

# Centre for Experimental Economics (CEE)

Annual Report  
2007

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Department of Economics,

University of Copenhagen

Stu-di-stræ-de 6

DK-1455 Copenhagen K

Denmark

Web: <http://www.econ.ku.dk/CEE/>

Subdivisions

Laboratory facilities (LEE):

St. Kannikestræde 13 (2nd Floor)

DK-1455 Copenhagen K

Denmark

Web: <http://www.econ.ku.dk/LEE/>

Internet Laboratory for Experimental Economics (iLEE)

Web: <http://www.econ.ku.dk/iLEE/Default.htm>

## Foreword

Ongoing research and teaching in experimental economics has had a short history in Denmark. It started in 2004, when the Department of Economics at the University of Copenhagen decided to hire a Swiss economist. Since 2006, experimenters have organized their activities under the label Laboratory for Experimental Economics (LEE). LEE has been able to produce solid research and teaching, also because the Department provided state-of-the-art laboratory facilities at St. Kannikestræde 13 in 2006, and because additional external funding and manpower was made available. Experimental economics has been prospering with the continued support by the Department and the Faculty of Social Sciences and with the enthusiasm of dedicated students, staff, visitors, affiliates and academic collaborators.

Today, experimental economics has secured itself a firm place at the University of Copenhagen. About a dozen academic collaborators and students have run experiments with more than two thousand participants in 2007, and workshops and numerous visitors have contributed to an active and stimulating research atmosphere.

In the future, we plan to further expand our activities in the laboratory but also to broaden the scope of experimental research by running experiments over the internet and “in the field”. We have been able to secure funding of about Dkr. 10 mio. for our research over the next three years. This funding enables us to start a new initiative, the internet Laboratory for Experimental Economics (iLEE), which serves to run unprecedented large-scale experiments with participants from all walks of life over the internet. We are excited about the new opportunities iLEE provides for our research and we believe that iLEE constitutes an important next step in experimental research. To mark this expansion in scope and scale, we have chosen a new name for our organization from 2008 on, the Centre for Experimental Economics (CEE).

Jean-Robert Tyran

Director of CEE

## Executive Summary

### *Purpose of the Centre and its sub-entities*

The Centre for Experimental Economics (CEE) provides infrastructure for conducting experimental research at the University of Copenhagen (KU) and is a forum for discussion and exchange of ideas. Members of CEE are mainly involved in basic research, and CEE aims at being the leading institution for research in experimental economics in Scandinavia.

The primary focus of CEE is to investigate the relevance of bounded rationality and social preferences in the economy, society and the state. In addition, CEE contributes to research and teaching in other branches of experimental economics and to the development of experimental methods and behavioral economic theory.

Experiments are an important tool of research in economics. Experiments can in principle be run in a laboratory, over the internet or elsewhere (“in the field”). The three types of experiments have different strengths and limitations, and they often complement each other. The Centre has two research infrastructures to facilitate these types of experiments.

The Laboratory for Experimental Economics (LEE) is a state-of-the-art laboratory devoted to research and teaching in experimental economics. The laboratory facilities consist of 2 servers, 29 clients, and several workstations for researchers and students. The LEE is currently located at St. Kannikestræde 13 but may move to a new location in 2008.

The internet Laboratory for Experimental Economics (iLEE) is a novel internet-based platform for running large-scale experiments. The iLEE is generously funded by the Carlsberg Foundation for a period of 3 years and developing iLEE will be a main focus of attention during this period.

## ***Research and Publications***

Research topics studied included

- Provision of public goods and determinants of voluntary cooperation
- Trust and reputation mechanisms in markets with incomplete contracts
- Effects of money illusion in markets
- Determinants of speculative bubbles in asset markets
- Discrimination in labor markets

This research has resulted in a total of 8 publications in academic journals such as *Science*, *Games and Economic Behavior* and *Economics Letters* in 2007. Members of CEE have published 6 working papers, and ongoing research has been presented in several conferences and about a dozen seminars at Universities abroad over the past year.

