

# RENÉ A. CALDENTÉY

**Leonard N. Stern School of Business, New York University**

Associate Professor, Operations Management

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## Appointments

- Associate Professor. Stern School of Business, New York University. 2007-present.
- Assistant Professor.
  - Stern School of Business, New York University. 2001-2007.
  - Department of Industrial Engineering, University of Chile. 1995-1996.
- Researcher. Department of Foreign Trade. Chilean Central Bank. 1995.

## Education

**Massachusetts Institute of Technology**, Cambridge, MA      September 1997 to  
-*Degree*: Ph.D. in Operations Management      May 2001  
-*Thesis*: Analyzing the Make-to-Stock Queue in the  
Supply Chain and eBusiness Settings

**University of Chile**, Santiago, Chile      March 1988 to  
-*Degree*: Civil Industrial Engineer (Maximum Distinction)      November 1994  
-*Thesis*: Políticas de Precio para Bienes Perecibles

## Research Interests

- Revenue Management and Dynamic Pricing.
- Operations Management in the Retail Industry.
- Queueing Theory and its Applications to Manufacturing Systems.
- The Role of Financial Markets in Operations.
- Production Systems in the Copper Industry.

## Publications and Forthcoming Papers

- Caldentey, R., E. Stacchetti (2009). Insider Trading with Random Deadline. *Econometrica* (forthcoming).
- Caldentey, R., E. Kaplan, G. Weiss (2009). FCFS Infinite Bipartite Matching of Servers and Customers. *Advances in Applied Probability* (forthcoming).
- Araman, V., R. Caldentey (2009). Dynamic Pricing for Non-Perishable Products with Demand Learning. *Operations Research* (forthcoming).

- Caldentey, R., M. Haugh (2009). Supply Contracts with Financial Hedging. *Operations Research* **57**, 47–65.
- Caldentey, R., G. Vulcano (2007). Online Auction and Revenue Management. *Management Science* vol. **53**(5), 795-813.
- Caldentey, R., L. Wein (2006). Revenue Management of a Make-to-Stock Queue. *Operations Research* **54**, 859-875. This paper was awarded the second prize in the *M&SOM Student Paper Competition* (2001). An extended abstract was published in *M&SOM* vol. **4**, 4-6, (2002).
- Caldentey, R., M. Haugh (2006). Optimal Control and Hedging of Operations in the Presence of Financial Markets. *Mathematics of Operations Research* vol. **31**, 285-304.
- Bitran, G., R. Caldentey (2003). An Overview of Pricing Models and Revenue Management. *M&SOM* vol. **5**, 203-229.
- Caldentey, R., L. Wein (2003). Analysis of a Decentralized Production-Inventory System. *M&SOM* vol. **5**, 1-17.
- Caldentey, R., S. Mondschein (2003). Policy Model for Pollution Control in the Copper Industry, Including a Model for the Sulfuric Acid Market. *Operations Research* vol. **51**, 1-16.
- Bitran, G., R. Caldentey (2002). Two-Class Priority Queueing System with State-Dependent Arrivals. *Queueing Systems* vol. **40**, 355-382.
- Caldentey, R. (2001). Approximations for Multi-Class Departure Processes. *Queueing Systems* vol. **38**, 205-212.
- Caldentey, R., S. Mondschein (2000). Control de la Contaminación Atmosférica de las Fundiciones Estatales de Cobre Mediante un Sistema de Apoyo a las Decisiones. *Rev. Ing. Syst.*, vol. **XIV**, 79-101. (In Spanish)
- Bitran, G., R. Caldentey, S. Mondschein (1998). Coordinating Clearance Markdown Sales of Seasonal Products in Retail Chains. *Operations Research* vol. **46**, 609-624.

