

# PRAJIT K. DUTTA

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## PERSONAL DATA

### Office

Department of Economics  
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**Date of Birth** January 26, 1960

**Marital Status** Married, Two children

## EDUCATION

Ph. D.	1987	Economics	Cornell University
M.A.	1985	Economics	Cornell University
M.A.	1982	Economics	Delhi School of Economics
B.A.	1980	Economics	St. Stephen's College, Delhi University

## ACADEMIC POSITIONS

### Employment

<i>Professor</i> , Department of Economics, Columbia University	1994-
<i>Associate Professor</i> , Department of Economics, Columbia University	1992-1994
<i>Associate Professor</i> , Department of Economics, University of Wisconsin	1993-1994
<i>Assistant Professor</i> , Department of Economics, Columbia University	1987-1992
<i>Post-Doctoral Research Fellow</i> , AT&T Bell Laboratories	1986-1987

### Visiting Position

<i>Visiting Assistant Professor</i> , Department of Economics, University of Rochester	1990-1991
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### Editorial Position

*Associate Editor*, *Economic Theory*, 1992- 2000.

## COURSES TAUGHT

### Graduate

Microeconomic Analysis (Game Theory, Information Economics), Advanced Microeconomic Analysis (Dynamic Models, Game Theory), Mathematical Methods for Economics, Advanced Mathematical Methods.

### Undergraduate

Economics of the Internet, Principles of Economics (Microeconomics and Macroeconomics), Intermediate Microeconomics, Game Theory, Economics of Finance, Public Finance, Seminar in Game Theory, Seminar in Industrial Organization, Seminar in Economics & Philosophy, Seminar in Economics of the Arts.

## PUBLICATIONS

### Book

*Strategies and Games: Theory and Practice*, 1999, MIT Press, Cambridge, MA.

### Articles

Capital Deepening and Impatience Equivalence in Stochastic Aggregative Growth Models, 1987, *Journal of Economic Dynamics and Control*, 11, 519-530.

Maximum Theorems for Convex Structures with an Application to the Theory of Optimal Intertemporal Allocation, 1989, (with Tapan Mitra), *Journal of Mathematical Economics*, 18, 77-86.

On Continuity of the Utility Function in Intertemporal Allocation Models: An Example, 1989, (with Tapan Mitra), *International Economic Review*, 30, 527-536.

What Do Discounted Optima Converge To? A Theory of Discount Rate Asymptotics in Economic Models, 1991, *Journal of Economic Theory*, 55, 64-94.

Markovian Equilibrium in a Class of Stochastic Games: Existence Theorems for Discounted and Undiscounted Models, 1992, (with Rangarajan Sundaram), *Economic Theory*, 2, 197-214.

Finite Horizon Optimization: Sensitivity and Continuity in Multi-Sectoral Models, 1993, *Journal of Mathematical Economics*, 22, 101-124.

How Different Can Strategic Models Be?, 1993, (with Rangarajan Sundaram), *Journal of Economic Theory*, 60, 42-61.

Tragedy of the Commons?, 1993, (with Rangarajan Sundaram), *Economic Theory*, 3, 413-432.

A Theory of Stopping Time Games with Applications to Product Innovation and Asset Sales, 1993, *Economic Theory*, 3, 743-763.

Bankruptcy and Expected Utility Maximization, 1994, *Journal of Economic Dynamics and Control*, 18, 539-560.

Limit Integration Theorems for Monotone Functions and Parametric Continuity in Zero-Sum Stochastic Games, 1994, (with Mukul Majumdar), *Nonlinear World*, 1, 73-91.

Optimal Principal-Agent Contracts for a Class of Incentive Schemes: A Complete Characterization and the Rate of Approach to Efficiency, 1994, (with Roy Radner), *Economic Theory*, 4, 483-503.

Parametric Continuity in Dynamic Programming Problems, 1994, (with Mukul Majumdar and Rangarajan Sundaram), *Journal of Economic Dynamics and Control*, 18, 1069-1092.

The Folk Theorem for Discounted Repeated Games: A NEU Condition, 1994, (with Dilip Abreu and Lones Smith), *Econometrica*, 62, 939-948. .

