**Tilman Börgers** Curriculum Vitae February 9, 2017

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### Education

Habilitation, Universität Basel, 1993

PhD in Economics, London School of Economics, 1987

Diplom Volkswirt, Universität Köln, 1983

### Employment

Samuel Zell Professor of the Economics of Risk, University of Michigan (since 2005)

Professor of Economics, University College London, 1996 - 2005

Reader in Economics, University College London, 1993 - 1996

Lecturer in Economics, University College London, 1991 - 1993

Assistent, Universität Basel, 1987 – 1991

#### **Administrative Service (Selected)**

Member of the Executive Committee, Economics Department, University of Michigan, 2005 - 2007

Director, Centre for Economic Learning and Social Evolution, Departments of Economics, Psychology and Mathematics, University College London, 2002 - 2005

Acting Director, Centre for Economic Learning and Social Evolution, Departments of Economics, Psychology and Mathematics, University College London, 2001 - 2002

## **Editorial Service**

Review of Economic Design (editor in chief since 2015, associate editor 2012 - 2015)

*Journal of Economic Theory* (associate editor since 2015)

Journal of Economic Literature (board of editors since 2013)

The B.E. Journals in Theoretical Economics (editorial board member 2004 - 2011)

*Games and Economic Behavior* (editorial board member 2004 - 2011)

Mathematical Social Sciences (editorial board member 1998 - 2003)

Ricerche Economiche (editorial board member 1996 - 2001)

*Review of Economic Studies* (managing editor 1994 - 1995, assistant editor 1992 - 1994, editorial board member 1995 - 2001)

### **Professional Service**

Elected Member, Council of the Game Theory Society (since 2015)

Programme Chair or Co-Chair, Midwest Economic Theory Meetings, Fall 2007 and Fall 2013.

Member, Programme Committee, World Congress of the Econometric Society, 2005.

Member, Programme Committee, European Meeting of the Econometric Society, 1996, 1997, 1998, 2001, and 2002.

Member, Programme Committee, Annual Meeting of the European Economic Association, 2001.

Co-organizer (with Ben Newell and Peter Todd), workshop on "Exploring the Boundaries of Rationality", jointly organized by the Centre for Economic Learning and Social Evolution (London) and the Centre for Adaptive Behaviour and Cognition (Berlin), June 2003.

Co-organizer, ESRC Research Seminars in Game Theory, 2003 - 2005 (with V. Bhaskar and Bhaskar Dutta). Funded by ESRC Conference Grant RES 451 260010 (£15,563).

Co-organizer, ESRC Research Seminars in Game Theory, 1997 - 2000 (with Murali Agastya and Martin Cripps). Funded by ESRC Conference Grants R451 26448496 (£13,940) and R451 26477098 (£12,546).

## Honors

Economic Theory Fellow since 2011

Michigan Economics Society's Outstanding Professor, Fall 2010

Prize for the best paper in the *Economic Journal* in 2005 (for: "Strange Bids: Bidding Behaviour in the United Kingdom's Third Generation Spectrum Auction", joint with Christian Dustmann).

## Grants

National Science Foundation, 2007 - 014 (ca. \$ 3000,000, IGERT grant for: Incentive-Centered Design For Information And Communication Systems, PI: Yan Chen, co-PIs: Tilman Borgers, Daniel Grosu, Jeffrey MacKie-Mason, and Michael Wellman)

National Science Foundation (\$10,392, for experimental research conducted by Doug Smith and Mary Rigdon)

Economic and Social Research Council, 2005-2010 (ca. £ 2,900,000, joint with Mark Armstrong, Celia Heyes, Steffen Huck, David Shanks, and Rob Seymour, for an interdisciplinary research centre on economic learning and social evolution)

Economic and Social Research Council, 2003 - 2006 (£ 148,876, joint with Steffen Huck and Hide Ichimura, for research on quantitative methods for behavioural mechanism design)

