

## BOOK REVIEW

***Energy Economics: A Modern Introduction*** by FERDINAND E. BANKS.  
(Boston: Kluwer Academic Publishers, 2000). 288 pages, ISBN 0-7923-7700-1

Banks has sought to fill a significant hiatus in energy economics, a clear, contemporary, comprehensive textbook on energy economics. As expected from his prior work, the resulting effort is idiosyncratic. Problems arise with what is covered, the order of presentation, and the exposition of each topic.

The book comprises ten chapters. The first is a rambling introduction. Then a primer on present value analysis is presented. The next three chapters deal respectively with the three fossil fuels: oil, natural gas, and coal. A primer on financial markets and their use in energy follows. An electricity chapter, a nuclear discussion, and a chapter on Hotelling and other theoretic questions complete the book.

The most problematic aspect of the book is the weakness of the chapters devoted to energy sectors. The oil chapter is particularly troubling. The majority of that discussion is devoted to developing a pessimistic analysis of prospects; this is supplemented by an introduction (before his treatment of financial markets) to futures trading in oil. The minimum complaints about the treatment are that it only mentions Adelman and OPEC. Banks ignores Adelman's cautions about available data on oil supply prospects and presents the standard, often-refuted vision of depletion soon. He adds the familiar resource-pessimist demonstration that reserves are depleted faster if consumption grows steadily. Banks fails to warn that this view has critics (unless you count his suggestion to consult Michael Lynch), let alone recognize how many people have prematurely predicted immediate exhaustion. The book lacks serious discussion of the role of OPEC. This neglect is part of a systematic failure to recognize and analyze the role of public policy in energy.

The gas chapter starts with a reasonable discussion of the economic issues, moves on to review Chenery's work on economies of scale in pipelines, presents some superficial remarks on British deregulation, and then introduces the issue of peak-load pricing. The coal chapter is largely a review of the environmental problems. The review is prefaced by observations about the coal market. The environmental portion is started with an effort to use game theory. Then the issues are noted.

The electricity chapter concentrates on load variation and how to react to it. The nuclear chapter starts with observations about the sector, proceeds to use the long life of plants and fuel loads to illustrate his use of capital budgeting techniques, and then sketches risk analysis as it might apply to nuclear power.

The prior listing of topics suggests several further concerns. The first, as noted, is neglect of public policy. OPEC is considered only as an information source. No attention is given to the maze of controls and subsidies that every OECD country has employed to distort fuels and electricity markets.

Another problem is the choice of theoretic issues to stress. The most warranted was the stress and early presentation of the principles of capital budgeting. The topic is vital to energy economics and neglected in regular economics texts. Unfortunately, the treatment is marred by a discussion of depletion allowances that neglects the American laws that allowed such allowances and the criticism the practice inspired. The use of commodity exchanges in oil, gas, and electricity is of growing interest in energy economics. The main problem here is that the discussion in the oil chapter would have been clearer, as noted, if the derivatives chapter had come first. Peak-load pricing is also interesting, but the treatment is unsatisfactory. The inclusion of game theory seemed forced. Load variation and its consequences are another key issue but would have been better handled by discussing with peak-load pricing.

Finally, the presentation of Hotelling's analysis is limited to Hotelling simple case of homogeneous resources produced under constant returns to scale. Thus, both Grey's earlier (1914) case of increasing marginal costs and Hotelling's general model are neglected. As numerous later elaborations of Hotelling's sketch of a general model showed, a triple payoff arises to delayed output. First is the simple Hotelling effect of having minerals to sell in the future when they would be more valuable. Second is the Grey effect of a lower marginal cost of the reduced future output. Third is the general Hotelling effect of preserving lower-cost resources for future generations.

The lesser deletion from lower present output then lowers the costs and raises the profits of future production. With so many effects at work, the only  $r$  percent rule at work is the general rule that nothing is an asset unless it somehow yields  $r$  percent per year. Thus, as Banks fails to show, a full Hotelling model shows that, if exhaustion is impending, prices will rise steadily but not at a constant rate. The absence of steady price rises then indicates unwillingness to invest in reserving resources. An inveterate resource pessimist could invoke the incomplete capital-market argument. However, the tradition in academic energy economics is to stress the ability to overcome depletion threats. The deficiencies in topic choice and weaknesses in implementation are the critical flaws in the book. Thus, the book does not attain its goals.

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