

# Catalina Stefanescu-Cuntze

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## Current employment

Director of Research, September 2010–present;  
Associate Professor, November 2009–present;  
ESMT European School of Management and Technology, Berlin, Germany.

## Education

PhD in Operations Research, Cornell University, Ithaca, New York, USA, 2002.

MS in Operations Research, Cornell University, Ithaca, New York, USA, 2000.

BS in Mathematics, University of Bucharest, Bucharest, Romania, 1997.

## Past employment

Assistant Professor of Decision Sciences, London Business School, London, UK, 2002–2009.

## Refereed journal publications

Chava, S., C. Stefanescu, and S. Turnbull (2011). Modeling the loss distribution. *Management Science* 57(7): 1267–1287.

Stefanescu, C., and B. W. Turnbull (2009). Likelihood inference for exchangeable continuous data: Use of the Farlie–Gumbel–Morgenstern Model. *Statistical Methodology* 6(5): 503–512.

Stefanescu, C., R. Tunaru, and S. Turnbull (2009). The credit rating process and estimation of transition probabilities: A Bayesian approach. *Journal of Empirical Finance* 16(2): 216–234.

Stefanescu, C., and D. V. Mehrotra (2008). A more powerful average bioequivalence analysis for the 2x2 crossover. *Communications in Statistics – Simulation and Computation* 37(1): 212–221.

Stefanescu, C., and B. W. Turnbull (2006). Multivariate frailty models for exchangeable survival data. *Technometrics* 48(3): 411–417.

Berger V. W., C. Stefanescu, and Y. Y. Zhou (2006). The analysis of stratified 2x2 contingency tables. *Biometrical Journal* 48(6): 992–1007.

Stefanescu, C., and B. W. Turnbull (2005). On the multivariate probit model for exchangeable binary data with covariates. *Biometrical Journal* 47(2): 206–218.

Stefanescu, C., and B. W. Turnbull (2003). Likelihood inference for exchangeable binary data with varying cluster sizes. *Biometrics* 59(1): 18–24.

Ahrens, C., N. Altman, G. Casella, M. Eaton, T. J. G. Hwang, J. Staudenmayer, and C. Stefanescu (2001). Leukemia clusters and TCE waste sites in upstate New York: How adding covariates changes the story. *Environmetrics* 12(7): 659–672.

Stefanescu, C., C. Calude, and E. Calude (1998). Computational complementarity for mealy automata. *European Association for Theoretical Computer Science Bulletin* 66: 139–149.

Stefanescu, C. (1998). Simulation of a multitype Galton-Watson chain. *Simulation Practice and Theory* 6(7): 657–663.

Stefanescu, C. (1995). A Markov process of sequential allocation. *Journal of Universal Computer Science* 1(12): 821–827.

### **Book chapters**

Gallego, G., and C. Stefanescu (Forthcoming). Service engineering: The future of service feature design and pricing. In *Handbook of Pricing Management*, ed. R. Phillips and O. Ozer. Oxford, UK: Oxford University Press.

Stefanescu, C., V. W. Berger, and S. B. Hershberger (2005). Yates' correction. In *The encyclopedia of statistics in behavioral science*, ed. B. Everitt and D. Howell. Hoboken, N.J.: John Wiley & Sons.

Stefanescu, C., V. W. Berger, and S. B. Hershberger (2005). Yates' correction. In *The encyclopedia of statistics in behavioral science*, ed. B. Everitt and D. Howell. Hoboken, N.J.: John Wiley & Sons.

### **Working papers**

Kocabiyyoglu, A., I. Popescu, and C. Stefanescu (2011–Under Review). Pricing and revenue management: The value of coordination.

Stefanescu, C., and S. Turnbull (2011). Credit rating transitions and non-Markovian effects.

Stefanescu, C. (2009–Under Review). Multivariate demand: Modeling and estimation from censored sales.

### **Technical reports**

Stefanescu, C., and B. W. Turnbull (2002). *Likelihood inference for exchangeable binary data with varying cluster sizes*. Cornell University Technical Report TR OR–1329.