Economic and Social Research Council, 1994-1996 (£ 24,240 UK Pounds, for research on learning processes in game theory)

Schweizerischer Nationalfonds, 1990 - 1991 (for a visit to the University of California at San Diego)

Studienstiftung des deutschen Volkes, 1985 - 1987 (for graduate studies)

Deutscher Akademischer Austauschdienst, 1984 - 1985 (for graduate studies)

Cusanuswerk, 1979-1983 (for undergraduate studies)

#### **Recent and Forthcoming Seminar Presentations**

Singapore Management University, February 2017. National University of Singapore, February 2017. Duke University, November 2015; University of Guelph, November 2015; University of Zürich, October 2015; University of Bielefeld, July 2015; Virginia Tech, May 2015; Université de Montreal, March 2015; University of Pittsburgh and Carnegie Mellon University (joint seminar), March 2015; National University of Singapore, February 2015.

### **Recent and Forthcoming Conference Presentations**

Workshop on Mechanism Design, NYU Abu Dhabi, December 2016. World Congress of the Game Theory Society, Maastricht, July 2016. International Conference on Microeconomic Theory, Peking University, June 2016; Midwest Economic Theory Conference, University of Rochester, April 2016; Symposium on the Analysis of Revealed Preferences, University of St Andrews, March 2016; Society for Economic Design, Istanbul, July 2015; Society for the Advancement of Economic Theory, Cambridge (UK), July 2015

#### Teaching at the University of Michigan

Undergraduate:

- 1. Econ 401 Intermediate Microeconomic Theory (Fall 2009, Winter 2009, Winter 2011, Winter 2012, Winter 2013, Fall 2014, Winter 2016)
- 2. Econ 403 Advanced Economic Theory (Winter 2006, Winter 2007, Winter 2008)
- 3. Econ 495 Seminar in Economics (Fall 2015)

Graduate:

- 1. Econ 600 Mathematics for Economists (Fall 2013, Fall 2016)
- 2. Econ 602 Game Theory (Fall 2005, Fall 2006, Fall 2007, Fall 2008)
- 3. Econ 603 General Equilibrium Theory (Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016)
- 4. Econ 617 Advanced Game Theory (Fall 2006, Fall 2007, Fall 2010, Fall 2011, Fall 2012)
- 5. Econ 619/20 Advanced Theory (Winter 2006, Winter 2009, Winter 2011, Winter 2013, Winter 2015, Winter 2017)

#### **Recent External Teaching**

Graduate course in economic theory, Humboldt University Berlin, July 2015

### PhD Students for whom I serve or have served as committee chair or co-chair

- 1. Taejun Oh, Essays on Game Theory, 2016
- 2. Qinggong Wu, 2016 (co-chair with Stephan Lauermann).
- 3. Yan-Min Choo, *Two Essays on Divorce and one Essay on Utilitarianism*, 2015 (co-chair with Martha Bailey).
- 4. Bartley Tablante, Learning and Beliefs in Non-Centralized Markets, 2015, now consulting.
- 5. Josh Cherry, 2011 (co-chair with Lones Smith), now at Kellogg Graduate School.
- 6. Doug Smith, Robust Mechanism Design, 2011, now at the Federal Trade Commission.
- 7. Katalin Bognar, Essays on Costly Voting, 2008, now in private consulting.
- 8. Martin Bøg, Endogenous Social Interactions, 2006, now at Erasmus University Rotterdam.
- 9. Pedro Rey, *Psychology, Economics and Incentives, 2005,* now at Universitat Autonoma de Barcelona (co-chair with Steffen Huck).
- 10. Peter Postl, *Mechanism Design for Information Acquisition*, 2004, now at the University of Bath.
- 11. Angel Hernando, *Essays on Auction Theory*, 2000, now at the University of Carlos III, Madrid.
- 12. Antonio Morales, *Learning, Imitation, and Economic Rationality*, 1999, now at the University of Malaga.
- 13. Nir Vulkan, *Uncertainty, Information Acquisition, and Economic Equilibria,* 1996, now at the Said Business School (Oxford), (co-chair with Ken Binmore).
- 14. Antonella Ianni, *Interaction Patterns, Learning Processes, and Equilibria in Population Games,* 1996, now at the University of Southampton.

