CURRICULUM VITAE Bernhard Ganglmair

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Education

University of Zurich, Switzerland, Ph.D, Economics, 2011 University of Linz, Austria, Magister (M.A. equivalent), Economics, 2004

Academic Positions

Assistant Professor of Managerial Economics, University of Texas at Dallas, 2010 – present Affiliated Faculty, Center and Laboratory for Behavioral Operations and Economics, UTD, 2012 – present

External Services

Associate Editor for Economic Inquiry, 2014 – present

Research interests

Industrial organization, innovation economics, contracts, law and economics, corporate finance

Publications

 "Conversation With Secrets," <u>RAND Journal of Economics</u>, 45(2), 2014 (Summer), pp. 273-302. (with Emanuele Tarantino) — Google Scholar Citations: 16

We model a collaborative process of innovation and give conditions under which agents choose to voluntarily reveal private information to ensure continuation of the collaboration when the other agent would otherwise leave. Applications in industry standard setting (with secret patents or patent applications) and joint ventures are discussed. *Keywords: asymmetric information; conversation; disclosure; joint ventures; patents; secrets; signaling; standard setting organizations*

 "Patent Hold Up and Antitrust: How a Well-Intentioned Rule Could Retard Innovation," Journal of Industrial Economics, 60(2), 2012 (June), pp. 249-273. (with Luke Froeb and Greg Werden) — Google Scholar Citations: 35

The (antitrust) enforcement of innovators' commitments (vis-à-vis other members of a standard setting organization) to license patents on reasonable and non-discriminatory (RAND) terms can harm their incentives to invest in R&D. We argue that optimal rules strike a balance between investment incentives of innovators and those of adopters of new technologies. *Keywords: antitrust; option contract; patent hold-up; RAND commitment*

Working Papers

3. "Efficient Material Breach of Contract" (2014:10; R&R, Journal of Law, Economics, and Organization)

In a contracting environment in which a seller can exert effort to reduce the probability of defective delivery, I show that when contract enforcement is imperfect and damages for breach of contract are under-compensatory, the optimal performance standard allows buyers to reject the seller's delivery for some but not all defects (in line with the legal doctrine of *material breach of contract*). I further demonstrate that a policy that allows buyers to collect expectation damages when they rightfully reject delivery dominates a policy that limits compensation to restitution damages. *Keywords: breach remedies; cooperative investment; expectation damages; imperfect contract enforcement; material breach; perfect tender rule; rejection; under-compensatory damages*

4. "Installment Contracts and Material Breach" (2014:05; invited for resubmission, Journal of Law, Economics, and Organization)

I show that absent other contractual solutions, an installment contract with endogenous reversibility (i.e., a buyer can cancel future deliveries only if if past deliveries are defective) can solve the buyer's holdup problem and implement the first-best outcome. Multiple independent contracts over one delivery each, installment contracts without the right to terminate, or installment contracts with exogenous reversibility cannot solve the buyer's holdup problem and result in suboptimal investment. Keywords: contingent control rights; default rules; endogenous reversibility; expectation damages; holdup; installment contracts; material breach of contract; non-divisible contracts

5. "Strategic Secrecy of Pending Patents" (with Jong-Min Oh, 2014:12)

We model an applicant's decision to announce the existence of a patent application prior to its publication by the patent office (while still pending). The applicant strikes a balance between a negative effect of the announcement on its informational advantage in the short run and a positive long-run effect stemming from potential deterrence of a rival's R&D. In equilibrium, the applicant's decision to announce and the rival's decision to innovate are non-monotonic in the strength of the application and the scope of the desired patent. Keywords: information disclosure, innovation, patenting, pending patents, perfect Bayesian equilibrium, R & D

6. "Cutthroats or Comrades: Information Sharing Among Competing Fund Managers" (with Alex Holcomb and Noah Myung; 2015:03)

Observations of correlated trading behavior of fund managers have been interpreted as evidence of word-of-mouth communication. We experimentally test and find strong evidence for the collaboration argument (Stein, 2008) that posits that competitors are more likely to share private information when they expect to receive feedback. Keywords: conversation, correlated trading, experimental finance, fund managers, hedge funds, information sharing, word-of-mouth communication

