPICS

In the following pages, a brief account of the results published during the last academic year in the Discussion Paper Series is presented in a concise form, grouping them by fields of interest. The complete list of Discussion Papers is given in Section 3 of this report.

ECONOMETRICS

Three papers are related to the GARCH model. Sébastien LAURENT, Jeroen V.K. ROMBOUTS and Francesco VIOLANTE examine, in 2009/2, the ranking of multivariate volatility models in terms of their ability to forecast out-of-sample conditional variance matrices. To show that point, they investigate how sensitive the ranking is to alternative statistical loss functions, which evaluate the distance between the true covariance matrix and its forecast. The evaluation of multivariate volatility models requires the use of a proxy for the unobservable volatility matrix, which may shift the ranking of the models. Therefore, to preserve this ranking conditions with respect to the choice of the loss function have to be discussed. To do this, the authors extend the conditions defined in Hansen and Lunde (2006) to the multivariate framework. By invoking norm equivalence they are able to extend the class of loss functions that preserve the true ranking. In a simulation study, they sample data from a continuous time multivariate diffusion process to illustrate the sensitivity of the ranking to different choices of the loss functions and to the quality of the proxy. An application to three foreign exchange rates, where they compare the forecasting performance of 16 multivariate GARCH specifications, is provided.

In 2009/24, María Eugenia SANIN and Francesco VIOLANTE study the short-term price behavior of December 2008 future prices for EU emission allowances. They model the returns and volatility dynamics of this price showing that a standard ARMA-GARCH framework is not adequate and that the gaussianity assumption is rejected due to the occurrence of a number of level and volatility outliers. To improve the fitness of the model, they combine the underlying price process with an additive stochastic jump process. The resulting distribution, a mixture of Gaussians, allows for endogenously determined jumps in the process governing the returns, while the mixing law determines the jump probability. The performance of the model is improved by introducing a time varying jump probability explained by two variables. The first one is the daily relative change in the volume of transactions and suggests that sharp increases in volume increase volatility even in the absence of changes in what the recent literature considers as market fundamentals. The second one accounts for changes in the jump probability associated to the European Commission's announcements regarding the NAPs for Phase II. They find that announcements concerning the NAPs induce jumps in the process and tend to increase volatility. This result suggests authorities should advocate to increase stability in the regulatory environment which is

crucial to allow traders to realize efficient trading strategies and informed investment decisions regarding pollution reduction.

The third paper, 2009/13, using GARCH model is written by Jeroen V.K. ROMBOUTS and Lars STENTOFT. The authors explain that while stochastic volatility models improve on the option pricing error when compared to the Black-Scholes-Merton model, mispricings remain. They use mixed normal heteroskedasticity models to price options. This model allows for significant negative skewness and time varying higher order moments of the risk neutral distribution. Parameter inference using Gibbs sampling is explained and the authors detail how to compute risk neutral predictive densities taking into account parameter uncertainty. When forecasting out-of-sample options on the S&P 500 index, substantial improvements are found compared to a benchmark model in terms of dollar losses and the ability to explain the smirk in implied volatilities.

In 2009/1, Carlo ROSA evaluates, the predictive power of different information sets for the European Central Bank (ECB) interest rate setting behavior. The author employs an ordered probit model, i.e. a limited dependent variable framework, to take into account the discreteness displayed by policy rate changes. The results show that the forecasting ability of standard Taylor-type variables, such as inflation and output gap, is fairly low both in-sample and out-of-sample, and is comparable to the performance of the random walk model. Instead by using broader information sets that include measures of core inflation, exchange rates and monetary aggregates, the accuracy of the forecasts about ECB future actions substantially improves. Moreover, ECB rhetoric contributes to a better understanding of its policy reaction function, and ECB statements complement the information contained in actual macro figures. Finally, the author finds that the ECB has been fairly successful in educating the public to anticipate the overall future direction of its monetary policy, but has been less successful in signaling the exact timing of rate changes.

Most academic studies on performance persistence in monthly mutual fund returns do not find evidence for timing skills of fund managers. Furthermore, realized returns are undoubtedly driven by the investment style of a fund. Iwan MEIER and Jeroen V.K. ROMBOUTS (2008/72) propose a new holdings-based measure of style rotation to investigate the relation between performance persistence and changes in style. For a large sample of U.S. domestic equity mutual funds they find that top and bottom performing decile portfolios, sorted on past one-year returns and risk adjusted excess performance from a 4-factor model, are subject to a higher degree of style rotation than middle deciles. Style inconsistent funds with high values for the style rotation measure in turn exhibit less persistence in decile rankings over subsequent years than style consistent funds. Hence, it is important for delegated portfolio management to consider style rotation when selecting managers based on past performance.

Gauthier de MAERE D'AERTRYCKE and Yves SMEERS consider, in 2009/14, a controversial topic, that is, the pricing of contingent claims in the wholesale power market. Important challenges come from the non-storability of electricity and the number of parameters that impact the market. They propose an equilibrium model based on the fundamentals of power generation. In a perfect competitive market, spot electricity prices are determined by the marginal cost of producing the last unit of power. Electricity can be viewed as a derivative of demand, fuels prices and carbon emission price. They extend the Pirrong-Jermakayan model such as to incorporate the main factors driving the marginal cost and the non-linearities of electricity prices with respect to fuels

prices. As in the Pirrong-Jermakyan framework, any contingent claims on power must satisfy a high dimensional PDE that embeds a market price of risk, as load is not a traded asset. Analyzing the specificity of the marginal cost in power market, they simplify the problem for evaluating power futures so that it becomes computationally tractable. They test their model on the German EEX for "German Month Futures" with maturity of June and September 2008.

Shin-Huei WANG and Christian M. HAFNER (2008/73) consider the impact of ordinary least squares (OLS) detrending and the first difference (FD) detrending on autocorrelation estimation in the presence of long memory and deterministic trends. They show that the FD detrending results in inconsistent autocorrelation estimates when the error term is stationary. Thus, the FD detrending should not be employed for autocorrelation estimation of the detrended series when constructing e.g. portmanteau-type tests. In an empirical application of volume in Dow Jones stocks, they show that for some stocks, OLS and FD detrending result in substantial differences in ACF estimates.

In 2009/41, Taoufik BOUEZMARNI, Jeroen V.K. ROMBOUTS and Abderrahi TAAMOUTI propose a new nonparametric test for conditional independence, which is based on the comparison of Bernstein copula densities using the Hellinger distance. The test is easy to implement because it does not involve a weighting function in the test statistic, and it can be applied in general settings since there is no restriction on the dimension of the data. In fact, to apply the test, only a bandwidth is needed for the nonparametric copula. The authors prove that the test statistic is asymptotically pivotal under the null hypothesis, establish local power properties, and motivate the validity of the bootstrap technique that they use in finite sample settings. A simulation study illustrates the good size and power properties of the test. They illustrate the empirical relevance of our test by focusing on Granger causality using financial time series data to test for nonlinear leverage versus volatility feedback effects and to test for causality between stock returns and trading volume. In a third application, they investigate Granger causality between macroeconomic variables.

J. Roderick McCORRIE discusses, in 2008/59, the fundamental role played by Skorokhod space, through its underpinning of functional central limit theory, in the development of the paradigm of unit roots and co-integration. This paradigm has fundamentally affected the way economists approach economic time series as was recognized by the award of the Nobel Memorial Prize in Economic Sciences to Robert F. Engle and Clive W.J. Granger in 2003. Here, the focus is on how P.C.B. Phillips and others used the Skorokhod topology to establish a limiting distribution theory that underpinned and facilitated the development of methods of estimation and testing of single equations and systems of equations with possibly integrated regressors. This approach has spawned a large body of work that can be traced back to Skorokhod's conception of fifty years ago. Much of this work is surprisingly confined to the econometrics literature.

A new technology adoption problem can be modelled as a two-stage control problem, in which model parameters ("technology") might be altered at some time. An optimal solution to utility maximisation for this class of problems needs to contain information on the time, at which the change will take place (0, finite or never), along with the optimal control strategies before and after the change. For the change, or switch, to occur the "new technology" value function needs to dominate the "old technology" value function, after the switch. In 2009/4, Jacek B. KRAWCZYK and Oana-Silvia SEREA characterize the value function using the fact that its hypograph is a viability kernel of an auxiliary problem and they study when the graphs can intersect. If they do not, the switch cannot occur at a positive time. Using this characterization the authors analyze a

technology adoption problem and show how to recognize the models, for which the switch will occur at time zero or never.

Finally, Giacomo SBRANA and Andrea SILVESTRI (2009/20) compare the performance of "aggregate" and "disaggregate" predictors in forecasting contemporaneously aggregated vector ARMA processes. An aggregate predictor is built by forecasting directly the aggregate process, as it results from contemporaneous aggregation of the data generating vector process. The authors obtain a disaggregate predictor by aggregating univariate forecasts for the individual components of the data generating vector process. The necessary and sufficient condition for the equality of mean squared errors associated with the two competing methods is provided in the bivariate VMA(1) case. Furthermore, it is argued that the condition of equality of predictors as stated in Lütkepohl is only sufficient (not necessary) for the equality of mean squared errors. Finally, it is shown that the equality of forecasting accuracy for the two predictors can be achieved using specific assumptions on the parameters of the VMA(1) structure. Monte Carlo simulations are in line with the analytical results. An empirical application that involves the problem of forecasting the Italian monetary aggregate M1 in the pre-EMU period is presented to illustrate the main findings.

ECONOMIC GEOGRAPHY AND INTERNATIONAL ECONOMICS

Every year, thousands of refugees are forced to leave their countries of origin and are hosted by their neighboring countries. However, very little is known about the impact of these refugees on the local economy and its inhabitants. Based on hypothesis formulated during a two-month iterative field research, Jean-François MAYSTADT and Philip VERWIMP use a theoretical framework to understand how the refugee inflow would affect the good and labour markets of the local economy, in 2009/34. They then test the theoretical predictions regarding the potential winners and losers among the refugee-hosting population, using household panel data collected in the region of Kagera in Tanzania. Their identification strategy exploits both time and spatial variations in the way households traced between 1991 and 2004 have been affected by the refugee inflows originating from Burundi (1993) and Rwanda (1994). Their results show that local hosts do not necessarily suffer from the refugee presence. Net economic benefits could even emerge provided a sufficient mass of refugees is gathered. Furthermore, the economic benefits appear to be unevenly distributed among the refugee-hosting population. Agricultural workers are likely to suffer the most from an increase in competition on the labor markets and the surging prices of several goods. On the contrary, non-agricultural workers and self-employed farmers are in a better position to benefit from such a refugee inflow. They also conjecture that the welfare deterioration experienced by those involved into business could be explained by a selection effect resulting from the reported entry of larger-scale entrepreneurs from other regions.

In 2008/71, Toshihiro OKUBO and Pierre M. PICARD build a quality-augmented version of an economic geography model where consumers have heterogeneous tastes for a set of manufacturing varieties. They discuss a footloose capital model and a footloose entrepreneur model. They show that firms selling the goods with higher values select the region hosting the largest number of consumers. Larger countries thus get better access to the higher quality products. They also show that the effect of spatial selection on firms' spatial distribution crucially

depends on the properties of the taste distribution across varieties. Finally, they show that taste heterogeneity smooths the agglomeration patterns but that it should be considered neither as a dispersion force nor as an agglomeration force. Indeed, the introduction of taste heterogeneity makes an initially dispersed economy less dispersed and an initially agglomerated economy less agglomerated.

Alain PHOLO BALA provides two successive papers. The first one (2009/38) uses a semiparametric specification to examine the impact of urban concentration in economic growth on different groups of countries that he classifies according to a geographical criterion or according to their level of development. Facing a significant proportion of missing data, the author handles that problem with a multiple imputation algorithm as advised in the statistical literature. Therefore using a Bayesian estimation he obtains parametric coefficients and non parametric curves. Then he may perform Yatchew's tests of equality of non parametric effects to check out if the model specification is the same in the different groups of countries. The second one (2009/39) investigates the impact of changes in international trade and domestic transport costs on the internal geography of a domestic economy linked to the rest of the World through a hub. He addresses that issue by developing two three regions model, namely a version of the Footlose Entrepreneur and a model à la Ottaviano et al. (2002). One region represents the rest of the World, while the two others compose the domestic economy. One region of the Domestic economy, the hub, exhibits a "geographical advantage" in terms of easier access to the rest of the World. He finds the standard result that decreases in transports and trade costs raise the likelihood of agglomeration in the domestic economy. However, high interregional transport may induce partial agglomeration in the hinterland even in case of trade integration. Therefore depending on the level of transportation costs, hinterland remoteness may not be a locational "disadvantage" as Behrens et al. (2007) pointed out.

In 2008/79, Sandra PONCET, Walter STEINGRESS and Hylke VANDENBUSSCHE use a unique micro-level data-set on Chinese firms to test for the existence of a "political-pecking order" in the allocation of credit. Their findings are threefold. Firstly, private Chinese firms are credit constrained while State-owned firms and foreign-owned firms in China are not. Secondly, the geographical and sectoral presence of foreign capital alleviates credit constraints faced by private Chinese firms. Thirdly, geographical and sectoral presence of state firms aggravates financial constraints for private Chinese firms ("crowding out"). Therefore it seems that ongoing restructuring of the state-owned sector and further liberalization of foreign capital inflows in China can help to circumvent financial constraints and can boost the investment of private firms.

Jozef KONINGS and Hylke VANDENBUSSCHE (2009/42) question the benefits of firms protected by antidumping measures. Antidumping protection benefits non-exporters active on the protected market by raising their domestic sales, but hurts exporters of similar products as the protected ones. Export sales of protected firms fall by almost 8% compared to a relevant control group of unprotected firms. This effect more than doubles for firms that are global, i.e. firms with foreign affiliates. Measured at the product-level, extra-EU exports of goods protected by antidumping fall by 36% while exports to target countries fall by as much as 66% following protection. Protection also has an effect on the extensive margin, by raising the probability to start exporting for firms that were initially non-exporters. Existing exporters face a higher probability to stop exporting during protection. Finally, they find that the productivity of exporters falls

while that of non-exporters rises during antidumping protection. They offer a number of plausible explanations for their findings that stem from the heterogeneous firm literature. They also discuss the importance of their findings for policy.

In 2009/45, Jean CAVAILHES, Pierre FRANKHAUSER, Dominique PEETERS and Isabelle THOMAS represent and model a metropolitan area through a residential location model derived from urban economics combined with the geometry of a multifractal Sierpinski carpet. This area is made up of a system of built-up patches hierarchically organized around a city centre, and green areas arranged in an inverse hierarchical order (large open-spaces in the periphery). An analytical solution is obtained by using a specific geographic coding system for computing distances. The values of the parameters used in the model are based on the French medium sized metropolitan areas; a realistic benchmark is proposed and comparative-statics simulations are performed. The results show that the French peri-urbanisation process can be explained by an increase income and a reduction in transport costs. Nevertheless, changes in household preferences, in particular an increased taste for open spaces, can also contribute to urban sprawl by making the gradient of land rents less steep and by making peripheral household locations more desirable.

Finally, Claire DUJARDIN and Florence GOFFETTE-NAGOT (2008/78) test the effect of public housing occupancy on unemployment. To that purpose, they estimate a simultaneous probit model of unemployment and public housing. On a first sample, they instrument public housing with the gender composition of children. On a second sample, the instrument is the share of public housing at the city level. They also perform a robustness check that consists in measuring the correlation between unobservables that could explain the effect of public housing on unemployment. As the corresponding level of correlation is low, this check reinforces the result of no effect of public housing on unemployment.

INDUSTRIAL ORGANIZATION

Jean-François CAULIER, Ana MAULEON and Vincent VANNETELBOSCH develop a theoretical framework, in 2008/66, that allows to study which bilateral links and coalition structures are going to emerge at equilibrium. They define the notion of coalitional network to represent a network and a coalition structure, where the network specifies the nature of the relationship each individual has with his coalition members and with individuals outside his coalition. To predict the coalitional networks that are going to emerge at equilibrium, they propose the concept of contractual stability, which requires that any change made to the coalitional network needs the consent of both the deviating players and their original coalition partners. They show that there always exists a contractually stable coalitional network under the simple majority decision rule and the component-wise egalitarian or majoritarian allocation rules. Moreover, requiring the consent of group members may help to reconcile stability and efficiency.

In the French urban public transport industry, services are often delegated to a private firm by the mean of a fixed-term regulatory contract. This contract specifies the duties of the firm and a financial compensation. When it expires, a new contract is awarded, possibly to a different operator. Cost-plus and fixed-price (gross cost or net cost) contracts are commonly used to regulate the operators in the transport industry. Axel GAUTIER and Anne YVRANDE-BILLON analyze, in 2008/68, the incentives for the operator to reduce its cost. These incentives come from both the

profit maximization during the current contract and the perspective of contract renewal. In their model, the amount of cost-reducing effort depends on the contract type and the time remaining till contract expiration. They use a sample of 124 French urban public transport networks covering the period 1995-2002 to test their predictions. Their proxy for the cost reducing effort is technical efficiency. The data largely confirm the importance of contract type on performances and the incentive effect of contract renewal.

In 2009/29, Maria Eugenia SANIN and Skerdilajda ZANAJ give an example in which the price of tradeable emission permits increases despite firms' adoption of a less polluting technology. This is in contrast with Montero (2002) and Parry (1998), among others. If two Cournot players switch to a cleaner technology, the price for permits may increase due to an increase in the net demand for permits and a decrease in net supply of permits after the clean technology is adopted. This is only the case when output demand is elastic.

Jean GABSZEWICZ, Ornella TAROLA and Skerdilajda ZANAJ examine, in 2009/27, how uncertainty can affect successive markets, when uncertainty can jointly influence both the upstream and downstream markets' conditions. The main result of the paper is that the equilibrium input and output quantities under stochastic dependence can be higher or lower than the corresponding quantities in the case of certainty equivalence depending on how much dependent are the events.

The imposition of universal coverage and uniform pricing constraints, as part of the universal service obligations, makes the universal service provider less aggressive in the price game when it competes with a firm that does not cover the whole set of markets (Valletti et al., 2002). Axel GAUTIER and Xavier WAUTHY fully characterize, in 2009/32, the resulting price equilibrium when universal service obligations are imposed. With a limited market coverage by the entrant or a small degree of degree of product differentiation, the equilibrium is a mixed strategy one.

Giorgia OGGIONI and Yves SMEERS provide two papers on carbon leakage in the electricity industry. They explain that carbon leakage is the phenomenon whereby Electricity Intensive Industries (EII) subject to harsh environmental standards move their activity or part of it to more environmentally lenient regions. This situation is a possible outcome of the combination of emission charges and higher electricity prices entailed by the EU-Emission Trading Scheme (EU-ETS). In order to mitigate this effect, EIs have asked for special power contracts whereby they would be supplied from dedicated power capacities at average (capacity, fuel, transmission and emission allowance) costs. In 2008/62, the authors model this situation on a prototype power system calibrated on four countries of Central Western Europe. In order to capture the main feature of EIs' demand, they separate the consumer market in two segments: EIs and the rest. EIs buy electricity at average cost price while the rest pays marginal cost. They consider two different types of EIs' contractual arrangements: a single region wide and zonal average cost prices. They also analyze the cases where generators only rely on existing capacities or can invest in new ones. They find that these average cost contracts can indeed partially mitigate the incentive to relocate activities but with quite diverse regional impacts depending on different national power policies. Models are formulated as a non-monotone complementarity problems with endogenous energy, transmission and allowance prices and are implemented in GAMS. Another remedy proposed by the Energy Intensive Industries is to combine free emission allowances with a pricing of electricity whereby energy emissions and transmission costs are bundled and sold on an average cost basis.

The authors attempt to model this proposal in 2008/76. They cast the problem in a spatial model of the power sector where generators can develop new capacities, the transmission system is organized on a flowgate basis, emission allowances are auctioned, except possibly for industries, and traded. The consumer market is decomposed in two segments. Industries purchase electricity according to some form of average cost price, the rest of the market is supplied at marginal cost. These equilibrium models are non convex. They present the models and discuss their properties. Companion papers report policy implications.

Armchair evidence shows that many industries are made of a few big commercial or manufacturing firms, which are able to affect the market outcome, and of a myriad of small family-run businesses with very few employees, each of which has a negligible impact on the market. Examples can be found in apparel, catering, publishers and bookstores, retailing, finance and insurances, and IT industries. Ken-Ichi SHIMOMURA and Jacques-François THISSE provide, in 2009/47, a new general equilibrium framework that encapsulates both market structures. Due to the higher toughness of the market, the entry of big firms leads them to sell more through a market expansion effect, which is generated by the exit of small firms. Furthermore, the level of social welfare increases with the number of oligopolistic firms because the procompetitive effect associated with the entry of a big firm dominates the resulting decrease in product variety.

The welfare impact of a merger involves the market power offense and the efficiency defense. Salant et al. (1983) show that mergers among symmetric firms are unprofitable except for monopolization. Nicolas BOCCARD characterizes in 2009/40 the limit to this merger paradox in a simple linear Cournot oligopoly with asymmetric costs. Farrell and Shapiro (1990) provide sufficient conditions for a profitable merger to increase welfare but leave open whether it exists. He characterizes the degree of cost asymmetry making a merger both profitable and socially desirable. Comparing rationalization and synergy within the efficiency defense, he shows that for most industry structures, a rationalization merger is more likely to be welfare enhancing but a synergy merger is more likely to be profitable.

Finally, Xavier WAUTHY and Nicolas BOCCARD consider, in 2009/50, a stage-game where the entrant may simultaneously commit to its product's quality and the level of its production capacity before price competition takes place. The authors show that capacity limitation is more effective than quality reduction as a way to induce entry accommodation: the entrant tends to rely exclusively on capacity limitation in a subgame perfect equilibrium. This is so because capacity limitation drastically changes the nature of price competition by introducing local strategic substitutability whereas quality differentiation only alters the intensity of price competition.

MACROECONOMIC POLICIES

Sergei PEKARSKI contributes to the literature on budget deficits and inflation in high inflation economies with 2008/54. The main finding is that recurrent outbursts of extreme inflation in these economies can be explained by a certain hysteresis effect associated with public finance. This interpretation meets the evidence that dramatic shifts between regimes of moderately high and extremely high (hyper-) inflation often occur without visible deterioration in public finance or abrupt shifts in fiscal or monetary policies. The existence of this hysteresis effect is explicitly explained by the action of two mechanisms: the arithmetic associated with the wrong side of the

inflation tax Laffer curve and the Patinkin effect (the reverse of the much oftener cited Olivera-Tanzi effect). It is also shown that the division of the operational budget deficit into the part that is subject to negative inflation feedback and the part that is inflation-proof, has implications for both the discussion of the inflationary consequences of budget deficits and the proper design of stabilization policy.

A general equilibrium multi-sector vintage capital model is developed by Théophile T. AZOMAHOU, Raouf BOUCEKKINE and Phu NGUYEN-VAN, in 2009/11. They use energysaving technological progress and an explicit energy market to study the impact of investment subsidies on investment and output. Energy and capital are assumed to be complementary in the production process. New machines are less energy consuming and scrapping is endogenous. The intermediate inputs sector is modeled à la Dixit-Stiglitz (1977). Two polar market structures are considered for the energy market, free entry and natural monopoly. The impact of imperfect competition on the outcomes of the decentralized equilibria is deeply characterized. They identify an original paradox: adoption subsidies may induce a larger investment into cleaner technologies either under free entry or natural monopoly. However, larger diffusion rates do not necessarily mean lower energy consumption at equilibrium, which may explain certain empirical puzzles.

Julio DAVILA shows in 2008/75 that in an overlapping generations economy with production à la Diamond (1970) in which the agents can only save in terms of capital (i.e. with no asset bubbles à la Tirole (1985) or public debt as in Diamond (1965)), there is a period-by-period balanced fiscal policy supporting a steady state allocation that Pareto-improves upon the laissez-faire competitive equilibrium steady state (without having to resort to intergenerational transfers) if there is no first generation or the economy starts there. A transition from the competitive equilibrium steady state to this other allocation is also Pareto-improving if the former is dynamically inefficient, but even in the dynamically efficient case if the elasticity of output to capital is high enough. This intervention allows every subsequent generation to attain, as a competitive equilibrium outcome, the highest utility attainable at a steady state through the existing markets for the consumption good and the production factors. The active fiscal policy consists of taxing (or subsidizing, in the dynamically efficient case) linearly the returns to capital, while balancing the budget period by period through a lump-sum transfer (or tax, respectively) on second period income. This policy does not finance any public spending, since there is none in the model. The only purpose of the intervention is to decentralize as a competitive equilibrium the steady state allocation that maximizes the utility of the representative agent among all steady state allocations attainable through the existing markets.

Raouf BOUCEKKINE, Jacek B. KRAWCZYK and Thomas VALLEE study in 2009/10 a trade-off between economic and environmental indicators using a two stage optimal control setting where the player can switch to a cleaner technology, that is environmentally "efficient", but economically less productive. They provide an analytical characterization of the solution paths for the case where the considered utility functions are increasing and strictly concave with respect to consumption and decreasing linearly with respect to the pollution stock. In this context, an isolated player will either immediately start using the environmentally efficient technology, or for ever continue applying the old and "dirty"- technology. In a two-player (say, two neighbor countries) dynamic game where the pollution results from a sum of two consumptions, they prove existence of a Nash (open-loop) equilibrium, in which each player chooses the technology selfishly i.e., without

considering the choice made by the other player. A Stackelberg game solution displays the same properties. Under cooperation, the country reluctant to adopt the technology as an equilibrium solution, chooses to switch to the cleaner technology provided it benefits from some "transfer" from the environmentally efficient partner.

In 2009/21, Marc GERMAIN, Henry TULKENS and Alphonse MAGNUS deals with cooperation issues in international pollution problems in a two dimensional dynamic framework implied by the accumulation of the pollutant and of the capital goods. Assuming that countries do reevaluate at each period the advantages to cooperate or not given the current stocks of pollutant and capital, and under the assumption that damage cost functions are linear, the authors define at each period of time a transfer scheme between countries, which makes cooperation better for each of them than non-cooperation. This transfer scheme is also strategically stable in the sense that it discourages partial coalitions.

MICROECONOMIC THEORY

In 2008/53, Roland Iwan LUTTENS and Marie-Anne VALFORT endow individuals that differ in skill levels and tastes for working with altruistic preferences for redistribution in a voting model where a unidimensional redistributive parameter is chosen by majority voting in a direct democracy. When altruistic preferences are desert-sensitive, i.e. when there is a reluctance to redistribute from the hard-working to the lazy, they show that lower levels of redistribution emerge in political equilibrium. They provide empirical evidence, based on the ISSP 1992 dataset, that preferences for redistribution are not purely selfish and that desert-sensitive motivations play a significant role. They estimate that preferences for redistribution are significantly more desert-sensitive in the US than in Europe. They believe that these differences help to explain the different social contracts that prevail in both continents.

Johanna M.M. GOERTZ and François MANIQUET (2009/26) study information aggregation in large elections. With two candidates, efficient information aggregation is possible in a large election (e.g., Feddersen and Pesendorfer). They find that this result does not extend to large elections with more than two candidates. More precisely, they study a class of simple scoring rules in large voting games with Poisson population uncertainty and three candidates. They show that there is no simple scoring rule that aggregates information efficiently, even if preferences are dichotomous and a unique Condorcet winner always exists. They introduce a weaker criterion of informational efficiency that requires a voting rule to have at least one efficient equilibrium. Only approval voting satisfies this criterion.

