

## **Xiaoxun (Cathy) Gao**

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<http://mypage.iu.edu/~gaox>

### **Office Address**

Department of Economics  
Indiana University  
Wylie Hall 105  
Bloomington, IN 47405

### **Home Address**

1101 N. Union St., Apt. 221  
Bloomington, IN 47408  
Cell: (812) 361-8761  
E-mail: [gaox@indiana.edu](mailto:gaox@indiana.edu)

### **Personal Information**

Chinese Citizen, F-1 Visa

### **Education**

Ph.D. in Economics, Indiana University, Bloomington, IN, August 2009 (expected)  
M.A. in Economics, Indiana University-Purdue University Indianapolis, IN, June 2005  
B.A. in English Translation, Guangdong University of Foreign Studies, China, June 2002

### **Fields of Specialization**

Primary Fields: Applied Econometrics, Industrial Organization  
Secondary Fields: Game Theory

### **Research Interests**

Applied Econometrics, Empirical Industrial Organization, Applied Microeconomics

### **Dissertation**

Title: "Essays on Price Dispersion, Service Quality Premium and Advertising Fee"

Committee: Michael Baye (Co-Chair), Michael Rauh (Co-Chair), Roy Gardner,  
Matthijs Wildenbeest, David Jacho-Chávez

- Proposing a generalized clearing house model that explains the effects of displaying store service ratings on price dispersion and why charging click-through fee is so common by leading price comparison sites
- Showing observable store effects explain about 30 percent of the variation in prices and finding service quality premium for four digital cameras by hedonic regressions
- Finding firms keep their prices constant for on average three weeks using duration and Markov transition analysis
- Conducting Monte Carlo experiments to examine the property of the estimators and applying the structural estimation method to real price data

### **Presentations**

Microeconomics Workshop at Indiana University, Bloomington, IN, March 2008  
Omicron Delta Epsilon (ODE) Graduate Student Papers Session at the ASSA Meetings in  
New Orleans, January 2007 (discussant)  
Jordan River Economics Conference at Indiana University, Bloomington, IN, April 2007

## **Awards**

Best Student Paper Award, 3<sup>rd</sup> Annual Jordan River Economic Conference, April 2007  
Indiana University-Purdue University Indianapolis Chancellor's Scholar Recognition Award, April 2004

B.A. with Distinction, June 2002

Guangdong University of Foreign Studies Annual Outstanding Student Scholarship, 1999-2002

## **Working Papers**

“Price Dispersion Within and Across Stores at a Price Comparison Site” (Oct. 2008)

“Empirical Investigation of Competitive Price Promotion of Online Stores” (Nov. 2008)

## **Work in Progress**

“Nonparametric Estimation of eBay Auction Models and Comparison with Fixed Posted Price Selling,” with Qi Meng (data collection stage)

“Hierarchical Multivariate Probit in Modeling Demand for Variety” (develop MATLAB program and run on simulated data)

## **Research Experience**

Research Assistant, Research Center on Philanthropy of Indiana University, Indianapolis, Spring 2003 – Fall 2004

- Developing empirical models to evaluate CEOs' pay and performance in nonprofit organizations
- Constructing datasets and performing data analysis using SAS

## **Teaching Experience at Indiana University**

Associate Instructor with full teaching responsibilities

- E201: Principles of Microeconomics, Fall 2006 – Spring 2007 and Spring 2008
- E202: Principles of Macroeconomics, Fall 2007

Teaching Assistant for graduate course

- E673: Microeconometrics, Fall 2008

Teaching Assistant for undergraduate courses

- E471: Econometric Theory and Practice I, Fall 2008
- E201: Principles of Microeconomics, Fall 2004 – Fall 2005
- E202: Principles of Macroeconomics, Spring 2005

## **Computer Skills**

SAS, R, STATA, MATLAB, EXCEL

## **Languages:**

English, Mandarin, Cantonese

## **Professional Affiliations**

American Economic Association, Omicron Delta Epsilon (ODE) Student Association

## References

Professor Michael Baye (Co-Chair)

E-mail: [mbaye@indiana.edu](mailto:mbaye@indiana.edu)

Phone: (812) 855-2779

Professor Michael Rauh (Co-Chair)

E-mail: [mtrauh@indiana.edu](mailto:mtrauh@indiana.edu)

Phone: (812) 855-2782

Professor Matthijs Wildenbeest

E-mail: [mwildenb@indiana.edu](mailto:mwildenb@indiana.edu)

Phone: (812) 856-5067

The common postal address for the above three references:

Department of Business Economics and Public Policy

Kelly School of Business

Indiana University

Bloomington, IN 47405

Professor Roy Gardner

E-mail: [gardner@indiana.edu](mailto:gardner@indiana.edu)

Phone: (812) 855-6383

Professor David Jacho-Chávez

E-mail: [djachoch@indiana.edu](mailto:djachoch@indiana.edu)

Phone: (812) 855-7928

The postal address for the above two references:

Department of Economics

Wylie Hall 105

Indiana University

Bloomington, IN 47408

## **Dissertation Abstract**

### ***Essays on Price Dispersion, Service Quality Premium and Advertising Fee***

#### **Essay I: “Price Dispersion Within and Across Retailers at a Price Comparison Site”**

This paper proposes a generalized clearinghouse model that allows for quality differences between firms. By modeling how optimal fee setting behavior of gatekeeper interacts with firm pricing strategies and consumer behavior we find that allowing for firm heterogeneity helps us to better understand findings of recent empirical studies that have used price data from price comparison sites. By writing a clearinghouse model based on Baye and Morgan (2001) in terms of utility, we show that it is optimal for firms to draw deals from a symmetric utility distribution. If firms are heterogeneous in their service levels the equilibrium will result in asymmetric pricing strategies. In addition, we study the optimal advertising fee. As opposed to Baye and Morgan (2001) who only allow for a flat listing fee, we also model a click-through fee, which is paid only when consumers are directed to a store’s web pages from the price comparison site. We show that click-through fees generate more revenue and we derive the lower bounds of the profit performance ratio. Our results are consistent with fee practices of comparison sites.

#### **Essay II: “Empirical Investigation of Competitive Price Promotion of Online Stores” (Job Market Paper)**

Using daily price data collected from a leading price comparison website, this paper empirically examines the role of vertical store differentiation on firms’ equilibrium pricing strategies in a clearinghouse model. By allowing for different quality levels across firms the theoretical model used for estimation generates asymmetric pricing strategies. Our estimates show that observable store effects explain about 30 percent of the variation in prices for four digital cameras, a finding that is supported by hedonic regression results. Furthermore, we find that prices adjusted for quality differences between stores have greater intra-distribution mobility than unadjusted prices: stores move up and down the adjusted price distribution more frequently so that consumers cannot tell the identity of the lowest-priced firm over time. Using duration and Markov transition analysis we find that firms keep their prices constant for on average three weeks. We structurally estimate the model using nonlinear least squares and show nonlinear least squares gives consistent parameter estimates. Our general model explains the real world price data reasonably well. Factors that generate price dispersion are similar across the four digital cameras: the maximal profit margin ranges from 16 to 22 percent and the estimated proportion of consumers who visit the price comparison site is 16 to 26 percent. The cost of updating the prices is about two percent of the maximal profit margin. Finally, our estimates suggest that store managers believe to be competing with four to five stores.