"Measuring Contract Completeness: A Text Based Analysis of Loan Agreements" (with Malcolm Wardlaw, 2015:03)

We use tools from natural language processing to generate metrics for contractual complexity (i.e., completeness) for a sample of private loan contracts. Contracts are more complex when there is greater default risk, more uncertainty, and longer maturities. Larger lending syndicates and repeat lending relationships increase this impact, suggesting an important role for renegotiation costs. We further show evidence that complexity is associated with increased operating performance and cash holdings of borrowers. Keywords: contract complexity; debt contracts; incomplete contracts; natural language processing; text analysis

8. "A Theory of Competitive Framing", Vanderbilt Owen Graduate School of Management Research Paper No. 2371768 (with Luke Froeb, Steven Tschantz, 2014:05)

To explain the existence and effects of seemingly inconsistent claims about factual or scientific evidence in adversarial settings, we build a model that turns scientific inquiry upside down—considering selfinterested parties who strategically choose hypotheses to influence a decision maker (after the evidence has already been produced) instead of objective truth seekers who formulate and test hypotheses. We show that equilibrium decisions are biased away from the best explanation, and the bias favors the party making the more extreme claim. *Keywords: adversarial justice; Bayesian hypothesis testing;* evidence-based decision making; expert testimony; framing; litigation games 9. "Separation of Powers: The Case of Antitrust" (with Andrea Günster, 2011:03)

Using a simple game-theoretic model, we show that the lack of separation of powers in European antitrust enforcement (i.e., combining the role of investigator, prosecutor, and adjudicator within the European Commission as antitrust authority) increases the likelihood of a firm in Europe being convicted of an antitrust violation relative to the United States. *Keywords: antitrust; competition policy; Department of Justice; European Commission; Federal Trade Commission; separation of powers*

10. "Intrinsic Motivation, Discrimination and the Child Labor-Schooling Trade-Off: Empirical Findings" (2006:12, inactive)

I estimate a bivariate probit model to data from Uganda to take into account the interdependence of decisions over children's labor and school attendance. A household decision maker's intrinsic motivation cannot explain the observed gender or age bias implying that parents do not discriminate against their daughters or older children other than for mere economic reasons. The observed relationship bias, however, is driven by parents' intrinsic motivation. *Keywords: bivariate probit; child labor; discrimination; educational investment; intrinsic motivation; Uganda*

Work in Progress

11. "Process and Product Patents: New Data and Results" (with W. Keith Robinson)

Models of innovation and competition often draw a clear distinction between process (or cost-reducing) innovation and product (or valuation-increasing) innovation. Data to that effect, however, are not available. We use the language in the patents claims to categorize granted patents into process patents and product patents. *Keywords: patent claims; patent data; process patents; product patents; text analysis*

12. "Collaborative Innovation in Internet Standards Development" (with Tim Simcoe and Emanuele Tarantino)

We provide preliminary empirical evidence on the role of collaborative innovation for the development of the Internet. We employ a unique dataset composed by information on the content of 5,169 distinct projects, and their development over time, in the Internet Engineering Task Force (IETF) consortium—the standard setting organization that has designed some of the key technologies at the core of the Internet. We show that the evolution of these projects is consistent with the main predictions arising from a simple model of collaboration with information transmission. *Keywords: collaborative innovation; feedback; organization of innovation; standard setting organizations; text analysis*

13. "Contract Protection and Efficient Breach: Experimental Evidence" (with Wolfgang Luhan)

Models of efficient breach of contract are based on the assumption that contract parties produce and deliver (i.e., seller) or accept and reject (i.e., buyer) to maximize expected profits—typically without taking social norms and other-regarding preferences into account. We study buyers' incentives to reject defective delivery when social norms and/or other-regarding preferences are in the mix and explore how sellers anticipate the buyers' behavior in their decisions to (efficiently) breach contracts. *Keywords: breach of contract; defective goods; experimental law and economics; rejection; termination*

14. "Forward and Backward Looking Rules of Contract Termination" (with Dongsoo Shin)

Contract law scholars are divided over whether buyers (in a multi-shipment contract) are to be granted the right to cancel future delivery if a seller's past delivery is so defective as to impair the value of the entire contract ("backward looking) or if a seller's past delivery gives sufficient reason to believe that future delivery will be defective ("forward looking"). We take a mechanism-design approach to address this question. Keywords: breach of contract; cancellation; installment contracts; material breach of contract; mechanism design; termination