In 2008/65, Geir B. ASHEIM, Claude D'ASPREMONT and Kuntal BANERJEE present a new version of the overtaking criterion, which they call generalized time-invariant overtaking. The generalized time-invariant overtaking criterion (on the space of infinite utility streams) is defined by extending proliferating sequences of complete and transitive binary relations defined on finite dimensional spaces. The paper presents a general approach that can be specialized to at least two, extensively researched examples, the utilitarian and the leximin orderings on a finite dimensional Euclidean space.

Jean J. GABSZEWICZ, Filomena GARCIA, Joana PAIS and Joana RESENDE (2008/67) start to claim that established marriages can be heavily destabilized when the population of existing couples is enriched by the arrival of new candidates to marriage. Afterwards, they discuss briefly how stability concepts can be extended to account for entry and exit phenomena affecting the composition of the marriage market.

Jean-François MERTENS and Anna RUBINCHIK provide two papers using overlapping generations. The first one (2008/77) develops a simple tool to evaluate small policy changes affecting several generations, by reducing the dynamic problem to a static one. They prove that for two independent principles of intergenerational equity, the implied discount rate equals the growth rate of real per-capita income, say 2%, thus falling right into the range suggested by the U.S. Office of Management and Budget. A necessary condition is time-invariance, which is satisfied by any common solution concept in an overlapping generations model with exogenous growth. This tool is applied to derive the discount rate for cost-benefit analysis under two different utilitarian welfare functions: classical and relative. It is only with relative utilitarianism that the discount rate is well-defined for a heterogeneous society, is corroborated by an independent principle equating values of human lives, and equals the growth rate of real per-capita income. In the second paper (2009/5), the authors analyze the local stability of the balanced growth equilibria with respect to perturbations of consumption endowments, thought of as the "monetized" value of a government policy to individuals. They show that perturbed economies have a unique equilibrium in the neighbourhood, that the equilibrium allocation expressed in terms of efficient labour units is Fréchet differentiable in L_∞ with derivatives given by kernels, and that the equilibrium is stable in the sense that if perturbations converge to 0 at $\pm\infty$, the corresponding equilibria converge back to the unperturbed equilibrium at $\pm\infty$. As a corollary this implies a proof of non-vacuity of the main result in Mertens and Rubinchik (2006).

A set of agents with possibly different waiting costs have to receive the same service one after the other. Efficiency requires to maximize total welfare. Equity requires to at least treat equal agents equally. One must form a queue, set up monetary transfers to compensate agents having to wait, and not a priori arbitrarily exclude agents from positions. As one may not know agents' waiting costs, they may have no incentive to reveal them. Cagatay KANI and Eve RAMAEKERS identify, in 2008/84, the only rule satisfying Pareto-efficiency, a weak equity axiom as equal treatment of equals in welfare or symmetry, and strategy-proofness. It satisfies stronger axioms, as no-envy and anonymity. Further, its desirability extends to related problems. To obtain these results, they prove that even non-single-valued rules satisfy Pareto-efficiency of queues and strategy-proofness if and only if they select Pareto efficient queues and set transfers in the spirit of Groves (1973). This holds in other problems, provided the domain of quasi-linear preferences is rich enough.

Two successive papers are written by Michel M. DENUIT, Louis EECKHOUDT and Mario MENEGATTI. The first one (2009/7) considers a decision-maker facing a financial risk flanked by a background risk, possibly non-financial, such as health or environmental risk. A decision has to be made about the amount of an investment (in the financial dimension) resulting in a future benefit either in the same dimension (savings) or in the order dimension (environmental quality or health improvement). In the first case, they show that the optimal amount of savings decreases as the pair of risks increases in the bivariate increasing concave dominance rules of higher degrees which express the common preferences of all the decision-makers whose two argument utility function

possesses direct and cross derivatives fulfilling some specific requirements. Roughly speaking, the optimal amount of savings decreases as the two risks become "less positively correlated" or marginally improve in univariate stochastic dominance. In the second case, a similar conclusion on optimal investment is reached under alternative conditions on the derivatives of the utility function. The second one (2009/8) shows that most commonly used utility functions do not necessarily positively value the aggregation of independent risks so that they are not eligible for insurers. Many papers in the literature have adopted the expected utility paradigm to analyze insurance decisions. Insurance companies manage policies by growing, by adding independent risks. Even if adding risks generally ultimately decreases the probability of insolvency, the impact on the insurer's expected utility is less clear. Indeed, it is not true that the risk aversion toward the additional loss generated by a new policy included in an insurance portfolio is a decreasing function of the number of contracts already underwritten (i.e. the "fallacy of large numbers"). The results of their paper cast some doubt about the conclusions drawn in the papers postulating completely monotonic utilities for guiding insurers' choices. Finally, it is shown that the sufficient conditions for adding risks that can be found in the literature need to be refined by restricting the domain of definition of the insurer's utility function.

In a recent paper Goeree et al. (2005) determine that all-pay auctions are better for fundraising activities than lotteries. Olivier BOS shows in 2009/49 that the introduction of asymmetry among valuations with complete information could reverse this result. Complete information seems well suited to some charity environments.

The Pareto principle is often viewed as a mild requirement compatible with a variety of value judgments. In particular, it is generally thought that it can accommodate different views on the desirable degree of equality. Antoine BOMMIER and Stéphane ZUBER show in 2009/9 that this is generally not true in intertemporal models where some uncertainty prevails. To do so, they formalize the concept of inequality aversion. They show that different degrees of inequality aversion are not possible in typical models of time-consistent dynamic decision under uncertainty.

Raouf BOUCEKKINE, Jacek B. KRAWCZYK and Thomas VALLÉE (2008/55) consider a country with two regions that have developed differently so that their current levels of energy efficiency differ. Each region's production involves the emission of pollutants, on which a regulator might impose restrictions. The restrictions can be related to pollution standards that the regulator perceives as binding the whole country (e.g., enforced by international agreements like the Kyoto Protocol). They observe that the pollution standards define a common constraint upon the joint strategy space of the regions. They propose a game theoretic model with a coupled constraints equilibrium as a solution to the regulator's problem of avoiding excessive pollution. The regulator can direct the regions to implement the solution by using a political pressure, or compel them to employ it by using the coupled constraints' Lagrange multipliers as taxation coefficients. They specify a stylized model that possesses those characteristics, of the Belgian regions of Flanders and Wallonia. They analytically and numerically analyze the equilibrium regional production levels as a function of the pollution standards and of the sharing rules for the satisfaction of the constraint. For the computational results, they use NIRA, which is a piece of software designed to minimize the associated Nikaido-Isoda function.

The heterogeneity of the available physical capital with respect to productivity and emission intensity is an important factor for policy design, especially in the presence of emission

restrictions. In a vintage capital model, reducing pollution requires to change the capital structure through investment in cleaner machines and to scrap the more polluting ones. In 2009/15, using such a setting Thierry BRÉCHET, Tsvetomir TSACHEV and Vladimir M. VELIOV show that emission tax and auctioned emission permits may yield contrasting outcomes. They also show that some failures in the permits market may undermine its efficiency and that imposing the emission cap over longer periods plays a regularizing role in the market.

Thierry BRÉCHET and Fabien PRIEUR develop in 2009/19 an overlapping generations model of growth and the environment with public policy on education. Beyond the traditional mechanisms through which knowledge, growth and the environment interplay, they stress out the role played by education on environmental awareness. Assuming first that environmental awareness is constant, they show the existence of a balanced growth path along which environmental quality increases continually. Then, if education enhances environmental awareness, the equilibrium properties are modified: the economy can reach a steady state or converge to an asymptotic balanced growth path. Therefore, education does not necessarily promote sustained and sustainable growth.

Both environmental quality and health care expenditure are determinants of health and life expectancy, but the support for them appears to be different according to the electors' age, with a relatively larger support for health expenditure among the elderly as it is generally effective on a shorter horizon than environmental maintenance. With population aging, the political support for health care expenditure is then self-reinforcing. In 2009/37, Carlotta BALESTRA and Davide DOTTORI cast this issue through an overlapping generations model with endogenous longevity, where lifespan depends on health care expenditure and environmental quality. They compare the long run outcomes for health care expenditure, environmental quality, lifespan, consumption and capital accumulation of an economy where agents vote over health spending and environmental maintenance, with those chosen by a social planner who takes into account also the welfare of future generations. The role played by other factors, such as the propensity for smoothing consumption or the degree of annuity markets, is also highlighted. Empirical evidence of age-biased environmental care is provided.

Claude D'ASPREMONT and Rodolphe DOS SANTOS FERREIRA propose in 2009/22 a model of household behavior with both private and public consumption where the spouses independently maximize their utilities, but taking into account, together with their own individual budget constraints, the collective household budget constraint (with public goods evaluated at Lindahl prices). The Lagrange multipliers associated with these constraints are used to parameterize the set of equilibria, in addition to the usual parameterization by income shares. The proposed game generalizes both the "collective" model of household behavior and the non-cooperative game with voluntary contributions to public goods.

Gilles GRANDJEAN, Ana MAULEON and Vincent VANNETELBOSCH study the stability of social and economic networks when players are farsighted. In particular, 2009/31 examines whether the networks formed by farsighted players are different from those formed by myopic players. The authors adopt Herings, Mauleon and Vannetelbosch's (Games and Economic Behavior, forthcoming) notion of pairwise farsightedly stable set. They first investigate in some classical models of social and economic networks whether the pairwise farsightedly stable sets of networks coincide with the set of pairwise (myopically) stable networks and the set of strongly efficient

networks. They then provide some primitive conditions on value functions and allocation rules so that the set of strongly efficient networks is the unique pairwise farsightedly stable set. Under the componentwise egalitarian allocation rule, the set of strongly efficient networks and the set of pairwise (myopically) stable networks that are immune to coalitional deviations are the unique pairwise farsightedly stable set if and only if the value function is top convex.

The weighted value was introduced by Shapley in 1953 as an asymmetric version of his value. Since then several axiomatizations have been proposed including one by Shapley in 1981 specifically addressed to cost allocation, a context in which weights appear naturally. It was at the occasion of a comment in which he only stated the axioms. Pierre DEHEZ offers in 2009/35 a proof of Shapley's statement as well as an alternative set of axioms. It is shown that the value is the unique rule which allocates additional fixed costs fairly: only the players who are concerned contribute to the fixed cost and they contribute in proportion to their weights.

In 2009/17, Marc FLEURBAEY, Erik SCHOKKAERT and Koen DECANCO examine whether, and how, welfare economics should incorporate the insights from happiness and satisfaction studies. Their main point is that measuring well-being by reported satisfaction levels can come in conflict with individuals judgments about their own lives and that these individual judgments should be respected. They propose an alternative measure of welfare in terms of equivalent incomes that does respect individual preferences. Satisfaction surveys are useful, however, to derive information about preferences. They illustrate their approach with panel data from the Russian Longitudinal Monitoring Survey (RLMS) for the period 1995-2003 and they compare the results for equivalent incomes with the results for subjective satisfaction.

Sabien DOBBELAERE, Roland Iwan LUTTENS and Bettina PETERS (2009/36) study a two-stage R&D project with an abandonment option. Two types of uncertainty influence the decision to start R&D. Demand uncertainty is modeled as a lottery between a proportional increase and decrease in demand. Technical uncertainty is modelled as a lottery between a decrease and increase in the cost to continue R&D. They relate differences in uncertainty to differences in risk premia. They derive testable hypotheses on the basis of which they empirically analyze the impact of uncertainty on the decision to start an R&D project. Using data for about 4000 German firms in manufacturing and services (CIS IV), the model predictions are strongly confirmed.

A recurrent dilemma in team management is to select between a team-based and an individual-based wage scheme. Dunia LOPEZ-PINTADO and Juan D. MORENO TERNERO explore, in 2009/3, such a dilemma in a simple model of production in teams, in which the team members may differ in their effort choices and qualification. They show that, in spite of enhancing output as the basis for payment, a team-based wage scheme might be less profitable for the principal than an individual-based wage scheme. They also highlight a deep misalignment between designing optimal (output-based) incentives for a team and treating its members impartially. Finally, upon introducing the possibility of liquidity constraints in the model, they provide rationale for the so-called "rich get richer" hypothesis.

Daisuke OYAMA, Yasuhiro SATO, Takatoshi TABUCHI and Jacques-François THISSE investigate, in 2009/46, the impacts of progressive trade openness, technological externalities, and heterogeneity of individuals on the formation of entrepreneurship in a two-country occupation choice model. They show that trade opening gives rise to a non-monotonic process of international specialization, in which the share of entrepreneurial firms in the large (small) country

first increases (decreases) and then decreases (increases), with the global economy exhibiting first de-industrialization and then re-industrialization. When countries have the same size, they also show that strong technological externalities make the symmetric equilibrium unstable, generating equilibrium multiplicity, while sufficient heterogeneity of individuals leads to the stability and uniqueness of the symmetric equilibrium.

OPTIMIZATION METHODS AND OPERATIONS RESEARCH

In Operations Research, the equipment replacement process is usually modeled in discrete time. The optimal replacement strategies are found from discrete (or integer) programming problems, well known for their analytic and computational complexity. An alternative approach is represented, in 2008/69, by continuous-time vintage capital models that explicitly involve the equipment lifetime and are described by nonlinear integral equations. Then, Yuri YATSENKO and Natali HRITONENKO determine the optimal replacement via the optimal control of such equations. These two alternative techniques describe essentially the same controlled dynamic process. They introduce and analyze a model that unites both approaches. The obtained results allow us to explore such important effects in optimal asset replacement as the transition and long-term dynamics, clustering and splitting of replaced assets, and the impact of improving technology and discounting. In particular, they demonstrate that the cluster splitting is possible in their replacement model with given demand in the case of an increasing asset lifetime. Theoretical findings are illustrated with numeric examples.

Several R&D-based models of endogenous economic growth are investigated under the Solow-like assumption of fixed allocation of resources across activities. In 2008/52, Yuri YATSENKO, Raouf BOUCEKKINE and Natali HRITONENKO identify model parameters that lead to explosive dynamics and analyze various economic techniques to avoid it. The techniques include adding stricter constraints on model trajectories and limiting factors in technology equation. In particular, they demonstrate that their vintage version of the well-known R&D-based model of economic growth (Jones, 1995) exhibits the same balanced dynamics as the original model.

The optimal replacement of assets under continuous and discontinuous technological change is analyzed by Yuri YATSENKO and Natali HRITONENKO, in 2008/74. They investigate the variable lifetime of assets in an infinite-horizon replacement problem. Due to deterioration, the maintenance cost increases when the asset becomes older. Because of technological change, both maintenance and new capital costs decrease for a fixed asset age. The dynamics of the optimal lifetime is investigated analytically and numerically under technological change in the cases of one and several technological breakthroughs. It is shown that the breakthroughs cause irregularities (anticipation echoes) in the asset lifetime before the breakthrough time.

In 2008/56, Santanu S. DEY presents a simple geometric argument to determine a lower bound on the split rank of intersection cuts. As a first step of this argument, a polyhedral subset of the lattice-free convex set that is used to generate the intersection cut is constructed. He calls this subset the restricted lattice-free set. It is then shown that $\lceil \log_2(l) \rceil$ is a lower bound on the split rank of the intersection cut, where l is the number of integer points lying on the boundary of the restricted lattice-free set satisfying the condition that no two points lie on the same facet of the restricted

lattice-free set. The use of this result is illustrated to obtain a lower bound of $\log_2[(n+1)]$ on the split rank of n -row mixing inequalities.

In a series of two papers, Yurii NESTEROV elaborates methods for convex optimization. In the first (2008/57), the author develops several polynomial-time interior-point methods (IPM) for solving nonlinear primal-dual conic optimization problem. He assumes that the barriers for the primal and the dual cone are not conjugate, so one cannot apply the standard primal-dual IPM. However, he shows that in this situation it is also possible to develop very efficient optimization methods, which satisfy all desired qualities, including the infeasible-start features. This technique is based on an asymmetric primal-dual barrier augmented by the squared residual of the primal-dual linear system. In the second (2008/60), Yurii NESTEROV develops a new primal-dual subgradient method for nonsmooth convex optimization problems. This scheme is based on a self-concordant barrier for the basic feasible set. It is suitable for finding approximate solutions with certain relative accuracy. Some applications of this technique are discussed including the fractional covering problem, maximal concurrent flow problem, semidefinite relaxations and nonlinear online optimization.

In 2008/63, Jean-Sébastien TANCREZ, Philippe CHEVALIER and Pierre SEMAL present a bounding methodology that allows one to compute a tight lower bound on the cycle time of fork-join queueing networks with blocking and with general service time distributions. The methodology relies on two ideas. First, probability mass fitting (PMF) discretizes the service time distributions so that the evolution of the modified network can be modelled by a Markov chain. The PMF discretization is simple: the probability masses on regular intervals are computed and aggregated on a single value in the corresponding interval. Second, they take advantage of the concept of critical path, i.e. the sequence of jobs that covers a sample run. They show that the critical path can be computed with the discretized distributions and that the same sequence of jobs offers a lower bound on the original cycle time. The tightness of the bound is shown on computational experiments. Finally, they discuss the extension to split-and-merge networks and approximate estimations of the cycle time.

In a series of two papers, Nicolas GILLIS and François GLINEUR consider Nonnegative Matrix Factorization (NMF). This is a data analysis technique, which allows compression and interpretation of nonnegative data. In the first paper (2008/64), the authors consider the problem of approximating a not necessarily nonnegative matrix with the product of two nonnegative matrices, which they refer to as Nonnegative Factorization~(NF)~; this is the subproblem that HALS methods implicitly try to solve at each iteration. They prove that NF is NP-hard for any fixed factorization rank, using a reduction to the maximum edge biclique problem. They also generalize the multiplicative updates to NF, which allows us to shed some light on the differences between the MU and HALS algorithms for NMF and give an explanation for the better performance of HALS. Finally, they link stationary points of NF with feasible solutions of the biclique problem to obtain a new type of biclique finding algorithm (based on MU) whose iterations have an algorithmic complexity proportional to the number of edges in the graph, and show that it performs better than comparable existing methods.

In the second paper (2009/6), the authors attempt to solve NMF problems in a recursive way. In order to do so, they introduce a new variant called Nonnegative Matrix Underapproximation (NMU) by adding the upper bound constraint $VW \leq M$. Besides enabling a recursive procedure for

NMF, these inequalities make NMU particularly well-suited to achieve a sparse representation, improving the part-based decomposition. Although NMU is NP-hard, they present two approaches to solve it: a method based on convex reformulations and a method based on Lagrangian relaxation. Finally, they provide some encouraging numerical results for image processing applications.

In 2008/70, Michel JOURNÉE, Yurii NESTEROV, Peter RICHTARIK and Rodolphe SEPULCHRE develop a new approach to sparse principal component analysis (sparse PCA). They propose two single-unit and two block optimization formulations of the sparse PCA problem, aimed at extracting a single sparse dominant principal component of a data matrix, or more components at once, respectively. While the initial formulations involve nonconvex functions, and are therefore computationally intractable, they rewrite them into the form of an optimization program involving maximization of a convex function on a compact set. The dimension of the search space is decreased enormously if the data matrix has many more columns (variables) than rows. They then propose and analyze a simple gradient method suited for the task. It appears that our algorithm has best convergence properties in the case when either the objective function or the feasible set are strongly convex, which is the case with our single-unit formulations and can be enforced in the block case. Finally, they demonstrate numerically on a set of random and gene expression test problems that the approach outperforms existing algorithms both in quality of the obtained solution and in computational speed.

In health care systems, the operating theatre is recognized as having an important role, notably in terms of generated income and cost. Its management, and in particular its scheduling, is thus a critical activity, and has been the subject of many studies. However, the stochasticity of the operating theatre environment is rarely considered while it has considerable effect on the actual working of a surgical unit. In practice, the planners keep a safety margin, let's say 15% of the capacity, in order to absorb the effect of unpredictable events. However, this safety margin is most often chosen subjectively, from experience. The goal of Jean-Sébastien TANCREZ, Benoît ROLAND, Jean-Philippe CORDIER and Fouad RIANE in their paper 2008/82 is to rationalize this process. They want to give insights to managers in order to deal with the stochasticity of their environment, at a tactical-strategic decision level. For this, they propose an analytical approach that takes account of the stochastic operating times as well as the disruptions caused by emergency arrivals. From the model, various performance measures can be computed: the emergency disruption rate, the waiting time for an emergency, the distribution of the working time, the probability of overtime, the average overtime, etc. In particular, the tool is able to tell how many operations can be scheduled per day in order to keep the overtime limited.

In 2008/83, Peter RICHTARIK proposes and analyzes a variant of the level method (Lemaréchal et al., 1995), which is an algorithm for minimizing nonsmooth convex functions. The main work per iteration is spent on 1) minimizing a piecewise-linear model of the objective function and on 2) projecting onto the intersection of the feasible region and a polyhedron arising as a level set of the model. He shows that by replacing exact computations in both cases by approximate computations, in relative scale, the theoretical iteration complexity increases only by the factor of four. This means that while spending less work on the subproblems, we are able to retain the good theoretical properties of the level method.

2009/16 is a survey in which François VANDERBECK and Laurence A. WOLSEY examine ways to reformulate integer and mixed integer programs. Typically, but not exclusively, one reformulates so as to obtain stronger linear programming relaxations, and hence better bounds for use in a branch-and-bound based algorithm. First they cover in detail reformulations based on decomposition, such as Lagrangean relaxation, Dantzig-Wolfe column generation and the resulting branch-and-price algorithms. This is followed by an examination of Benders' type algorithms based on projection. Finally they discuss in detail extended formulations involving additional variables that are based on problem structure. These can often be used to provide strengthened a priori formulations. Reformulations obtained by adding cutting planes in the original variables are not treated here.

Marco DI SUMMA and Laurence A. WOLSEY study in 2009/25 the discrete lot-sizing problem with an initial stock variable and an associated variable upper bound constraint. This problem is of interest in its own right, and is also a natural relaxation of the constant capacity lot-sizing problem with upper bounds and fixed charges on the stock variables. They show that the convex hull of solutions of the discrete lot-sizing problem is obtained as the intersection of two simpler sets, one involving just 0-1 variables and the second a mixing set with a variable upper bound constraint. For these two sets they derive both inequality descriptions and polynomial-size extended formulations of their respective convex hulls. Finally they carry out some limited computational tests on single-item constant capacity lot-sizing problems with upper bounds and fixed charges on the stock variables in which they use the extended formulations derived above to strengthen the initial mixed integer programming formulations.

In 2009/28, Jerzy A. FILAR, Jacek B. KRAWCZYK and Manju AGRAWAL carry out a preliminary exploration of a time scales' conjecture, which postulates that "reasonable" notions of sustainability must include a suitable synchronization of time scales of both the processes of human development and those of the natural environment. They perform their analysis within a coarse, five variables, model of man-nature interactions expressed as a system of differential equations where production and human capital are coupled with both renewable and non renewable natural resource. They demonstrate a phenomenon that they name the "sustainability screw" that describes a spiral like trajectory of the three key variables: non-renewable and renewable resources as well as the production capital. Under many plausible scenarios, this spiral tends unacceptably fast to an undesirable equilibrium. However, they also show that by adjusting the ratio of "intensity of production effort" and "intensity of abatement effort", parameters of the relative time scales of production and natural recovery processes can be altered in a manner that produces, arguably, more sustainable trajectories.

Recently minimal and extreme inequalities for continuous group relaxations of general mixed integer sets have been characterized. Santanu S. DEY and Laurence A. WOLSEY consider in 2009/33 a stronger relaxation of general mixed integer sets by allowing constraints, such as bounds, on the free integer variables in the continuous group relaxation. They generalize a number of results for the continuous infinite group relaxation to this stronger relaxation and characterize the extreme inequalities when there are two integer variables. Given a valid inequality for the mixed integer infinite group relaxation, the same authors present in 2009/44 a lifting based approach that can be used to strengthen this inequality. Bounds on the solution of the corresponding lifting problem and some necessary conditions for the lifted inequality to be minimal for the mixed integer infinite

group relaxation are presented. Finally, these results are applied to generate a strengthened version of the mixing inequality that provides a new class of extreme inequalities for the two-row mixed integer infinite group relaxation.

Problems dealing with the design and the operations of gas transmission networks are challenging. The difficulty mainly arises from the simultaneous modeling of gas transmission laws and of the investment costs. The combination of the two yields a non-linear non-convex optimization problem. To obviate this shortcoming, Frédéric BABONNEAU, Yurii NESTEROV and Jean-Philippe VIAL propose in 2009/48 a new formulation as a multi-objective problem, with two objectives. The first one is the investment cost function or a suitable approximation of it; the second is the cost of energy that is required to transmit the gas. This energy cost is approximated by the total energy dissipated into the network. This bi-criterion problem turns out to be convex and easily solvable by convex optimization solvers. Their continuous optimization formulation can be used as an efficient continuous relaxation for problems with non-divisible restrictions such as a limited number of available commercial pipe dimensions.

PUBLIC ECONOMICS

Marie-Louise LEROUX, Pierre PESTIEAU and Grégory PONTIÈRE write two papers together. In the first one (2008/51), the authors study the optimal linear tax-transfer policy in an economy where agents differ in productivity and in genetic background, and where longevity depends on health spending and genes. It is shown that, if agents internalize imperfectly the impact of genes and health spending on longevity, the utilitarian social optimum can be decentralized with type-specific redistributive lump sum transfers and Pigouvian taxes correcting for agents' myopia (leading to undersaving and underinvestment in health), and for their incapacity to perceive the effect of health spending on the resource constraint of the economy (causing overinvestment in health). The second-best problem is also examined under linear taxation instruments. Their main result is that it may be optimal to tax health spending, in particular under a complementarity of genes and health spending in the production of longevity. In the second one (2008/58), they study the design of the optimal non linear taxation in an economy where longevity varies across agents, and depends on three factors: longevity genes, health investment and farsightedness. Provided earnings, farsightedness and genes are correlated, governmental intervention can be justified on two grounds: correction for a lack of farsightedness and redistribution across both earnings and genetic dimensions. Whether longevity-enhancing spending should be subsidized or taxed is shown to depend on the combined effects of myopia, self-selection and free-riding on the annuity returns. Their policy conclusions depend also on how productivity and genes are correlated, on the complementarity of genes and efforts in the survival function, and on how the government weights the welfare of heterogeneous agents. All in all, it might be desirable to tax longevity-enhancing spending.

The aim of 2008/80 is to develop a dynamic model of migrations, in which migration is driven by size asymmetries between countries and by the relative preferences of consumers between private consumption and consumption of public goods. Jean J. GABSZEWICZ, Salome GNETADZE, Didier LAUSSEL and Patrice PIERIETTI find out that the dynamic trajectories heavily depend on the degree of attractiveness for public goods. They show that monotone migrations require

sufficiently strong preferences for public goods, and can only be sustained from the small to the large countries. They identify the threshold value of the public goods' intensity of preferences guaranteeing the survival of the small country. For weaker preference intensities, oscillating migrations may arise, but they finally converge to situation where both countries are of equal size.