## ***Workshops, visitors and international networking***

CEE has hosted a specialized workshop with a focus on ongoing research in May 2007, and an international workshop on “Behavioral Public Economics” with international top-researchers in October 2007. Both events have been organized for the third time, and because they have proven to be a great success, CEE plans to continue these workshops in the future.

To strengthen its international research network, CEE is striving to maintain an active visitor program. External funding provided by the Velux Foundation allowed us to host Charles Noussair (Emory University) and David Reiley (University of Arizona). More than 10 researchers were hosted for research seminars in 2007.

## ***Teaching***

The laboratory facilities also serve teaching purposes. CEE has promoted the integration of experimental economics into the curriculum of undergraduate studies by running two teaching experiments with approx. 250 first-year students each. In addition, numerous

demonstration experiments were conducted for students in the MA course on Behavioral and Experimental Economics, and MA students were given the opportunity to develop and run their own experiments in a seminar (Øvelse). Eight students have been working on their MA theses (of which 4 were completed) and 6 students have been working on their PhD theses in 2007.

### ***Dissemination of knowledge to society***

Members of CEE have contributed to a policy debate, gave 3 interviews and gave 2 lectures for the general public. CEE members continued advising Nosco, a spin-off company initiated by two former students. The company uses experimental markets to predict a broad range of future events.

### ***Administration***

CEE is mainly self-administrated by academics, with support from part-time administrators (mainly Tine Ceccardi). Dozens of research and teaching experiments in more than 100 sessions have successfully been run with over 2000 participants in 2007. These experiments were run, and the general laboratory infrastructure was maintained, by academics and a handful of undergraduate students who help us occasionally and who are employed by the hour. We plan to employ additional manpower dedicated to administration.

### ***Outlook***

CEE aspires to be the leading center for Behavioral and Experimental Economics in Scandinavia, and to be among the leading institutions for this type of research in Europe.

## Contents

Organization and Staff	7
Publications and dissemination of research in 2007	11
Report of activities of LEE	18
Report of activities of iLEE	20

## Organization and Staff

CEE thanks all collaborators for their efforts in running the laboratory facilities and enabling (and conducting) experimental research.

Mads Harmsen joined us from Aarhus University in September 2006 to manage our laboratory activities. He replaced Ernesto Reuben who has left us to accept a position at Northwestern University. After having obtained his PhD, Mads accepted a position as a researcher at the Danish National Bank in summer 2007. Mads continues his collaboration with us as a research affiliate of CEE.

In August 2007, two key collaborators have joined CEE as assistant research professors. Marco Piovesan joined us from the University of Padua and is responsible for the operational management of our laboratory experiments and facilities. Erik Wengström joined us from the University of Lund and is responsible for the operational management of the internet platform iLEE.

Administrative support came mostly from our secretary Tine Ceccardi, and from numerous student assistants who are paid by the hour helped us occasionally on demand.

Numerous MA and PhD students have joined CEE, and others have successfully completed their degrees in 2007 (see below). They all contributed to the effective functioning of CEE and to a vibrant academic atmosphere.

### Academic director of CEE

Jean-Robert Tyran

### Management

Marco Piovesan (LEE)

Erik Wengström (iLEE)

### Administrative staff

Secretarial staff: Tine Ceccardi

Technical support: Guang Yang (ORSEE administrator), Nikos Korfiatis (iLEE)

Student Assistants: Jonas Nordlund, Rasmus Nielsen, Joanna Kurcinska, Katja Bächtold, Melania Rudin, Anne Gladbo

## **PhD students**

### *Current PhD students*

Toke Fosgaard

Morten Hedegaard

Nikos Korfiatis (external, CBS)

Thomas Markussen

Julian Rauchdobler (external, U Innsbruck)

Frederik Øvlisen

### *PhD theses completed in 2007*

Mads Harmsen (external, U Aarhus)

Wolfgang Höchtl (external, U Innsbruck)

## **Master students**

### *Current Master students:*

Rasmus Abel Aagaard

Helene Bohn-Jespersen

Oliver B. Pedersen

Ian Delgado Rusu

### *MA theses completed in 2007:*

Toke Fosgaard (May)

Karen Winnie Larsen (September)

Lars Markan Reenberg (December)

Michael Rudy Schröder (December)

## **Research affiliates**

CEE has started to appoint research affiliates in 2007 to facilitate interaction with researchers with affiliations outside Copenhagen University. Affiliates are appointed for the duration of 1 year and are entitled to use our research infrastructure (e.g. the laboratory and office space) with high priority according to availability.