15. "Framing in Experimental Economics: A Textual Meta-Analysis" (with Alex Holcomb)

The choice of language (e.g., terminology or tone) for instructions in laboratory experiments in economics and the social sciences in more general has been said to be influential for the outcome of experimental studies. A systematic and conclusive analysis of this debate, however, is yet to be presented. We use methods from natural language processing to capture characteristics of the language of instructions and conduct a meta-analysis of economics experiments published in the main journals over the last 15 years. Keywords: experimental economics; framing; meta analysis; natural language processing; text analysis

16. "Indeterminate Horizon Centipede Games: Experimental Results" (with Alex Holcomb)

We explore players' behavior and beliefs about others' behavior in a centipede game that is characterized by an indeterminate final round. Relating our results back to the traditional centipede game (with a fixed final round), we are able to weigh in on the debate over individuals' ability and willingness to use backward induction in dynamic games. *Keywords: centipede game; experimental economics; indeterminate horizon games*

17. "The Effectiveness of Benchmarking with Product-Market Externalities" (with Michael Rebello)

Benchmarking, i.e., linking a manger's compensation to a rival firm's performance measures, is used to improve upon the incentive properties of executive compensation. We explore the effectiveness of benchmarking in equilibrium when firms' (managers') investment (innovation) decisions have (positive or negative) external effects on a rival firm's productivity and profitability. *Keywords: benchmarking; corporate finance; executive compensation; externalities; optimal contracting*

Awards, Honors, Scholarships

Exzellenzstipendium, State of Upper Austria, 2015:05 - 2015:06

Young Economists' Essay Award, European Association for Research in Industrial Economics, presented by the Conseil de la concurrence, Toulouse, 2008

Research Scholarship, Swiss Federal Commission for Scholarships for Foreign Students, ESKAS, 2007 – 2008 (declined: 2008:02 – 2008:06)

Visiting Research Fellowship, Columbia University (School of Law, Center of Legal and Economic Studies), Spring 2006 and 2007

Fulbright Scholarship, 2005 – 2006 (declined)

Ph.D. Research Stipend, German Science Foundation (DFG), 2004 – 2007

Grants

Travel Grant: Searle Center on Law, Regulation, and Economic Growth, Northwestern University School of Law, 2015:04 (USD 1,000)

Research Grant: Center and Laboratory for Behavioral Operations and Economics at UT Dallas, 2014:01 – 2014:05 (USD 4,800)

Research Grant: Center for the Analysis of Property Rights and Innovation at UT Dallas, 2014:01 – 2015:01 (USD 6,000)

Summer Research Grant (with Emanuele Tarantino): NET Institute, 2011:07 – 2011:09 (USD 3,000)

Research Grant: NBER, 2011:05 (USD 7,500)

Research Grant: Center for the Analysis of Property Rights and Innovation at UT Dallas, 2011:01 – 2012:01 (USD 5,000)

Research Visits

University of Linz, Department of Economics, 2015:05 – 2015:06 University of Haifa, Department of Economics, 2014:11 – 2014:12 University of Bologna, Department of Economics, 2012:05 – 2012:07 ETH Zurich, Chair for Intellectual Property, 2009:08 – 2010:06 Columbia University, Center of Legal and Economic Studies, Spring 2006 and 2007

Invited Seminars (*: scheduled)

Bar-Ilan University (2014) CEMFI (2015) Copenhagen Business School (2012) ESMT Berlin (2012, 2014) European Commission/DG Competition Brussels (2010) ETH Zurich (2010, 2012) Federal Trade Commission (2009) Naval Postgraduate School (2012) NYU (2007) Royal Holloway College (2009) Santa Clara University (2014) Southern Methodist University (2011) Tel Aviv University (Law&Economics 2014, Recanati BS 2014) Tübingen University (2009, 2012) University of Bologna (2011, 2012) University of Bonn (Law&Economics 2007, 2009) University of Cologne (2009) University of Haifa (Law&Economics 2010; Economics 2012, 2014) University of Innsbruck (2007) University of Linz (2012, 2015)University of Maryland (Finance 2015) University of Munich (2009) University of Oldenburg (2008) University of Rochester (Simon BS 2010) University of Texas at Dallas (Jindal BS 2009; Economics 2013) University of Toronto (Rotman BS 2014) University of St. Gallen (2009) Universitat Pompeu Fabra Barcelona (2010) U.S. Department of Justice/EAG (2009) Vanderbilt University (Law&Econ 2010; Owen BS 2013)