Helmuth CREMER, Philippe DE DONDER and Pierre PESTIEAU examine, in 2009/23, the degree of elitism of public education under two different social objectives. It illustrates a potential conflict between welfare and social mobility. In the absence of private supplementary education, utilitarian welfare increases with the degree of elitism of the public education system. On the other hand, elitism decreases the steady state proportion of heterogeneous dynasties (those comprised of a skilled parent and an unskilled child, or vice versa), which is their measure of social mobility. Consequently, social mobility is maximized under the least elitist public education system. They then open up the possibility for skilled parents to invest in private supplementary education for their child. They show that when private education is available, the degree of elitism that maximizes social mobility increases, while the welfare-maximizing degree of elitism decreases, provided that the inequality in productivity between the two types of agents is large enough. They provide a numerical example where the ranking between the welfare and mobility-maximizing degree of elitism is reversed when private education is allowed — i.e., where the public education system that maximizes social mobility is more elitist than the one that maximizes welfare. Finally, they show that utilitarian welfare is always (weakly) higher when private supplementary education is available. However, to maximize social mobility it may be preferable to ban private supplements.

In 2009/43, Pierre PESTIEAU and Uri M. POSSEN explore the effect of letting individuals choose their retirement age in a world of uncertainty where there exist both defined benefit (DB) and defined contribution (DC) pension plans. The paper shows that giving individuals the flexibility to determine when to retire is an important tool for them when they are hedging against future uncertainty. It also finds that it is preferable to let people make their retirement decision after rather than before the uncertainty is lifted. Finally, it shows that shifting from DB to DC plans fosters the rate of activity of elderly workers.

Tax competition within the EU is fiercer than in the rest of the OECD with tax rates falling rapidly. Karen CRABBE and Hylke VANDENBUSSCHE analyze, in 2008/81, the tax responses of EU-15 countries to corporate tax changes in the EU-10 new member states as a function of their proximity to these new member states. The average corporate tax rate in the new member states has always been considerably lower than the average in the EU-15 countries. Their entry into the EU eliminated capital barriers, allowing firms to locate in one of the new EU-10 with full access to the European Market. Their results indicate that EU-15 countries geographically closer to the new member states respond stronger to corporate tax changes in these new member states. They use a theoretical and a spatial regression framework to test the hypothesis that distance to a low tax region intensifies countries' tax reaction functions.

In 2009/12, Patrice PIERETTI and Skerdilajda ZANAJ analyze competition among jurisdictions to attract firms through low taxes on capital and/or high level of public goods, which enhance firms' productivity. They assume that the competing jurisdictions are different in (population) size and that the mobility of capital is costly. They find that for moderate mobility costs, small economies can attract foreign capital if they supply higher levels of public goods than larger jurisdictions,

without being tax havens. If mobility costs are high, they recover the classical result that small jurisdictions are attractive to foreign capital if they engage in tax dumping. Finally, they show that there exists a subset of mobility costs for which the differentiation in public goods across jurisdictions is not able to relax tax competition.

The ELIE scheme of Kolm taxes labour capacities instead of labour income in order to circumvent the distortionary effect of taxation on labour supply. Still, Kolm does not study the impact of ELIE on human capital formation and investment. In 2009/18, David DE LA CROIX and Michel LUBRANO build an overlapping generations (OLG) model with heterogeneous agents and endogenous growth driven by investment in human capital. They study the effect of ELIE on education investment and other aggregate economic variables. Calibrating the model to French data, they highlight a trade-off between growth and redistribution. With a perfect credit market, ELIE is successful in reducing inequalities and poverty, but it is at the expense of lower investment in education and slower growth. In an economy with an imperfect credit market where individuals cannot borrow to educate, the tradeoff between growth and redistribution is not overturned but is less severe. However, it is possible to overturn completely that trade-off simply by changing the base of taxation for the young generation, which is equivalent to subsidizing education.

The problem of redistribution between individuals having different mortality rates is studied in 2009/30. Antoine BOMMIER, Marie-Louise LEROUX and Jean-Marie LOZACHMEUR use a continuous time model in which there are two types of individuals characterized by different survival probability paths. Individual preferences are represented by a generalized life cycle utility function, which can exhibit temporal risk aversion. They successively compare utilitarian allocations when individuals exhibit temporal risk neutrality and temporal risk aversion. This problem is analyzed successively in the context of full information and asymmetric information on mortality rates.

Thierry BRÉCHET, Johan EYCKMANS, François GÉRARD, Philippe MARBAIX, Henry TULKENS and Jean-Pascal VAN YPERSELE analyze in 2009/61 the negotiation strategy of the European Union regarding the formation of an international climate agreement for the post-2012 era. They use game theoretical stability concepts to explore incentives for key players in the climate policy game to join future climate agreements. They compare a minus 20 percent unilateral commitment strategy by the EU with a unilateral minus 30 percent emission reduction strategy for all Annex-B countries. Using a numerical integrated assessment climate economy simulation model, they find that carbon leakage effects are negligible. The EU strategy to reduce emissions by 30% (compared to 1990 levels) by 2020 if other Annex-B countries follow does not induce participation of the USA with a similar 30% reduction commitment. However, the model shows that an appropriate initial allocation of emission allowances may stabilize a larger and more ambitious climate coalition than the Kyoto Protocol in its first commitment period.

CHAIRS AND RESEARCH PROJECTS UNDER CONTRACTS

Research contracts are listed by sponsor: chairs, the University, the Belgian Federal Government, the Belgian French-speaking Community, the European Commission or industry.

GdF-SUEZ CHAIR: ENERGY ECONOMICS AND RISK MANAGEMENT

In order to develop formal and quantitative analysis in energy economics and in the management of risks associated to energy markets, GdF-Suez will fund a Chair. Research will be done at CORE and in STAT-ACTU (as partners within IMMAQ). Claude D'ASPREMONT and Pierre DEVOLDER are in charge of the implementation. Planned research topics include: computational models of the natural gas and electricity markets, quantitative analysis of investment in the energy sector, energy risk management with physical and financial assets, pricing models for natural gas and electricity.

LHOIST BERGHMANS CHAIR

It is now a recognized fact that environmental issues are pervasive in business. This concern is quite rightly interpreted as the expression of collective aspirations for a better quality of life. The Chair Lhoist Berghmans in Environmental Economics and Management takes part in this process. A teaching and research chair, the Chair Lhoist Berghmans aims at fostering research likely to improve our knowledge from three points of view: (i) evaluating the costs for industry of applying clean technologies, (ii) evaluating the benefits for our society of applying these technologies, (iii) evaluating the global impact of industrial activities on the environment and on the improvement of living conditions through the use of their products. An interdisciplinary approach to these problems is needed in order to integrate environmental, economic, technological and institutional factors into a coherent process and to quantify the effects of new environmental policy instruments on the competitiveness of industries and countries and on their overall wealth. Improving decision-making tools, both on individual firms and on society as a whole, is the main theme of this research. The Chair held by Thierry BRÉCHET involves about ten researchers at CORE every year. It is also responsible for four courses in environmental economics and management, which are offered in many departments in the university.

TRACTEBEL CHAIR

The aim of the Tractebel Chair in energy economics held by Yves SMEERS is to develop research on questions arising from the restructuring of the gas and electricity sectors. The activity concentrates on market simulation, investment and risk management problems. The methodological approach is to cast fundamental ideas of economic theory in a computable framework using methods derived from optimization. Current work concentrates on the analysis of electricity spot prices using variations of unit commitment type models, long-term gas and oil resource development by equilibrium models, investments in generation capacity in an uncertain context through real option type methods and development of special contracts for large industrial consumers in the EU-ETS context (again equilibrium models).

SUBGAME PERFECT IMPLEMENTATION USING BOUNDED MECHANISMS

A social choice rule is implementable if there exists a mechanism where the equilibrium alternatives always coincide with the recommendation of the rule at that particular profile of preferences. The topic of the project is the implementation using bounded mechanism. One aims at characterizing the rules that can be implemented in subgame perfect equilibrium.

François MANIQUET coordinates this project financed by the Fonds Spéciaux de Recherche (FSR) of the Université catholique de Louvain.

EXTENSION OF AN ALGEBRAIC MODELLING LANGUAGE AND DEVELOPMENT OF A SOLVER FOR STRUCTURED CONIC CONVEX OPTIMIZATION

The result of this project will be useful for anybody who needs to solve convex optimization problems which appear naturally in numerous domains of industrial applications. One could mention here mechanical engineering with optimal shape design (shape of an aircraft wing, or the paddle of a turbo-engine), the conception of truss designs (for example for antennae, bridges etc. where the goal is to optimize the stiffness with a given weight). One could also mention applications in the domain of telecommunication (signal processing, network design of antennae), for estimation in statistics (maximum likelihood estimators) or in finance. The resulting program will include a modelling interface which takes as input the model to be solved. The practitioner simply formulates the problem in its natural way and hands it to that interface. The various transformations techniques are applied with the aim to establish a conic form that is treatable by the underlying solver. It hands the transformed problem to the solver and returns the optimal solution to the user.

Robert CHARES, under the supervision of François GLINEUR is working within the scope of this FRIA (Fonds pour la Formation à la Recherche dans l'Industrie et dans l'Agriculture) project.

EXPECTATIONS AND VOLATILITY, EFFICIENT CAPITAL ACCUMULATION IMPLEMENTATION, BARGAINING AND AUCTIONS (MIS ULYSSE)

The research program aims at developing the following research lines:

- How to reduce the impact of expectations in the generation of excess volatility and what are the consequences of imposing rationality conditions on the agent's expectations formation process?
- Have the trade liberalization and economic integration processes a stabilizing effect on the economies, and what is the impact of an increasing dispersion in the distribution of characteristics of the fundamentals of an economy on its stability?
- What are the constrained efficient capital accumulation policies in the neoclassical growth model in the presence of uninsurable idiosyncratic shocks, and in the overlapping generations economies, how can they be implemented in a decentralized way?

- What is the fiscal tax/subsidy mix that allows to Pareto improve to upon the competitive outcome in overlapping generations economies with production?
- How can auctions and bargaining games be connected in a common framework and what can we learn from that; how can bargaining games competitive outcomes be implemented under non-competitive conditions between few agents?

Nguyen Thang DAO, Marie-Louise LEROUX and Hiroshi UNO are working under the scope of this project coordinated by Julio DAVILA and sponsored by the Fonds National de la Recherche Scientifique.

GEOGRAPHICAL APPROACH OF BRAIN DRAIN: DESCRIPTIVE AND PRESCRIPTIVE STUDY OF THE LINK BETWEEN COUNTRY SIZE AND BRAIN DRAIN'S EFFECTS

On the one hand, one wants to study the links between economic size, intensity of the mobility of skilled workers and accumulation of human capital (descriptive approach). On the other hand, one tries to analyse the impact of economic size on the optimal policies of growth and education (prescriptive approach).

The descriptive approach bases on three intuitions:

- The degree of openness of smaller countries is not related to some specific characteristics of their inhabitants. It is due to the smallness of the territory and to its implications in terms of specialization and nearness of the borders. Larger countries' inhabitants are not less mobile but they have more opportunities of moving inside the country.
- Extern mobility is more unegalitarian than intern mobility. Hence, inhabitants of small countries having fewer opportunities of moving within the country, small countries suffer more of the intrinsic mobility of their inhabitants.
- Small countries are more affected by extern mobility. However, their level of human capital and their economic growth are not lesser than those of larger countries. They may even be larger. The explanation to this paradox bases on the fact that small countries benefit more from economies of scale and dedicate most of their economy to secondary and tertiary sectors, which are more open to innovation and rely more on human capital. Beside, small countries are ethnically more homogeneous and may implement policies which are more efficient and related to their specific needs and constraints.

Bénédicte MEERT is working under the scope of this project financed by the Belgian Fonds National de la Recherche Scientifique (FNRS). Her work is supervised by Jean-François THISSE and Frédéric DOCQUIER.

HEALTH GEOGRAPHY. DO THE CHARACTERISTICS OF RESIDENTIAL LOCATIONS INFLUENCE HEALTH STATUS AMONG THE BELGIAN POPULATION? A SPATIAL AND ECONOMETRIC APPROACH

The general goal of this project is to describe and explain spatial variations in Belgians' health status in function of the characteristics of residential locations. Two health indicators are studied (subjective health and mortality) and various aspects of residential locations are tackled (notably, physical characteristics, housing conditions, access to local resources, sociocultural composition, and perception of the neighbourhood). Different methodological problems put forward by the literature are dealt with, notably, the influence of the chosen spatial unit, the difficult distinction between contextual effects and compositional effects, and the problems of statistical biases arising from the endogeneity of residential locations.

Claire DUJARDIN is working under the scope of this project financed by the Belgian Fonds National de la Recherche Scientifique (FNRS).

STUDY OF FAIR AND STRATEGICALLY DECENTRALIZABLE SOLUTIONS TO ALLOCATION PROBLEMS OF GOODS IN ECONOMIC ENVIRONMENTS WITH INDIVISIBILITIES, HETEROGENEITIES, OR EXTERNALITIES

One studies allocation problems of goods in economic environments with indivisibilities, heterogeneities, or externalities. The objective is to define rules that allow one selecting, whatever the problem one encounters, allocations considered as optimal. Therefore, rules should be efficient and fair, and immune to manipulations of information by strategic agents. In each model one develops, one first follows an axiomatic approach to specify rules that satisfy efficiency and fairness criteria, then one applies implementation theory to determine if one can decentralize such rules. The motivation is hence normative and has, as its ultimate goal, enlightening political decision-makers about the compromises to make to solve such allocation problems.

Eve RAMAEKERS is working under the scope of this project financed by the Belgian Fonds National de la Recherche Scientifique (FNRS).

NONNEGATIVE MATRIX FACTORIZATION AND RELATED PROBLEMS: ALGORITHMS, COMPLEXITY AND APPLICATIONS

Nonnegative Matrix Factorization (NMF) is the problem of expressing a nonnegative matrix as the product of two low-rank nonnegative matrices. It is a new way of interpreting nonnegative data with applications in text mining, image processing, computational biology, ... One would like to study the complexity of NMF and related problems, design efficient algorithms and finally use the results for some applications.

Nicolas GILLIS, under the supervision of François GLINEUR, is working under the scope of this project financed by the Belgian Fonds National de la Recherche Scientifique (FNRS).

EUROPEAN LABORATORY IN QUANTITATIVE ECONOMICS AND THEORY OF CHOICE

The Laboratory in Quantitative Economics and Theory of Choice is an Associated European Laboratory of the French CNRS (Centre National de la Recherche Scientifique), the Belgian FNRS (Fonds National de la Recherche Scientifique) and the Spanish Consejo Superior de Investigaciones Científicas (CSIC), which proposes a research programme based on a collaboration between the GREQAM of EHESS and the Universités d'Aix-Marseille II and III, the GREC grouping economists from three centers in Barcelona (Institut d'Anàlisi Econòmica, Universitat Autònoma de Barcelona and CODE at Universitat Pompeu Fabra) and CORE, Université catholique de Louvain. The principal fields of research are: strategic foundations of industrial organization, uncertainty, bounded rationality and learning, political economy; coalition formation and networks; the development of econometric methods for tests and estimation, growth and redistribution.

Efthymios ATHANASIOU and Giacomo VALLETTA, under the supervision of François MANIQUET, are working within the scope of this project coordinated by Claude d'ASPREMONT.

COOPERATION AND COMPETITION IN THE KNOWLEDGE ECONOMY

The goal of this project is to combine the general methods of industrial organization with the theories pertaining to coalition formation and to network structures in order to shed a new light on the issue of cooperation versus competition among firms. One focuses the analysis on the industries producing "ideas" (i.e., R&D, information, networks, etc). The basic questions are the following: How does the formation of networks affect the process and the intensity of innovation? How does the formation of networks modify the institutional framework in these industries?

This Fonds de la Recherche Fondamentale Collective (FRFC) project is coordinated by Ana MAULEON, Paul BELLEFLAMME, Vincent VANNETELBOSCH and Xavier WAUTHY and financed by the Fonds National de la Recherche Scientifique (FNRS). Marco MARINUCCI is working under the scope of this project.

DEVELOPMENT OF MODELS AND EXACT APPROXIMATE SOLUTIONS METHODS FOR LINEAR AND NON-LINEAR, CONTINUOUS, MIXED AND INTEGER OPTIMIZATION PROBLEMS

This project studies the structure of difficult problems of optimization, of the identification of polynomial particular cases and the development of heuristic and exact methods of resolution.

This project financed by the Belgian Fonds National de la Recherche Scientifique (FNRS) gathers the Department of Computer Science of the Université Libre de Bruxelles (coordinator: Bernard FORTZ), the Management School of the Université de Liège (coordinator: Yves CRAMA), the Numerical Analysis Research Unit of the Facultés Universitaires Notre-Dame de la Paix, Namur (coordinator: Philippe TOINT) and CORE, Université catholique de Louvain (coordinator: Laurence WOLSEY).

ECONOMETRIC MODELLING OF MULTIVARIATE FINANCIAL TIME SERIES

When developing multivariate time series models, a balance between sufficient flexibility and rapidly growing dimensionality (number of relations, of parameters) is necessary in order to incorporate the potentially time-varying dynamics of financial data in large dimensions. These issues are addressed by a range of complementary approaches (non-linear models, latent factor models, finite mixture models, locally stationary models).

Rainer VON SACHS, Luc BAUWENS, Christian HAFNER and Johan SEGERS are coordinating this Actions de Recherche Concertées (ARC) project financed by the Communauté Française de Belgique. Alfonso VALDESOGLO is working under the scope of this project.

ECONOMIC ANALYSIS OF HETEROGENEITY IN SOCIAL ORGANIZATION

The co-existence under diversity has become one of the most important and challenging issues in multi-cultural societies. The diversity that could be rooted in cultural, religious, linguistic, economic, ideological or historical differences can provide an accelerator and spark to the enrichment and progress of our society. Recent research points out the strong linkage between the diversity of human capital and talents across major cities in the United States to the creativity and innovative technology-based industries located there. The positive impact of diversity of cultural and skill assets could be mitigated by the fact that diversity and polarization may pose a threat to the cohesiveness and preservation of existing political and economic structures. For example, the recent enlargement of the European Union created a powerful Union of more than 450 million people and an economy of about nine trillion Euros, which is close in size to that of the United States. On the other hand, the cultural, historical, religious, and geographical diversity within the bloc with twenty official languages is overwhelming. The economic disparities among the country members are striking. The gaps would widen even further when (or if) Bulgaria, Romania, Croatia, and possibly, Turkey will join the Union. The crucial question is whether there exists a threshold on the degree of the intra-union heterogeneity that would preserve the sustainable cohesiveness of the Union and its ability to generate a consensus among its members.

Jean HINDRIKS, Pierre DEHEZ, Jacques-François THISSE, Vincent VANNETELBOSCH and Shlomo WEBER coordinate this Actions de Recherche Concertées (ARC) project financed by the Communauté Française de Belgique. Filippo CALCIANO, Marie-Louise LEROUX, Carlo ROSA and Giacomo VALLETTA are working within the scope of this project.

MANAGING SHARED RESOURCES IN SUPPLY CHAINS

Supply Chain Management (SCM) is widely recognized as the largest source of potential gains in efficiency for the operations of organisations. It has also been the subject of many articles in the scientific literature, in the field of Operations Management, Operations Research and Economy. The main lesson from SCM is that it is no longer enough for organisations to think about their own operations, they should take into account all other organizations that participate in the same value creation chain.

The emphasis until now has been on sharing information and co-ordinating flows of goods between organizations. This has led to new ways of organizing operations and new contracts between organizations since companies have recognized that there is a direct link between the performance of supply chains and the availability and quality of timely information.

The logical next step is to coordinate not only flows of goods and information, but also shared resources. Information technologies enable much tighter coordination mechanisms between independent organizations. On the other hand the increasing complexity of most services and goods require the utilization of ever more sophisticated (and expensive) resources. Those resources benefit in general from large economies of scale that can better be captured if the resources can be shared among organizations. The goal is then to achieve the best possible performance with a decentralized control of these resources.

The Centre de Recherches et d'Etudes en Gestion Industrielle (CREGI) from the Facultés Universitaires Catholiques de Mons is taking part in this Actions de Recherche Concertées (ARC) project coordinated by Per AGRELL, Philippe CHEVALIER, Fouad RIANE and Laurence WOLSEY and financed by the Communauté Française de Belgique.

ECONOMIC POLICY AND FINANCE IN THE GLOBAL ECONOMY, EQUILIBRIUM ANALYSIS AND SOCIAL EVALUATION

The Belgian Science Policy administration has renewed this important research contract for a period of five years (2007-2011). CORE, Université catholique de Louvain, is the "Attraction Pole" and the promotor is Claude d'ASPREMONT.

The Belgian partners are ECON-IRES, Université catholique de Louvain (Promotor: David DE LA CROIX), Centrum voor Economische Studien, Katholieke Universiteit Leuven (Promotor: Erik SCHOKKAERT), Groupe d'Economie Quantitative et Optimisation, Facultés Universitaires Notre-Dame de la Paix, Namur (Promotor: Sébastien LAURENT), Fakulteit Economie en Bedrijfskunde, Universiteit Gent (Promotor: Dirk VAN DE GAER) and European Center for Advanced Research in Economics and Statistics (ECARES), Université Libre de Bruxelles (Promotor: Philippe WEIL). The European partners are Groupement de Recherche en Economie Quantitative d'Aix-Marseille, Universités d'Aix-Marseille II and III (Promotor: Jean-Benoît ZIMMERMANN), the London School of Economics (Promotor: Frank COWELL), Institut d'Economie Industrielle, Université de Toulouse 1 Capitole (Promotor: Helmuth CREMER), and Universiteit Maastricht (Promotor: Franz PALM).

The objective of the project is to simultaneously develop analytical tools for economic equilibrium analysis and use these tools in the fields of public policy and regulation. The strategic and mechanism design approaches to equilibrium theory in economics, as well as the normative dimension of the analysis and the possible use of optimization methods have to be developed. Various aspects of public decision, both at the micro and the macro level, and the regulation of both social and industrial organizations are examined. Econometric models should support the theoretical analysis.

The general equilibrium perspective has been kept, but with further developments of game-theoretical features and computational methods. Network and bargaining ideas have been

applied to analyze the effect of network integration on the market equilibrium in the presence of international network externalities in consumption and the effect of trade unions on the stability of R&D networks. The tools to regulate markets and non-market institutions have been analysed in various frameworks (energy markets, the transportation sector, agriculture, the drinking water market). General equilibrium modelling has dealt with very diversified issues, such as unemployment persistence in the USA and the Euro zone, the impact of oil shocks and the dynamics of the US trade balance, the ability of economies to innovate in response to environmental regulation and/or to higher natural resources' prices. Computation methods have also been developed, in the assessment of efficiency frontier, in the stochastic equilibrium analysis of energy markets, and in various applications using large-scale non-linear optimization or discrete optimization.

The part on social evaluation and public governance has been well advanced. Several theoretical papers have derived equity and fairness criteria in different contexts and the specific problems that arise in a multidimensional setting have been studied. The properties of the collective consumption model of household behaviour have been analysed in a series of papers. Nonparametric analysis has shown the superiority of the collective model over the traditional unitary model. Other papers contribute to the advancement of theoretical and econometric tools needed for economic analysis of the political feasibility of reforms and political economy. A first attempt at modelling public opinion is provided. A set of papers study the questions of the political feasibility of reforms in developing country context. Also one of the key dimensions of reforms is examined, that is the structure of transfers between different levels of government.

In the part devoted to international economics and finance, issues concerning currency and monetary unions, international macroeconomics, exchange rate and central banking, trade and spacial econometrics have been examined. In financial econometrics high-frequency financial data have been analyzed, in particular the effect and modelling of jumps in high-frequency data, as well as the effect of macroeconomic releases and central banks interventions on jumps. Also producer price adjustment using a low-inflation micro-data have been studied and competition and regulation in the banking sector have been reviewed. The last line of research goes on macro-finance research. The monthly volatility of the US economy from 1959 to 2008 is estimated. It helps to understand the macroeconomic indicators that cause volatility.

Rafael DE MELO, Fernanda ESTEVAN, Emanuele FORLANI and Georgios LOLAS are working within the scope of this project.

ASSESSING AND DEVELOPING INITIATIVES OF COMPANIES TO CONTROL AND REDUCE COMMUTER TRAFFIC

The objective of this project is to improve public and private decision-making and guide investments in employer-based commuter transport schemes (also called mobility management plans) using a case study analysis and a large scale business questionnaire that will aim at determining what characteristics (company and/or worksite related) make commuter choice programs successful in reducing (and/or controlling) commuter car traffic. This degree of "successfulness" is expressed in terms of savings in travel time and travel distance, potential in

inducing modal shift, contribution to a fair division of costs, and employer and employee acceptance, and will be assessed using a spatial and economic model. Hence, the project's results contribute to a policy aimed at inducing sustainable mobility.

The partners of this projects are the Universiteit Gent (coordinator : Frank WITLOX), the Facultés Universitaires Catholiques de Mons (promotor : Bart JOURQUIN), CORE, Université catholique de Louvain (promotor : Isabelle THOMAS) and the Universiteit Antwerp (promotor : Ann VERHETSEL).

Laurent VAN MALDEREN is working within the scope of this project coordinated by Isabelle THOMAS and financed by the Belgian Science Policy.

CLIMNEG PROJECT ON CLIMATE, COALITIONS AND TECHNOLOGY

The subject of this project is the exploration of the post-Kyoto climate regimes with respect to two key issues: (i) how stable coalitions of countries could emerge to significantly mitigate climate change, (ii) what could be the contribution of technological progress for a sustainable climate? How these two issues interplay will be particularly examined in the project.

This project is coordinated by CORE (promotor: Thierry BRÉCHET). The partners are CORE, Université catholique de Louvain (coordinator: Thierry BRÉCHET and Raouf BOUCEKKINE), Economische Hogeschool Brussel (promotor: Johan EYCKMANS) and the Institut d'Astronomie et de Géophysique George Lemaître of Université catholique de Louvain (promotor: Jean-Pascal VAN YPERSELE).

It is financed by the Belgian Science Policy. Alexis GÉRARD and Violette VAN DYCK are working within the scope of this project.

SYSTEMATIC ANALYSIS OF HEALTH RISKS AND PHYSICAL ACTIVITY ASSOCIATED WITH CYCLING POLICIES (SHAPES)

The project is at the crossroads of transport and health research and integrates the results of basic studies and experiments in each expertise to support future transport and public health policies. The main objective is to analyze the risks and benefits (voluntary and involuntary) of a modal shift from passenger cars to cycling in an objective way. The specific objective is here to understand and model the spatial aspect of commuting by bicycle in Belgium as well as the associated risks.

This project is coordinated by Isabelle THOMAS and financed by the Belgian Science Policy. The partners are the Laamse Instelling voor Technologisch Onderzoek Integrale Milieu Studies (coordinator : Luc INT PANIS), the Faculty of Physical Education of the Vrije Universiteit Brussel (promotor : Romain MEEUSEN) and CORE, Université catholique de Louvain (promotor: Isabelle THOMAS). Julie FRÈRE and Gregory VANDENBULCKE are working within the scope of this research.

PUBLIC GOODS, PUBLIC PROJECTS, EXTERNALITIES

Defining European policies in provision and financing public goods and services or environment defense is a core challenge for the building of a political Europe. Rather than a political answer, this programme invites to advance the part of economic theory addressing these crucial questions. Topics include pure public goods and public projects, all kind of impure public goods, public goods as production inputs, externalities, environment. The outcome of the programme will be the creation and development of an effective research network gathering theorists, specialists of political economy and of history of economic analysis and practitioners of public economics.

The participants to this program financed by the European Science Foundation are the University of Graz (promotor: Richard STURN), the Max Planck Institute for Research on Collective Goods, Bonn (promotor: Martin HELLWIG), the Bogazici University (promotor: Unal ZENGINOBUZ), CERMSEM, Université Paris I (Panthéon-Sorbonne) (promotor: Monique FLORENZANO) and CORE, Université catholique de Louvain (promotor: Jean HINDRIKS).

