

RENNA JIANG

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EDUCATION

Ph.D. in Marketing, 2009 (expected)

University of Chicago, Graduate School of Business, Chicago, IL, USA

- *Support Area*: Economics
- *Coordinated Sequence*: Econometrics and Statistics
- *Dissertation (Job Market Paper)*: “Structural Estimation of a Moral Hazard Model: An Application to Business Selling”
- *Dissertation Committee*: Pradeep Chintagunta (Co-Chair), Peter Rossi (Co-Chair), Jean-Pierre Dubé, Milton Harris

Bachelor in Economics, 2001

Tsinghua University, Beijing, China

RESEARCH INTERESTS

- Moral Hazard in Sales Force
- Learning in Pharmaceutical Industry
- Bayesian Methods and Structural Modeling

HONORS, AWARDS AND SCHOLARSHIPS

Winner of ISBM (Institute for the Study of Business Markets) Business Marketing Doctoral Support Award Competition, 2007

Performance Bonus for Excellence in Teaching Assistance (Executive MBA – London and Singapore), Graduate School of Business, University of Chicago, 2006, 2007

Kilts Center Fellow, Graduate School of Business, University of Chicago, 2008

Haring Symposium Fellow, 2007

INFORMS Society of Marketing Science Doctoral Consortium Fellow, 2005, 2006

Summer Research Grant, Graduate School of Business, University of Chicago, 2004

Doctoral Fellowship, Graduate School of Business, University of Chicago, 2003-2007

DISSERTATION

“Structural Estimation of a Moral Hazard Model: An Application to Business Selling”

Abstract: I propose and estimate a moral hazard model for contracts in business selling context, where manufacturers of industrial materials hire outside independent sales organizations as their representatives ("rep firms") to sell products to business customers. In return, rep firms receive commissions on realized sales. The question I address in this research is whether the observed commission rates are set at the optimal level, and if not, what are the economic consequences. This is different from most previous empirical contracting work which tests comparative statics predictions derived from theoretical models that impose optimality on manufacturers. A unique feature of the data is that I have a measure of salespeople's effort obtained from surveys. The effort data allow me to build a realistic model where salespeople have better information than the manufacturer about the opportunities in the field. The empirical results show that optimal commission rates are higher than what are observed in the data, and that manufacturers could achieve greater profits by adopting the proposed rates.

OTHER RESEARCH

“Bayesian Analysis of Random Coefficient Logit Models Using Aggregate Data,” with Puneet Manchanda and Peter E. Rossi (forthcoming at the *Journal of Econometrics*)

Abstract: We present a Bayesian approach for analyzing aggregate level sales data in a market with differentiated products. We consider the aggregate share model proposed by Berry, Levinsohn and Pakes (1995) which introduces a common demand shock into an aggregated random coefficient logit model. A full likelihood approach is possible with a specification of the distribution of the common demand shock. We introduce a re-parameterization of the covariance matrix to improve the performance of the random walk Metropolis for covariance parameters. We illustrate the usefulness of our approach with both actual and simulated data. Sampling experiments show that our approach performs well relative to the GMM estimator even in the presence of a mis-specified shock distribution. We view our approach as useful for those who willing to trade off one additional distributional assumption for increased efficiency in estimation.

“Information, Learning and Drug Diffusion: The Case of Cox-2 Inhibitors,” with Pradeep K. Chintagunta and Ginger Z. Jin (conditionally accepted by *Quantitative Marketing and Economics*)