## Book

An Introduction to the Theory of Mechanism Design, (with a chapter by Daniel Krähmer and Roland Strausz), Oxford University Press, 2015.

## **Journal Articles**

- 1. Optimal Voting Rules When Voting is Costly (with Katalin Bognar and Moritz Meyer-ter-Vehn), *Journal of Economic Theory*, 159 (2015), 1056-1073.
- 2. Robust Mechanism Design and Dominant Strategy Voting Rules (with Doug Smith), *Theoretical Economics* 9 (2014), 339-360.
- 3. Equilibrium Bids in Sponsored Search Auctions: Theory and Evidence (with Ingemar Cox, Martin Pesendorfer and Vaclav Petricek), *American Economic Journal, Microeconomics* 5 (2013), 163-187.
- 4. When are Signals Complements or Substitutes? (with Angel Hernando-Veciana and Daniel Krähmer), *Journal of Economic Theory*, 148 (2013), 165-195.
- 5. Robustly Ranking Mechanisms (with Doug Smith), American Economic Review (Papers and Proceedings) 102 (2012), 325-329.
- 6. Efficient Compromising (with Peter Postl), Journal of Economic Theory 144 (2009), 2057-2076.
- 7. A Note on Budget Balance under Interim Participation Constraints: The Case of Independent Types (with Peter Norman), *Economic Theory* 39 (2009), 477-489.
- 8. Information Invariant Equilibria of Extensive Games (with Timothy McQuade), *The B.E. Journal of Theoretical Economics (Contributions)*, Vol. 7 (2007), Article 42.
- 9. Strange Bids: Bidding Behaviour in the United Kingdom's Third Generation Spectrum Auction, *Economic Journal*, 115 (2005), 551-578 (with Christian Dustmann).
- 10. Costly Voting, American Economic Review 94 (2004), 57 66.
- 11. Expedient and Monotone Learning Rules, *Econometrica* 72 (2004), 383 405 (with Antonio Morales and Rajiv Sarin).
- 12. Awarding Telecom Licenses: The Recent European Experience, *Economic Policy* 36 (2003), 216-268 (with Christian Dustmann).
- Rationalizing the UMTS Spectrum Bids: The Case of the UK Auction, *Ifo Studien* 48 (2002), 77 - 109 (with Christian Dustmann). [Reprinted in: Gerhard Illing and Ulrich Klüh (editors), *Spectrum Auctions and Competition in Telecommunications*, Cambridge: MIT Press, 2003, 119 - 157.]
- The British UMTS Auction: A Response to Klemperer and Schmidt, *Ifo Studien* 48 (2002), 121 - 122 (with Christian Dustmann). ). [Reprinted in: Gerhard Illing and Ulrich Klüh (editors), *Spectrum Auctions and Competition in Telecommunications*, Cambridge: MIT Press, 2003, 171 - 172.]
- 15. Naïve Reinforcement Learning With Endogenous Aspirations, *International Economic Review* 41 (2000), 921 950 (with Rajiv Sarin).
- 16. Is Internet Voting a Good Thing?, *Journal of Institutional and Theoretical Economics* 156 (2000), 531-547.
- 17. Learning Through Reinforcement and Replicator Dynamics, *Journal of Economic Theory* 77 (1997), 1-14 (with Rajiv Sarin).
- 18. On the Relevance of Evolution and Learning to Economic Theory, *Economic Journal* 106 (1996), 1274 1385.
- 19. On the Dominance Solvability of Large Cournot Games, *Games and Economic Behavior* 8 (1995), 297 321 (with Maarten Janssen).