PUBLIC POLICY, MARKET ORGANIZATION AND TRANSITION ECONOMIES

The project is lead by a consortium which includes CORE, Université catholique de Louvain, project co-ordinator (coordinator: Jean HINDRIKS), the Central European University (CEU), Budapest (promotor: Istvan TEPLAN), the Center for Economic Research and Graduate Studies of Charles University (CERGE), Prague (promotor: Ivan WILHELM) and the Economics Institute, Academy of Sciences of the Czech Republic (EI), Prague (promotor: Lubomir LIZAL). The European Commission is financing this project for a period of four years (2006-2010).

The aim of the project is to prepare students for careers in teaching, research or government services and to prepare researchers to participate actively in the analysis of the fundamental economic questions facing market regulation and transition economies.

Olivier BOS, Maia GEJADZE, Martin GUZI, Salome GVETADZE, Asel ISAKOVA, Tanja KOSI, Deniz NEBIOGLU, Paolo PIACQUADIO, Mariann RIGO, Dzianis ROZHYN and Bezik SAMKHARADZE are working within the scope of this project.

EUROPEAN DISTRIBUTED ENERGY PARTNERSHIP

The EU-DEEP project aims at developing business models for the deployment of Distributed Energy Resources (DER) in the European market. The project involving 39 partners, among energy operators, industrial manufacturers, research centers, academics, professionals and national agencies and provides an interdisciplinary approach mixing engineering and economics both in theoretical and applied contexts. UCL (CORE and the Louvain School of Management) is involved in the subproject on sustainable and dynamic regulation models for DER, including analyses of technical and economic organization of the activity, related to coordination, information and market efficiency concerns. The work contributed to the development of a sustainable European regulation model for the integration of DER in unbundled energy markets, aiming at both

theoretical and institutional models. The partners in the subproject financed by the European Commission cooperate closely with the research institute fondazione Eni Enrico Mattei in Milano.

The coordinator at CORE is Per AGRELL.

SOCIAL SECURITY AND DIFFERENTIAL LONGEVITY

This project focuses on the issue of the optimal design of Social Security when individuals have different life expectancies and tries to answer the following questions: how should differential mortality be included in pension systems? How should contributions and benefits be linked to life duration? The answers are likely to depend on the modeling of the survival function (whether individuals or public policies can influence it or not). This project lies at the frontier of public economics, health economics, behavioral economics and the economics of ageing.

Marie-Louise LEROUX is working within the scope of this project financed by the European Commission.

LOGISTICS IN WALLONIA. EXECUTIVE MASTER IN INTERNATIONAL SUPPLY CHAIN MANAGEMENT

This program for managers who want to have a broader view on supply chain management is coordinated by Philippe CHEVALIER and financed by the Forem (Service public wallon de la formation et de l'emploi). It is based on unique teaching methods in order to ensure that the participants gain the full benefit of their investment, integrating very tightly theory and practice.

Each of the seven modules includes a real life, full-day on site case study including the visit of a logistic or industrial site. The participants work the case in small groups, this gives them an immediate opportunity to confront the course material, their experience and the group exchange dynamics to a current real-life situation. This reality-based approach offers an opportunity of opinion confrontation between the participants, the trainers and the hosting professionals.

Each module is also taught by an international team of faculty in order to give participants an international view on each subject. In addition, two modules are organized outside Belgium.

MODELING AND OPTIMIZATION OF LOGISTIC FLOWS AND THEIR VARIABILITY

In order to be competitive, companies are more and more interested in the management of their entire supply chain from the raw materials to the final product. The first objective of this research is to develop better models for the variability of the flows of goods and orders in a supply chain. This variability can induce large buffering costs and it is strongly affected by the decisions taken for the management of the supply chain. The aim is to be able to optimize the decisions in order to improve the performance of the supply chain, taking the variability into account.

Ying WEI is working within the scope of this project coordinated by Philippe CHEVALIER and financed by the Région Wallonne.

TRANSLOGISTICS

The Walloon government has funded a 2 year and a half research project in transport and logistics through the "Marshall Plan" which involves such firms as Alstom, Alcatel, SNCB and Arcelor-Mittal. The purpose of this project is to increase the communication skills and technologies in rail, road, waterway transport firms.

This project is coordinated by Per AGRELL, Philippe CHEVALIER and Pierre SEMAL and financed by the Région Wallonne.

VENTURE CAPITAL, INNOVATION AND STRATEGIC PATENTING

The objective of this project financed by the AXA Research Fund is to understand the effects of venture capital on innovation and intellectual property protection. First, we aim to provide a theoretical answer to the following question: Why do start-ups use patents more often than established firms as suggested by recurrent empirical findings? One argues that one explanation lies in the strategic relationship between start-ups and venture capitalists. More specifically, one investigates the extent to which patents can be used as signaling or bargaining instruments by firms seeking venture capital funding. Second, one intends to fill a gap in the literature on the active role of venture capitalists in the innovation strategies of venture-backed start-ups: while previous papers provide some insights on this role at the commercialization stage, one still knows little about how venture capital funding may affect firms' behavior at the R&D stage.

Yassine LEFOUILI is working within the scope of this project.

LINKING THEORY AND PRACTICE IN THE VEHICLE ROUTING OPTIMIZATION

By reexamining in depth the existing approaches to the Vehicle Routing Optimization, and recentering on their practicability, this research program can potentially, from an industrial viewpoint, lead to

- improvements in the quality of the results furnished to the industrial clients (both in computing time and solution quality);
- increase the number of cases in which software for vehicle routing optimization can provide adequate responses.

From a scientific viewpoint this program should lead to a better understanding of the problems fixed by companies dealing with delivery/collection of goods and extend its research to deal with real applications.

Joël RAUCQ is working in the scope of this project coordinated by Laurence WOLSEY and financed by Routing International.

L'ORÉAL SUPPLY CHAIN PARTNERSHIP

The partnership has the objective to jointly develop the logistics and supply chain management skills and practices of L'Oréal, through training, analysis, project work at multiple levels and increased awareness of the functional scope within the supply chain.

Géraldine STRACK is working in the scope of this project coordinated by Per AGRELL, Philippe CHEVALIER and Pierre SEMAL, and financed by L'Oréal.

LEGAL AND ECONOMIC ANALYSIS OF THE INTERNATIONAL TRANSFERS OF ENVIRONMENTALLY TECHNOLOGIES

The research project financed by the "Prix GdF-Suez" and coordinated by Paul BELLEFLAMME concerns the analysis of international transfers of environmentally friendly technologies, from both a legal and an economic point of view. In particular, the project aims at understanding better the mechanisms through which so-called "green technologies" are diffused, and to assess what regulatory tools are the most suitable to promote such diffusion.

LONG TERM ENERGY PRICES

The objective of this project is to construct long term equilibrium models of interacting energy forms under uncertainty with the view of constructing consistent long term energy prices.

Olivier DURAND-LASSERVE is working in the scope of this project coordinated by Yves SMEERS and financed by GdF Suez Belgium.

REAL OPTIONS, SYSTEMS DYNAMICS AND BOOM AND BUST IN INVESTMENTS

The objective of this project is to construct stylized (real options, system dynamics) equilibrium models of investment in competitive electricity markets with the view of analyzing the possible emergence of investment cycles.

Joachim GAHUNGU is working in the scope of this project coordinated by Yves SMEERS and financed by GdF Suez Belgium.

SHORT TERM ENERGY PRICES

The objective of this project is to construct multifactor risk models of short term electricity markets with the view of understanding forward electricity markets.

Gauthier DE MAERE D'AETRYCKE is working in the scope of this project coordinated by Yves SMEERS and financed by GdF Suez Belgium.

ANALYSIS OF STRATEGIC DECISIONS AND OF GROUP FORMATION IN DIFFERENT ECONOMIC SITUATIONS

The solution of many economic, social or political issues involves some cooperation among decision makers. A classical way to tackle these issues is to study the possibility for decision makers to form coalitions or networks. Which coalitions or networks are likely to be stable? Which coalitions or networks are efficient, i.e. maximizing the overall wealth? Using game theoretical tools, the project aims at deriving results that are general in the sense that they apply to a wide range of different environments: economics of innovation (joint ventures, R&D collaborations), economics of retailing and distribution (trade associations), and international economics (bilateral trade agreements, customs unions).

This project financed by the Ministerio de Education y Ciencia, Spain, is coordinated by Ana MAULEON and Vincent VANNETELBOSCH.

EVALUATION, CHOICE AND DECISION IN URBAN AND PERIURBAN LAND USE. AN INTERDISCIPLINARY APPROACH OF RESIDENTIAL AND DAILY MOBILITIES

The project ECDESUP is funded by the Agence Nationale de Recherche (ANR, France). It is led by ThéMA at the University of Besançon (coordinator: Pierre FRANKHAUSER). It involves researchers from the Université of Strasbourg (promotor: Dominique ANSEL), from the Centre d'Economie et Sociologie Appliquées à l'Agriculture et aux Espaces Ruraux (CESAER) in Dijon (promotor: Mohamed HILAL) and CORE, Université catholique de Louvain (promotor: Dominique PEETERS). It addresses questions related to residential choice and the daily mobility of households, which represent key issues for the sustainable management of urban territories particularly in growing urban fringes or in deprived neighbourhoods.

Geoffrey CARUSO, Dominique PEETERS and Isabelle THOMAS are working under this scope of this project.

PUBLICATIONS

- CORE REPRINTS
- OTHER PUBLISHED PAPERS
- ARTICLES IN NEWSPAPERS
- CORE DISCUSSION PAPERS
- OTHER DISCUSSION PAPERS AND MANUSCRIPTS
- BOOKS AND REPORTS
- EDITORIAL ACTIVITIES

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- Raouf BOUCEKKINE, Jacek B. KRAWCZYK and Thomas VALLÉE. Environmental negotiations as dynamic games: why so selfish? Discussion Paper 2009-07, Department of Economics, University of Glasgow, United Kingdom, 2009.

- Raouf BOUCEKKINE and Jean-Pierre LAFFARGUE. On the distributional consequences of epidemics. Discussion Paper 2009-22, Department of Economics, University of Glasgow, United Kingdom, 2009.
- Raouf BOUCEKKINE, Giorgio FABBRI and Fausto GOZZI. Maintenance and investment: complements or substitutes? A reappraisal. Discussion Paper 2009-10, Department of Economics, Université catholique de Louvain, Belgium, 2009.
- Kris BOUDT, Christophe CROUX and Sébastien LAURENT. Outlyingness weighted quadratic covariation. Mimeo, 2009.
- Kris BOUDT, Christophe CROUX and Sébastien LAURENT. Robust estimation of intraweek periodicity in volatility and jump detection. Mimeo, 2009.
- Philippe CHEVALIER and Jean-Christophe VAN DEN SCHRIECK. Computing the performance of multiclass queuing systems based on equivalent loss systems. Submitted to *Queueing Systems*.
- Michele CONFORTI, Laurence A. Wolsey and Giacomo Zambelli. Projecting an extended formulation for mixed-integer covers on bipartite graphs. Mimeo, 2008.
- Helmuth CREMER, Firouz GAHVARI and Pierre PESTIEAU. Optimal income taxation and accidental bequests. Mimeo, 2009.
- Helmuth CREMER, Firouz GAHVARI and Pierre PESTIEAU. The design of pension plans with endogenously determined fertility, education and ability types. Mimeo, 2009.
- Helmuth CREMER and Pierre PESTIEAU. Taxing wealth and wealth transfers. A survey. Mimeo, 2009.
- Helmuth CREMER and Pierre PESTIEAU. Myopia, redistribution and pensions. A survey of the literature. Mimeo, 2009.
- Rafael DE MELO and Laurence A. WOLSEY. Optimizing production and transportation in a commit-to-delivery business mode. Mimeo, 2009.
- Santanu DEY and Laurence WOLSEY. Lifting group inequalities and an application of mixing inequalities. Mimeo, 2009.
- Santanu DEY and Laurence WOLSEY. Constrained infinite group relaxations of MIPs. Mimeo, 2009.
- Nikos EBEL and Yassine LEFOUILI. Regulation stringency and efficiency: individual vs. relative regulation. Mimeo, 2009.
- Emanuele FORLANI. Input origin and Irish firm productivity. Mimeo, 2009.
- Maia GEJADZE. Capital market conditions and the exit decision from venture capital investments. Mimeo, 2009.
- Jean-Yves GNABO, Jérôme LAHAYE, Christelle LECOURT and Sébastien LAURENT. Do jumps mislead the FX market? Mimeo, 2009.
- Gilles GRANDJEAN, Ana MAULEON and Vincent VANNETELBOSCH. Strongly rational sets for normal-form games. Mimeo, 2009.

- Alain JOUSTEN, Mathieu LEFÈBVRE, Sergio PERELMAN and Pierre PESTIEAU. The effects of early retirement on youth unemployment: the case of Belgium. Mimeo, 2008.
- Cagatay KAYI and Eve RAMAEKERS. An impossibility in sequencing problems. METEOR research memoranda 040, Universiteit Maastricht, The Netherlands.
- Jozef KONINGS and Hylke VANDENBUSSCHE. Antidumping protection hurts exporters. Firm-level evidence from France. CEPR Discussion Paper n° 5678, 2009.
- Leonidas KOUTSOUGERAS. Intermediation across imperfectly competitive markets. Mimeo, 2009.
- Jérôme LAHAYE, Sébastien LAURENT and Chris NEELY. Jumps, cojumps and macro announcements. Submitted to *Journal of Applied Econometrics*.
- Sébastien LAURENT, Jeroen ROMBOUTS and Francesco VIOLANTE. Consistent ranking of multivariate volatility models. Mimeo, 2009.
- Yassine LEFOUILI and Catherine ROUX. Leniency programs for multimarket firms: the effect of amnesty plus on cartel formation. Submitted to *Journal of Industrial Organization*.
- Marie-Louise LEROUX, Pierre PESTIEAU and Maria RACIONERO. Pensions and marriage. A political economy approach. Mimeo, 2009.
- Marie-Louise LEROUX and Grégory PONTIÈRE. Utilitarianism and differential longevity: a remedy? Working Paper 2009/19, Paris School of Economics, France, 2009.
- Sylvette LY. Looking for eco-efficiency. Mimeo, 2009.
- Ana MAULEON, Huasheng SONG and Vincent VANNETELBOSCH. Networks of free trade agreements among heterogeneous countries. Submitted to *Journal of Public Economic Theory*, 2009.
- Ana MAULEON, Vincent VANNETELBOSCH and Wouter VERGOTE. Von Neumann-Morgenstern farsightedly stable sets in two-sided matching. Submitted to *Theoretical Economics*, 2009.
- Ana MAULEON, Jose J. SEMPERE-MONERIS and Vincent VANNETELBOSCH. Contractually stable coalition structures with externalities. Mimeo, 2009.
- Kaz MIYAGIWA, Huasheng SONG and Hylke VANDENBUSSCHE. Trade policy and innovation. LICOS Discussion Paper 200/2008, Katholieke Universiteit Leuven, Belgium, 2008.
- Philippe MONFORT, Hylke VANDENBUSSCHE and Emanuele FORLANI. Chinese import competition and skill upgrading in European textiles. LICOS Discussion Paper 198/2008, Katholieke Universiteit Leuven, Belgium, 2008.
- Pierre PESTIEAU and Grégory PONTIÈRE. Myopia, regret and risky behaviors. Mimeo, 2009.
- Pierre PESTIEAU and Uri POSSEN. Defined contribution pensions and retirement choice. Mimeo, 2009.
- Pierre PESTIEAU and Uri POSSEN. Interaction of defined benefit pension plans and social security when retirement age is endogeneous. Mimeo, 2009.

- Pierre PESTIEAU and Motohiro SATO. Social and private LTC insurance with variable altruism. Mimeo, 2009.
- Pierre PESTIEAU and Maria RACIONERO. Tagging with needs. Mimeo, 2009.
- Besik SAMKHARADZE. Monetary transmission mechanism in Georgia: Analyzing pass-through of different channels. National Bank of Georgia Working Paper, NBF WP No. 02/2008, 2008.
- Erik SCHOKKAERT. The capabilities approach. In P. Anand, C. Puppe and P. Pattanaik (eds.), *The Handbook of Rational and Social Choice*, Oxford, Oxford University Press, 542-566, 2009.
- Chris SCHLUTER and Dirk VAN DE GAER. Structural mobility, exchange mobility and subgroup consistent mobility measurement –US/German mobility measurements revisited. Working Paper 98/543, Faculteit Economie en Bedrijfskunde, Universiteit Gent, Belgium, 2008.
- Wouter VERGOTE. Endogeneous social capital in joint liability lending through mutual insurance. Mimeo, 2009.
- Ying WEI and Tsan-Ming CHOI. Mean-variance analysis of a supply chain under wholesale pricing and profit sharing scheme. Submitted to *Journal of Operational Research*.

▪ BOOKS AND REPORTS

- Marie-Louise de KEERSMAECKER and Isabelle THOMAS. *Atlas Erasme: Espace et Société*. Namur, Erasme, 2008.
- G. GELAUFF, A. BOOT, P. Jean-Jacques HERINGS, M. LINDEBOOM, and H. SCHENK. *Jaarboek 2007/2008*. Koninklijke Vereniging voor de Staathuishoudkunde. Utrecht, Lemma, 2008.
- P. Jean-Jacques HERINGS, Marcin JURDZINSKI, Peter Bro MILTERSEN, Eva TARDOS and Bernhard von STENGEL (eds.). *Equilibrium Computation*. Dagstuhl Seminar Proceedings 07471. Internationales Begegnungs- und Forschungszentrum für Informatik, Schloss Dagstuhl, Germany, 2008.
- Sébastien LAURENT. *G@RCH 6, Estimating and Forecasting Arch Models*. London, Timberlake Consultant Press, 2009.
- Robert FENGE, Georges de MÉNIL and Pierre PESTIEAU (eds.). *Pensions Strategies in Europe and the United States*. R. Fenge and G. de Menil (eds.), Cambridge (MA), MIT Press, 2009.

▪ EDITORIAL ACTIVITIES

PER AGRELL

- associate editor
International Journal of Production Economics

LUC BAUWENS

- associate editor
International Econometric Review
Journal of Financial Econometrics
Risk Letters
- member of the editorial board
Empirical Economics
Journal of Applied Econometrics

PAUL BELLEFLAMME

- associate editor
E-economics, the Open-Access, Open-Assessment E-Journal
Information Economics & Policy
- member of the editorial board
Regards Economiques

RAOUF BOUCEKKINE

- associate editor
Investigaciones Economicas
Journal of Public Economic Theory
Mathematical Population Studies
Mathematical Social Sciences

THIERRY BRÉCHET

- guest editor
International Economics/Economie Internationale
- member of the editorial board
Regards Economiques

CLAUDE d'ASPREMONT

- associate editor
Journal of Mathematical Economics
Journal of Economics/Zeitschrift für Nationalökonomie
Journal of Public Economic Theory
Games and Economic Behavior
Revue de Philosophie Economique
Social Choice and Welfare

DAVID DE LA CROIX

- associate editor
Journal of Economic Dynamics and Control
- member of the editorial board
Clometrica
Fiscal Studies
Recherches Economiques de Louvain – Louvain Economic Review

LOUIS ECKHOUDT

- associate editor
Journal of Risk and Insurance
Revue d'Economie Politique
Revue Economique

BERNARD FORTZ

- associate editor
INFORMS Journal on Computing
- guest editor
Special issue of *Networks* dedicated to GOM 2008

CHRISTIAN HAFNER

- associate editor
Banking and Finance Review
Computational Statistics
Studies in Nonlinear Dynamics and Econometrics

P. JEAN-JACQUES HERINGS

- associate editor
Decisions in Economics and Finance
European Economic Review
International Journal of Game Theory
Journal of Mathematical Economics

JEAN HINDRIKS

- member of the Editorial Board
European Journal of Political Economy
Fiscal Studies
Reflets et Perspectives de la Vie Economique
Regards Economiques

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- co-editor
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Energy Journal

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- associate editor
International Journal of Economic Theory
International Journal of Industrial Organization
Japanese Economic Review
Journal of Economic Geography
Journal of Economics and Management Strategy
Regional Science and Urban Economics

ISABELLE THOMAS

- associate editor
Cybergeog (European Journal of Geography on the Internet)
L'Espace Géographique
International Regional Science Review

XAVIER WAUTHY

- member of the editorial board
Recherches Economiques de Louvain – Louvain Economic Review

LAURENCE WOLSEY

- associate editor
Mathematical Programming A

SEMINARS & WORKSHOPS

- ECONOMETRICS SEMINAR
- ECONOMIC THEORY SEMINAR
- MATHEMATICAL PROGRAMMING SEMINAR
- SEMINAIRE ECONOMIQUE DE LOUVAIN
- REGIONAL AND TRADE ECONOMICS SEMINAR
- ENVIRONMENTAL WORKSHOP
- IAP-UAP ECONOMIC THEORY SEMINAR
- ECORE, joint CORE-ECARES SEMINAR

The three regular weekly seminars in econometrics, economic theory and mathematical programming were held from September through June. CORE also continued its participation in the sponsorship of the Séminaire Economique de Louvain. Other seminars series were also organized within the framework of outside research contracts.

■ ECONOMETRICS SEMINAR

- September 18, 2008. Jeroen ROMBOUTS, HEC, Montréal, Canada
Bayesian option pricing using mixed normal heteroskedasticity model?
- September 24, 2008. Niels HALDRUP, Aarhus Universitet, Denmark
A vector autoregressive model for electricity prices subject to long memory and regime switching
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- September 24, 2008. Siem Jan KOOPMAN, Vrije Universiteit Amsterdam and Tinbergen Institute Amsterdam, The Netherlands
A multivariate model for hourly electricity
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- October 1, 2008. Roy VANDERWEIDE, World Bank, Washington (CA), USA
Testing the number of factors in GO-GARCH models
- October 8, 2008. Luc BAUWENS, CORE, UCL, Belgium
Forecasting long memory processes subject to structural breaks
- October 15, 2008. Carlo ROSA, CORE, UCL, Belgium
What is the ECB reaction function? A dynamic probit analysis
- October 29, 2008. Claudia CZADO, Technische Universität München, Germany
Statistical inference for pair-copula constructions of multiple dependence
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- October 29, 2008. Alfonso VADESOGLO ROBLES, CORE, UCL, Belgium
A canonical vine autoregressive model for large dimension
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- October 31, 2008. Timo TERASVIRTA, Aarhus Universitet, Denmark
Conditional correlation models of autoregressive conditional heteroskedasticity with nonstationary GARCH equations
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- October 31, 2008. KRIS BOUDT, Katholieke Universiteit Leuven, Belgium
Outlyingness weighted quadratic covariation
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- November 5, 2008. Weihua HUANG, Universiteit Maastricht, The Netherlands
When bank loans are bad news: market reactions to loan announcements under the risk of expropriation
(Joint with Louvain School of Management Finance Seminar)

- November 12, 2008. Otilia BOLDEA, Universiteit Tilburg, The Netherlands
Estimation and inference in unstable nonlinear least squares models
- November 19, 2008. David ARDIA, Université de Fribourg, Switzerland and CORE, UCL, Belgium
Bayesian estimation of a Markov-Switching threshold asymmetric GARCH model with student-innovations
(Joint with Louvain School of Management Finance Seminar)
- November 26, 2008. Kevin SHEPPARD, Oxford University, United Kingdom
Measuring the quadratic variation of infrequently traded assets
- December 3, 2008. Robinson KRUSE, Aarhus Universitet, Denmark
What do we know about real exchange rate non-linearity?
(Joint with Louvain School of Management Finance Seminar)
- December 5, 2008. Roger KOENKER, University of Illinois at Urbana-Champaign (IL), USA
Quasi-concave density estimation
(Joint ECORE-KUL Seminar)
- December 10, 2008. Matei DEMETRESCU, Universität Frankfurt, Germany
Forecasting stationary processes under asymmetric loss
- December 12, 2008. Rohit DEO, Stern Business School, New York (NY), USA
The restricted likelihood in econometrics: estimation and likelihood based inference in autoregressive models, predictive regressions, dynamic panel data and co-integrated systems
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- December 17, 2008. Katelijne CARBONEZ, Katholieke Universiteit Leuven, Belgium
Model selection and estimation of long-memory time-series models
(Joint with Louvain School of Management Finance Seminar)
- January 28, 2009. Helmut LUTKEPOHL, European University Institute, Firenze, Italy
The role of the log transformation in forecasting economic variables
- February 4, 2009. Drew CREAL, Vrije Universiteit Amsterdam, The Netherlands
A general framework for observation driven time-varying parameter models
- February 4, 2009. Cheng HSIAO, City University of Hong Kong and University of Southern California, Los Angeles (CA), USA
A panel data approach for program evaluation – measuring the economic benefits of political and economic integration of Hong Kong with Mainland China
- February 11, 2009. Abderrahim TAAMOUTI, Universidad Carlos III de Madrid, Spain
Measuring causality between volatility and returns with high-frequency data
- February 18, 2009. Hélène RAYMOND, Université Paris X (Nanterre), France
The effect of Sovereign wealth funds' investments on stock markets
(Joint with Louvain School of Management Finance Seminar)
- February 25, 2009. Sophie BEREAU, Université Paris X (Nanterre), France
Nonlinear adjustment of the real exchange rate towards its equilibrium value: a panel smooth transition error correction modelling
(Joint with Louvain School of Management Finance Seminar)

- March 4, 2009. René GARCIA, Edhec Business School, Nice, France
Bond liquidity premia
- March 11, 2009. Shin-Huei WANG, CORE, UCL, Belgium
The real time monitoring tests with its applications
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- March 18, 2009. Jean-Pierre URBAIN, Universiteit Maastricht, The Netherlands
Cross-section dependence robust block bootstrap panel unit root tests
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- March 25, 2009. Alfons WIECHENRIEDER, Goethe-Universität Frankfurt and Oxford Said Business School, United Kingdom
Interest income tax evasion, the EU savings directive, and capital market effects
(Joint with Louvain School of Management Finance Seminar)
- April 1, 2009. Ludovic PHALIPPOU, Universiteit Amsterdam, The Netherlands
Private equity investments: performance and diseconomies of scale
(Joint with Louvain School of Management Finance Seminar)
- April 22, 2009. Douglas CUMMING, York University, Canada
Capital flows and hedge fund regulation
(Joint with Louvain School of Management Finance Seminar)
- April 29, 2009. Gunther CAPELLE-BLANCARD, Université Paris X (Nanterre) et Université Paris I (Panthéon-Sorbonne), France
Volatility trading in options market: how does it affect where informed traders trade?
(Joint with Louvain School of Management Finance Seminar)
- May 6, 2009. Christophe BISIÈRE, Université de Toulouse 1 Capitole, France
Risk attitude, beliefs updating and the information content of trades: an experiment
(Joint with Louvain School of Management Finance Seminar)
- May 13, 2009. Jeroen ROMBOUTS, HEC Montréal, Canada
A nonparametric copula based test for conditional independence with applications to Granger causality
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)
- May 13, 2009. Olivier LINTON, London School of Economics, United Kingdom
Efficient estimation of a multivariate multiplicative volatility model
(Joint CORE-STAT Seminar, in the frame of ARC project on time series)