On Specifying the Parameters of a Development Plan, 1994, in *Planning and Development: Essays in Honor of Sukhamoy Chakravarty*, Chapter 4, 75-98, edited by Kaushik Basu, Mukul Majumdar and Tapan Mitra, Basil Blackwell, London.

Moral Hazard, 1994, (with Roy Radner), in *Handbook of Game Theory, Volume 2*, Chapter 26, 869-903, edited by Robert Aumann and Sergiu Hart, North-Holland, Amsterdam.

Collusion, Discounting and Dynamic Games, 1995, *Journal of Economic Theory*, 66, 289-306.

A Folk Theorem for Stochastic Games, 1995, *Journal of Economic Theory*, 66, 1-32. .

Better Late than Early: Vertical Differentiation in the Adoption of a New Technology, 1995, (with Saul Lach and Aldo Rustichini), *Journal of Economic Management and Strategy*, 4, 563-589.

(s,S) Equilibria in Stochastic Games, 1995, (with Aldo Rustichini), *Journal of Economic Theory*, 67, 1-39.

Price Continuity Rules and Insider Trading, 1995, (with Ananth Madhavan), *Journal of Financial and Quantitative Analysis*, 30, 199-228.

Optimal Management of an R&D Budget, 1997, *Journal of Econ Dynamics and Control*, 21, 575-602.

Competition and Collusion in Dealer Markets, 1997, (with Ananth Madhavan), *Journal of Finance* 52, 245-276.

The Equilibrium Existence Problem in General Markovian Games, 1998, (with Rangarajan Sundaram), in *Organizations with Incomplete Information*, Chapter 5, 159-207, edited by Mukul Majumdar, Cambridge University Press, Cambridge, UK.

Profit Maximization and the Market Selection Hypothesis, 1999, (with Roy Radner), *Review of Economic Studies*, 66, 769-798.

Survival and the Art of Profit Maximization, 2001, (with Rangarajan Sundaram), *Review of Economic Design*, 6, 429-446.

Strategic Analysis, 2002, in *Encyclopedia of the Social Sciences*, ESOL Publishers, London, UK.

Self-Enforcing Climate Change Treaties, 2004, (with Roy Radner), *Proceedings of the National Academy of Sciences*, 101, 4746-4751.

A Game-Theoretic Approach To Global Warming, 2005, (with Roy Radner), in *Advances in Mathematical Economics*, edited by S Kasuoka and A Yamazaki, Springer-Verlag, Tokyo.

Population Growth and Technological Change in a Global Warming Model, 2006 (with Roy Radner), *Economic Theory*, 29, 251-270.

Long-Run Price Competition with Intertemporal Demand, 2007, (with Alexander Matros and Jorgen Weibull), *Rand Journal of Economics*, 38, 291-313.

Dynamic Games with an Application to Climate Change Models, 2009, in *Encyclopedia of Complexity and System Sciences, Game Theory Section*, edited by Marilda Sotomayor, Springer-Verlag, Germany.

Strategic Analysis of Global Warming: Theory and Some Numbers, (with Roy Radner), 2009, *Journal of Economic Behavior and Organization*, 71-2, 187-209.

Mixed Strategy Equilibria in Repeated Games with One-Period Memory, 2010, (with Paolo Siconolfi), *International Journal of Economic Theory*, 6-1, 167-187.

Capital Growth in a Global Warming Model: Will China and India Sign a Climate Change Treaty?, 2012, (with Roy Radner), *Economic Theory*, 49, 411-443.

Coordination Need Not Be A Problem, 2012, *Games and Economic Behavior*, 76, 519-534.

A Strategic Approach to Climate Change Agreements: Technology, Foreign Aid, and Asymmetries, 2015 (forthcoming), (with Roy Radner); in *Handbook on the Economics of Climate Change*, edited by Graciela Chichilnisky and Armon Rezai, Elsevier, North-Holland, Netherlands.

### **Working Papers/ Papers Under Preparation**

Repeated Games with Finite Memory, 2011, (with Paolo Siconolfi), mimeo, Columbia University.

