

On the minus side, there is the author's choice of problems:

- (i) much of the book is given over to demonstrating that the internet has evolved to be dominated by about a half-dozen large firms, much like the rest of the US economy. His reason for this focus is because this is not the outcome predicted by the internet gurus of the mid-1990s. It's unlikely that readers of this journal will be terribly surprised by, or terribly interested in, this result.
- (ii) Another (well-documented) result presented in the book is the lack of online hyper-local news sources, which again, is included because this is not the outcome predicted. But the evidence suggests that the hyper-local news market is quite well served by print media, so there is little reason for concern.

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## Q Agricultural and Natural Resource Economics • Environmental and Ecological Economics

*Game Theory and Climate Change*. By Parkash Chander. New York and Chichester: Columbia University Press, 2018. Pp. xii, 329. \$70.00, cloth; \$69.99, e-book. ISBN 978-0-231-18464-9, cloth; 978-0-231-54559-4, e-book.

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The analysis of climate and environmental policy more broadly through a game theoretic lens has come a long way since the early, seminal papers on the topic (e.g., Barrett 1994a, 1994b). Parkash Chander's *Game Theory and Climate Change* provides a comprehensive, technical survey of the topic: a textbook for those interested in learning the modeling tools from the ground up, and a good reference for the experienced researcher.

It is not, however, as the preface suggests, both for "academic researchers and practitioners and policymakers"—unless the latter two would like to reminisce about their graduate school days and be reminded of what it was like to work through pages that offer more Greek symbols than English words. Page 121, here's looking at you.

Footnote 1 on page 1, chapter 1, might be another good example of the book's earnestness. It guides those interested in a "thorough account of the scientific evidence on the state of the problem" to all five of the Intergovernmental Panel on Climate Change's (IPCC) assessment reports, beginning with 1990. Reading all tens of thousands of report pages might indeed make for an exciting journey for a dedicated historian of (climate) science. Alas, it is hardly necessary for a game theorist trying to capture the latest climate science, nor is it necessarily sufficient. Science has advanced even since the latest assessment report (IPCC 2013). Realizing that Chander would not have been able to cite either of these suggestions, as the book went to press in mid-2018, I might point to the latest special report (IPCC 2018) or, perhaps better, to more focused reviews aimed at economists (e.g., Hsiang and Kopp 2018).

The preface promises "two chapters that specifically focus on policy," chapters 9 and 11. Chapter 11 is indeed accessible. It is also the seven-page conclusion to the book that, as is so often the case, might be the best place to start reading it, too.

Chapter 9, meanwhile, while detailing "the Journey from Kyoto to Paris," as the title suggests, also features nine numbered equations, and many more in-text ones. That makes it a satisfying read for academic researchers, especially since it shines an economic light on the pathway of global climate policies in these crucial two decades from Kyoto (passed in 1997) to Paris (2015), but it is not "accessible" in any sense of the word.

Chapter 9 also gives a sampling of the characteristically strong policy pronouncements throughout the book. The Kyoto Protocol, for example, is “a failed agreement.” It surely failed to solve climate change. That much is clear. (To be fair, of course, no sensible observer would have ever argued it would—or should.) On the other hand, every country with emissions reductions targets under Kyoto did meet those targets. That shows the targets were not sufficiently ambitious, which is surely the case. It also shows that more countries should have accepted targets. Then again: politics.

The Paris Agreement, meanwhile, is appropriately seen as “a work in progress.” Chapter 9, as its introduction previews, “proposes a road map for making it effective.” That is both important and laudable, and one area where the book strikes some new, potentially useful ground. In doing so, however, Chander shortchanges other interpretations, especially those focused on the political dynamics in and around Paris. For example, he states that “a stream of thought has spread the thesis, from the late 1990s onward, that *only* an agreement among a small number of countries can *ever* emerge” (emphasis mine). Some earlier theoretical work cited in a note accompanying this statement does indeed support this strong conclusion. However, more recent elaborations might even be used to *explain* Paris, rather than be disproven by it. Nordhaus’s (2015a, 2015b) recent writings on “climate clubs” are hardly disproven by the signing of the Paris Agreement. In fact, the Paris Agreement arguably provides a framework for just such (formal or informal) clubs to form (Stua 2017).

