

The Economics of Electricity Markets: Theory and Policy. Edited by Pippo Ranci and Guido Cervigni. Loyola de Palacio Series on European Energy Policy. Cheltenham, U.K. and Northampton, Mass.: Elgar, 2013. Pp. viii, 226. \$120.00. ISBN 978-0-85793-395-9.

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This book provides a concise description of the institutions that govern competitive electricity markets. The editors, Pippo Ranci and Guido Cervigni, together with their four contributors, have witnessed the development of electricity markets in Europe from multiple perspectives: market participant, regulator, and academic researcher. They draw on their experiences to describe both the technical details of how markets operate and the advantages and disadvantages of alternative market designs.

As described in chapter 2, electricity supply requires central coordination by an entity known as the system operator. It is responsible for planning the operation of generation units and making real-time adjustments in order to match second-by-second fluctuations in demand. The need for this central coordination is a challenge for electricity market design. On the one hand, creating a standardized product that can be traded among all market participants will enhance market liquidity. On the other hand, the outcome of trading in a standardized product may not satisfy the physical constraints on generation and transmission that the system operator must account for.

A central theme of the book is the contrast between the two market design philosophies that have developed to resolve this trade-off. In the “U.S. model,” wholesale markets are tightly integrated with the physical limitations on electricity supply. Market prices and quantities are the outcome of a single optimization procedure that minimizes the cost of supplying electricity, subject to generation and transmission constraints. By comparison, in the “European model,” initial transactions occur in an idealized market that ignores these physical constraints. Subsequent adjustments to these ideal outcomes are made by transactions in separate markets to ensure that all constraints are satisfied. This lack of integration in the European model will lead to inefficient production decisions and higher costs.

Many wholesale electricity markets incorporate a mechanism to pay generators for their available capacity, even if it is not used to produce electricity. Chapter 3 describes the rationale for and operation of these capacity support programs. During periods of scarcity, the (administratively-set) market price may not be high enough to recover the fixed costs of the highest-cost generators that only run for a few hours each year. I wonder whether trying to correct the underlying market flaw—price-insensitive demand—would be better than concealing it beneath an additional payment mechanism. The other rationale is even less convincing: The capacity mechanism allows coordination of generation investment decisions, reducing uncertainty for investors and “a more certain environment is expected to reduce the rate of return required by investors, to the ultimate benefit of consumers” (p. 69). Yet other industries that require large sunk investments appear to function well without centralized coordination. Furthermore, setting an administrative target for the capacity requirement does not eliminate the potential costs from overinvestment. Instead, capacity programs transfer these costs from firms (which no longer face the risk of making unprofitable investments) to consumers.

Chapter 4 describes the institutional features of wholesale electricity markets that ensure that the capacity limits on transmission networks are not exceeded. A unique feature of electricity is that it flows along every parallel route between generators and consumers. The surprising consequence is that congestion on a small portion of the transmission network can affect the feasible combinations of generation and consumption on distant parts of the network. The chapter begins with an insightful demonstration of this result using a stylized example of a three-node triangular network. Depending on the location of congestion on this network, the marginal cost of additional consumption at a particular node is shown to be high, low, or even negative. This example is then developed to describe the alternative market mechanisms that are used to manage congestion. These further illustrate the differences between the U.S. and European market design philosophies.

The final third of the book contains three shorter chapters about wholesale market power,

retail competition, and the integration of renewable generation. The last of these highlights the irony in current energy policies, both in Europe and elsewhere. One major objective of electricity deregulation was to place responsibility for investment decisions on profit-maximizing firms, instead of regulators. However, as a result of climate policies, decisions on the type and quantity of generation investment—even the output price that firms receive—are once again being made by regulators instead of firms. As Cervigni says, “The level of installed generation capacity and its composition are ceasing to be the result of decisions taken by market investors, which bear the corresponding risk” (p. 203). This unfortunate trend puts at risk many of the benefits achieved from electricity industry restructuring.

At the same time, technological innovation promises to greatly enhance electricity markets. Widespread adoption of real-time metering creates the possibility of incorporating price-responsive demand into wholesale markets. This would ameliorate many of the problems described in the book, from wholesale market power to insufficient capacity investment. Improved storage technologies, increased distributed generation, and greater use of electricity for transportation will also bring large changes to electricity markets. Despite the potentially disruptive effects of these technologies, there is only a brief mention of them at the end of the book.

One other missed opportunity for this book was to link the descriptive discussion of alternative market designs to the academic literature. I would have liked to see additional references to empirical analyses of the performance of different market structures. For example, Wolak (2011) shows that energy usage of natural gas generation units, holding their output constant, fell by 2.5 percent after California switched to a nodal pricing market in 2009.

Overall, this book will appeal to professionals and academics who wish to understand the organization and operation of electricity markets. It is useful both as general background and as a reference guide to particular institutions. Although the emphasis is on European electricity markets, it will be valuable for people working in other regions too. The debate over alternative market structures, described in this book, has influenced

the design of every wholesale electricity market in the world.

REFERENCES

- Wolak, Frank A. 2011. “Measuring the Benefits of Greater Spatial Granularity in Short-Term Pricing in Wholesale Electricity Markets.” *American Economic Review* 101 (3): 247–52.

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- Casinonomics: The Socioeconomic Impacts of the Casino Industry.* By Douglas M. Walker. Management for Professionals series. Heidelberg and New York: Springer Science + Business Media, 2013. Pp. xv, 297. \$79.99. ISBN 978-1-4614-7122-6.

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A book titled *Casinonomics* suggests that it sheds light on the special economics of casinos. What might this special economics be? The American Psychiatric Association recognizes an impulse control disorder in its *Diagnostic and Statistical Manual of Mental Disorders*, where repeated unsuccessful efforts to control, cut back, or stop gambling is one of the symptoms. A reasonable inference is that gambling induced by mental disorder is not ordinary demand. How does analysis need to be altered when evaluating casinos? For example, what share of revenue comes from gambling disorders? How do benefit measures, such as consumer surplus, change in light of gambling’s special features? Do casinos create or just “discover” already-created “disordered” gamblers? Are “disordered” gamblers responsible for external social harm and costs to others?

In addition to theory, there should be the collection and dissemination of current industry facts and figures. If the author has original empirical research, we would expect to see that, too.

Casinonomics is divided into three parts: The first deals with the economic benefits of casinos. The second addresses gambling disorder. The third discusses negative impacts. Introductory and concluding chapters round out the book.

For the most part, the reader will be disappointed regarding the discussion of theory. The book’s early discussion of benefits, for example, is devoted to routine descriptions of expanding