Cheap versus Clean: Technological Change and Foreign Aid in a Climate Change Model, 2014, (with Roy Radner), mimeo, Columbia University.

Compromise is Key to Repeated Bargaining, 2014, revised 2016 mimeo, Columbia University; **under submission** to *American Economic Review*.

Asynchronous Games with Transfers: Uniqueness and Optimality in the Infinite Horizon, 2016 (with Paolo Siconolfi), mimeo, Columbia University; **under submission** to *Review of Economic Studies*.

Prisoners Dilemma with Simultaneous Transfers, 2016 (with Paolo Siconolfi), mimeo, Columbia University.

Asynchronous Games with Transfers: Uniqueness and Optimality in the Finite Horizon, 2017 (with Paolo Siconolfi), mimeo, Columbia University.

The Paris Accord: A Proposal to Make the Green Climate Fund Effective, 2017 (with Roy Radner), mimeo, Columbia University.

Imperfect Monitoring in Asynchronous Games with Transfers, (with Paolo Siconolfi), under preparation.

## **PROFESSIONAL EXPERIENCE**

### **Invited Lectures**

May 1991 Invited to present six lectures on *Dynamic Programming and Dynamic Games* at the Hebrew University, Jerusalem.

August 1992 Invited to present three lectures on *Dynamic Games* at the Indian Statistical Institute, Delhi.

August 1994 Invited to present three lectures on *Market Rationality and Survival* at the ISI, New Delhi.

March 1998 Invited to present a lecture on *Global Warming: An Economic Perspective* at the Seventh International Conference for Economic Journalists, School of Journalism, Columbia University.

September 1998 Invited to present three lectures on *Markovian Games and Global Warming* at the Stockholm School of Economics.

May 2000 Invited to present three lectures on *Economics of the Internet* at Erasmus University, Rotterdam.

August, 2000 Invited to present an address on *What Game Theory Can Teach Agricultural and Resource Economists* at the Annual Conference of the American Agricultural Economics Association, Tampa, FL.

May 2009, Invited to present two lectures on *Economics of Climate Change* at MSRI, University of California, Berkeley.

December, 2012, Invited to present in Conference on “Game Theory in Energy, Resources and Environment”, Montreal.

May, 2013, Invited to present in Distinguished Lecture Series, Koc University, Istanbul.

### **Conference Organization**

*Co-Organizer*, Conference on *Organizational Structure and Network Organization in Economics and Electrical Engineering*, March 1996, Columbia University.

*Member*, *Organizing Committee*, *Econometric Society Winter Meetings*, January 1997, New Orleans.

*Co-Organizer*, Conference *In Honor of Professor Tapan Mitra*, July 2008, Cornell University.

*Co-Organizer*, Conference *Economic Games and Mechanisms to Address Climate Change*, May 2009, University of California, Berkeley.

*Co-Organizer*, Conference *In Honor of Professor Roy Radner*, May 2015, New York University.

### **Refereeing**

Econometrica, Journal of Economic Theory, International Economic Review, Review of Economic Studies, Economic Theory, Journal of Economic Dynamics and Control, Games and Economic Behavior, Journal of Mathematical Analysis and Applications, Journal of Economic Behavior and Organization, Rand Journal of Economics, International Journal of Industrial Organization, European Economic Review, American Economic Review, SIAM Journal of Control and Optimization Theory, National Science Foundation.

## **HONORS AND AWARDS**

National Science Foundation Grant, 1998-2001, # SBR-9809988, *Topics in Global Warming and Markovian Games*, 1998-2001.

National Science Foundation Grant, 1994-1997, # SBR 9410485 (with Rangarajan Sundaram), *Markovian Games and their Applications*, 1994-1997.

Finalist for the Smith Breeden Prize (for the Best Paper in the *Journal of Finance* in 1997).

Vilas Foundation Award, University of Wisconsin, 1993-1995.

Columbia University Council for the Social Sciences Fellowship, 1988 and 1989.

President A. D. White Fellowship, Cornell University, 1985-1986.

Martin McAvoy Trust Fellowship, Cornell University, 1984-1985.