### Other Publications and Technical Reports

- Caldentey, R., J.C. Ferrer, I. Haddad, G. Parada, D. Pérez, R. Vial. (2003). *Políticas Dinámicas de Precio y Revenue Management en Falabella*. Technical Report. University of Chile. (In Spanish)
- Caldentey, R. (2001). *Analyzing the Make-to-Stock Queue in the Supply Chain and eBusiness Settings*. Ph.D. Thesis, Sloan School of Management, MIT.
- Bitran, G., R. Caldentey, J.C., Ferrer, V. Tang. (1999) *Value Pricing of IT Services*. Technical Report. Sloan School of Management.
- Caldentey, R. (1995). *Políticas de Precio para Productos Perecibles*. Civil Industrial Engineering Thesis, Department of Industrial Engineering, University of Industrial Engineering Chile.
- Caldentey, R., E. Jadresic, A. López (1995). Indicadores de Competitividad de Exportaciones y Sustituidores de Importaciones”, Chilean Central Bank Review. (In Spanish)

### Papers in Preparation and under Review

- Bitran, G., R. Caldenteý, R. Vial. Pricing Policies for a Family of Products under Demand Correlation. Under review in *Management Science*.
- Araman, V., R. Caldenteý. Revenue Management with Incomplete Demand Information. Under review *Encyclopedia of Operations Research*, Wiley.
- Caldenteý R., F. Caro. Dynamic Assortment Planning. In preparation for *POM special issue on Retail Operations*.
- Bitran, G., R. Caldenteý, P. Oliveira. Learning Customers Preferences through Repetitive Sale Interactions. Working paper.
- Caldenteý, R., R. Epstein, D. Sauré. Optimal Exploitation of a Nonrenewable Resource. Working paper.
- Caldenteý R., X. Chen. The Role of Financial Services in Procurement Contracts. Working paper.
- Caldenteý, R., M. Haugh, L. Valdés. Operational Models with Risk Hedging Constraints. Working paper.
- Araman, V., R. Caldenteý. Sequential Demand Learning and Dynamic Pricing. In preparation.
- Caldenteý, R., F. Ordoñez. Robust Network Revenue Management. In preparation.
- Caldenteý, R., C. Correa. Optimal Operating Control and Dividend Distribution Policies. In preparation.

### Honors and Awards

- *Principal co-Investigator*: The Role of Information in Insider Trading with Stochastic Valuation. NSF project # 0720815, 2007-2010. Budget \$375,967.
- *Principal Investigator*: The Martingale Approach to Operational and Financial Hedging. Research supported by Fondecyt, 2007-2010.
- Operations Research Meritorious Service Award, 2005.
- Finalist in the JFIG paper competition (M&SOM) with the paper: Online Auction and Revenue Management (co-author: Gustavo Vulcano). INFORMS, Denver 2004.
- Operations Research Meritorious Service Award, 2002.
- M&SOM Meritorious Service Award, 2004.
- Second Prize M&SOM Student Paper Competition 2001 with the paper Revenue Management of a Make-to-Stock Queue.
- Derbes, Gerrity, and Zannetos Fellowships 2000-2001. Sloan School of Management, MIT.
- Finalist in the paper Competition "OR in Developing Country" with the paper: Decision Support System for Pollution Control in the Copper Industry, Including a Model for the Sulfuric Acid Market (co-author: Susana Mondschein). IFORS '99, August 1999, Beijing, China.
- "*Presidente de la República*", Chilean Government Scholarship, 1997-2000.

- Outstanding Teacher Award 1996. Department of Industrial Engineering, University of Chile.
- Outstanding Engineer Student 1995. Chilean Institute of Engineers.
- Outstanding Teacher Assistant 1992-1994. Department of Industrial Engineering, University of Chile.

### Selected Industry Projects

- *Principal co-Investigator*: Dynamic Assortment Planning. Research supported by Falabella (October 2008 to June 2009).
- *Principal co-Investigator*: Decision Support System for Evaluating Long-Term Investments in the Copper Industry. Research supported by Fondef and Codelco. (November 2004 to November 2007).
- *Principal co-Investigator*: Dynamic Pricing and Inventory Replenishment Models. Research supported by Falabella (October 2002 to October 2003).
- *Research Assistant*: Value Pricing of Technology-Intensive Services. Research supported by IBM (March 1999 to June 2000).
- *Research Assistant*: Measuring Quality of Service on the Internet. Research supported by AT&T (November 1997 to December 1998).
- *Principal co-Investigator*: Inventory and Capacity Management for a Seasonal Manufacturer. Research supported by Otto Krauss (March 1996 to March 1997).
- *Research Assistant*: Policy Model for Pollution Control in the Copper Industry, Including a Model for the Sulfuric Acid Market. Research supported by the Chilean Copper Commission (Cochilco) (September 1995 to March 1997).
- *Principal co-Investigator*: Development of Indexes for Measuring Competitiveness of Chilean Exports. Chilean Central Bank (April 1995 to November 1995).