### *Affiliates in 2007*

Steffen Andersen (Copenhagen Business School)

Dirk Engelmann (University of London)

Mads Harmsen (Danish National Bank)

Nikos Korfiatis (Copenhagen Business School)

Rupert Sausgruber (University of Innsbruck)

Brian Wood (Harvard University)

## **Visitors**

### *Short-term visitors*

Peter Bossaerts (California Institute of Technology, October 29)

Rebecca Morton (New York University, October 4-5)

Marie-Claire Villeval (CNRS and University of Lyon, September 24)

David Reiley (University of Arizona, September 17/18, 24-26, 28/29)

Dirk Engelmann (University of London, September 5-18)

Lise Vesterlund (University of Pittsburgh, August 7-8)

Gary Bolton (Pennsylvania State University, August 4-8)

Georg Weizsäcker (London School of Economics, April 30)

Gabriele Ruchala (University College, London, April 10-27)

Anna Breman (Stockholm School of Economics, February 20)

Daniel Schunk (University of Mannheim, February 2)

*Long-term visitors (1 month or more)*

Chaxia Ke (University of Adelaide, March 26 - May 7)

Wolfgang Höchtl (University of Innsbruck, March 11 - July 7)

Charles Noussair (Emory University, March 5 - June 23)

### **Workshops organized by CEE**

The 3rd LEE day was held on May 23. The conference serves to present and discuss ongoing research at CEE to members of CEE and selected external researchers.

The 3rd Workshop on Behavioral Public Economics was held on Oct. 18/19 at the University of Innsbruck. The workshop gathered international top-researchers in the field and provided a platform for networking and inspiring discussions.

## Publications and dissemination of research in 2007

Jean-Robert Tyran

### Working Papers

"Pricing and Trust", with Huck, S. and Ruchala, G. January 2007. Working paper 07-04, Department of Economics, University of Copenhagen and CEPR working paper no. 6135.

**Abstract:** We experimentally examine the effects of flexible and fixed prices in markets for experience goods in which demand is driven by trust. With flexible prices, we observe low prices and high quality in competitive (oligopolistic) markets, and high prices coupled with low quality in non-competitive (monopolistic) markets. We then introduce a regulated intermediate price above the oligopoly price and below the monopoly price. The effect in monopolies is more or less in line with standard intuition. As price falls volume increases and so does quality, such that overall efficiency is raised by 50%. However, quite in contrast to standard intuition, we also observe an efficiency rise in response to regulation in oligopolies. Both, transaction volume and traded quality are, in fact, maximal in regulated oligopolies.

"Limited Rationality and Strategic Interaction. The Impact of the Strategic Environment on Nominal Inertia", with Fehr, E. CAMA Working Paper 26/2007, Australian National University.

**Abstract:** Much evidence suggests that people are heterogeneous with regard to their abilities to make rational, forward-looking decisions. This raises the question as to when the rational types are decisive for aggregate outcomes and when the boundedly rational types shape aggregate results. We examine this question in the context of a long-standing and important economic problem: the adjustment of nominal prices after an anticipated monetary shock. Our experiments suggest that two types of bounded rationality – money illusion and anchoring – are important behavioral forces behind nominal inertia. However, depending on the strategic environment, bounded rationality has vastly different effects on aggregate price adjustment. If agents' actions are strategic substitutes, adjustment to the new equilibrium is extremely quick, whereas under strategic complementarity, adjustment is both very slow and associated with relatively large real effects. This adjustment difference is driven by price expectations, which are very flexible and forward-looking under substitutability but adaptive and sticky under complementarity. Moreover, subjects' expectations are also considerably more rational under substitutability.

