

Book Reviews



George Horwich and David Leo Weimer, *Oil Price Shocks, Market Response, and Contingency Planning* (Washington, D.C.: American Enterprise Institute for Public Policy Research, 1984), 220 pages.

The oil price shocks of the 1973–1981 period have prompted many economists to consider whether government policies to moderate the impact of such events can create net benefits for the economy. While considerable progress has been made on this question, much of the best work has been either highly technical or narrow in focus. There is a need for books that explain to policymakers how markets adjust to such shocks and what policies are available that may improve on the market response.

This book, while not explicitly intended for the lay reader, is likely to be valued primarily for its success in filling this role. It is rich in analysis of the economic impact of oil price shocks and of alternative policies that have been proposed or used in the past to deal with them. The treatment is rigorous but nonmathematical and should be intelligible to anyone who remembers undergraduate-level economic principles. A range of alternative policies is considered, including policies for addressing distributional concerns. An awareness of political realities, which will be welcomed by those responsible for policy formulation, is displayed.

To aid the lay reader, a number of topics are covered in greater detail than is necessary for economists. Chapter 2 of the text, for instance, contains an extensive analysis of the economic consequences of an oil supply disruption for a net importing nation such as the United States. Such shocks are seen to result in real and substantial costs for the economy. These costs are asserted to be minimized in a free-market system. Some will find the use of simple market models in this and other chapters to explain macroeconomic effects to be confusing.

In Chapter 3 the authors assess the economic impact of the regulations imposed on the U.S. oil market in the 1970s. The analysis draws heavily on earlier work by others, particularly that of Joseph Kalt. Like Kalt, Horwich and Weimer find that the regulations deprived domestic producers of substantial economic surplus and effected a net loss of surplus for the economy. They take exception, however, to Kalt's view that the programs transferred substantial surplus from domestic producers to consumers.

Their differences stem largely from disagreement over the impact of the program of price controls for petroleum products. Kalt concludes that except for brief periods, ceilings on product prices were seldom binding in the 1973–1981 period. The regulatory system thus succeeded in depressing product prices without creating excess demand.

Horwich and Weimer assert that product markets "were in a state of shortage or malfunction throughout the control period." They theorize that when price ceilings create shortages, searching and queuing activity and a deterioration of product quality raise the "effective" price high enough to eliminate excess demand. The

upward pressure on world crude prices, which entitlements in principle caused by subsidizing imports, is stressed but is not quantified. The effectiveness of the program is easing the inflation induced by an oil price shock is also questioned.

In the later chapters of the book the authors consider some familiar proposals for modifying the effects of oil supply disruptions and identify the set of policies they favor. For many specialists, the most interesting of these chapters will be the one on fiscal and monetary policies. This summarizes research for the Energy Department that Horwich directed. The loss of purchasing power in nonpetroleum goods markets after both recent price shocks—the so-called oil price drag—is estimated to have been of modest size. Monetary expansion is the suggested remedy.

The Strategic Petroleum Reserve is deemed “the most important affirmative step the federal government can take in preparation for oil supply disruptions.” The authors appear comfortable with a maximum size of 750 to 1000 million barrels for the reserve, an amount much larger than that accumulated to date. To ensure funding for so large a stock, a two-dollar-per-barrel fee that is earmarked for SPR acquisitions on imported crude oil and petroleum products is suggested. The recommended means of disposal during a disruption is the sale of options for future delivery at prices five to ten dollars per barrel above normal levels.

The authors also propose an emergency fiscal transfer system to enable states to provide quick relief to groups that are conspicuous victims of a price shock. They oppose U.S. participation in the mandatory sharing program of the International Energy Agency.

The stout defense of the SPR as a crisis management tool is the most surprising feature of the book, given the general enthusiasm expressed for the market mechanism. There is no attempt to show that private management of oil and product inventories deviated markedly from the social optimum during the two oil price shocks. It is argued that firms and households manage oil stocks inefficiently because they are risk averse, ignore the effect of their actions on prices, and expect price controls. It is not clear why these shortcomings do not also call into question the efficiency of private production and consumption activities, however.

Government intervention in energy markets may be needed to moderate the macroeconomic impact of oil supply disruptions and gain foreign policy flexibility. It is not clear, though, that an economic stockpile can be relied on as the principal means for achieving these goals. Indeed, there is doubt as to whether an SPR drawdown of the magnitude currently feasible can significantly moderate future oil-price run-ups even if its managers possess the great wisdom about oil markets that few give them credit for.