### Teaching Experience

- **Stern School of Business, NYU** (July 2001-present)
  - Competitive Advantage from Operations (Undergraduate Core).
  - Competitive Advantage from Operations (MBA Core).
  - Introduction to Operations Research (MBA Elective).
  - Doctoral Courses:
    - Applications of Stochastic Control to Revenue Management.
    - Queueing Networks - Theory and Applications.
    - Risk Management in Operations.
- **Universidad Torcuato Di Tella, Argentina** (July, 2006 and December 2007)
  - Core class on Operations Management (MBA level).
- **Marshall School of Business, USC** (May 23-May 27, 2005)

- Mini Course on Stochastic Control with Applications (Ph.D. level).
- **Sloan School of Management, MIT** (June-July, 2000)
  - *Teaching Assistant*: Data, Models, and Decisions (Executive MBA).
- **Universidad de Guayaquil** (08/96)
  - Mini Course in Service Operations. (Executive MBA).
- **Department of Industrial Engineering, University of Chile** (03/96- 09/97)
  - Operations Research and Stochastic Processes (Undergraduate Core).
  - Linear Programming (Undergraduate Core).
  - Operations Management (MBA core).
  - Introduction to Decision Models (MBA elective).
  - Project Management (MBA elective).

### Editorial and Service Activities

- ASSOCIATE EDITOR: Manufacturing and Service Operations Management (2008-present). Management Science (2005-2008), Revista de Ingeniería de Sistemas (1995-1996).
- SENIOR EDITOR: POM (2006-present).
- EDITORIAL BOARD: Manufacturing and Service Operations Management (2003-2005).
- INVITED ASSOCIATE EDITOR: Operations Research.
- CHAIR: Revenue Management section prize 2009. *Revenue Management and Dynamic Pricing* cluster, INFORMS Atlanta, 2003. *Workshop on Operations and Management Science*, Santiago, Chile, 2005.
- COMMITTEE MEMBER: Revenue Management section prize 2008.
- JUDGE: Nicholson prize 2008. M&SOM Student Paper Award Competition, 2004, 2005, 2008.
- REFEREE FOR: Journal of Economic Theory, Naval Research Logistics, Management Science, M&SOM, Operations Research, Operations Research Letters, POM, Probability in the Engineering and Information Sciences.
- MEMBER: INFORMS.

### Selected Invited Seminars

- New York University, 9th Annual NYU/KPMG Tax Lecture on Tax Efficient Supply Chain Management. April 2009.
- Columbia Business School. April 2009.
- The Wharton School of the University of Pennsylvania. April 2008.
- The Anderson School of Management, UCLA. April 2008.
- Case Western University. April 2008.