▪ ECONOMIC THEORY SEMINAR

- September 15, 2008. Hervé MOULIN, Rice University, Houston (TX), USA
Pricing traffic in a congestion-free network
- September 18, 2008. Lise TOLE, University of Strathclyde, Glasgow, United Kingdom
Do environmental regulations affect the location decisions of multinational gold mining firms?
(Joint with Environmental Economics and Regional & Trade Economics seminars)
- September 22, 2008. Amit GAYER, University of Haifa, Israël
Oligopoly, endogenous monopolist and product quality

- October 13, 2008. Jose Luis MORAGA, Rijksuniversiteit Groningen, The Netherlands
Nonparametric estimation of the costs of non-sequential search
- October 20, 2008. Stéphane ZUBER, CORE, UCL, Belgium
Does inequality aversion implies paternalism?
- October 23, 2008. Kaz MIYAGIWA, Osaka University, Japan and Emory University, Atlanta (GA), USA
First-to-invent versus first-to-file: international patent law harmonization and invention
(Joint with Regional & Trade Economics seminar and Séminaire Economique de Louvain)
- October 27, 2008. Rida LARAKI, Ecole Polytechnique and CNRS, Paris, France
The majority judgement: a new theory and method of voting
- November 10, 2008. Julio DAVILA, CORE, UCL, Belgium
Constrained efficient taxation of capital
- November 17, 2008. Jan BOUCKAERT, Universiteit Antwerpen, Belgium
Price discrimination bans for dominant firms
- November 24, 2008. Walter BOSSERT, Université de Montréal, Canada
Multi-profile intergenerational social choice
- December 1, 2008. Harris SCHLESINGER, University of Alabama, Tuscaloosa (AL), USA
Exploring higher-order risk effects
- February 2, 2009. Kjetil STORESLETTEN, Universiteit Oslo, Norway
Growing like China
- February 9, 2009. Klaus ADAM, Universität Mannheim, Germany
Internal rationality and asset prices
- February 23, 2009. Christian GOLLIER, Université de Toulouse 1 Capitole, France
Socially efficient discounting under ambiguity aversion
- March 2, 2009. Jee-Hyeong PARK, Seoul National University, Korea and Princeton University (NJ), USA
Enforcing international trade agreements with imperfect private monitoring: private trigger strategies and a possible role for the WTO
- March 16, 2009. Michael WHINSTON, Northwestern University, Evanston (IL), USA
Property rights
- March 30, 2009. Geoffroy DE CLIPPEL, Brown University, Providence (RI), USA
Reason-based choice: a bargaining rationale for the attraction and compromise effects
- April 20, 2009. Antoinette BAUJARD, Université de Caen, France
Political supply in the 2007 French presidential election: an analysis based on experimental data
- April 27, 2009. Clemens PUPPE, Universität Karlsruhe, Germany
The median voter theorem revisited

- May 15, 2009. Suresh P. SETHI, University of Texas, Dallas (TX), USA
Cooperative advertising and pricing in a dynamic stochastic supply chain: feedback Stackelberg strategies
(Joint with Mathematical Programming Seminar)
- May 18, 2009. Peter HAMMOND, University of Warwyck, United Kingdom
Normal form invariance as the foundation of rational behaviour in games
- May 25, 2009. Daisuke OYAMA, Hitotsubashi University, Tokyo, Japan and Paris-Jourdan Sciences Economiques, France
Normal form invariance as the foundation of rational behaviour in games
- June 22, 2009. Joana PAIS, Universidade Tecnica de Lisboa, Portugal
College admissions and the role of information: an experimental study

▪ MATHEMATICAL PROGRAMMING SEMINAR

- September 30, 2008. François VANDERBECK, Université de Bordeaux 1, France
Towards a generic branch-and-price solver: progress report
- October 7, 2008. Pierre BONAMI, Laboratoire d'Informatique Fondamentale, Marseille, France
Disjunctive cuts for non-convex mixed integer quadratically constrained programs
- October 14, 2008. Jean-Bernard LASSERRE, Laboratoire d'Analyse et d'Architecture des Systèmes (LAAS), Marseille, France
Moments and sums of squares for solving the generalized problem of moments
- October 21, 2008. Marco DI SUMMA, CORE, UCL, Belgium
Extended formulations for a class of mixed-integer programs
- October 28, 2008. Ying WEI, CORE, UCL, Belgium
Mean-variance analysis of supply chains under wholesale pricing and profit sharing scheme
- November 4, 2008. Vladimir SHIKHMAN, Rheinisch-Westfälische Technische Hochschule Aachen, Germany
MPCC: critical point theory
- December 9, 2008. Clovis GONZAGA, Universidade Federal de Santa Catarina, Brazil
Fine tuning Nesterov's optimal descent method for differentiable convex functions
- December 16, 2008. François GLINEUR, CORE and INMA, UCL, Belgium
Unified modeling and solving of a large class of structured convex problems based on the power cone
- February 3, 2009. Robert FILDES, University of Lancaster, United Kingdom
Forecasting and operational research – a review
- February 10, 2009. Michael BAES, Eidgenössische Technische Hochschule Zürich, Switzerland
Estimate sequence methods: extensions and approximations
- February 23, 2009. Giacomo PATRIZI, Università di Roma, Italy
Solving combinatorial problems as formulations of linear complementarity problems

- February 24, 2009. Céline GICQUEL, Ecole Centrale Paris, France
MIP models and exact methods for the discrete lot-sizing and scheduling problem with sequence-dependent changeover costs and times
- March 10, 2009. Peter RICHTARIK, CORE and INMA, UCL, Belgium
Generalized power method for sparse principal component analysis
- March 17, 2009. Stephan RÜDIGER, Technische Universität Berlin, Germany
Polyhedral aspects of cardinality constrained combinatorial optimization
- March 24, 2009. Vladimir PROTASOV, Moscow State University, **MOCKBA**, Russia
An optimal strategy in the modified Nerlove-Arrow advertising model
- April 21, 2009. Annick SARTENAER, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium
A branch-and-refine method for nonconvex mixed integer optimization
- April 28, 2009. Hartmut STADTLER, Universität Hamburg, Germany
Collaborative planning
- May 5, 2009. Cristoph HELMBERG, Technische Universität Chemnitz, Germany
Graph realizations corresponding to optimized extremal eigenvalues of the Laplacian
- May 15, 2009. Suresh P. SETHI, University of Texas, Dallas (TX)
Cooperative advertising and pricing in a dynamic stochastic supply chain: feedback Stackelberg strategies
(Joint with Economic Theory Seminar)
- May 19, 2009. Oualid JOUINI, Ecole Centrale de Paris, France
Call centers with delay information: models and insights
- June 8, 2009. Boris MORDUKHOVICH, Wayne State University, Detroit (MI), USA
Developments and applications of variational analysis
- June 9, 2009. Youhua Frank CHEN, Chinese University of Hong Kong, Shatin, Hong Kong
Improving supply chain performance and managing risk under weather-related demand uncertainty
(Joint with Supply Chain Management Seminar)
- June 9, 2009. Houmin YAN, Chinese University of Hong Kong, Shatin, Hong Kong
Inventory models with alternative delivery lead times, demand backlogging, and priority rules
(Joint with Supply Chain Management Seminar)
- June 16, 2009. Sarah DREWES, Technische Universität Darmstadt, Germany
Mixed integer second order cone programming

▪ SEMINAIRE ECONOMIQUE DE LOUVAIN

- September 16, 2008. François LANGOT, Université du Mans, France
Does the growth process discriminate against older workers?

- October 16, 2008. Claudio LUCIFORA, Università Cattolica del Sacro Cuore, Milano, Italy and Université Paris II (Panthéon-Assas), France
The 'bologna process' and college enrollment decisions
- October 23, 2008. Kaz MIYAGIWA, Osaka University, Japan and Emory University, Atlanta (GA), USA
First-to-invent versus first-to-file: international patent law harmonization and invention
(Joint with Economic Theory and Regional & Trade Economics seminars)
- November 6, 2008. Diego PUGA, Instituto Madrileño de Estudios Avanzados (IMDEA), Madrid, Spain
The productivity advantages of large cities: distinguishing agglomeration from firm selection
- November 13, 2008. Cyriaque EDON, ECON, UCL, Belgium
Female labor supply
- November 20, 2008. Sandra PONCET, Université Paris I (Panthéon-Sorbonne), France
Local export spillovers: an analysis at the firm and product level
(Joint with Regional & Trade Economics seminar)
- November 21, 2008. Rafael LALIVE, Université de Lausanne, Switzerland
Unemployment benefit sanctions and post unemployment job quality
- December 4, 2008. Jan VAN HOVE, Katholieke Universiteit Leuven and Hogeschool-Universiteit, Brussel, Belgium
Innovation and bilateral exports of heterogeneous firms: the case of a small open regional economy
(Joint with Economic Theory and Regional & Trade Economics seminars)
- December 11, 2008. David COLANDER, Middlebury College (VT), USA
Vision, judgment, and macroeconomic pedagogy
- January 15, 2009. Jiangyong LU, Tsinghua University, Beijing, China
Chinese exports sophistication
- February 5, 2009. Johannes SPINNEWYN, Massachusetts Institute of Technology, Cambridge (MA), USA
Unemployed but optimistic: optimal insurance design with biased beliefs
- February 12, 2009. Christian GORMSEN SCHMIDT, Universitet Aarhus, Denmark
Anti-dumping and heterogeneous firms: new protectionism for the new-new trade theory
(Joint with Regional & Trade Economics seminar)
- March 5, 2009. Gérard WILLMANN, Katholieke Universiteit Leuven, Belgium
A theory of dumping and anti-dumping
(Joint with Regional & Trade Economics seminar)
- March 6, 2009. Bas VAN DER KLAAUW, Vrije Universiteit Amsterdam, The Netherlands
Incentives versus sorting in tournaments: evidence from a field experiment
- April 29, 2009. Ron DAVIES, University College, Dublin, Ireland
Tax competition in an enlarge Europe
(Joint with Regional & Trade Economics seminar)

- May 13, 2009. Corinne AUTANT BERNARD, Université de Saint-Etienne, France
Quantifying knowledge spillovers using spatial econometric models
(Joint with Regional & Trade Economics seminar)
- June 11, 2009. Franck PORTIER, GREMAQ, Université de Toulouse 1 Capitole, France
The international propagation of new shocks

▪ REGIONAL AND TRADE ECONOMICS SEMINAR

- September 18, 2008. Lise TOLE, University of Strathclyde, Glasgow, United Kingdom
Do environmental regulations affect the location decisions of multinational gold mining firms?
(Joint with Economic Theory and Environmental seminars)
- October 23, 2008. Kaz MIYAGIWA, Osaka University, Japan and Emory University, Atlanta (GA), USA
First-to-invent versus first-to-file: international patent law harmonization and invention
(Joint with Séminaire Economique de Louvain)
- November 6, 2008. Diego PUGA, Instituto Madrilenio de Estudios Avanzados (IMDEA), Madrid, Spain
The productivity advantages of larges cities: distinguishing agglomeration from firm selection
(Joint with the Séminaire Economique de Louvain)
- November 20, 2008. Sandra PONCET, Université Paris I (Panthéon-Sorbonne), France
Local export spillovers: an analysis at the firm and product level
(Joint with the Séminaire Economique de Louvain)
- December 4, 2008. Jan VAN HOVE, Katholieke Universiteit Leuven and Hogeschool-Universiteit, Brussel, Belgium
Innovation and bilateral exports of heterogeneous firms: the case of a small open regional economy
(Joint with Economic Theory seminar and Séminaire Economique de Louvain)
- March 19, 2008. Kenmei TSUBOTA, CORE, UCL, Belgium and University of Kyoto, Japan
Agglomeration and wage bargaining
- February 12, 2009. Christian GORMSEN SCHMIDT, Universitet Aarhus, Denmark
Anti-dumping and heterogeneous firms: new protectionism for the new-new trade theory
(Joint with the Séminaire Economique de Louvain)
- March 5, 2009. Gérard WILLMANN, Katholieke Universiteit Leuven, Belgium
A theory of dumping and anti-dumping
(Joint with the Séminaire Economique de Louvain)
- May 13, 2009. Corinne AUTANT BERNARD, Université de Saint-Etienne, France
Quantifying knowledge spillovers using spatial econometric models
(Joint with the Séminaire Economique de Louvain)

■ ENVIRONMENTAL WORKSHOP

- September 8, 2008. Thierry BRÉCHET, Alexis GÉRARD and Violette VAN DYCK, CORE, UCL, Belgium
Implementing adaptation in the CWS model
- September 18, 2008. Lise TOLE, University of Strathclyde, Glasgow, United Kingdom
Do environmental regulations affect the location decisions of multinational gold mining firms?
(Joint with Economic Theory and Regional and Trade Economics seminars)
- October 16, 2008. Maria Eugenia SANIN, CORE, UCL, Belgium
What's to learn from a short term stay in the Worl Bank sustainable development economist's unit?
- October 16, 2008. Stéphane ZUBER, CORE, UCL, Belgium
Catastrophe avoidance, social discounting and environmental policy
- November 6, 2008. Samuel FRANKHAUSER, London School of Economics, United Kingdom
Adaptation in climate policies
- November 13, 2008. Pierre-André JOUVET, Université Paris-Nanterre, France
Tradable permits in a 2-sector OLG economy and optimal growth
- November 20, 2008. Mirabelle MUULS, London School of Economics, United Kingdom
The effect of investment on bargaining positions. Over-investment in the case of international agreements on climat change
- December 18, 2008. Thierry BRÉCHET, CORE, UCL, Belgium
Common natural resources, property rights and biological spillovers
- February 19, 2009. Olivier DURAND-LASSERVE, CORE, UCL, Belgium
Strategies to reduce CO₂ emissions under uncertainty in a top-down/bottom-up integrated assessment model
- March 5, 2009. Agustin PEREZ-BARAHONA, Université Paris I (Panthéon-Sorbonne), France
Life expectancy and the environment
- March 12, 2009. Carlotta BALESTRA, CORE, UCL, Belgium
Common natural resources, property rights and biological spillovers
- March 19, 2009. Sylvette LI, CORE, UCL, Belgium
Looking for eco-efficiency spillovers
- March 26, 2009. Guy MEUNIER, Ecole Polytechnique, Paris, France
Capacity decisions with demand fluctuations and carbon leakage spillovers
- April 2, 2009. Vincent VAN STEENBERGHE, Service Fédéral Environnement, Bruxelles, Belgium
Une évaluation du "pâquet énergie-climat" de la CE spillovers
- April 23, 2009. Kai LESSMANN, Postdam Institute for Climate Impact Research, Postdam, Germany
Research cooperation and international standards in a model of coalition stability spillovers

- April 30, 2009. Maria Eugenia SANIN, CORE, UCL, Belgium
Understanding volatility dynamics in the EU-ETS market: lessons from the future spillovers
- May 7, 2009. Stéphane ZUBER, CORE, UCL, Belgium
The three inequalities of the climate change spillovers
- May 28, 2009. Thierry BRÉCHET, CORE, UCL, Belgium
The oil peak from an economist's standpoint

▪ IAP-UAP ECONOMIC THEORY SEMINAR

- December 15, 2008. Bas JACOBS, Erasmus Universiteit Rotterdam, The Netherlands
Optimal redistributive tax and education policies in general equilibrium
(This seminar took place at Katholieke Universiteit Leuven)
- December 15, 2008. John WEYMARK, Vanderbilt University, Nashville (TN), USA
Strategic nonlinear income tax competition with perfect labor mobility
(This seminar took place at Katholieke Universiteit Leuven)
- March 9, 2009. Gilles SAINT-PAUL, Université de Toulouse 1 Capitole, France
The role of beliefs and ideologies in the political economy of reforms
(This seminar took place at Facultés Universitaires Notre-Dame de la Paix, Namur)
- March 9, 2009. Vincenzo GALASSO, Università Commerciale Luigi Bocconi, Milano, Italy
The euro and structural reforms
(This seminar took place at Facultés Universitaires Notre-Dame de la Paix, Namur)
- March 9, 2009. Andrew CLARK, Paris School of Economics, France
Public employment and political pressure: the case of French hospitals
(This seminar took place at Facultés Universitaires Notre-Dame de la Paix, Namur)
- May 11, 2009. Laurence JACQUET, Norwegian School of Economics and Business Administration, Norway
Optimal marginal tax rates with both extensive and intensive responses
(This seminar took place at Universiteit Gent)
- May 11, 2009. Guy LAROQUE, CREST, Paris, France
Optimal taxation in the extensive model
(This seminar took place at Universiteit Gent)

▪ ECORE, JOINT CORE-ECARES SEMINAR

ECORE federates two research centers: CORE, Université catholique de Louvain and ECARES, Université Libre de Bruxelles. The creation of such a scientific association integrates the research activities and the doctoral programs of both institutions. It promotes their position on the international scene in the fields of economics, finance, operations research, econometrics and statistics.

- September 29, 2008. Pierre DEHEZ, CORE, UCL, Belgium
Data games. Sharing public goods with exclusion

- November 3, 2008. Maurizio ZANARDI, ECARES, Université Libre de Bruxelles, Belgium
Fast track authority and international trade negotiations
- December 8, 2008. Dominique PEETERS and Isabelle THOMAS, CORE , UCL, Belgium
S-GHOST city self-generating housing, open space and transportation in a city
- February 16, 2009. Guy MELARD, ECARES, Université Libre de Bruxelles, Belgium
Forecasting daily and high-frequency data
- March 23, 2009. Per AGRELL, CORE , UCL, Belgium
Development, analysis and implementation of the yardstick network regulation in Germany
- May 4, 2009. Bruno VAN POTTELSBERGHE, ECARES, Université Libre de Bruxelles, Belgium
On the role of fees in patent systems

DOCTORAL TRAINING

- COMPLETED Ph.D. DISSERTATIONS
- Ph.D. PROJECTS IN PROGRESS
- EUROPEAN DOCTORAL PROGRAM IN QUANTITATIVE ECONOMICS
- DOCTORAL WORKSHOPS

■ COMPLETED PH.D. DISSERTATIONS

Seven doctoral students at CORE successfully defended their Doctoral Dissertation:

- On September 5, 2008. Oscar AMERIGHI, *Fiscal competition between national governments and the behavior of multinational enterprises*. Docteur en Sciences Economiques et de Gestion, Université catholique de Louvain under the supervision of Jean HINDRIKS.
Current job: Università di Bologna, Italy
- On October 6, 2008. Marjan MAES, *Essays on financial and distributional implications of retirement in Belgium*. Docteur en Sciences Economiques et de Gestion, Université catholique de Louvain under the supervision of Vincent VANDENBERGHE and Pierre PESTIEAU.
Current job: Hogeschool-Universiteit Brussel, Belgium
- On March 18, 2009. Jean-Sébastien TANCREZ, *Modelling queueing networks with blocking using probability mass fitting*. Docteur en Sciences de l'Ingénieur, Université catholique de Louvain under the supervision of Philippe CHEVALIER and Pierre SEMAL.
Current job: Ecole Polytechnique de Louvain, UCL, Belgium
- On June 2, 2009. Andrea SILVESTRINI, *Essais sur l'agrégation et la cointégration de modèles économétriques*. Docteur en Sciences Economiques, Université catholique de Louvain and Université Libre de Bruxelles under the supervision of Luc BAUWENS and David VEREDAS. (This thesis is the first ECORE one)
Current job: Bank of Italy
- On June 24, 2009. Alain PHOLO BALA, *Rent seeking and hubs: towards a new economic geography of Sub Saharan Africa*. Docteur en Sciences Economiques et de Gestion, Université catholique de Louvain under the supervision of Jacques-François THISSE and Dominique PEETERS.
Current job: CORE, UCL, Belgium
- On June 12, 2009. Joana Rita PINHO RESENDE, *Dynamic competition in the presence of consumption network externalities*. Docteur en Sciences Economiques et de Gestion, Université catholique de Louvain and Universidade do Porto, Portugal, under the supervision of Jean JASKOLD GABSZEWICZ, Jacques-François THISSE and Antonio BRANDAO (Universidade do Porto).
Current job: Universidade do Porto, Portugal
- On June 22, 2009. Fernanda ESTEVAN, *Essays on development economics*. Docteur en Sciences Economiques et de Gestion, Université catholique de Louvain under the supervision of Jean-Marie BALAND and Jean HINDRIKS.
Current job: University of Ottawa, Canada

■ PH.D. PROJECTS IN PROGRESS

Efthymios ATHANASIOU

Title: Essays on welfare economics

Supervisor: François MANIQUET

Started: 2005

Doctoral School : Department of Economics, UCL, Belgium (European Doctoral Program)

Carlotta BALESTRA

Title: Essays on environmental economics in an OLG model

Supervisor: Thierry BRÉCHET

Started: 2006

Doctoral School : Department of Economics, UCL, Belgium

Anton BELYAKOV

Title: On the exchange dynamics of limited production factor

Supervisor: Raouf BOUCEKKINE

Started: 2008

Doctoral School : Department of Economics, UCL, Belgium

Quentin BOTTON

Title: Survival network design problem with hop-constraints

Supervisor: Bernard FORTZ

Started: 2004

Doctoral School : Louvain School of Management, UCL, Belgium

Filippo CALCIANO

Title: Rationality, correlation and communication in games

Supervisors: Pierre DEHEZ and Jean-François MERTENS

Started: 2005

Doctoral School : Department of Economics, UCL, Belgium (European Doctoral Program)

Jean-François CARPANTIER

Title: Applied Econometrics in commodities

Supervisor: Luc BAUWENS

Started: 2007

Doctoral School : Department of Economics, UCL, Belgium (European Doctoral Program)

Robert CHARES

Title: Extension of an algebraic modelling language and development of a solver for structured conic convex optimization

Supervisor: François GLINEUR

Started: 2005

Doctoral School : Louvain School of Engineering, UCL, Belgium

Nguyen Thang DAO

Title: On the environmental externalities in the overlapping generation framework

Supervisor: Julio Davila

Started: 2009

Doctoral School : Department of Economics, UCL, Belgium

Gauthier DE MAERE D'AERTRYCKE

Title: The formation of prices in restructured electricity market

Supervisor: Yves SMEERS

Started: 2007

Doctoral School : Louvain School of Engineering, UCL, Belgium

Rafaël DE MELO

Title: Algorithms for production planning problems

Supervisor: Laurence WOLSEY

Started: 2007

Doctoral School : Louvain School of Engineering, UCL, Belgium

Federico DE STEFANO

Title: On the Nash equilibrium refinements

Supervisor: Jean-François MERTENS

Started: 2004

Doctoral School : Department of Economics, UCL, Belgium

Olivier DURAND-LASSERVE

Title: Stochastic long-term scenarios for energy markets

Supervisor: Yves SMEERS

Started: 2007

Doctoral School : Department of Economics, UCL, Belgium

Emmanuele FORLANI

Title: Service sector market conduct: effects and interactions with manufacturing firms

Supervisor: Hylke VANDENBUSSCHE

Started: 2006

Doctoral School : Department of Economics, UCL, Belgium

Joachim GAHUNGU

Title: Reals options and system dynamics: two approaches to explain boom and bust cycles

Supervisor: Yves SMEERS

Started: 2007

Doctoral School : Louvain School of Engineering, UCL, Belgium

Maia GEJADZE

Title: The exist decision from venture capital investment

Supervisor: Pierre GIOT

Started: 2008

Doctoral School : Department of Economics, UCL, Belgium

Nicolas GILLIS

Title: Nonnegative matrix factorization

Supervisor: François GLINEUR

Started: 2007

Doctoral School : Louvain School of Engineering, UCL, Belgium

Gilles GRANDJEAN

Title: Essays on coalitional rationality

Supervisors: Vincent VANNETELBOSCH and Ana MAULEON

Started: 2004

Doctoral School : Department of Economics, UCL, Belgium

Salome GVETADZE

Title: Public goods and migration

Supervisor: Jean JASKOLD GABSZEWICZ and Jacques-François THISSE

Started: 2008

Doctoral School : Department of Economics, UCL, Belgium

Asel ISAKOVA

Title: Monetary policy efficiency in the economies of Central Asia

Supervisor: Jan HANOUSEK (Center for Economic Research and Graduate Education – Economics Institute, Praha, Czech Republic)

Started: 2004

Doctoral School : Center for Economic Research and Graduate Education – Economics Institute, Praha, Czech Republic

Aysegül KAYAOGLU

Title: Policy implications of brain drain

Supervisor: Frédéric DOCQUIER

Started: 2008

Doctoral School : Department of Economics, UCL, Belgium (European Doctoral Programme)

Tanja KOSI

Title: Labour market institutions, entrepreneurship, and economic performance

Supervisor: Stefan BOJNEC, University of Primorska, Slovenia

Started: 2008

Doctoral School : Faculty of Management Koper, University of Primorska, Slovenia

Mathias LORENZ

Title: Regulatory competition and harmonization

Supervisor: Per AGRELL

Started: 2004

Doctoral School : Louvain School of Management, UCL, Belgium

Sylvette LY

Title: Environmental innovations and firms

Supervisor: Thierry BRÉCHET

Started: 2007

Doctoral School : Louvain School of Management, UCL, Belgium

Marco MARINUCCI

Title: Topics on R&D cooperation among firms

Supervisors: Paul BELLEFLAMME and Vincent VANNETELBOSCH

Started: 2005

Doctoral School : Department of Economics, UCL, Belgium

Jean-François MAYSTADT

Title: Conflict and forced migration in the light of geographical economics

Supervisor: Jacques-François THISSE

Started: 2006

Doctoral School : Department of Economics, UCL, Belgium

Bénédicte MEERT

Title: Geographical approach of Brain Drain: descriptive and prescriptive study of the link between country size and Brain Drain's effects

Supervisors: Frédéric DOCQUIER and Jacques-François THISSE

Started: 2009

Doctoral School : Department of Economics, UCL, Belgium

Tanja MLINAR

Title: Stochastic models to the shared resources in supply chains

Supervisor: Philippe CHEVALIER

Started: 2008

Doctoral School : Louvain School of Management, UCL, Belgium

Deniz NEBIOGLU

Title: Do expectations matter?

Supervisors: Raf WOUTERS and Jean HINDRIKS

Started: 2007

Doctoral School : Department of Economics, UCL, Belgium

Paolo Giovanni PIACQUADIO

Title: Welfare economics in a dynamic context

Supervisors: Raouf BOUCEKKINE and François MANIQUET

Started: 2008

Doctoral School : Department of Economics, UCL, Belgium

Dzianis ROZHYN

Title: Energy-capital substitution in Ukraine (evidence from stochastic frontier)

Supervisor: Jean HINDRIKS

Started: 2007

Doctoral School : Department of Economics, UCL, Belgium

Besik SAMKHARADZE

Title: Volatility spillovers in European stock markets: A multivariate GARCH analysis

Supervisor: Luc BAUWENS

Started: 2008

Doctoral School : Department of Economics, UCL, Belgium

Maria Eugenia SANIN

Title: Market design in pollution markets

Supervisor: Thierry BRÉCHET

Started: 2005

Doctoral School : Department of Economics, UCL, Belgium

Hakan UMIT

Title: Techniques and tools for intra-domain

Supervisor: Bernard FORTZ

Started: 2006

Doctoral School : Louvain School of Management, UCL, Belgium

Alfonso VALDESOGLO ROBLES

Title: Application of copulas to Markov models and realized volatility

Supervisor: Luc BAUWENS

Started: 2004

Doctoral School : Department of Economics, UCL, Belgium

Giacomo VALLETTA

Title: Three essays on responsibility-minded egalitarianism

Supervisor: François MANIQUET

Started: 2005

Doctoral School : Department of Economics, UCL, Belgium (European Doctoral Program)

Grégory VANDENBULCKE

Title: Spatial analysis of computer cycling and accident risks for cyclists

Supervisor: Isabelle THOMAS

Started: 2008

Doctoral School : Department of Geography, UCL, Belgium

Jean-Christophe VAN DEN SCHRIECK

Title: Multi-skill call centers: optimization of the staffing and routing based on the Hayward approximation

Supervisor: Philippe CHEVALIER

Started: 2005

Doctoral School : Louvain School of Management, UCL, Belgium

■ EUROPEAN DOCTORAL PROGRAM IN QUANTITATIVE ECONOMICS

The **EUROPEAN DOCTORAL PROGRAM IN QUANTITATIVE ECONOMICS** is a joint project of CORE, Université catholique de Louvain, Belgium, with the Universitat Pompeu Fabra, Barcelona, Spain, the Rheinische Friedrich-Wilhelms-Universität Bonn, Germany, the London School of Economics, United Kingdom, the Ecole des Hautes Etudes en Sciences Sociales, France, the European University Institute in Florence, Italy, and as an associate member, the University of Tel Aviv, Israël. Students in the program complete all the requirements for a doctorate in one of the participating universities. In addition, they spend at least one full academic year, typically their second year in the program, in one of the other universities.

