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Book Review

Spectrum Auctions: Designing markets to benefit the public, industry and the economy—
Geoffrey Myers
(London, UK: LSE Press, 2023, 314 pp.)

Spectrum auctions are an important area of public policy that has attracted widespread attention not only among scholars but also the general public.¹ Some milestones are the first spectrum auctions in the United States, in 1994, the high revenue auctions of “3G spectrum” in the United Kingdom and Germany at the turn of the millennium, and the award of the Nobel Memorial Prize in Economic Sciences to Robert Wilson and Paul Milgrom in 2020, in part for developing new formats used in spectrum auctions.

It took 30 years since Coase (1959) had argued for market rather than “command and control” mechanisms in spectrum management, for a spectrum auction practice to start to develop. Auction theory in itself, however, was developed from around the time of Coase’s writings by William Vickrey and then Wilson, Milgrom and others. At least since the 1990’s there is a specialized field, bordering economics and other disciplines, using e.g. game theory to analyze existing spectrum auction formats, and developing new formats. There are several books covering spectrum auctions, for academics as well as practitioners, e.g. Milgrom (2004) and Bichler and Goeree (2017).

Geoffrey Myers has a background at the UK regulator Ofcom and at the London School of Economics. The practitioner’s and the academic perspective are both present in *Spectrum Auctions: Designing markets to benefit the public, industry and the economy*, an open access publication that distinguishes itself in several ways. One of the features of the book is the detailed account of the four high-stakes UK spectrum auctions from the last two decades, the learnings from each auction, and how the learnings were progressively applied in upcoming awards. Another valuable discussion, running through several chapters, is a discussion of the different parts of an auction project, and the decisions regulators face. Myers has furthermore intended to and succeeded in describing spectrum auctions as part of a wider process of public policy making. The book, drawing on e.g. public administration and institutional theory, discusses the role of different stakeholders, including the regulator itself and its internal dynamics and its reputation, auction experts, consultants and in some contexts politicians and other actors, in shaping the spectrum auction practice. A further

¹ Any opinions or views expressed are those of the author and do not represent opinions or views of PTS.

contribution is the catalogue and discussion of different types of strategic bidding, which is valuable material for anyone involved in spectrum auctions.

Myers starts off by describing spectrum auctions as a market design problem, in which the regulator provides the rules of the game. Success of an auction, and spectrum management in general, is ultimately measured in terms of “public value” which Myers argues is broader than the efficiency criteria used in microeconomic theory (it could include, for instance, rural coverage, with wider societal benefits). The regulator has an important institutional role in assuring auctions and markets are designed and functioning according to a public value criterion. Myers’ discussion of public value and other concepts such as economic efficiency, fairness, market failure and regulatory failure, institutions, transaction costs and the Coase (1960) “theorem”, and also game theory, is accessible, and should perhaps be of special value for readers without an in-depth background in economics or other social sciences. Similarly, those without an engineering background will appreciate the introduction to radio spectrum. Having briefly referred to other mechanisms than auctions, e.g. beauty contests, the author has a useful discussion of the many features of spectrum auctions, such as that there are typically few bidders due to the oligopolistic nature of telecom markets, that auctions are typically multi-object, with complementarity and/or substitutability between objects, and the role of first- and second price rules. The four high-stakes UK auctions are then reviewed (with additional details in the final chapters and the appendix) and the author introduces the Simultaneous Multiple Round Ascending Auction (SMRA) and Combinatorial Clock Auction (CCA) formats, the two main formats discussed. The author discusses the successes, as well as potential mistakes or design problems, and the lessons learned from the UK experience. Two examples are a discussion of the long-term implications of the set-aside spectrum for a new entrant, in the 2000 SMRA “3G” (2.1 GHz band) auction, and a critical review of the strong and weak points of using the CCA format with many provisions in the 2013 “4G” (800 MHz and 2.6 GHz bands) auction (the book reviews by Kwerel, 2023, and Salant, 2023, further discuss experiences with the CCA format). Myers proceeds with discussions of the regulatory process, policy making, and organizational features that are important for the process of designing and running auctions. Apart from auction practitioners, an academic audience may find interest in a real-life application of classic work in public administration, such as Lindblom’s (1959) theory of incremental decision making.

The second part of the book discusses more in detail the different parts of an auction project (from well before it actually starts, including band clearance) and also some auction theory. Spectrum valuation and reserve price determination, lot structure, the relations between auction efficiency and efficiency of the downstream market, and between efficiency and

auction revenue, are part of the topics covered, as are the questions of whether multiple bands should be awarded in simultaneous or sequential awards. Based on the two main formats used in the UK, SMRA and the procedurally more complicated CCA, the author delves deeper into choice of auction format. The choice involves considering whether there are important complementarities between auction objects, whether lots should be specific or generic (with a subsequent placement round), the possibility of unsold spectrum, if there should be a first or a second price rule and the associated incentives, how much information is to be provided to bidders and the level of “price discovery” that follows, procedural vs. strategic complexity, etc. Different auction formats can affect bidder behavior. In a discussion of bidding according to intrinsic value vs. bidding strategically, the author has collected different types of strategic bidding (such as bid sniping, bid parking) in a table, accompanied with a discussion. Another useful table compares the SMRA and CCA auction formats along several dimensions, and, importantly, the author recognizes throughout that there is no, one, best format for all circumstances. In its final chapters, the book again connects auctions to wider public policy, through the discussion of competition assessment and measures such as spectrum caps, spectrum floors, set-aside spectrum and coverage obligations. Auctions can furthermore be used to elicit otherwise hard-to-get information (such as valuations) from operators, which is useful for public policy formation.

Myers' book has several strong points, as argued above. The list of references is helpful and the author covers experiences also from other countries, including Australia, Austria, Finland and Portugal (albeit with less data). One discussion the book could have covered more of is that of other multiple round auction formats. Clock auctions and other combinatorial auction formats than CCA are mentioned, but as they can be strategically different, additional material would have been of value. On a different and more theoretical note, the book distinguishes between the concepts of public value and social value. Such definitions may vary slightly between different fields, however. The book is structured and consistent in its use of terms, however, and the comprehensive glossary in the book is highly useful.

Spectrum Auctions: Designing markets to benefit the public, industry and the economy is a useful source for anyone interested in auction theory and practice. The author has made a considerable effort in explaining spectrum auctions to a wide audience, which will be appreciated by many readers, and the text complements more theoretical references.

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