"Consumer Networks and Firm Reputation" with Huck, S. and Lünser, G. October 2007. Working paper 07-28, Department of Economics, University of Copenhagen.

**Abstract:** Arguing that consumers are the carriers of firms' reputations, we examine the role of consumer networks for trust in markets that suffer from moral hazard. When consumers are embedded in a network, they can exchange information with their neighbours about their private experiences with different sellers. We find that such information exchange fosters firms' incentives for reputation building and, thus, enhances trust and efficiency in markets. This efficiency-enhancing effect is already achieved with a rather low level of network density.

### Publications

1. "Money Illusion and the Market", *Science*, 2007, 317: 1042-3.
2. "Pure Redistribution and the Provision of Public Goods", with Sausgruber, R. *Economics Letters*, 2007, 95: 334-8.
3. "Money Illusion and Coordination Failure", with Fehr, E. *Games and Economic Behavior*, 2007, 58(2): 246-68.
4. "Reciprocity, Social Ties, and Competition in Markets for Experience Goods", with Huck, S. *Journal of Socio-Economics*, 2007, 36(2): 191-203.
5. "Preference, Belief, and Similarity: Selected Writings Amos Tversky" by E. Shafir (ed., 2004, MIT Press), *Journal of Socio-Economics* 2007, 36(4): 675-6.
6. "Can Markets be Trusted?", with Huck, S. *Policy Insight* No. 6, July 2007, Centre for Economic Policy Research (CEPR), London.
7. "Coordination Failure", in: W. A. Darity (ed.), *International Encyclopedia of the Social Sciences*, Vol. II, pp. 127-128. 2nd ed. Macmillan, 2007.

### Presentations

*Research seminars:* University of Aarhus, University of Heidelberg, University of Paris 1, DELTA (Ecole Normale Supérieure, Paris),

*Keynote lectures:* Nordic Conference on Behavioral and Experimental Economics (Göteborg, 2007)

*Workshops and Conferences:*

Social and Moral Norms in Intentional Action (Oslo), Laboratory Economics and the Field (London), Experimental Methods in the Social Sciences (Sciences Po, Paris), Arne Ryde Symposium (Lund), Economic Science Association (Rome)

*Presentations for the general public: “Stupidity” (Vallekilde Højskole), “Experimental Economics” (Biocampus lecture, University of Copenhagen)*

### **In the media**

- Sydsvenskan: Reporting on my work on money illusion, 28.8.07
- Deutschlandfunk: Interview on money illusion, 24.8.07
- 24 timer: Interview on risk perception, 12.1.07

### **Other activities**

Visiting professor, January 2007, Université Paris I, Sorbonne

### **Refereeing for**

*American Economic Review, Applied Psychology, European Journal of Political Economy, Experimental Economics, Judgment and Decision Making, Journal of the European Economic Association, Journal of Public Economics*

### **Appointments and services to the profession**

German Wissenschaftsrat, “Excellence initiative”, Member of Evaluation Group

CAMA (Centre for Applied Macroeconomic Analysis, Australian National University),  
Research fellow

European Journal of Political Economy, Editorial Board

Judgment and Decision Making, Editorial Board

University of Paris 1, Committee member for award of “habilitation à diriger des recherches”

**Marco Piovesan**

### **Working Papers**

"An Experiment on Markets and Contracts: Do Social Preferences Determine Corporate Culture?", with Antonio Cabrales, Raffaele Miniaci and Giovanni Ponti, Universidad Carlos III, Departamento de Economía, Economics Working Papers No.we072010.

**Abstract:** This paper reports experimental evidence on a stylized labor market. The experiment is designed as a sequence of three phases. In the first two phases, P1 and P2; agents face simple games, which we use to estimate subjects' social and reciprocity concerns, together with their beliefs. In the last phase, P3; four principals, who face four teams of two agents, compete by offering agents a contract from a fixed menu. Then, each agent selects one of the available contracts (i.e. he "chooses to work" for a principal). Production is determined by the outcome of a simple effort game induced by the chosen contract. We find that (heterogeneous) social preferences are significant determinants of choices in all phases of the experiment. Since the available contracts display a trade-off between fairness and strategic uncertainty, we observe that the latter is a much stronger determinant of choices, for both principals and agents. Finally, we also see that social preferences explain, to a large extent, matching between principals and agents, since agents display a marked propensity to work for principals with similar social preferences.