The program started in 1977. Fifteen students obtained their certificate during the academic year 2008-2009. Fifty-five students are currently enrolled.

The annual jamboree was held at London School of Economics on April 19-21, 2009 and attended by sixty-three doctoral students and several academics from the partner universities.

PROGRAMME

APRIL 20, 2009

■ LECTURE 1

Gilat LEVY, London School of Economics, United Kingdom

A theory of religious organizations

■ SESSION 1 – CHAIR : GIANLUCA BENIGNO, LONDON SCHOOL OF ECONOMICS, UNITED KINGDOM

Sebastian EBERT, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany

A methodology to test for prudence

Stefan KOCH, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany and London School of Economics, United Kingdom

The idiosyncratic risk puzzle: evidence from the German stock market

Benjamin GOLEZ, Universitat Pompeu Fabra, Barcelona, Spain

Options implied dividend yield and market returns

■ SESSION 2 – CHAIR : GIVAT LEVY, LONDON SCHOOL OF ECONOMICS, UNITED KINGDOM

Stefanie LEHMANN, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany and London School of Economics, United Kingdom

When randomization in collective tournaments is profitable for the principle

Michał LEWANDOWSKI, European University Institute, Firenze, Italy

Buying and selling price for a lottery, wealth effects and arbitrage-free types of preference reversal

Olivier BOS, Paris School of Economics, France and CORE, UCL, Belgium

Charitable asymmetric bidders

Paolo MELINDI GHIDI, IRES, UCL, Belgium

A model of ideological transmission with endogenous paternalism

■ **SESSION 3 – CHAIR : GUY MICHAELS, LONDON SCHOOL OF ECONOMICS, UNITED KINGDOM**

Benjamin BORN, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany

Simple regression based tests for spatial dependence

Juliane PARYS, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany

On the sensitivity of return to schooling investments to estimation models, model specification and influential outliers if estimation is weak

Habbes SCHWANDT, Universitat Pompeu Fabra, Barcelona, Spain

Testing the rational expectations hypothesis over stages and states of life: micro evidence from the German socio-economic panel

■ **SESSION 4 – CHAIR : STEFAN PENCZYNSKI, LONDON SCHOOL OF ECONOMICS, UNITED KINGDOM**

Konrad MIERENDORFF, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany

Optimal dynamic mechanism design with deadlines

Lluís SAURI-ROMERO, European University Institute, Firenze, Italy

Innovate when governments regulate prices

Nicolas SCHUTZ, Paris School of Economics, France

Complete foreclosure with multiple vertically integrated firms

■ **SESSION 5 – CHAIR : GUY MICHAELS, LONDON SCHOOL OF ECONOMICS, UNITED KINGDOM**

Matthias LANG, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany

The fog of fraud: how to reduce insurance fraud?

Pedro GOMES, London School of Economics, United Kingdom

Labour market effects of public sector employment and wages

Guilhem CASSAN, Paris School of Economics, France

The impact of British colonial presence on the evolution of caste identity in the Punjab at the beginning of the 20th century

■ **SESSION 6 – CHAIR : ANDREA PRAT, LONDON SCHOOL OF ECONOMICS, UNITED KINGDOM**

Gilles GRANDJEAN, CORE, UCL, Belgium

Strongly rational sets for normal form games

Stefan PENCZYNSKI, London School of Economics, United Kingdom

Focality and the beginning of level-k reasoning

Geronimo UGARTE BEDWELL, University of Tel Aviv, Israël
Network and belief formation

APRIL 21, 2009

▪ SESSION 7 – CHAIR : DANIEL STURM, LONDON SCHOOL OF ECONOMICS, UNITED KINGDOM

Bastien CHABÉ-FERRET, ECON-IRES, UCL, Belgium
A study of minorities' behaviour: fertility differential and cultural transmission

Hélène LATZER, ECON-IRES, UCL, Belgium
How do epidemics induce behavioural changes?

Konrad BURCHARDI, London School of Economics, United Kingdom
The role of social ties in economic transition: evidence from the German reunification

Remi JEDWAB, Paris School of Economics, France and London School of Economics, United Kingdom
The political economy of road placement in Kenya

▪ SESSION 8 – CHAIR : KEVIN SHEEDY, LONDON SCHOOL OF ECONOMICS, UNITED KINGDOM

Zvi NAOR, University of Tel Aviv, Jerusalem, Israël
Heterogenous discount factor, human capital accumulation and inequality

Joan MONRAS, Universitat Pompeu Fabra, Barcelona, Spain
The sluggish movement of workers: rethinking immigration absorption, Rybcznski effects and wages responses

Luca FORNARO, Paris School of Economics, France and London School of Economics, United Kingdom
Nominal volatility and growth

▪ LECTURE 2

Dreg FISCHER, London School of Economics, United Kingdom
Contract structure, risk sharing, and investment choice: experiments in the field

▪ DOCTORAL WORKSHOPS

The doctoral workshops provide a research forum where the members of the Doctoral Program in Economics at UCL and KUL have the opportunity to present part of their completed or ongoing research.

PROGRAMME

JANUARY 22, 2009

- **MACROECONOMICS I**

CHAIR : MARIA DEL CARMEN CAMACHO PÉREZ, ECON-IRES, UCL, BELGIUM

Gül ERTAN ÖZGÜZER, ECON-IRES, UCL, Belgium

Trade deficits in Turkey: are they worth concerning?

Fabien NGENDAKURIYO, ECON-IRES, UCL, Belgium

Institutions quality and growth

- **INDUSTRIAL ORGANIZATION**

CHAIR: XAVIER WAUTHY, FACULTÉS UNIVERSITAIRES NOTRE-DAME DE LA PAIX, NAMUR AND CORE, UCL, BELGIUM

Dries DE SMET, Katholieke Universiteit Leuven, Belgium

There is some truth in it. A new market model

Julien JACQMIN, Facultés Universitaires Saint-Louis, Bruxelles, Belgium

Higher education institutions as two-sided platforms

- **MICROECONOMICS**

CHAIR: CÉLINE POILLY, ECON-IRES, UCL, BELGIUM

Giulio NICOLETTI, ECON-IRES, UCL, Belgium

Bayesian prior elicitation in DSGE models: macro vs micro priors

Alberto COCO, ECON-IRES, UCL, Belgium

Lumpy investment, complementarities and monetary policy in a NK model

- **MICROECONOMICS AND HEALTH**

CHAIR: MARTHE NYSENS, ECON-IRES, UCL, BELGIUM

Denis HERBAUX, Université Libre de Bruxelles, Belgium

Social identity, advertising and market competition

Bruno MEESSEN, ECON-IRES, UCL, Belgium

Evidence on the role of health equity funds in strengthening household coping with major illness in Cambodia

- **DEVELOPMENT ECONOMICS I**

CHAIR: RAOUF BOUCEKKINE, ECON-IRES, UCL, BELGIUM

Jean-François MAYSTADT, CORE, UCL, Belgium

Winners and losers among a refugee-hosting population

Stefan ZEUGER, Université Libre de Bruxelles, Belgium

Transport investment, geography, and growth

- **ECONOMETRICS**

CHAIR: CHRISTIAN HAFNER, STAT, UCL, BELGIUM

Jean-François CARPANTIER, CORE, UCL, Belgium

Commodities inverse leverage effect in GJR models

Nicolas DEBARSY, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

LM test to detect spatial autocorrelation in fixed effects panel data models

- **DEVELOPMENT ECONOMICS II**

CHAIR: RAOUF BOUCEKKINE, ECON-IRES, UCL, BELGIUM

Petros SEKERIS, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

"Guns and Butter" revisited: the role of deterrence

MAY 28, 2009

- **INDUSTRIAL ORGANIZATION I**

CHAIR : AXEL GAUTIER, UNIVERSITÉ DE LIÈGE AND CORE, UCL, BELGIUM

Arastou KHATIB, ECON-IRES, UCL, Belgium

Pricing, advertising and anti-dumping policy

Joana RESENDE, CORE, UCL, Belgium

Free press industry: are there too many incentives to print?

- **MACROECONOMIS I**

CHAIR: HENRI SNEESSENS, ECON-IRES, UCL, BELGIUM

Deniz NEBIOGLU, CORE, UCL, Belgium

Do expectations matter?

José MOURELLE, ECON-IRES, UCL, Belgium

Financial shocks and macroeconomic policies during the Argentine crisis of 2001-2002

Olivier DURAND-LASSERVE, CORE, UCL, Belgium

Energy commodity markets and uncertainty: an applied general equilibrium approach

- **INDUSTRIAL ORGANIZATION II**

CHAIR: ILKE VAN BEVEREN, KATHOLIEKE UNIVERSITEIT LEUVEN, BELGIUM

Laura ROVEGNO, ECON-IRES, UCL, Belgium

Trade protection and market power: evidence from US antidumping and countervailing duties

Aminato SISSOKO, ECON-IRES, UCL, Belgium

R&D subsidies and the productivity in France

Emanuele FORLANI, CORE, UCL, Belgium

Efficiency and input origin

▪ **ENVIRONMENT****CHAIR: THIERRY BRÉCHET, CORE-UCL, BELGIUM**

Maria Eugenia SANIN, CORE, UCL, Belgium

The role of intermediaries in the North American SO2 market

Carlotta BALESTRA, CORE, UCL, Belgium

Property rights and biological spillovers: when Hardin meets Meade

Sylvette LY, CORE, UCL, Belgium

Looking for eco-efficiency▪ **ECONOMETRICS I****CHAIR: DANIEL WEISERBS, ECON-IRES, UCL, BELGIUM**

Maia GEJADZE, CORE, UCL, Belgium

Capital market conditions and the exist decision from venture capital investments

Besik SAMKHARADZE, CORE, UCL, Belgium

Volatility spillovers in European stock markets: a multivariate GARCH analysis

Vincent SCOURNEAU, ESPO, UCL, Belgium

Maximum likelihood estimations of extreme value distribution: an application to motor insurance data▪ **DEVELOPMENT ECONOMICS**

Lore VANDEWALLE, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

Microfinance lifespans: a study of attrition and exclusion in self-held groups in India

Miron TEQUAME, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

HIV, ethnolinguistic fractionalization and risky behavior

Christian VIEGELAHN, ECON-IRES, UCL, Belgium

Antidumping policy and its effects on the productivity of Indian firms▪ **MICROECONOMICS****CHAIR: JULIO DAVILA, CORE, UCL, BELGIUM**

Tanguy ISAAC, ECON-IRES, UCL, Belgium

Last trip to the Nile: information revelation in decentralized markets

Gilles GRANDJEAN, CORE, UCL, Belgium

Connections among farsighted agents

Paolo Giovanni PIACQUADIO, CORE, UCL, Belgium

Equity and efficiency in an overlapping generation model

Géraldine THIRY, ECON-IRES, UCL, Belgium

Alternative indicators to GDP: what's beyond the numbers?

▪ **MACROECONOMICS II**

CHAIR: DAVID DE LA CROIX, CORE, UCL, BELGIUM

Paolo MELINDI GHIDI, ECON-IRES, UCL, Belgium

A model of ideological transmission with endogenous paternalism

Bastien CHABÉ-FERRET, ECON-IRES, UCL, Belgium

A study of the minorities' behavior: cultural assimilation and fertility differential

Anton BELYAKOV, CORE, UCL, Belgium

On the dynamics of territorial exchange

Pierre PECHER, ECON-IRES, UCL, Belgium

Power struggle and the voracity effect

MAY 29, 2009

▪ **ECONOMETRICS II**

CHAIR: LUC BAUWENS, CORE, UCL, BELGIUM

Dzianis ROZHYN, CORE, UCL, Belgium

Energy capital substitution

Francesco VIOLANTE, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

Diffusion limits of conditional correlation GARCH models

Alfonso VALDESOGO ROBLES, CORE, UCL, Belgium

Asymmetric CAPM dependence for large dimensions: the canonical vine autoregressive model

▪ **INDUSTRIAL ORGANIZATION III**

CHAIR: HYLKE VANDENBUSSCHE, CORE AND ECON-IRES, UCL, BELGIUM

Hélène LATZER, ECON-IRES, UCL, Belgium

Behavioral changes under epidemics

Mélanie LEFÈVRE, Université de Liège, Belgium

Spatial monopsony: pricing and location

Marco MARINUCCI, CORE, UCL, Belgium

Patent races as a network game

▪ **LABOUR ECONOMICS**

CHAIR: BRUNO VAN DER LINDEN, ECON-IRES, UCL, BELGIUM

Marco PECORARO, ECON-IRES, UCL, Belgium

Overeducation and skill utilization: an alternative definition of job-education

Mariann RIGO, ECON-IRES, UCL, Belgium

Who earns their keep? An estimation of the productivity-wage gap in Hungary

Ana Maria DIAZ, ECON-IRES, UCL, Belgium

Understanding spatial patterns of unemployment in Colombia

▪ **MIGRATION**

CHAIR: FRÉDÉRIC DOCQUIER, ECON-IRES, UCL, BELGIUM

Sara SALOMONE, ECON-IRES, UCL, Belgium

The gender dimension of migration networks

Darwin UGARTE, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

Foreign aid, migration and brain drain

Aysegul KAYAOGLU, CORE, UCL, Belgium

The impact of brain drain on Education policies

MEETINGS HELD AT CORE OR CO-ORGANIZED BY CORE MEMBERS

- JOURNEES DOCTORALES DE L'ADRES
- BELGIAN ENVIRONMENTAL ECONOMICS DAY
- JOURNEE DE L'OLIGOPOLE
- INTEGER PROGRAMMING AT CORE
- CHALLENGES IN PUBLIC ECONOMICS
- ECORE SUMMER SCHOOL "MARKET EVOLUTION AND PUBLIC DECISION"

■ JOURNEES DOCTORALES DE L'ADRES

organized by Muriel DEJEMEPPE, IRES, UCL, Belgium, David de la CROIX, CORE and IRES, UCL, Belgium, Sébastien LAURENT, Facultés Universitaires Notre-Dame de la Paix, Namur and CORE, UCL, Belgium and François MANIQUET, CORE, UCL, Belgium . The event was sponsored by ADRES, Paris, France, the Belgian Science Policy, the European Commission, CORE, UCL, Belgium, the Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium and IRES, UCL, Belgium.

PROGRAMME

JANUARY 23, 2009

■ SESSION A1: DEVELOPMENT

Paolo CASINI, ECARES, Université Libre de Bruxelles, Belgium

Competition and altruism in microcredit markets

Cedric DUPREZ, CRED, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

"Made in Dignity": the redistributive impacts of social labeling

■ SESSION A2: ENVIRONMENT

Guy MEUNIER, Centre International de la Recherche en Environnement et Développement (CIRED), Paris, France

Emission permits trading across imperfectly competitive product markets

Maria Eugenia SANIN, CORE, UCL, Belgium

Banking tradable emission permits under upstream-downstream strategic interaction

■ SESSION B1: ECONOMETRIC THEORY

Adriana CORNEA, Groupement de Recherche en Economie Quantitative d'Aix-Marseille (GREQAM), France

A refined bootstrap for heavy tailed distributions

Laura CORONEO, ECARES, Université Libre de Bruxelles, Belgium

How arbitrage-free is the Nelson-Siegel model?

Mohamad KHALED, Université Paris I (Panthéon-Sorbonne), France

A multivariate generalization of the Markov switching model with an application to volatility clusters

Robert VERMEULEN, CREA, Université du Luxembourg, Luxembourg

The dark side of global integration: increasing tail dependence

■ SESSION B2: THEORY

Efthymios ATHANASIOU, CORE, UCL, Belgium

Endogenous productivity and equality of opportunity

Matias NUNEZ, Ecole Polytechnique de Paris, France

A study of approval voting on large poisson games

Marion OURY, HEC, School of Management, Paris, France

Continuous implementation

Giacomo VALLETTA, CORE, UCL, Belgium

On sharing the benefits of communication

▪ **SESSION C1: FINANCE 1**

Thi Quynh Anh VO, Université de Toulouse 1 Capitole, France

Optimality of prompt corrective action with recapitalization possibility in a continuous time model

▪ **SESSION C2: TRADE**

Maria BAS, Ecole des Hautes Etudes en Sciences Sociales, Paris, and Paris School of Economics, France

Trade, technology adoption and wage inequalities: theory and evidence

Vincent VICARD, Université Paris I (Panthéon-Sorbonne), France

Trade, conflicts, and political integration: explaining the heterogeneity of regional trade agreements

▪ **SESSION D1: EDUCATION**

Thibault BRODATHY, CREST and Université Paris-Dauphine, France

Teacher and peer effects in higher education: evidence from a French university

Karine MARAZYAN, Université Paris I (Panthéon-Sorbonne), France

Explaining differences in education between foster-children and biological children: a sibling rivalry approach. Some evidence from Indonesia

Michel TENIKUE, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

Pro-male gender gap/bias in school enrolment: systematic or selection among the weak?

▪ **SESSION D2: PUBLIC ECONOMICS**

Vincent FROGNEUX, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium

Retirement decision and quasi-hyperbolic discounting

Christophe HACHON, Université Paris I (Panthéon-Sorbonne), France

Who really benefits from pension systems? When life expectancy matters

Sumudu KANKANAMGE, Université Paris I (Panthéon-Sorbonne), France

Uninsured entrepreneurial risk and public debt policies

JANUARY 24, 2009

▪ SESSION E1: FINANCE 2

Nicolas BERMAN, European University Institute, Firenze, Italy and Université Paris I (Panthéon-Sorbonne), France

Financial crises and international trade: the long way to recovery

Antoine BERTHOU, Université Paris I (Panthéon-Sorbonne), France

The distorted effect of financial development on international trade

▪ SESSION E2: LABOUR

Anna OKATENKO, Université Paris I (Panthéon-Sorbonne), France

Job search with Bayes prior

Matteo PICCHIO, IRES, UCL, Belgium

Are short-term jobs stepping stones to long-term jobs? A new approach

▪ SESSION F1: GROWTH – DEVELOPMENT

Thomas BAUDIN, Université Paris I (Panthéon-Sorbonne), France

A role for cultural transmission in fertility transitions

Ruxanda BERLINSCHI, Université Paris I (Panthéon-Sorbonne), France

Aid to poor resource exporting countries: which role should be played by resource taxation?

Victor HILLER, Paris School of Economics, Université Paris I (Panthéon-Sorbonne), France

Gender inequality, endogenous cultural norms and economic development

▪ SESSION F2: INDUSTRIAL 1

Juan CARLUCCIO, Université Paris I (Panthéon-Sorbonne), France

Multinationals, technological incompatibilities, and spillovers

Emanuele FORLANI, CORE, UCL, Belgium

Competition in services' sector and performances of manufacturing firms: does liberalization matter?

Ivan LEDEZMAN, Université Paris I (Panthéon-Sorbonne), France

Defensive strategies in the quality ladders

▪ KEYNOTE

Volcker NOCKE, University of Oxford, United Kingdom

Dynamic merger policy

▪ SESSION G1: MACROECONOMICS

Kenza BENHIMA, CREST and EconomiX, Université Paris X (Nanterre), France

Financial development, technological change in emerging countries and global imbalances

Eleni ILIOPULOS, Università degli Studi di Pavia, Italy and University d'Evry, France
External imbalances and collateral constraints in a two-country world

▪ **SESSION G2: INDUSTRIAL 2**

Yassine LEFOUILI, Université Paris I (Panthéon-Sorbonne), France
Leniency programs for multimarket firms: the effect of amnesty plus on cartel formation

▪ **BELGIAN ENVIRONMENTAL ECONOMICS DAY (BEED 2009)**

organized by Thierry BRÉCHET, CORE, UCL, Belgium, Johan EYCKMANS and Sandra ROUSSEAU, Hogeschool-Universiteit Brussel, Belgium and Tom VERBEKE, Universiteit Ghent and Hogeschool Universiteit Brussel, Belgium. The event was sponsored by the Chair Lhoist Berghmans in Environmental Economics and Management and CORE, UCL, Belgium.

PROGRAMME

FEBRUARY 2, 2009

▪ **SESSION I**

CHAIR: JOHAN EYCKMANS, HOGESCHOOL-UNIVERSITEIT BRUSSEL, BELGIUM

Stef PROOST, Katholieke Universiteit Leuven, Belgium
Informational benefits of international environmental agreements

Joris MORBEE, Katholieke Universiteit Leuven, Belgium
Political Economy of resource taxation in petroleum-producing countries

▪ **SESSION II**

CHAIR: TOM VERBEKE, UNIVERSITEIT GHENT AND HOGESCHOOL-UNIVERSITEIT BRUSSEL, BELGIUM

Gerd KÜPPER, Katholieke Universiteit Leuven, Belgium
Strategic investment in green technology

Maria Eugenia SANIN, CORE, UCL, Belgium
Emission permits under upstream-downstream strategic interaction

▪ **SESSION III**

CHAIR: SANDRA ROUSSEAU, HOGESCHOOL-UNIVERSITEIT BRUSSEL, BELGIUM

Simon DE JAEGER, Hogeschool-Universiteit Brussel, Belgium
Waste demand in the context of waste-price mimicking and waste tourism: a case study of Flemish municipalities

Erika MEYNAERTS, VITO (Vision on Technology), Antwerp, Belgium
Ex ante evaluation of the costs and effects of an earmarked NO_x-charge of stationary sources in Flanders with the environmental costing model

▪ **SESSION IV**

CHAIR: THIERRY BRÉCHET, CORE, UCL, BELGIUM

Johan EYCKMANS, Hogeschool-Universiteit Brussel, Belgium

Valuation of odor nuisance using field measurements and spatial regression techniques – An application for animal waste treatment facility in Flanders.

Stella VANASSCHE, VITO (Vision on Technology), Antwerp, Belgium

The impact of environmental policy on industrial sectors Empirical evidence from 14 European countries

▪ **JOURNEES DE L'OLIGOPOLE**

organized by Claude d'ASPREMONT, CORE, UCL, Belgium and sponsored by the Belgian Science Policy, the Ecole Polytechnique, Paris and CORE, UCL, Belgium.

PROGRAMME

MAY 19, 2009

- Guy MEUNIER and Jean-Pierre PONSSARD, Ecole Polytechnique, Paris, France
Capacity decisions with demand fluctuations and carbon leakage
- Paul BELLEFLAMME, CORE, UCL, Belgium
Asymmetric information and overinvestment in quality
- Johan HOMBERT, Jérôme POUYET and Nicolas SCHUTZ, Ecole Polytechnique, Paris, France
Vertical foreclosure with multiple integrated firms
- Wouter VERGOTE, Facultés Universitaires Saint-Louis, Bruxelles and CORE, UCL, Belgium
Endogenous network formation and optimal efforts in a patent game

▪ **INTEGER PROGRAMMING AT CORE**

organized by Karen AARDAL, Technische Universiteit Delft, The Netherlands, Michele CONFORTI, Università di Padova, Italy, Jean-Paul DOIGNON, Université Libre de Bruxelles, Belgium and Robert WEISMANTEL, Otto-von-Guericke Universität Magdeburg, Germany. The event was sponsored by the Centrum Wiskunde & Informatica, Amsterdam, The Netherlands, CORE, UCL, Belgium, SMASH, Facultés Universitaires Saint-Louis, Bruxelles, Belgium the Fonds de la Recherche Scientifique and ORBEL/SOGESCI-B.V.W.B.

PROGRAMME

MAY 27, 2009

- George NEMHAUSER, Georgia Institute of Technology, USA
Laurence Wolsey's contributions to Integer Programming
- Gérard CORNUÉJOLS, Carnegie Mellon University, USA
Cutting planes and maximal lattice-free convex sets
- Michel GOEMANS, Massachusetts Institute of Technology, USA
Linking flows
- Imre BARANY, Hungarian Academy of Sciences, Hungary
On the randomized integer convex hull
- Jean-Philippe RICHARD, University of Florida, USA
MIP Techniques in global optimization

MAY 28, 2009

- Kurt ANSTREICHER, University of Iowa, USA
Nonconvex quadratic programming: return of the Boolean quadric polytope
- Monique LAURENT, Centrum Wiskunde & Informatica, The Netherlands
Solving polynomial equations in reals with semidefinite programming
- Rekha THOMAS, University of Washington, USA
A hierarchy of the theta bodies for polynomial systems
- Daniel BIENSTOCK, Columbia University, USA
Using constrained eigenvalue techniques in non-convex optimization
- Jon LEE, IBM Research, USA
An analysis of approximations for maximizing submodular set functions - III
- Yurii NESTEROV, CORE, UCL, Belgium
Fast gradient methods for network flow problems

MAY 29, 2009

- Martin GRÖTSCHEL, Konrad-Zuse-Zentrum für Informationstechnik Berlin, Germany
Making good use of railroad tracks
- Pascal VAN HENTENRYCK, Brown University, USA
Dynamic optimization under uncertainty
- Yves POCHET, Lhoist, Belgium
From PW and MIP to PP by MIP

■ CHALLENGES IN PUBLIC ECONOMICS

organized by Claude d'ASPREMONT, CORE, UCL, Belgium and Sergio PERELMAN, Université de Liège, Belgium in honor of Pierre PESTIEAU. The conference was sponsored by the Communauté Française de Belgique, the Fonds National de la Recherche Scientifique, the Politique Scientifique Fédérale, CORE, UCL, Belgium and CREPP, HEC, Université de Liège, Belgium.

PROGRAMME

JUNE 2, 2009

- **SESSION I – CHAIR: HELMUTH CREMER, UNIVERSITÉ DE TOULOUSE 1 CAPITOLE, FRANCE**
Robin BOADWAY, Queen's University, Ontario, Canada
Ethical voting and political equilibrium

Arnaud DELLIS, Université Laval, Canada
Splitting, squeezing and diluting: policy moderation and endogenous candidacy

Philippe DE DONDER, Université de Toulouse 1 Capitole, France
A positive theory of unemployment insurance and employment protection
- **SESSION II – CHAIR: VICTOR GINSBURGH, ECARES, UNIVERSITÉ LIBRE DE BRUXELLES AND CORE, UCL, BELGIUM**
Emmanuel THIBAULT, Université de Toulouse 1 Capitole, France
Wealth dynastic accumulation

Grégory PONTIÈRE, Paris School of Economics, France
Utilitarianism and differential longevity: a remedy

Erik SCHOKKAERT, Katholieke Universiteit Leuven, Belgium
What good is happiness?
- **SESSION III – CHAIR: MOTOHIRO SATO, HITOTSUBASHI UNIVERSITY, JAPAN**
Olivier DONNI, Université de Cergy-Ponthoise, France
Parents' bargaining, economics of scale, and the cost of children

Jacques-François THISSE, CORE, UCL, Belgium and Paris School of Economics, France
On the impact of trade on industrial structures: the role of entry cost heterogeneity

Ray REES, Universität München, Germany
Two extensions to the theory of optimal income taxation

JUNE 3, 2009

■ SESSION IV – CHAIR: VICTORIA BARHAM, UNIVERSITY OF OTTAWA, CANADA

André MASSON, Paris School of Economics, France

How to measure risk and time preferences of savers?