Stefanescu, C. (2001). *Modelling stochastic volatility in time series of stock returns: Empirical evidence*. Cornell University Technical Report TR OR–1318.

### **Conference proceedings**

Stefanescu, C., V. DeMiguel, K. Fridgeirsdottir, and S. Zenios (2004). Revenue management with correlated demand forecasting. In the conference *Proceedings of the American Statistical Association, Business and Economics Statistics Section* in Alexandria, Virginia, USA.

### **Selected conference presentations**

2008 London School of Economics (London), INFORMS Revenue Management and Pricing Conference (Montreal), AGIFORS 48th Annual Symposium (Montreal), INSEAD (Fontainebleau).

2007 Judge Institute of Management at Cambridge University (Cambridge), Heriot-Watt University (Edinburgh), INFORMS Revenue Management and Pricing Conference (Barcelona), CREDIT (Venice), INFORMS Annual Meeting (Seattle).

2006 INFORMS Annual Meeting (Pittsburgh), University of Southampton (Southampton), BMBF workshop on credit risk management (Freising), Eidgenoessische Technische Hochschule (ETH, Zurich), Bank of England (London).

2005 INFORMS Annual Meeting (San Francisco), INFORMS Revenue Management and Pricing Section Conference (Boston).

2004 American Statistical Association (Alexandria), Eastern North American Region/International Biometric Society Spring Meeting (Pittsburgh), INFORMS Annual Meeting (Denver).

2003 American Statistical Association (Toronto), Young Statisticians Meeting (University of Cambridge).

2002 INFORMS Annual Meeting (San Jose), London Business School (London), University of Bath, Eastern North American Region/International Biometric Society Spring Meeting (Arlington), American Statistical Association (New York).

2001 INFORMS Annual Meeting (Miami).

### **Other publications**

Stefanescu, C. (2011). Verkäufer im Methodenwirrwarr. *Manager Magazin*, November 14.

Stefanescu, C. (2002). *Statistical models and methods for clustered exchangeable binary and survival data*. PhD thesis, Cornell University, Ithaca, New York, USA.

## **Teaching experience in business schools and universities**

### **2002–2009 Business Statistics.**

Core course for full-time and executive MBA programs at London Business School. Subjects covered include descriptive statistics and probability distributions, sampling and statistical inference, regression analysis, and time series analysis. PC-based-software is used to illustrate how to apply the methodologies introduced.

### **2003–2009 Managerial Statistics.**

Core course for the Global-Executive MBA programs at London Business School, Columbia Business School, and Hong Kong University, taught in modular units in London, New York, and Hong Kong. Teaching is case driven, based on a mixture of lecture and computer sessions. Subjects covered include sampling and statistical inference, linear and nonlinear regression modeling, and statistical portfolio analysis.

### **2003–2009 Statistical Research Methods II.**

Core course in the PhD program at London Business School. Topics include the theoretical foundations of multivariate statistics, as well as software-based applications. Subjects covered are exploratory and confirmatory factor analysis, structural equations modeling, canonical correlation, cluster and discriminant analysis.

### **2003–2006 Statistical Research Methods I.**

Core course in the PhD program at London Business School. Topics include the theoretical foundations of statistical modeling as well as applications to research in the social sciences. Subjects covered are probability distributions and statistical inference, sampling theory, linear models, the analysis of survival data, and time series models.

### **2001 Engineering Probability and Statistics.**

Core undergraduate course at Cornell University. Topics include the theoretical bases of probability theory and statistical inference with applications to engineering.

## **Research grants**

2010–11 *Peter Curtius Foundation Grant* at ESMT. Title: What Is in a Rating? Credit Rating Performance for Structured Financial Products.

2007–08 *Research and Materials Development Fund* at London Business School. Title: Upgrades, Upsells and Pricing in Revenue Management.