- School of Operations Research and Industrial Engineering, Cornell University, February 2007.
- Robert H. Smith School of Business, University of Maryland, Maryland, February 2007.
- Operations Research Center, MIT, February 2007.
- Marshall School of Business, USC, Los Angeles CA, October 2006.
- Industrial and Systems Engineering, Lehigh University, September 2006.
- Universidad Torcuato Di Tella, Buenos Aires, Argentina, July 2006.
- Universidad Adolfo Ibañez, Santiago, Chile, June 2006.
- Managerial Economics and Decision Sciences Department, Kellogg School of Management, Northwestern University, October 2005.
- Department of Decision Sciences, Fuqua School of Business, Duke University, October 2005.
- Department of Mechanical Engineering, University of Minnesota, Minneapolis, December 2004.
- Robert H. Smith School of Business, University of Maryland, Maryland, December 2004.
- School of Business, University of Miami, Miami, December 2004.
- Sloan School of Management, MIT, Cambridge, November 2004.
- Tepper School of Business, CMU, Pittsburgh, November 2004.
- Marshall School of Business, USC, Los Angeles CA, October 2004.
- Universidad Torcuato Di Tella, Buenos Aires, Argentina, August 2004.
- Universidad de Buenos Aires, Facultad de Ciencias Exactas, Buenos Aires, Argentina, August 2004.
- Universidad de Chile, Facultad de Matemáticas, Santiago, Chile, August 2004.
- Yale School of Management, Yale University. January 2001.
- Managerial Economics and Decision Sciences Department, Kellogg School of Management, Northwestern University, January 2001.
- Columbia University Graduate School of Business. February 2001.
- Tepper School of Business, CMU, Pittsburgh, February 2001.
- Stephen M. Ross School of Business, University of Michigan. February 2001.
- IOE Department, University of Michigan. February 2001.
- Dept of Industrial Engineering and Management Sciences, Northwestern University, February 2001.
- School of Industrial Engineering, Purdue University. February 2001.
- INSEAD. March 2001.

### Selected Conference Presentations

- *Revenue Management*, Semi-Plenary speaker at "CLAIO 2008", Cartagena de Indias, Colombia 2008.
- *Dynamic Assortment Planning*, INFORMS, Washington 2008.
- *Operational Models with Risk Hedging Constraints*, Washington 2008.
- *Revenue Management*. Plenary talk at OPTIMA'07, Puerto Montt, Chile, November 2007.
- *Dynamic Assortment Planning*. INFORMS, Seattle 2007.
- *Optimal Exploitation of a Mineral Resource*. INFORMS, Seattle 2007.
- *Sequential Pricing and Demand Learning*. INFORMS, Seattle 2007.
- *Hedging Operational Risk Using Financial Markets*. Integrated Finance and Operations Management Workshop. Carnegie Mellon Tepper School of Business, August 2006.
- *Dynamic Pricing for Non-Perishable Products with Demand Learning*. DIMACS Workshop on Yield Management and Dynamic Pricing, Rutgers University, August 2005.
- *The Martingale Approach to Operational and Financial Hedging*. Mini-Conference on Integrated Risk Management in Operations and Global Supply Chain Management. Boeing Center on Technology, Information and Manufacturing at Olin School of Business, Washington University-St.Louis. June 2005.
- *Financial Hedging in the Supply Chain*. INFORMS, Denver 2004.
- *Pricing Policies for a Family of Products under Demand Correlation*. INFORMS, Denver 2004.
- *Operational and Financial Hedging: A Coherent Approach*. Mini-Conference on Integrated Risk Management in Operations and Global Supply Chain Management. Boeing Center on Technology, Information and Manufacturing at Olin School of Business, Washington University-St.Louis. June 2004.
- *Dynamic Pricing Under Competition*. INFORMS, Atlanta, 2003.
- *Dynamic Pricing and Demand Learning*. EURO-INFORMS, Istanbul, Turkey, 2003.
- *A Heavy Traffic Approximation for Queues with Restricted Customer-Server Matchings*. INFORMS, San José, 2002.
- *A Real Option Approach for Valuating Long-term Planning in the Mining Industry*. INFORMS, San José, 2002.
- *A Real Option Approach for Valuating Long-term Planning in the Mining Industry*. POMS, Savannah, Georgia, 2003.
- *Revenue Management of a Make to-Stock Queue*. VI Congrès Franco-Chilien de Mathématiques Appliquées. Centro de Matemáticas Aplicadas, Universidad de Chile, Santiago 2001.
- *Revenue Management of a Production Facility Operating in an Electronic Marketplace*. INFORMS, San Antonio, 2000.
- *Decision Support System for Pollution Control in the Copper Industry, Including a Model for the Sulfuric Acid Market*. IFORS '99, Beijing, China, 1999.
- *Coordinating Pricing Policies of Seasonal Products In Retail Chains*. INFORMS, Dallas, 1997.