- 20. Weak Dominance and Approximate Common Knowledge, *Journal of Economic Theory* 64 (1994), 265 276.
- 21. Pure Strategy Dominance, *Econometrica* 61 (1993), 423 430.
- 22. 'Cautious' Utility Maximization and Iterated Weak Dominance, *International Journal* of Game Theory 21 (1992), 13 25 (with Larry Samuelson).
- 23. Iterated Elimination of Dominated Strategies in a Bertrand-Edgeworth Model, *Review* of Economic Studies 59 (1992), 163 176.
- 24. Undominated Strategies and Coordination in Normalform Games, *Social Choice and Welfare* 8 (1991), 65 78.
- 25. Upper Hemicontinuity of the Correspondence of Subgame-Perfect Equilibrium Outcomes, Journal of Mathematical Economics 20 (1991), 89–106.
- 26. Perfect Equilibrium Histories of Finite and Infinite Horizon Games, *Journal of Economic Theory* 47 (1989), 218–227.

#### **Contributions to Books:**

- 1. Complexity Constraints and Adaptive Learning: An Example, in: S. Huck (editor), *Advances in Understanding Strategic Behaviour: Game Theory, Experiments, and Bounded Rationality: Essays in Honour of Werner Güth*, Basingstoke: Palgrave, 2004 (with Antonio Morales).
- 2. Auction Theory for Auction Design, in: M. Janssen (editor), *Auctioning Public Assets*, Cambridge: Cambridge University Press, 2003, 19-63 (with Eric van Damme).
- The Design of Treasury Bond Auctions: Some Case Studies, in: M. Janssen (editor), *Auctioning Public Assets*, Cambridge: Cambridge University Press, 2003, 230-256 (with Joe Swierzbinski).
- 4. When Does Learning Lead to Nash Equilibrium?, in K. Inderfurth et al. (editors), *Operations Research Proceedings 1999*, Berlin etc.: Springer Verlag, 2000, 176-202.
- 5. Comments on Economics and Language, in: A. Rubinstein, *Economics and Language*, Cambridge: Cambridge University Press, 2000, 108 113.
- 6. Game Theory (Economic Applications), in: A. Kuper and J. Kuper (editors), The *Social Science Encyclopedia* (2<sup>nd</sup> edition), London: Routledge, 1996, p. 325. Revision forthcoming in the 3<sup>rd</sup> edition.
- A Note on Implementation and Strong Dominance, in: W. Barnett, H. Moulin, M. Salles and N. Schofield (editors), *Social Choice, Welfare and Ethics*, Cambridge: Cambridge University Press, 1995, 277 – 287.

#### Working Papers Available on My Website

- 1. A Counterexample to Dhillon (1998) (with Yan-Min Choo), current version: February 2017.
- 2. Revealed Relative Utilitarianism (with Yan-Min Choo), current version: June 2015.
- 3. (No) Foundations of Dominant-Strategy Mechanisms: A Comment on Chung and Ely (2007), current version: November 2013.
- 4. Common Prior Type Spaces in Which Payoff Types and Belief Types are Independent (with Taejun Oh), current version: August 2012.
- 5. Complexity Constraints in Two-Armed Bandit Problems: An Example (with Antonio Morales), 2004.
- 6. Putting Trembles into the Extensive Form, 1992.
- 7. Consistent Pairs in Extensive Games, 1992.
- 8. Robustness of Bertrand's Equilibrium in a General Model of Product Differentiation, 1988.
- 9. Bertrand Competition Without Demand Rationing, 1985.

## **Google Scholar**

Citations: 2130. H-index: 21.

# Consulting

I have acted as consultant on auctions to the Radiocommunications Agency (UK), the Office of Gas and Electricity Markets (UK), the Dutch Parliament, the Dutch Ministry of Economic Affairs, National Economic Research Associates, and, occasionally, to smaller commercial clients. All consulting has taken place earlier than 2010.