2005-06 *Research and Materials Development Fund* at London Business School. Title: The Credit Rating Process and Estimation of Transition Probabilities: A Bayesian Approach.

2004 Advanced Institute of Management Research. Title: Airline Revenue Management with Correlated Demand and Multistage Stochastic Programming.

2003–04 *Research and Materials Development Fund* at London Business School. Title: Modeling Expected Loss.

### **Honors and awards**

2008 *Best Paper Award* at the 48th AGIFORS Annual Symposium in Montreal, Canada for the paper "Upgrades, Upsells and Pricing in Revenue Management."

2008 *Best Paper Award* at the AGIFORS Revenue Management Conference in Tahiti for the paper "Upgrades, Upsells and Pricing in Revenue Management."

2006 *Best Paper Award* of the INFORMS Financial Services Section at the INFORMS Annual Meeting in Pittsburgh, Pennsylvania, USA for the paper "The Credit Rating Process and Estimation of Transition Probabilities: A Bayesian Approach."

2005 *Best Paper Award*, Honorable Mention of the INFORMS Financial Services Section at the INFORMS Annual Meeting in San Francisco, California, USA for the paper "Modeling Expected Loss."

2002 *Best Paper Award*, second winner of the Biopharmaceutical Section at the 2002 Joint Statistical Meetings of the American Statistical Association for the paper "A More Powerful Average Bioequivalence Analysis for the 2x2 Crossover Design."

### **Referee**

Journal of American Statistical Association; Biometrics; Biometrika; Management Science; Operations Research; Transportation Science; Statistics in Medicine; Biometrical Journal; Applied Stochastic Models in Business and Industry; Journal of Agricultural, Biological and Environmental Statistics; Journal of Multivariate Analysis; Journal of Credit Risk; Journal of Risk; Journal of Statistical Planning and Inference.

### **Editorial services**

Journal of Revenue and Pricing Management.

### **External reviewer**

Grant applications to ESRC and EPSRC.

### **Affiliations and memberships**

Royal Statistical Society; American Statistical Association; Institute for Operations Research and Management Science; International Biometric Society; Institute of Mathematical Statistics.

## **PhD supervision**

2007–08 PhD transfer committee for Jikyung Kim.  
2006–07 PhD transfer committee for Sirio Aramonte.  
2006–07 PhD transfer committee for Eva Ascarza.  
2006–07 PhD transfer committee for Dipeng Chen.  
2006–07 PhD transfer committee for Yang Fan.

## **Research interests**

My research focuses on the design, analysis, and application of statistical models and methods for managerial decision making. I have worked on three different areas: demand modeling and forecasting for revenue management, statistical models for credit risk, and methodologies for correlated binary and survival data with biostatistical applications.

### **Demand modeling and forecasting:**

Multivariate demand models for revenue management.  
Estimation of demand models from censored sales data.  
Optimal pricing for demand models with customer choice and capacity constraints.

### **Statistical models for credit risk:**

Modeling and predicting loss distributions; default and recovery rate models.  
Credit rating migration processes: modeling and estimation.  
Methodologies for statistical inference in low default portfolios.

### **Statistical methodologies for correlated data:**

Likelihood inference for correlated binary data.  
Bayesian inference for correlated survival data with applications to reliability studies.  
Statistical methodologies for the design and analysis of clinical trials.

## **Biographical sketch**

Catalina Stefanescu-Cuntze is Associate Professor at the European School of Management and Technology. She holds a BS degree in Mathematics from University of Bucharest, Romania, an MS degree in Operations Research from Cornell University, and a PhD in Operations Research from Cornell University.

Her research focuses on the design, analysis, and application of statistical models and methods for managerial decision making. Applications include demand modeling and forecasting for revenue management, statistical models for credit risk, and methodologies for correlated binary and survival data with biostatistical applications.

She teaches MBA and EMBA courses on Managerial Statistics and Operations Management, and PhD seminars on introductory and advanced Statistical Research Methods.

## **Languages**

Romanian (native); English and French (fluent).

*Updated: January 18, 2012*