### **Presentations**

December 12, 2007, Granada, Spain. Alhambra Experimental Workshop.

November 16-17, 2007, Göteborg, Sweden. Second Nordic Workshop.

November 1-3, 2007, Padua, Italy. Conference, ASSET.

June 4-7, 2007. Louvain-la-Neuve, Belgium. Summer School, CORE.

June 8-9, 2007. Forli, Italy. Civil Economy: Young Economists' Contribution.

May 31, 2007. Copenhagen, Denmark. LEE Seminar.

February 22-24, 2007. Verbania, Italy. Conference on "Reciprocity: Theories and Facts."

### **Participation at conferences and workshops**

3rd Workshop on Behavioral Public Economics (Oct. 18/19)

26th Arne Ryde Symposium, "Communication in Games and Experiments", Lund, 23-25 August, 2007

**Erik Wengström**

### **Working Papers**

"Communication and Renegotiation in Two-stage Games", with Ola Andersson, Lund University, Department of Economics Working Paper Series No 2007:4.

**Abstract:** In this paper we experimentally investigate cooperation and non-binding communication in a two-stage game. The game has a subgame perfect equilibrium where subjects can sustain cooperation in the first stage by threatening to punish deviant behavior in the second stage. In contrast, renegotiation-proofness rules out cooperation in the first stage when intra-play communication is possible. Our results provide some support for this argument. We observe less cooperation in the first stage when intra-play communication is possible. Moreover, pre-play communication only has a significant impact on actions when intra-play communication is not allowed. The experimental design also enables us to perform an in-depth analysis of communication.

"Setting the Anchor: Price Competition, Level-n Theory and Communication", Lund University, Department of Economics Working Paper Series No 2007:6.

**Abstract:** This paper analyzes communication from the viewpoint of the level-n theory of bounded rationality. It examines if communication can be understood by the effect it has on high-level types' beliefs about the actions of simpleminded level-0 players. We present experimental evidence from a slightly perturbed price competition game designed to test this interpretation. The main finding is that communication affects subjects in a way that seems compatible with the level-n model, indicating that people lie in order to fool other players that they believe do less thinking. Moreover, the results indicate that the predictive power of the level-n model does crucially depend on the possibility for high level players to form homogenous beliefs about the behavior of the level-0 players.

### **Publications**

1. "Do Antitrust Laws Facilitate Collusion: Experimental Evidence on Costly Communication in Duopolies", with Ola Andersson, *The Scandinavian Journal of Economics*, 2007, Vol 109(2): 321-39.
2. "A Note on Renegotiation in Repeated Bertrand Duopolies", with Ola Andersson, *Economics Letters*, 2007, 95(3): pp 398-401.

### **Presentations**

The Second Nordic Workshop in Behavioral and Experimental Economics Göteborg, Sweden, 2007

### **Participation at conferences and workshop**

3rd Workshop on Behavioral Public Economics (Oct. 18/19)

26th Arne Ryde Symposium, “Communication in Games and Experiments”, Lund, 23-25 August, 2007

3rd LEE day, Copenhagen Working Papers

### **Frederik Roose Øvlisen**

#### **Presentations**

3<sup>rd</sup> LEE Day at University of Copenhagen, May 23.

”Determinants of Disequilibrium”

EDGE 2007 Jamboree in Cambridge, from September 7 to September 9 “Determinants of Disequilibrium”

Theory Workshop (organized by prof. Schmidt, Rady and Rees) at LMU, Munich (Oct 15). “Determinants of Disequilibrium”

Brown Bag Lunch Seminar at the University of Innsbruck (November 22.) “Determinants of Disequilibrium”

### **Participation at conferences and workshop**

Barcelona LeeX Experimental Economic Summer School (BLEESS) in Macroeconomics from June 18 to June 22.