Abstract: The recent withdrawal of Cox-2 Inhibitors has generated debate on the role of information in drug diffusion: can the market learn the efficacy of new drugs, or does it depend solely on manufacturer advertising and FDA updates? In this study, we use a novel data set to study the diffusion of three Cox-2 Inhibitors—Celebrex, Vioxx and Bextra—before the Vioxx withdrawal. Our study has two unique features: first, we observe each patient's reported satisfaction after consuming a drug. This patient level data set, together with market level data on FDA updates, media coverage, academic articles, and pharmaceutical advertising, allows us to model individual prescription decisions. Second, we distinguish across-patient learning of a drug's general efficacy from the within-patient learning of the match between a drug and a patient. Our results suggest that prescription choice is sensitive to many sources of information. At the beginning of 2001 and upon Bextra entry in January 2002, doctors held a strong prior belief about the

efficacy of the three drugs. As a result, the learning from patient satisfaction is gradual and more concentrated on drug-patient match than on across-patient spillovers. Newspaper articles are weakly beneficial for Cox-2 drug sales, but academic articles appear to be detrimental. The FDA updates appear to follow academic articles and deliver little new information to doctors. Manufacturer advertising also influences the choice of a patient's medication. A number of counterfactual experiments are carried out to quantify the influence of information on market shares.

SELECTED PH.D. LEVEL COURSEWORK

Area	Course	Instructor
Marketing	Pro-seminar Advanced Marketing Theory: Behavior Perspective Advanced Marketing Theory: Quant Perspective Bayesian Statistics and Marketing Marketing Literature Seminar	All Marketing Faculty Chris Hsee Pradeep Chintagunta Peter Rossi Aparna Labroo / Günter Hitsch
Information Economics	Price Theory III Economics of Information Auctions	Pierre-André Chiappori Milton Harris Ali Hortacsu
Industrial Organization	Advanced Industrial Organization I Advanced Industrial Organization III	Dennis Carlton Amil Petrin
	Industrial Organization and Prices I Topics in Industrial Organization (Dynamics) (Economics Department, Northwestern University)	Aviv Nevo / Michael Whinston Aviv Nevo / Igal Hendel
Other Economics	Price Theory I (Microeconomic Theory) Price Theory II (General Equilibrium / Game Theory) Numerical Methods in Economics	Garry Becker / Kevin M. Murphy Hugo Sonnenschein / Philip Reny Kenneth Judd
	Microeconomics III (Game Theory) (Economics Department, Northwestern University)	Michael Whinston
Econometrics	Empirical Analysis II Empirical Analysis III Applied Econometrics	Lars Peter Hansen Han Hong Amil Petrin
Statistics	Probability and Statistics Statistical Inference Applied Linear Statistical Methods Intro to Probability Models	Nicholas Polson Nicholas Polson Wei-Biao Wu Yali Amit

INVITED TALK

“Information, Learning and Drug Diffusion: The Case of Cox-2 Inhibitors,” Marketing Department Seminar Series, Stern School of Business, New York University, March 2008

CONFERENCE PRESENTATIONS

“Bayesian Analysis of Random Coefficient Logit Models Using Aggregate Data”

- *Seminar on Bayesian Inference in Econometrics and Statistics (SBIES)*, Graduate School of Business, University of Chicago, May 2008
- *INFORMS Marketing Science Conference*, Katz Graduate School of Business, University of Pittsburgh, June 2006

TEACHING EXPERIENCE

Teaching Assistant – Graduate School of Business, University of Chicago

Economics of Information, PhD, Professor Milton Harris, 2005, 2006

Pricing Strategies, MBA, Professor Jean-Pierre Dubé, 2005, 2006

Marketing Management, Executive MBA (London and Singapore)

Professor Günter Hitsch (Summer 2006)

Professor Pradeep Chintagunta (Summer 2007)

Advanced Marketing Strategy, MBA, Professor Puneet Manchanda, 2006, 2007

Marketing Strategy, MBA, Professor Robert Zeithammer, 2004, 2005

REFERENCES

Pradeep K. Chintagunta (Co-Chair)

Robert Law Professor of Marketing

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Chicago, IL 60637

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Peter E. Rossi (Co-Chair)

Joseph T. and Bernice S. Lewis Professor of Marketing and Statistics

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Jean-Pierre Dubé

Professor of Marketing and Neubauer Family Faculty Fellow

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Milton Harris

Chicago Board of Trade Professor of Finance and Economics

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