Wedged between the two “accessible” chapters is chapter 10, on the potential for and possible implications of linking “international trade and climate change.” While such issue linkage is not new to political science scholarship, the analysis does indeed provide some novel insights for the theory and practice of global climate policy. Alas, chapter 10, while mercifully short, is also among the most technical of the book, offering three propositions followed by their rigorous proofs, followed, in turn, by further technical explorations.

This kind of rigor is *de rigueur* throughout the book. That is also precisely what makes it a potentially useful textbook or technical reference

guide—either for a stand-alone, advanced undergraduate, or graduate class on the specific topic of the book, or a good companion text in a broader class on climate economics more generally. It may also be useful in a broader, introductory game theory class that focuses on climate as the source of real-world examples.

Chapter 2 guides the reader through the basic framework, introducing the “environment as an economic good” on the one hand, and transfer functions on the other. Chapter 3, meanwhile, goes broader still, establishing the fundamental rationale for why cooperative outcomes often beat noncooperative ones.

Chapter 4 ups the rigor of the prior chapters, while introducing strategic games and the  $\gamma$ -core. The example-laden chapter 5, together with 6, helps build up to dynamic games introduced in chapter 7. Chapter 8 takes the long-run view and, in section 8.3, focuses on a rigorous “road map for stabilizing the climate.” That concluding section is both technically and policy-wise highly ambitious. The former limits the audience to graduate students and advanced researchers. The latter underscores the economic rigor of the book, while also making one yearn for the discussion to be grounded in present-day politics.

Chandra attempts to provide some of that grounding—for example in a brief exploration of the implications of the US withdrawal from the Paris Agreement at the end of chapter 9. However, there, too, the sole lens appears to be the theoretical economic one. Political explanations might point to how Donald Trump’s climate policies—or lack thereof—could help galvanize action elsewhere or in future US administrations (Wagner and Keith 2016). These dynamics might even point to formal or informal climate clubs (Nordhaus 2015a, 2015b).

*Game Theory and Climate* is not for the casual observer or practitioner. It is a rigorous text for serious students and scholars of economics. For them, working through the numerous theorems, lemmas, and propositions, while at times challenging, should also prove rewarding.

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## Z Other Special Topics

- Sports Economics Uncut*. By Brian Goff. New Horizons in the Economics of Sport. Cheltenham, UK and Northampton, MA: Elgar, 2018. Pp. ix, 196. \$120.00, cloth. ISBN 978-1-78811-872-9, cloth; 978-1-78811-873-6, e-book. *JEL* 2019-0236

Economists have studied sports in two areas. First, the economics of sports focuses on the organizational structures of sports leagues, labor markets, and financial outcomes. Second, economists have examined sports as economics, exploiting controlled environments with human participants responding to incentives as a natural laboratory for the study of economic phenomena in general. Brian Goff was an early proponent of the latter approach, publishing a book on the subject nearly thirty years ago (Goff and Tollison

1990). In *Sports Economics Uncut*, Goff tackles several topics in both areas in ten short chapters that ought to be of interest to general readers and researchers working in the field of sports economics.

Goff begins with a strangely under-studied question: why do sports capture so much of our attention? Professional sports are big business, but we spend far more time focusing on sports than we do on much larger industries. Goff argues that spectators are more than consumers of a product—they are club members with durable loyalty not observed in typical product markets. This peculiarity requires economists to take a more nuanced approach to sports than other industries.

The uniqueness of sports markets is something that team owners did not completely understand themselves at first. Owners initially feared that broadcasting games on radio and television would undercut their market power, but they soon found that broadcasts were complementary and boosted consumer demand rather than serving as substitutes. But not all leagues are the same. Major League Baseball (MLB) tried to follow the National Football League's (NFL) national television contract model, with marquee games broadcasted to all markets, but it could not replicate the NFL's success. MLB's model now focuses on regional fandom, distributing specific games to widely dispersed, team-specific fans—a strategy that has proved successful through its marketing arm, MLB Advanced Media.

The book includes three chapters addressing racial discrimination, where big-time sports have mirrored racist societal attitudes through outright segregation and discriminatory wage practices. When Jackie Robinson joined the Brooklyn Dodgers to break baseball's color line in 1947, many Americans still lived in a segregated society. Integrating teams was not primarily motivated by social justice but to produce profits through on-field success, and teams still feared backlash from racist customer attitudes. Thankfully, fans seemed to value winning more than racial purity, and successful integration in sports likely helped foster wider social change. The innovating teams were not the best and the worst but the teams for which the marginal improvements in competitiveness from integrating would be meaningful.