Conference Presentations (*: scheduled)

2015: MaCCI Workshop on Innovation Economics, Bad Homburg, Germany, November EARIE, Munich, Germany, August EEA, Mannheim, Germany, August EFA, Vienna, Austria, August ZEW/MaCCI Conference on the Economics of Innovation and Patenting,

Mannheim, Germany, July Searle Center Conference on Innovation Economics, Chicago, June FMA Europe, Venice, Italy, June IIOC, Boston, April 2014: FMA, Nashville, October Society for Experimental Finance, Zurich, Switzerland, June (poster) Midwest Economic Theory Meeting, IUPUI, Indianapolis, May/June 2013: Texas Economic Theory Camp, Texas A&M University, September International Conference on Game Theory Society, Stony Brook, July IIOC, Boston, May Midwest Economic Theory Meeting, Michigan State University, April 2012: Canadian Law and Economics Association, Toronto, September EARIE, Rome, Italy September World Congress of the Game Theory Society, Istanbul, Turkey, July Central European Program in Economic Theory (CEPET) Workshop, Udine, Italy, May **IIOC**, Arlington, March NBER Conference on Standards, Patents, and Innovation, Tucson, January 2011: Zurich Workshop on Economics, Lucerne, Switzerland, September IO: Theory, Empirics, and Experiments, Universita del Salento, Italy, June Workshop for Junior Researchers on the Law & Economics of Intellectual Property and Competition Law, Wildbad-Kreuth, Germany, June American Law & Economics Association, New York, May NBER Conference on Patents, Standards and Innovation, Boston, May Southwestern Society of Economists, Houston, March Eastern Economics Association, New York, February 2009: Spanish Economics Association, Valencia, Spain, December European Association of Law and Economics, Rome, Italy, September Intertic Conference on Competition Policy and Property Rights, Milan, Italy, September EARIE, Ljubljana, Slovenia, September EEA, Barcelona, Spain, August Swiss IO Day, Berne, Switzerland, April 2008: EARIE, Toulouse, France, September EEA, Milan, Italy, August World Congress of the Game Theory Society, Evanston, July International Society of New Institutional Economics, Toronto, June North American Summer Meeting of the Econometric Society, Pittsburgh, June Austrian Economics Association (NOeG), Vienna, Austria, May IIOC, Arlington, VA, May 2007: EEA and ESEM, Budapest, Hungary, August Royal Economic Society, Warwick, UK, April 2006: Verein für Socialpolitik, Bayreuth, Germany, September European Society of Population Economics, Verona, Italy, June IZA/World Bank Conference "Employment and Development", Berlin, Germany, May

Teaching

Industrial Organization and Corporate Strategy (undergrad), UT Dallas, Spring 2016 Regulation and Antitrust (M.Sc.), University of Linz, Summer 2015 Special Topics in Finance: Corporate Finance and IO (PhD), UT Dallas, Summer 2013
Industrial Organization (PhD), UT Dallas, Spring 2012–2014, Fall 2015
Business Economics (M.Sc.), UT Dallas, Spring 2011–2014, Fall 2011, Fall 2015
Business Economics (Professional MBA), UT Dallas, Spring 2015–2016
Advanced Microeconomics 1: Game Theory (Master), U of Zurich [exercises], Fall 2008
Advance Microeconomics 2: Microeconomics (Master), U of Zurich [exercises], Spring 2008, 2009

Refereeing

B.E. Journal of Theoretical Economics, DRUID Conference (2012 – 2015), DRUID-Asia Conference (2016), Economic Inquiry, Economics Letters, European Economic Review, FMA Conference (2014), International Economic Review, International Journal of the Economics of Business, Journal of Economics & Management Strategy, Journal of Economic Education, Journal of Institutional and Theoretical Economics, Journal of Mathematical Economics, Management Science, Oxford Economic Papers, Research in Labor Economics, Scandinavian Journal of Economics

December 2, 2015