Verein der Socialpolitik, Annual Conference of the German Economic Association 2007 in Munich from October 9 to October 12.

3rd Workshop in Behavioral Public Economics in Innsbruck, from October 18 to October 21.

### **Other activities**

Currently at Ludwig-Maximilians-Universität München

### **Toke Fosgaard**

#### **Presentation**

Seminar at University of Pittsburgh on Public good provision and markets, December

Seminar at University of Copenhagen (for the CEE group) on Market competition and public goods, November

#### **Participation to conferences and workshop**

DGPE Annual Workshop, University of Aarhus, November

The Second Nordic Workshop in Behavioral and Experimental Economics Göteborg, Sweden, 2007, November

## LEE - Report of activities

The past year has been a busy year for LEE. We were able to provide effective services in teaching at the BA and MA levels, and faculty and students have run numerous research experiments.

The upkeep of an effective laboratory infrastructure involves the organization and coordination of complex scientific and practical activities: a research plan must be developed, a schedule for series of experiments needs to be planned and users coordinated, experimental software needs to be programmed and tested, subjects must be recruited and the database with their participation record updated, bookkeeping and cash management has to be done with care, the data needs to be properly stored, etc. Marco Piovesan joined the team in summer 2007 and effectively managed the operations of LEE with the support of several research assistants and students, and, most importantly, our administrator Tine Ceccardi.

### *Teaching*

In Spring and Fall 2007, 2 series of teaching experiments in each term were run with all beginning students (approx. 50 in Spring and 250 in Fall). In particular, students participated in a market experiment (without financial incentives) and a public good experiment (with financial incentives). These experiments were developed in collaboration with Claus T. Kreiner who taught the class. CEE provided materials to discuss the results of the experiments in class.

In Fall, we run 3 series of experiments with the Master students (approx. 30) of the course in Experimental and Behavioral Economics (taught by JRT).

### *Research experiments*

Research in experimental economics is by its nature highly collaborative. In 2007 we worked in several projects (all projects with collaboration or supervision of JRT):

- Guessing Game (Frederik Øvlisen)
- Cooperation and Voting on Competition (Ernesto Reuben)
- Democracy and redistribution (Mads Harmsen)
- Near-rationality (Hansa Reda)

- Abstention and voting (Michael Rudy Schröder & Lars Markan Reenberg)
- Information and efficiency in asset markets (Ian Rusu, Rasmus Aagaard)
- Market for credence goods (Gabi Ruchala)
- Voting and externalities (Line Nielsen)
- Inflation perception (Rejaul Bakshi and Baris Urhan)
- Voting and tax efficiency in public goods (Helene Bohn-Jespersen)
- Indirect reciprocity (Dirk Engelmann and Urs Fischbacher)
- Credence goods (Gabriele Ruchala and Steffen Huck)
- Choosing presidents (Thomas Markussen)
- Public goods and the market (Toke Fosgaard and Rupert Sausgruber)
- Discrimination in the labor markets (Morten Hedegaard)

## **iLEE - Report of activities**

Work on the internet platform iLEE has started in June 2007 when funding by the Carlsberg Foundation became available. Erik Wengström has been appointed in August as project manager for iLEE. Toke Fosgaard has been hired, jointly with AKF, as a PhD student dedicated to the project.

We have developed a conceptual framework and the experimental design for the first wave of experiments over the fall and winter. Initial steps have been taken to develop the technical side of the platform. Nikos Korfiatis has joined the group and has provided invaluable input on the IT architecture and has done most of the necessary programming.

In the meantime, ten enthusiastic students have joined the group to do work for their term papers or master theses. The group collaborated effectively under the leadership of Erik Wengström, and by the end of the year, the barebones of the platform were established: A new server and a “wiki” to coordinate activities is up and running, the mailing with several thousand letters is prepared, and most of the administrative and legal issues relating to bookkeeping, electronic payments, data storage, matching of data, copyrights and many more are resolved.

We are therefore confident to launch the first wave of experiments on “socio-economic determinants of cooperation” in spring 2008, as planned.