

## Game theory and business applications

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### Abstrak

In the last twenty-five years, game theory has been applied to a growing number of practical problems: from antitrust analysis to monetary policy; from the design of auction institutions to the structuring of incentives within firms; from patent races to dispute resolution. The purpose of *Game Theory and Business Applications* is to expand these applications of game theory into a broad and meaningful view of the way business decisions can be modelled and analyzed. The chapter contents embrace a wide variety of business functions - from accounting to finance, to operations, to strategy, and to organizational design. In addition, specific application areas include numerous kinds of market competition, bargaining, auctions and competitive bidding. All of these applications involve competitive decision settings, specifically situations where a number of economic agents in pursuit of their respective self-interests take actions that together affect all of their fortunes. In the language of game theory, players take actions consistent with the given 'rules of the game,' and these joint actions determine final outcomes and payoffs. As this volume demonstrates, game theory provides a compelling guide for business strategy. The first section of this volume discusses game-theoretic applications in four functional areas of business: finance, accounting, operations management and information systems, and organization design. The second section considers competitive strategies in 'imperfect' markets. Using cooperative and non-cooperative game-theoretic approaches, these four chapters consider various topics: spatial competition, signaling of product quality, trust and cooperation in ongoing relationships, strategic behavior in bargaining, and the 'balance of power' between the firm and its buyers and suppliers. The last section of the book deals in detail with auctions and competitive bidding institutions. The emphasis is on the contributions of game theory to both auction theory and practice. Topics considered include optimal auctions, bidder collusion, and the design of institutions for selling the radio spectrum and trading electrical power.