Louis EECKHOUDT, Facultés Universitaires Catholiques de Mons, Belgium

About (higher order) risk attitudes: directions and intensities

Henry TULKENS, CORE, UCL, Belgium

Mitigation, adaptation, suffering: in search of the right mix in the face of climate change

■ SESSION V – CHAIR: ERIK SCHOKKAERT, KATHOLIEKE UNIVERSITEIT LEUVEN, BELGIUM

Philippe BARLA, Université Laval, Canada

Information technology and efficiency in trucking

Firouz GAHVARI, University of Illinois, USA

Friedman rule in a model with endogenous growth and cash-in-advance constraint

Dario MALDONADO, Universidad del Rosario, Bogota, Columbia

Mitigation, adaptation, suffering: in search of the right mix in the face of climate change

■ SESSION VI – CHAIR: ALESSANDRO CIGNO, UNIVERSITA DI FIRENZE, ITALY

David DE LA CROIX, IRES, UCL, Belgium

An international treaty to break to immigration deadlock

Nicolas MARCEAU, Université du Québec à Montréal, Canada

Equilibrium excess demand in the rental housing market for the poor

■ 2009 ECORE SUMMER SCHOOL

organized by Jean HINDRIKS, CORE, UCL, Belgium, Georg KIRCHSTEIGER, ECARES, Université Libre de Bruxelles, Belgium and François MANIQUET, CORE, UCL, Belgium. The event was sponsored by the Belgian Science Policy, the Communauté française de Belgique, CORE, UCL, Belgium, CORE Foundation, Belgium ECARES, Université Libre de Bruxelles, ECORE (UCL & ULB), Belgium, the European Commission FP6 Marie Curie Action, the European Research Council, the European Science Foundation and the Fonds National de la Recherche Scientifique.

PROGRAMME

JUNE 9, 2009

■ **PLENARY SESSION I**

Joel SOBEL, University of California, San Diego, USA

Lecture 1: Other-regarding preferences, theory and evidence

David AUSTEN-SMITH, Northwestern University, Evanston (IL), USA

Lecture 1: The Condorcet jury theorem and committee design

■ **PARALLEL SESSION A1: PUBLIC DECISION AND ASYMMETRIC INFORMATION**

Vanessa VALERO, Université de Montpellier I, France

Government opportunism in public-private partnerships

Frédéric MALHERBE, ECARES, Université Libre de Bruxelles, Belgium

Self-fulfilling liquidity dry-ups

Sandra POLANIA REYES, Università degli Studi di Siena, Italy

Economic incentives and social preferences: a preference-based Lucas critique of public policy

■ **PARALLEL SESSION B1: NETWORKS AND FAIRNESS**

Giacomo VALLETTA, CORE, UCL, Belgium

The Shapley value of the fair allocation of an indivisible good

Luca Paolo MERLINO, Universitat Autònoma de Barcelona, Spain

Endogenous job contact networks

Roland PONGOU, Brown University, Providence (RI), USA

A dynamic theory of fidelity networks with an application to the spread of HIV/AIDS

■ **PARALLEL SESSION A2: POLITICAL ECONOMY1**

Galina ZUDENKOVA, Universidad Carlos III de Madrid, Spain

Split-ticket voting: an implicit incentive approach

Benno BÜHLER, Université de Toulouse 1 Capitole, France and Universität München, Germany

Ideologues: explaining partisanship and persistence in politics (and elsewhere)

Marie-Louise LEROUX, CORE, UCL, Belgium

Voting on pensions: sex and marriage

■ **PARALLEL SESSION B2: INDUSTRIAL ORGANIZATION**

Alexandre de CORNIÈRE, Paris School of Economics, France

Advertising on a search engine: How to target consumers?

Ming GAO, London Business School, United Kingdom

When to allow buyers to sell? Bundling in mixed two-sided markets

Esra DURCEYLAN, Bilkent University, Ankara, Turkey
Managerial effort, agency, and industrial evolution

JUNE 10, 2009

■ PLENARY SESSION II

David AUSTEN-SMITH, Northwestern University, Evanston (IL), USA
Lecture 2: Information aggregation in large elections

Joel SOBEL, University of California, San Diego, USA
Lecture 2: Other-regarding preferences in markets: identification and welfare

■ PARALLEL SESSION A3: INFORMATION ECONOMICS

Evrin DENER, Southern Methodist University, Dallas (TX), USA
Signaling quality through prices in a durable good market

Mark LE QUEMENT, European University Institute, Firenze, Italy
Cheap talk, information acquisition and conditional delegation

Pinghan LIANG, Universita Autònoma de Barcelona, Spain
Customer complaint management: a mechanism design approach

■ PARALLEL SESSION B3: ENDOGENOUS INSTITUTIONS

Konstantinos MATAKOS, University of Warwick, United Kingdom
Endogenous choice of electoral rules in a multi-party system with two major dominant parties

Daniil MUSATOV, New Economic School, Moscow, Russia
Stable jurisdiction partitions under monotonically decreasing population density

Osiris Jorge PARCERO, United Arab Emirates University, Al-Ain, United Arab Emirates
Dynamics of neighborhood formation and segregation by income

■ PARALLEL SESSION A4: NETWORK AND MORAL HAZARD

Gilles GRANDJEAN, CORE, UCL, Belgium
Connections among farsighted agents

Yuki KUMAGAI, University of Nottingham, United Kingdom
Networks and markets: moral hazard, information and matching in global trade

Renaud BOURLES, Université de Toulouse 1 Capitole and GREQAM, Aix-Marseille, France
Moral hazard in dynamic insurance, classification risk and prepayment

▪ **PARALLEL SESSION B4: REGULATION**

Sebastian KRANZ, Universität Bonn, Germany

Legal unbundling can be a golden mean between vertical integration and ownership separation

Ana BORGES, Universidade do Porto, Portugal

Using cost observation to regulate bureaucratic firms

Renaud FOUCART, ECARES, Université Libre de Bruxelles, Belgium

On the economic impact of smoking bans in restaurants

JUNE 11, 2009

▪ **PLENARY SESSION III**

Joel SOBEL, University of California, San Diego, USA

Lecture 3: Institution design when incentives influence preferences

David AUSTEN-SMITH, Northwestern University, Evanston (IL), USA

Lecture 3: Deliberation in committees

▪ **PARALLEL SESSION A5: INVESTMENT AND MARKET REGULATION**

Irina SULEYMANOVA, German Institute of Economic Research, Berlin, Germany

Strategic investment in international gas-transport systems: A dynamic analysis of the hold-up problem

Maria Eugenia SANIN, CORE, UCL, Belgium

Trading emission permits under upstream-downstream strategic interaction

Nese SARA, Southern Methodist University, Dallas (TX), USA

Bilateral trade liberalization between asymmetric countries

▪ **PARALLEL SESSION B5: DYNAMICAL GAMES**

Chantal MARLATS, Paris School of Economics, Paris, France

A folk theorem for finitely repeated stochastic games

Antonio OSORIO DA COSTA, Universidad Carlos III de Madrid, Spain

Frequent monitoring in repeated games under Brownian uncertainty

Paolo PIACQUADIO, CORE, UCL, Belgium

Equity and efficiency in an overlapping generation model

▪ **PARALLEL SESSION A6: INCENTIVES AND DECISION**

Paul STEFFENS, Tinbergen Institute Rotterdam, The Netherlands

On the burden of accountability

Philippos LOUIS, Universitat Autònoma de Barcelona, Spain
Learning aversion and voting rules in collective decision making

Guido MARETTO, California Institute of Technology, Pasadena (CA), USA
Contracts with aftermarkets

■ **PARALLEL SESSION B6: COOPERATION, CHARITY AND CAREER CONCERN**

Jean BEUVE, Université Paris-Sud XI and Paris I (Panthéon-Sorbonne), France
Reputation, contracts and the dynamics of cooperation. Theoretical and experimental approaches.

Olivier BOS, Paris School of Economics, France and CORE, UCL, Belgium
Charitable asymmetric bidders

Rosa FERRER, Vanderbilt University, Nashville (TN), USA
The effect of Lawyers' career concerns on litigation

JUNE 12, 2009

■ **PLENARY SESSION IV**

Eric MASKIN, Institute for Advanced Study, Princeton (NJ), USA
Lecture 1: Voting theory 1

Eric MASKIN, Institute for Advanced Study, Princeton (NJ), USA
Lecture 1: Voting theory 2

■ **PARALLEL SESSION A7: BARGAINING AND SIGNALING**

Bing YE, Université de Toulouse 1 Capitole, France
Pricing for bargaining?

Wooyoung LIM, University of Pittsburgh (PA), USA
Communication in bargaining over decision rights

Susanne OHLENDORF, Universität Bonn, Germany
Signaling an outside option

■ **PARALLEL SESSION B7: POLITICAL ECONOMY 2**

Laurent BOUTON, ECARES, Université Libre de Bruxelles, Belgium
Runoff elections and the Condorcet loser: the Ortega effect

Sivan FRENKEL, Tel Aviv University, Israël
Unambiguous campaign as a signal of competence in electoral competition

Veronika BLOCK, Universität Karlsruhe, Germany
Preferences over coalitions

▪ **PARALLEL SESSION A8: LOBBIES AND POLITICIANS**

Allard VAN DER MADE, Rijksuniversiteit Groningen, The Netherlands
Endogenous group formation and lobbying

Dimitrios XEFTERIS, Universitat Autònoma de Barcelona, Spain
Referenda as a Catch-22

Anton BELYAKOV, CORE, UCL, Belgium
On the relation of country size to the form of government

▪ **PARALLEL SESSION B8: TAXATION, GROWTH AND INCOME INEQUALITY**

Filippo GREGORINI, Università degli Studi di Milano, Italy
Political geography and income inequalities

Christian KIEDAISCH, Université de Toulouse 1 Capitole, France
Patents in a model of growth with persistent leadership

Tapas KUNDU, Universitet Oslo, Norway
Resistance to outside investment: A rational model of surplus destruction

7

INVITED SEMINARS

The following seminars were presented by CORE members during the academic year 2008-2009.

PER AGRELL

- *Export Risk, incentives and information in telecom supply chain coordination*
Universidad Carlos III de Madrid, Spain (November 2008)
- *Models and outcomes for economics regulation of transmission system operators*
Comision Nacional de Energia, Madrid, Spain (November 2008)

LUC BAUWENS

- *Forecasting long memory processes subject to structural breaks*
University of Piraeus, Athens, Greece (October 2008)
- *A component GARCH model with time-varying weights*
Xiamen University, China (March 2009)
Zhejiang University, Hangzhou, China (March 2009)
Academica Sinica, Taipei, Taiwan (April 2009)

PAUL BELLEFLAMME

- *Economics of interoperability: innovation vs. competition*
Deutsches Institut für Wirtschaftsforschung, Berlin, Germany (September 2008)
- *Intermediation and investment incentives*
Séminaire Economie et Econométrie de l'Innovation (Université de Paris 1-CES, Université de Paris 2-ERMES, Mines Paris Tech-CERNA, TELECOM ParisTech-SES), France (May 2009)
- *Industrial organization in the digital economy*
Universitat Autònoma de Barcelona, Spain (May 2009)
- *Plates-formes de partage de connaissance: regard économique*
Digital Innovators Tour, Louvain-la-Neuve, Belgium (May 2009)
- *Asymmetric information and investment in quality*
Universidade do Porto, Portugal (May 2009)

OLIVIER BOS

- *Charity auctions for the happy few*
Wissenschaftszentrum Berlin für Sozialforschung, Berlin, Germany (February 2009)
Forschungsinstitut zur Zukunft der Arbeit (IZA), Bonn, Germany (April 2009)
Universiteit Maastricht, The Netherlands (May 2009)

- *Charitable asymmetric bidders*
Université catholique de Lille, France (May 2009)
Universiteit Amsterdam, The Netherlands (June 2009)
Universität zu Köln, Germany (July 2009)

RAOUF BOUCEKKINE

- *Optimal firm behavior under environmental constraints*
University of Glasgow, United Kingdom (November 2008)
Stockholm School of Economics, Sweden (December 2008)

THIERRY BRÉCHET

- *Les nuisances sonores autour de Zaventem, une évaluation économétrique*
IRES (Séminaire de Politique Economique), UCL, Belgium (October 2008)
- *Education, environmental awareness, and growth*
Interdisciplinary Research Seminar on "Forest, Nature and Society", UCL, Belgium (December 2008)
- *Tradable emission permits in a two-sector OLG model: acceptability and efficiency*
LERNA, Université de Toulouse 1 Capitole, France (March 2009)
- *Climate coalitions analysis and integrated assessment modeling*
Université Paris X (Nanterre), France (June 2009)

GEOFFREY CARUSO

- *EPSON Database 2013, objectives and structures*
EPSON Seminar, Bordeaux, France (December 2008)
- *Geographical modeling with cellular-automata*
Barcelona Polytechnic Institute, Spain (May 2009)

JULIO DAVILA

- *The taxation of saving returns with stochastic asset bubbles*
University of Kyoto, Japan (April 2009)
National Taiwan University, Taiwan (May 2009)
University of Warwick, United Kingdom (May 2009)

PIERRE DEHEZ

- *Data games: sharing public goods with exclusion*
Université de Nancy, France (March 2009)
- *Competitive pricing, increasing returns and industry structure*
Universita di Pisa, Italy (January 2009)
Université de Nancy, France (January 2009)
Université de Strasbourg, France (February 2009)

DAVID DE LA CROIX

- *An incentive compatible mechanism to break the unskilled immigration deadlock*
University of Tel Aviv, Israël (January 2008)
Aix-en-Provence, France (October 2008)
- *The child is father of the man: implications for the demographic transition*
Universitat Pompeu Fabra, Barcelona, Spain (December 2008)
Taiwan National University, Taiwan (April 2009)

SANTANU DEY

- *Split rank of triangle and quadrilateral inequalities*
Montefiore Institute, Université de Liège, Belgium (May 2009)
- *Constrained infinite group relaxation of MIPs*
Laboratoire d'Informatique Fondamentale, Marseille, France (May 2009)

MARCO SI SUMMA

- *Extended formulation for some mixed-integer sets*
Istituto Dalle Molle di Studi sull'Intelligenza Artificiale, Lugano, Italy (March 2009)

JACQUES DRÈZE

- *Decision theory and expected utility*
Jaharwal Nehru University, New Delhi, India (February 2009)
- *When Borch's theorem does not apply: some key implications of market incompleteness, with policy relevance today*
Norges Hadelshoyskole, Bergen, Norway (June 2009)
- *Elicitation and identification of subjective probabilities*
Norges Hadelshoyskole, Bergen, Norway (June 2009)

CLAIRE DUJARDIN

- *Le rôle de la localisation résidentielle sur le chômage. Le cas de l'agglomération bruxelloise*
Center of Research in Public Economics and Population Economics (CREPP), Université de Liège, Belgium (October 2008)

EMANUELE FORLANI

- *Competition in services' sector and efficiency of manufacturing firms: does liberalization matter?*
DG ECFIN, European Commission, Bruxelles, Belgium (December 2008)

BERNARD FORTZ

- *Applications of meta-heuristics to traffic engineering in IP networks*
Université de Mons, Belgium (June 2009)

JEAN J. GABSZEWICZ

- *Media as two-sided markets*
Portuguese Competition Authority, Lisbon, Portugal (September 2008)

AXEL GAUTIER

- *Efficient access pricing and endogenous market structure*
Universiteit Maastricht, The Netherlands (March 2009)
ECARES, Université Libre de Bruxelles, Belgium (March 2009)

NICOLAS GILLIS

- *New variants of nonnegative matrix factorization for sparsity improvement and maximum biclique finding*
Centre for Systems Engineering and Applied Mechanics, Louvain-la-Neuve, Belgium (March 2009)

GILLES GRANDJEAN

- *Connections among farisghted agents*
Center for Research in Economics, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (April 2009)

CHRISTIAN HAFNER

- *Efficient estimation of a dynamic semiparametric copula model*
Université de Liège, Belgium (November 2008)
- *Efficient estimation of a multivariate multiplicative volatility model*
Universiteit Maastricht, The Netherlands (April 2009)

JEAN-JACQUES HERINGS

- *Non-cooperative support for the asymmetric Nash bargaining solution*
Trinity College, Dublin, Ireland (February 2009)
Waseda University, Tokyo, Japan (July 2009)

LEONIDAS KOUTSOUGERAS

- *Intermediation across imperfectly competitive markets*
Université du Luxembourg, Luxembourg (March 2009)

YASSINE LEFOUILI

- *Leniency programs for multimarket firms: the effect of amnesty plus on cartel formation*
Facultés Universitaires Saint-Louis, Bruxelles, Belgium (May 2009)

MARIE-LOUISE LEROUX

- *Uncertain lifetime, redistribution and nonlinear pricing of annuities*
Université de Liège, Belgium (November 2007)

ROLAND IWAN LUTTENS

- *Voting for redistribution under desert-sensitive altruism*
Katholieke Universiteit Leuven, Belgium (October 2007)

FRANÇOIS MANIQUET

- *Strategic voting in large elections under proportional representation*
Institutions Market Technologies, Lucca, Italy (May 2009)

MARCO MARINUCCI

- *Network formation and endogenous efforts in an R&D race*
Center for Research in Economics, Facultés Universitaires Saint-Louis, Bruxelles, Belgium
(March 2009)

ANA MAULEON

- *Contractually stable networks*
Universidad del Pais Vasco, Bilbao, Spain (October 2008)
CentER, Universiteit Tilburg, The Netherlands (March 2009)
Universidad Complutense de Madrid, Spain (May 2009)

JUAN D. MORENO-TERNERO

- *The principal's dilemma*
Universität Bielefeld, Germany (April 2009)
Universität Paderborn, Germany (April 2009)
- *The political economy of health care finance*
Universidad del Pais Vasco, Bilbao, Spain (October 2008)
Universidad Pablo de Olavide, Sevilla, Spain (October 2008)

DOMINIQUE PEETERS

- *La localisation des activités productives en milieu rural*
Groupe Evaluation Prospective des PER, DIACT-INRA-CEMAGREF Paris, France (December 2008)

- *S-Ghost city: self-generating housing, open space and transportation in a city*
University of California at Santa Barbara (CA), USA (February 2009)
Université de Franche-Comté, Besançon, France (March 2009)
Nagoya University, Japan (March 2009)
- *Louvain-la-Neuve and Tsukuba: false twins?*
University of Tsukuba, Japan (March 2009)

PIERRE PESTIEAU

- *Unequal wages for equal utilities*
Center for Applied Economics and Policy Research, Bloomington (IN), USA (October 2008)
University of Illinois of Urbana Champaign (IL), USA (October 2008)
Ben Gurion University, Beer Sheeva, Israël (June 2009)
FEDEA Seminar, Madrid, Spain (June 2009)
- *Should we subsidize longevity?*
Lingnam University, Hong Kong (December 2008)
- *Myopia, redistribution and pensions*
Instituto de Estudios Fiscales, Madrid, Spain (June 2009)

EVE RAMAEKERS

- *Implementation in undominated strategies by bounded and covered mechanisms*
Centre Interuniversitaire de Recherche en Economie Quantitative (CIREQ), Montréal, Canada
(January 2009)

JOANA RESENDE

- *Does the absence of competition in markets foster competition for the market: a dynamic approach to aftermarkets?*
Universidade do Porto, Portugal (December 2008)

PETER RICHTARIK

- *Solving five optimization problems simultaneously in relative scale*
Comenius University, Slovakia (October 2008)
- *Approximate level method*
Eidgenössische Technische Hochschule Zürich, Switzerland (March 2009)
- *Linearize and optimize: symmetric linear programming and sparse principal component analysis*
Johann Radon Institute for Computational and Applied Mathematics (RICAM), Austrian Academy of Science, Linz, Austria (March 2009)
- *GPower and SPCA*
University of Edinburgh, United Kingdom (March 2009)

CARLO ROSA

- *What is the ECB reaction function? A dynamic probit analysis*
Dutch National Bank, Amsterdam, The Netherlands (December 2008)
Universita di Pavia, Italy (January 2009)
- *The validity of the event-study approach: evidence from the impact of the Fed's Monetary Policy on U.S. and Foreign Asset Prices*
Institute for Economic Research, München, Germany (January 2009)

MARIA EUGENIA SANIN

- *Trading emission permits under upstream-downstream strategic interaction*
University of Aberdeen, Scotland, United Kingdom (February 2009)

ERIK SCHOKKAERT

- *Competition in health care and health insurance: is the Belgian future Dutch?*
Tilburg Institute for Law and Economics (TILEC), Tilburg, The Netherlands (February 2009)
- *What good is happiness?*
University of Sheffield, United Kingdom (February 2009)
Katholieke Universiteit Leuven, Belgium (April 2009)

YVES SMEERS

- *Competition and regulatory mix in the restructuring of the European electricity system*
Research Institute of Economy, Trade & Industry, Tokyo, Japan (October 2007)
- *Generation capacity expansion in risky restructured electricity markets*
Federazione Italiana di Matematica Applicata, Ayas-Champoluc, Italy (January 2008)
- *Equilibrium formulations*
Ecole des Mines de Paris, France (February 2008)
- *Investments, contracts and risk premium*
Harvard Electricity Policy Group, Harvard University, Harvard (MA), USA (February 2008)
- *Average cost based power contracts can mitigate carbon leakage*
Fondazione Eni Enrico Mattei (FEEM), Milano, Italy (April 2008)
- *On the European mix of regulation and competition law in the reform of the electricity sector*
Direction Générale de l'Energie et des Transports (DG TREN), Commission Européenne, Bruxelles, Belgium (June 2008)

JEAN-SÉBASTIEN TANCREZ

- *Modelling queuing networks using probability mass fitting*
Katholieke Universiteit Leuven, Belgium (June 2009)

JOE THARAKAN

- *Endogenous mode of competition in general equilibrium*
Université de Grenoble, France (March 2009)

JACQUES-FRANÇOIS THISSE

- *A geo-economic approach to Belgian dualism*
Fondation Universitaire, Bruxelles, Belgium (November 2008)
- *What does human geography tell us about how Belgium's institutions should and/or will evolve?*
Re-Bel Initiative, Rethinking Belgium's institutions in the European Context, Bruxelles, Belgium (April 2009)

ISABELLE THOMAS

- *Prix et état(s) du logement en Belgique*
Conseil Economique et Social de la Région Wallonne: prix et état(s) du logement en Belgique, Liège, Belgium (September 2008)
- *Modèles de localisation: méthodes et solutions*
Université du Luxembourg, Luxembourg (November 2008)
- *A geo-economic approach to Belgian dualism*
Fondation Universitaire, Bruxelles, Belgium (November 2008)
- *What does human geography tell us about how Belgium's institutions should and/or will evolve?*
Re-Bel Initiative, Rethinking Belgium's institutions in the European Context, Bruxelles, Belgium (April 2009)
- *Quelles ambitions pour Louvain-la-Neuve? Point de vue du géographe*
Journée de réflexion sur les perspectives futures de la ville universitaire, Louvain-la-Neuve, Belgium (May 2009)

ERIC TOULEMONDE

- *The principle of mutual recognition – A source of divergence?*
HEC, Lausanne, Switzerland (April 2009)

HIROSHI UNO

- *Best-response adaptation in nested potential games*
Tokyo Metro University, Japan (May 2009)

GRÉGORY VANDENBULCKE-PLOSSCHAERT

- *Cycling to work: modeling spatial variations withing Belgium*
Séminaire de Géographie, UCL, Belgium (November 2008)

DIRK VAN DE GAER

- *A note on structural mobility, exchange mobility and subgroup consistent mobility measurement*
Tinbergen Institute, Rotterdam, The Netherlands (April 2009)

HYLKE VANDENBUSSCHE

- *Antidumping protection hurts exporters*
University of Nottingham, United Kingdom (January 2009)
Paris School of Economics, France (February 2009)
- *Trade defense instruments*
DG Trade, EU Commission, Bruxelles, Belgium (January 2009)

WOUTER VERGOTE

- *Von Neumann-Morgenstern farsightedly stable sets in two-sided matching*
Koc University, Istambul, Turkey (October 2008)
Sabanci University, Istambul, Turkey (October 2008)
- *Endogenous social capital in joint liability lending through mutual insurance*
Instituto de Estudios Superiores de Administracion, Caracas, Venezuela (December 2008)

XAVIER WAUTHY

- *Judo economics revisited*
Universitat Autònoma de Barcelona, Spain (March 2009)
Universitat de València, Spain (May 2009)

ACADEMIC VISITS OF CORE MEMBERS

Academic visits by CORE members to other institutions

PER AGRELL

Universitat Autònoma de Barcelona, Spain (August – December 2008)

LUC BAUWENS

HEC Montréal, Canada (February 2009)

RAOUF BOUCEKKINE

University of Glasgow, United Kingdom (October– November 2008)

THIERRY BRÉCHET

Université de Lille 1, France (October 2008)

International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria (November 2008)

ORDECSYS (Operations Research Decisions and Systems), Genève, Switzerland (February 2009)

Université de Savoie, Annecy, France (May 2009)

Université Paris X (Nanterre), France (June 2009)

JULIO DAVILA

University of Kyoto, Japan (April 2009)

National Taiwan University, Taiwan (May 2009)

PIERRE DEHEZ

Università di Pisa, Italy (November 2007)

European University Institute, Firenze, Italy (April 2008)

DAVID DE LA CROIX

Northwestern University, Evanston (IL), USA (November 2008)

Taiwan National University, Taiwan (April 2009)

JACQUES DRÈZE

Delhi School of Economics, New Delhi, India (February 2009)

Indian Statistical Institute, New Delhi, India (February 2009)

Jawahar Nehru University, New Delhi, India (February 2009)

CLAIRE DUJARDIN

Groupe d'Analyse et de Théorie Économique (GATE), Université de Lyon II, Ecully, France (April and May/June 2009)

BERNARD FORTZ

Politecnico di Milano, Milano, Italy (March – May 2009)

NICOLAS GILLIS

Laboratoire d'Analyse et d'Architecture des Systèmes, Toulouse, France (Décembre 2008)

SALOME GVETADZE

International School of Economics, Tbilisi, Georgia (March-April 2009)

ROLAND IWAN LUTTENS

Vrije Universiteit Amsterdam, The Netherlands (August-October 2008)

JUAN D. MORENO-TERNERO

Kobenhavns Universitet, Denmark (August 2009)

PIERRE PESTIEAU

Center for Applied Economics and Policy Research, Bloomington (IN), USA (October 2008)

Lingman University, Hong Kong (December 2008)

Institut d'Economie Industrielle, Toulouse, France (January and June 2009)

Cornell University, Ithaca (NY), USA (June 2009)

EVE RAMAEKERS

Université de Montréal, Canada (March-April 2009)

Hausdorff Research Institute for Mathematics (HIM), Universität Bonn, Germany (April-May 2009)

CARLO ROSA

Institute for Economic Research, München, Germany (January 2009)

HENRY TULKENS

National University of Singapore, Singapore (October-November 2008)

VINCENT VANNETELBOSCH

Universidad del Pais Vasco, Bilbao, Spain (October 2008)

LAURENCE WOLSEY

IBM T.J. Watson Research Center, Yorktown Heights, New York (NY), USA (July 2008)

**CONFERENCES ATTENDED
BY CORE MEMBERS**

CORE members attended the following conferences and most presented a paper

PER AGRELL

10th Workshop of the European Working Group on Distributed Decision Making (EWG DDM X), Universitat Autònoma de Barcelona, Spain (September 2008)
TILEC Workshop on Energy Network Investments, Universiteit Tilburg, The Netherlands (December 2008)
3rd International Conference on Integration of Renewable and Distributed Energy Resources, Nice, France (December 2008)
Smart EU Energy Policy Workshop, European University Institute, Firenze, Italy (April 2009)
EU-DEEP (European Distributed EnErgy Partnership) Final Conference, Bruxelles, Belgium (June 2009)
11th European Workshop on Productivity and Efficiency Analysis (EWEPA XI), Università di Pisa, Italy (June 2009)
Smart EU Energy Policy Workshop on Green Paper, Clingendael International Energy Programme, Den Haag, The Netherlands (June 2009)

CARLOTTA BALESTRA

Journées "Généralisations Imbriquées, Développement et Dynamique Economique", Université de la Méditerranée, Aix-en-Provence, France (October 2008)
17th Annual Conference of the European Association of Environmental and Resource Economists (EAERE), Vrije Universiteit Amsterdam, The Netherlands (June 2009)
24th Annual Congress of the European Economic Association, Barcelona Graduate School of Economics, Spain (August 2009)

LUC BAUWENS

International Conference on Price, Liquidity, and Credit Risks, Universität Konstanz, Germany (October 2008)

PAUL BELLEFLAMME

GREQAM Summer School "The Economics of Knowledge: Innovation and Networks", Aix-en-Provence, France (October 2008)
CESifo Area Conference on Applied Economics, München, Germany (March 2009)

OLIVIER BOS

23rd Symposium of Economic Analysis, Zaragoza, Spain (December 2008)
Royal Economic Society Fourth PhD Presentation Meeting, London, United Kingdom (January 2009)

Society of Economic Design (SED), Conference on Economic Design, Universiteit Maastricht, The Netherlands (June 2009)

9th Society for the Advancement of Economic Theory (SAET) Conference, Ischia, Italy (July 2009)

64th European Meeting of the Econometric Society, Barcelona School of Economics, Spain (August 2009)

RAOUF BOUCEKKINE

1st Milan Workshop on Dynamics, Optimal Growth and Population Change, Università degli Studi di Milano, Italy (member of the Scientific Committee) (September 2008)

International Conference on "Sustainable Development: Demographic, Energy and Intergenerational Aspects", BETA, Université de Strasbourg, France (member of the Scientific Committee) (November 2008)

9th Annual Conference of the Association of Public Economic Theory, Galway, Ireland (member of the Scientific Committee) (June 2009)

17th Annual Conference of the European Association of Environmental and Resource Economists (EAERE), Amsterdam, The Netherlands (member of the Scientific Committee), (June 2009)

23rd European Conference on Operational Research, Bonn, Germany (July 2009)

THIERRY BRÉCHET

Conference on "Sustainable Development: Demographic, Energy and Intergenerational Aspects", BETA, Université de Strasbourg, France (November 2008)

Rencontres de l'Environnement, Université de Lille 1, France (February 2009)

Invited Conference, Institut des Hautes Etudes de Bruxelles, Université Libre de Bruxelles, Belgium (April 2009)

17th Annual Conference of the European Association of Environmental and Resource Economists (EAERE), Vrije Universiteit Amsterdam, The Netherlands (June 2009)

GEOFFREY CARUSO

EPSON Workshop on Monitoring Territorial Dynamics, Esch-sur-Alzette, Luxembourg (April 2008)

CLAUDE d'ASPREMONT

IAP-Day, ECARES, Université Libre de Bruxelles, Belgium (October 2008)

JULIO DAVILA

Public Economic Theory, National University of Ireland, Galway, United Kingdom (June 2009)

Society of Economic Design (SED), Conference on Economic Design, Universiteit Maastricht, The Netherlands (June 2009)

North-American Summer Meeting of the Econometric Society, Boston University, Boston (MA), USA (July 2009)

Far-Eastern and South-Asian Meeting of the Econometric Society, University of Tokyo, Japan (August 2009)
Econometric Society European Meeting, Barcelona, Spain (August 2009)

PIERRE DEHEZ

Andreu Mas-Colell Conference, Universitat Pompeu Fabra, Barcelona, Spain (June 2009)

DAVID DE LA CROIX

Public Economic Theory Conference, National University of Ireland, Galway, Ireland (June 2009)

GAUTHIER DE MAERE D'AERTRYCKE

Conference on Energy Finance, University of Agder, Kristiansan, Norway (September 2008)

RAFAEL DE MELO

ORBEL'09, 23rd Belgian Conference on Operations Research, Katholieke Universiteit Leuven, Belgium (February 2009)
15th Mathematical Programming Meeting, Han-sur-Lesse, Belgium (March 2009)
5th Polyhedra and Combinatorial Optimization Workshop: "Pretty Structure, Existential Polytime and Polyhedral Combinatorics" (celebrating Jack Edmonds 75th birthday), Institut Henri Poincaré, Université Pierre et Marie Curie, Paris, France (April 2009)
20th International Symposium on Mathematical Programming, Chicago (IL), USA (August 2009)

SANTANU DEY

INFORMS (Institute for Operations Research and the Management Science) Annual Meeting, Washington (DC), USA (October 2008)
13th Combinatorial Optimization Workshop, Centre Paul Langevin, Aussois, France (January 2009)
ORBEL'09, 23rd Belgian Conference on Operations Research, Katholieke Universiteit Leuven, Belgium (February 2009)
MIP 2009 (Mixed Integer Programming Workshop Series), University of California, Berkeley (CA), USA (June 2009)

MARCO DI SUMMA

ORBEL'09, 23rd Belgian Conference on Operations Research, Katholieke Universiteit Leuven, Belgium (February 2009)
15th Mathematical Programming Meeting, Han-sur-Lesse, Belgium (March 2009)
20th International Symposium on Mathematical Programming, Chicago (IL), USA (August 2009)

JACQUES DRÈZE

Andreu Mas-Colell Conference, Universitat Pompeu Fabra, Barcelona, Spain (June 2009)
Conference in honour of Roger Guesnerie, Paris School of Economics, France (June 2009)

CLAIRE DUJARDIN

49th Congress of the European Regional Science Association, Lodz, Poland (August 2009)
European Trade Study Group Conference, Warszawa, Poland (September 2008)
"Innovation, Internationalization and Global Labor Market" conference, Centro Studi Luca d'Agliano, Torino, Italy (February 2009)
1st Globalization Investment Services Trade Meeting, Università di Milano, Italy (June 2009)

BERNARD FORTZ

INFORMS Annual Meeting, Washington (DC), USA (October 2008)
Winter School on Network Optimization, Estoril, Portugal (organizer) (January 2009)
International Network Optimization Conference 2009, Pisa, Italy (April 2009)
EU/Meeting 2009, Porto, Portugal (April 2009)
EURO Conference 2009, Bonn, Germany (July 2009)

JEAN GABSZEWICZ

Workshop on Industrial Organization: Theory, Empirics and Experiments, Lecce, Italy (June 2009)

JOACHIM GAHUNGU

Real Options. Theory Meets Practice. 13th Annual International Conference, Minho, Portugal and Santiago, Spain (June 2009)

AXEL GAUTIER

Journées de Micro-économie Appliquée, Dijon, France (June 2009)

MAIA GEJADZE

Nyse Euronext Tinbergen Workshop on "Liquidity and Volatility in Today's Markets", Tinbergen Institute, Amsterdam, The Netherlands (June 2009)

NICOLAS GILLIS

Latin American Summer School on Operations Research, El Fuerte, Mexico (August 2009)
International Symposium on Mathematical Programming (ISMP), Chicago (IL), USA (August 2009)

PIERRE GIOT

1st Leuven-Louvain Finance Research Workshop, Bruxelles, Belgium (January 2009)

GILLES GRANDJEAN

3rd Workshop on Economic Design and Institutions, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (December 2008)

14th Coalition Theory Network Workshop, Universiteit Maastricht, The Netherlands (January 2009)

10th Annual Conference of the Association for Public Economic Theory, National University of Ireland, Galway, Ireland (June 2009)

International Conference on Game Theory, Stony Brook, New York (NY), USA (July 2009)

SALOME GVETADZE

International Conference on Macroeconomic and Policy Implications of Underground Economy and Tax Evasion, Università Commerciale Luigi Bocconi, Milano, Italy (February 2009)

JEAN-JACQUES HERINGS

Nake-dag, Utrecht, The Netherlands (member of the programme committee) (October 2008)

Workshop on Economic Design and Institutions, Bruxelles, Belgium (December 2008)

North American Econometric Society Winter Meetings, San Francisco (CA), USA (January 2009)

14th Coalition Theory Network Workshop, Universiteit Maastricht, The Netherlands (member of the scientific committee) (January 2009)

Workshop on The Theory and Practice of Auctions, Universiteit Tilburg, The Netherlands (January 2009)

New Topics on Game Theory, Universidad de Sevilla, Spain (April 2009)

XVIII European Workshop on General Equilibrium Theory, Barcelona, Spain (member of the scientific committee) (June 2009)

Society of Economic Design (SED), Conference on Economic Design, Universiteit Maastricht, The Netherlands (member of programme committee) (June 2009)

SAET (Society for the Advancement of Economic Theory) Conference on Current Trends in Economics, Ischia, Italy (June-July 2009)

6th Asian General Equilibrium Theory Workshop (GETA2009), Waseda University, Tokyo, Japan (July-August 2009)

ASEL ISAKOVA

International Colloquium on the topic "Towards an Integrated Macro-Finance Framework for Monetary Policy Analysis", Banque Nationale de Belgique, Bruxelles, Belgium (October 2008)

Conference "Promoting Regional Cooperation and Development in Central Asia", Centre for European Policy Studies, Bruxelles, Belgium (March 2009)

STÉPHANE LAMBRECHT

17th Annual Conference of the European Association of Environmental and Resource Economists (EAERE 2009), Amsterdam, The Netherlands (June 2009)
 24th Annual Congress of the European Economic Association, Barcelona, Spain (August 2009)

LEONIDAS KOUTSOUGERAS

Conference of the Society for the Advancement of Economic Theory, Ischia, Italy (July 2009)

SÉBASTIEN LAURENT

6th OxMetrics User Conference, Cass Business School, London, United Kingdom (September 2008)
 The Chicago/London Conference on Financial Markets – Part 1 "What Went Wrong? Financial Engineering", Cass Business School, London, United Kingdom (December 2008)
 QASS (Quantitative and Qualitative Analysis in Social Sciences), Conference on Financial Econometrics and Realized Volatility, Queen Mary University, London, United Kingdom (June 2009)

YASSINE LEFOUILI

Conference in Honor of David Encaoua, Université Paris I (Panthéon-Sorbonne), France (May 2009)
 24th Annual Meeting of the European Economic Association, Barcelona, Spain (August 2009)
 64th European Meeting of the Econometric Society, Barcelona, Spain (August 2009)

MARIE-LOUISE LEROUX

CEsifo Area Conference on Public Sector Economics, München, Germany (April 2009)
 Workshop on Pensions and Savings, Université Paris-Dauphine, France (May 2009)
 LAGV#8, Journées Louis-André Gérard-Varet #8-2009, Marseille, France (June 2009)
 Public Economic Theory Conference, National University of Ireland, Galway, Ireland (June 2009)
 2009 IIPF (International Institute of Public Finance) Congress, Cape Town, South Africa (August 2009)

ROLAND IWAN LUTTENS

New Directions in Welfare. A conference for Economicists and Policy Makers. Oxford University, United Kingdom (June-July 2009)

SYLVETTE LY

Rencontres de l'Environnement, Université de Lille 1, France (February 2009)
 17th Annual Conference of the European Association of Environmental and Resource Economists (EAERE), Vrije Universiteit Amsterdam, The Netherlands (June 2009)

FRANÇOIS MANIQUET

New Topics on Game Theory, Universidad de Sevilla, Spain (April 2009)
Society of Economic Design (SED), Conference on Economic Design, Universiteit Maastricht, The Netherlands (June 2009)
New Directions in Welfare. A conference for Economicst and Policy Makers. Oxford University, United Kingdom (June-July 2009)
XII Urrutia Elejalde Summer School on Economics and Philosophy, Universidad del Pais Vasco, Bilbao, Spain (July 2009)

MARCO MARINUCCI

GREQAM Summer School "The Economics of Knowledge: Innovation and Networks", Aix-en-Provence, France (October 2008)
The Irish Society of New Economists Annual Conference, National University of Ireland, Galway, Ireland (October 2008)
3rd Workshop on Economic Design and Institutions, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (December 2008)
Belgian International Trade Workshop, Université catholique de Louvain, Louvain-la-Neuve, Belgium (March 2009)
2nd Doctoral Meeting of Montpellier, Université de Montpellier, France (May 2009)

ANA MAULEON

GREQAM Summer School "The Economics of Knowledge: Innovation and Networks", Aix-en-Provence, France (October 2008)
3rd Workshop on Economic Design and Institutions, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (member of the organizing committee) (December 2008)
14th Coalition Theory Network Workshop, Universiteit Maastricht, The Netherlands (January 2009)
Society of Economic Design (SED), Conference on Economic Design, Universiteit Maastricht, The Netherlands (June 2009)
20th Stony Brook Summer Institute on Game Theory: The International Conference, Stony Brook University, Stony Brook (NY), USA, July 2009.

JEAN-FRANÇOIS MAYSTADT

IAP-Day, ECARES, Université Libre de Bruxelles, Belgium (October 2008)
4th Annual Workshop of the Household Conflit Network, Yale University, New Haven (CT), USA (December 2008)
International Conference on New Economic Geography, Universität Passau, Germany (December 2008)
CEPR Conference of "Transnationality of Migrants", Marie Curie Research Training Network, Louvain-la-Neuve, Belgium (January 2009)
7th EUDN (European Development Research Network) PhD Workshop in Development Economics, Oxford, United Kingdom (March 2009)

CSAE (Center for the Study of African Economies) Conference 2009 – Economic Development in Africa, St Catherine College, Oxford, United Kingdom (March 2009)

TANJA MLINAR

8th Workshop on Logistic and Supply Chain Management, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (November 2008)

9th Workshop on Logistic and Supply Chain Management, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (April 2009)

JUAN D. MORENO TERNERO

4th Workshop on Social Decisions, Universidad de Malaga, Spain (member of the organizing committee) (November 2008)

Workshop on Economic Theory, Copenhagen, Denmark (December 2008)

XXXIII Simposio de Analisis Economico, Zaragoza, Spain (December 2008)

European Society of Population Economics Meeting 2009, Seville, Spain (June 2009)

Society of Economic Design (SED), Conference on Economic Design, Universiteit Maastricht, The Netherlands (June 2009)

European Summer Meeting of the Econometric Society, Barcelona, Spain (August 2009)

GIORGIA OGGIONI

Research Workshop "Climate Policy and Long Term Decisions – Investment and R&D", Università Commerciale Luigi Bocconi, Milano, Italy (June 2009)

23rd European Conference on Operational Research (EURO), Bonn, Germany (July 2009)

Advanced Course on Optimization: Theory, Methods and Applications, Universitat Autònoma de Barcelona, Spain (July 2009)

DOMINIQUE PEETERS

2009 Spring National Conference of the Operations Research Society of Japan, Tsukuba, Japan (March 2009)

PIERRE PESTIEAU

IZA (Institute for the Study of Labor) Workshop: The Economics of Labor Income Taxation, Bonn, Germany (September 2008)

Health Economics Association Meeting, Paris, France (September 2008)

Forum Retraites, Bordeaux, France (November 2008)

Conference of the Hong Kong Economic Association, Chengdu, Hong Kong (December 2008)

NBER Network on Social Security and Retirement, Paris, France (March 2009)

IZA (Institute for the Study of Labor) Conference on Risky Behavior, Washington (DC), USA (March 2009)

CESifo Public Economics Workshop, München, Germany (April 2009)

Robin Boadway Conference, Queen's University, Kingston, Canada (May 2009)

NBER Network on Social Security and Retirement, Firenze, Italy (May 2009)
LAGV#8, Journées Louis-André Gérard-Varet #8-2009, Marseille, France (June 2009)

EVE RAMAEKERS

3rd Annual Workshop on Economic Design and Institutions, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (May 2008)
14th Coalition Theory Network Workshop, Universiteit Maastricht, The Netherlands (January 2009)
Society of Economic Design (SED), Conference on Economic Design, Universiteit Maastricht, The Netherlands (June 2009)

JOANA RESENDE

XXXIII Simposio de Analisis Economico, Zaragoza, Spain (December 2008)
7th Annual International Industrial Organization Conference, Boston (MA), USA (April 2009)
29th Jornadas de Economia de la Salud, Malaga, Spain (June 2009)
Workshop on Industrial Organization: Theory, Empirics and Experiments, Lecce, Italy (June 2009)
Conference of the Society for the Advancement of Economic Theory, Ischia, Italy (July 2009)
3rd Lindau Meeting of the Winners of the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel, Germany (August 2008)
23rd Annual Meeting of the European Economic Association, Università Commerciale Luigi Bocconi, Milano, Italy (August 2008)
63rd European Meeting of the Econometric Society, Università Commerciale Luigi Bocconi, Milano, Italy (August 2008)

PETER RICHTARIK

INFORMS Annual Meeting, Washington (DC), USA (October 2008)
DYSCO Study Day (IAP VI/4), Palais des Académies, Bruxelles, Belgium (November 2008)
Veszprem Optimization Conference: Advanced Algorithms (VOCAL 2008), Regional Center of the Hungarian Academy of Sciences, Veszprem, Hungary (December 2008)
MATFYZ Alumni Week, Comenius University, Bratislava, Slovakia (December 2008)
23rd Belgian Conference on Operations Research (ORBEL 2009), Leuven, Belgium (February 2009)
Algorithm 2009, High Tatra Mountains, Slovakia (March 2009)
15th Mathematical Programming Meeting, Han-sur-Lesse, Belgium (March 2009)

CARLO ROSA

Viessmann European Research Centres' Annual Conference, Wilfrid Laurier University, Waterloo, Ontario, Canada (April 2009)
New Challenges to Central Banking in the Global Financial System, Namur, Belgium (June 2009)
Asset Markets, Nominal Contracts, and Monetary Policy, Universität München, Germany (June 2009)
Far East and South Asia Meeting of the Econometric Society, Tokyo, Japan (August 2009)

MARIE EUGENIA SANIN

17th Annual Conference of the European Association of Environmental and Resource Economists, Amsterdam, The Netherlands (June 2009)
 24th Annual Congress of the European Economic Association, Barcelona, Spain (June 2009)

ERIK SCHOKKAERT

Workshop on Health Economics, CERSES, Paris, France (September 2008)
 Congrès National des Observatoires Régionaux de la Santé, Marseille, France (October 2008)
 Winter School on "Frontiers of Economic Inequality", Università di Verona in Canazei, Trento, Italy (January 2009)
 Workshop on Happiness and Welfare, CERSES, Paris, France (January 2009)
 Conference "New Developments in Welfare Economics", St Catherine College, Oxford, United Kingdom (June-July 2009)

YVES SMEERS

Research Workshop "Climate Policy and Long Term Decisions – Investment and R&D", Università Commerciale Luigi Bocconi, Milano, Italy (June 2009)
 20th International Symposium on Mathematical Programming, Chicago (IL), USA (August 2009)

ISABELLE THOMAS

Bivec-Gibet Transport Research Day, Bruxelles, Belgium (May 2009)
 1st Transatlantic NECTAR conference, Washington (DC), USA (June 2009)
 49th Congress of the European Regional Science Association, Lodz, Poland (August 2009)

ERIC TOULEMONDE

1st Workshop of the Regional Studies Network on Geographical Localization, Intersectoral Reallocation of Labour and Unemployment Differentials, University of Macedonia, Thessaloniki, Greece (October 2008)

HENRY TULKENS

MIT Global Change Forum, Rome, Italy (June 2009)
 Coalitions for Climate Cooperation. A Game-Theoretic Analysis of Post 2012 Climate Policy, Fondazione Giorgio Cini, San Giorgio Maggiore Island, Venice, Italy (June 2009)

HIROSHI UNO

The 5th Pan-Pacific Conference on Game Theory, University of Auckland, New Zealand (November 2008)
 The 5th Spain, Italy, Netherlands Meeting on Game Theory, Vrije Universiteit Amsterdam, The Netherlands (July 2009)

GIACOMO VALLETTA

II G.R.A.S.S. Workshop, Bologna, Italy (September 2008)
New Directions in Welfare. A conference for Economicists and Policy Makers. Oxford University, United Kingdom (June-July 2009)

DIRK VAN DE GAER

IRISS 10th Anniversary Workshop, Differdange, Luxembourg (October 2008)
Workshop "Conflicts and Development", Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium (March 2009)
Workshop "Questionnaire and Experiments in Equality of Opportunity", IDEP-GREQAM, Marseille, France (May 2009)
Grand Colloque de l'ADRES 2009: New Developments in Social Choice and Welfare Theories, A Tribute to Maurice Salles, Caen, France (June 2009)
10th Annual Meeting of the Association of Public Economic Theory, Galway, Ireland, (June 2009)
Conference on "Income and Earnings Dynamics", Maynooth, Ireland (July 2009)
64th European Meeting of the Econometric Society, Barcelona School of Economics, Spain (August 2009)

GRÉGORY VANDENBULCKE

Geographer's Day, 3rd Edition, Université Libre de Bruxelles, Belgium (October 2008)
Velocity Conference, Bruxelles, Belgium (May 2009)
Bivec-Gibet Transport Research Day, Bruxelles, Belgium (May 2009)
1st Transatlantic NECTAR conference, Washington (DC), USA (June 2009)
49th Congress of the European Regional Science Association, Lodz, Poland (August 2009)

JEAN-CHRISTOPHE VAN DEN SCHRIECK

POMS (Production and Operations Management Society) College of Service Operations Conference, Orlando (FL), USA (April 2009)
20th Annual POMS Conference, Orlando (FL), USA (May 2009)

HYLKE VANDENBUSSCHE

ETSG 2008 Warsaw – 10th Annual Conference, University of Warsaw and Warsaw School of Economics, Warszawa, Poland (September 2008)
Belgian Day of International Trade Economists, Chaire Jacquemin, UCL, Louvain-la-Neuve, Belgium (March 2009)

LAURENT VANMALDEREN

Débats du conseil "Quelle politique de mobilité pour Bruxelles?" (by Frédéric Dobruszkes), Bruxelles, Belgium (September 2008)

Conférence de Marie CASTAIGNE et Xavier PAULY "Les voitures de société : quels impacts sur la mobilité?", Centre Interuniversitaire d'Etude de la Mobilité, Bruxelles, Belgium (November 2008)

Mobility Day, Centre Interuniversitaire d'Etude de la Mobilité, Bruxelles, Belgium (February 2009)

PROMOCO (Professional Mobility and Company Car Ownership) Workshop, Bruxelles, Belgium (May 2009)

Bivec-Gibet Transport Research Day, Bruxelles, Belgium (May 2009)

VINCENT VANNETELBOSCH

GREQAM Summer School "The Economics of Knowledge: Innovation and Networks", Aix-en-Provence, France (October 2008)

3rd Workshop on Economic Design and Institutions, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (member of the organizing committee) (December 2008)

DIME (Dynamics of Institutions & Markets in Europe) International Conference "Innovation, sustainability and policy", Université Montesquieu Bordeaux IV, France (June 2009)

Society of Economic Design (SED), Conference on Economic Design, Universiteit Maastricht, The Netherlands (June 2009)

9th Annual Conference of the Association of Public Economic Theory, Galway, Ireland (member of the Program Committee) (June 2009)

20th Stony Brook Summer Institute on Game Theory: The International Conference, Stony Brook University, Stony Brook (NY), USA, July 2009.

WOUTER VERGOTE

3rd Workshop on Economic Design and Institutions, Facultés Universitaires Saint-Louis, Bruxelles, Belgium (member of the organizing committee) (December 2008)

9th Annual Conference of the Association of Public Economic Theory, Galway, Ireland (June 2009)

XAVIER WAUTHY

Annual Conference of the European Association for Research in Industrial Economics, Toulouse, France (September 2008)

YING WEI

INFORMS Annual Meeting, Washington (DC), USA (October 2008)

6th CEMS Research Seminar on Supply Chain Management, Riezlern, Austria (February 2009)

15th Mathematical Programming Meeting, Han-sur-Lesse, Belgium (March 2009)

23rd European Conference on Operational Research, Bonn, Germany (July 2009)

LAURENCE WOLSEY

Workshop on Combinatorial Optimization, Bonn, Germany (November 2008)

ORBEL'09, 23rd Belgian Conference on Operations Research, Katholieke Universiteit Leuven, Belgium (February 2009)

5th Polyhedra and Combinatorial Optimization Workshop: "Pretty Structure, Existential Polytime and Polyhedral Combinatorics" (celebrating Jack Edmonds 75th birthday), Institut Henri Poincaré, Université Pierre et Marie Curie, Paris, France (April 2009)

FOCAPO 2008 – Foundations of Computer-Aided Process Operations, Cambridge (MA), USA (June – July 2008)

STÉPHANE ZUBER

9th Annual Conference of the Association of Public Economic Theory, Galway, Ireland (June 2009)

17th Annual Conference of the European Association of Environmental and Resource Economists (EAERE), Vrije Universiteit Amsterdam, The Netherlands (June 2009)

STATISTICAL APPENDIX

PEOPLE

■ YEARLY AVERAGES PER 10 YEAR PERIOD

Period	Professors	Assistants Ph.D. students Researchers	Long- and short- term visitors	Administration
1966-1975	14	15	26	4
1976-1985	20	29	45	6
1986-1995	26	40	56	8
1996-2005	32	43	84	10

■ RECENTLY EARLY NUMBERS

2005-2006	40	53	91	9
2006-2007	38	47	119	12
2007-2008	36	54	73	15
2008-2009	38	57	96	14

SCIENTIFIC ACTIVITIES

■ YEARLY AVERAGES PER 10 YEAR PERIOD

Period						Seminars				
	Discussion Papers	Books	Published papers	Editorial activities	Theses	Economics	Econometrics	Operations Research	Conferences	Yearly contracts
1966-1975	32	1	24	0	2	26	15	17	0	4
1976-1985	47	1	53	11	2	48	22	24	2	6
1986-1995	62	5	69	30	5	79	25	26	4	13
1996-2005	78	4	105	46	7	94	22	21	5	15

RECENTLY YEARLY NUMBERS

Period	Discussion Papers	Books	Published papers	Editorial activities	Theses	Seminars			Conferences	Yearly contracts
						Economics	Econometrics	Operations Research		
2005-2006	118	8	129	45	9	81	30	20	10	12
2006-2007	115	6	133	64	12	79	32	27	7	16
2007-2008	82	1	133	60	8	83	28	19	4	27
2008-2009	84	5	128	68	7	80	35	24	6	38

▪ **TOTAL OF THE 42 YEARS**

1966-2008	2511	124	3919	1113	194	2768	983	953	138	457
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All details can be found on the CORE webpage.