Despite these reservations, the authors should be applauded for providing in this book one of the best overviews yet of the oil crisis management debate. The discussion is well written, comprehensive, and helpful to economist and policymaker alike. While the book is now a few years old, it remains a good introduction to a topic that is returning to the front burner on the energy policy stove.

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J. Daniel Khazzoom, *An Econometric Model Integrating Conservation Measures in the Residential Demand for Energy* (Greenwich, Conn.: JAI Press Inc., 1986), 295 pages.

This book combines engineering and econometric methods to estimate price and income elasticities of residential energy demand, the impact of insulation on energy consumption, and, as its primary emphasis, the magnitude of the rebound effect for insulation. Khazzoom argues persuasively, as he has done before, for the existence of rebound effects: A conservation measure that increases the efficiency of an end-use necessarily decreases the effective price faced by the consumer for that end-use. Given a price-sensitive consumer, this drop in price induces the consumer to utilize the end-use more. The energy savings from the measure are therefore less, as a result of this price-induced rebound, than the decrease that would have resulted if utilization levels had been fixed.

While everyone (at least by now) submits to the concept as a theoretical possibility, the magnitude of the effect is still the subject of considerable controversy. Khazzoom points out that the controversy has methodological roots. End-use models traditionally assume that utilization levels are fixed, thus overestimating the impact of conservation measures by the amount of the rebound. Traditional econometric models—that is, time-series regressions of energy consumption on price, income, and other factors—emphasize price effects and generally ignore efficiency levels, as if the rebound effect completely negated any savings from efficiency improvements.

Khazzoom's book is an empirical investigation into the issue for the case of home insulation. He specifies and estimates a model that combines the traditional end-use and econometric methodologies in a way that allows for the effect of changes in both end-use efficiencies and prices. The estimated parameters of his model allow calculation of long- and short-run price and income elasticities (and trends in elasticities over time), separately for electric- and gas-heated homes. These estimated elasticities have some important implications, which he discusses in full. However, the rebound effect is Khazzoom's focus, and his results on this are indeed interesting.

If we compare the initial benefit of an increase in appliance efficiency (due solely to the engineering effect) with the net benefit (which measures the remaining energy savings after the full feedback effect has taken place), we find that only 35 percent of the initial benefit remains.

But the profile of the erosion of the benefit over time is interesting too. It shows that more than half of the initial benefit still remains by the end of the seventh year. This result is important for demand-side planning since utilities may at times be concerned with reducing energy demand, but only for a limited time, say five or six years until a crunch in the availability of generation facilities can be overcome.

I personally think that the rebound effect is smaller, but who's to say? Khazzoom's analysis is meticulous and entirely competent. He explains in detail, so the reader can evaluate with his or her own criteria the purpose of the model, its specification, the data, the estimation methods, and the results. Anyone who disagrees with the findings

is free, with the data provided in the appendices, to redo the analysis and check alternative specifications and hypotheses.

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John Evans, *OPEC, Its Member States, and the World Energy Market* (Essex, United Kingdom: Longman House, 1986), 679 pages. Distributed in the United States and Canada exclusively by Gale Research Company, Detroit.

Mohammed E. Ahrari, *OPEC: The Failing Giant* (Lexington, Kentucky: The University Press of Kentucky, 1986), 256 pages.

Roberta A. Scull, *Publishing Opportunities for Energy Research* (Westport, Conn.: Greenwood Press, Inc., 1986), 402 pages.

World oil developments continue to inspire a steady outpouring of studies. Typically, the work soberly, competently, and unimaginatively reviews the record.

As noted in the last set of reviews of oil books, we lack a 1987 counterpart to the classic, thorough works available on the period up to the 1973–1974 rises. The two books reviewed here are in the more prevalent mode. The Evans book is another variant on the curiously widespread effort to generate specialized reference books. It serves as an encyclopedia of OPEC with data on basic oil trends, sections giving data on each OPEC country, and a chronology of developments from 1960 to 1986. Each year from 1971 on rates a separate chapter. The publishers claim “impartiality,” which necessarily means that no analyses of the information is provided. Nevertheless, the book is useful as a compilation of the basic data.

Ahrari similarly reviews oil history with stress on the post-1971 period. He undertakes limited efforts to assess the situation. These essentially add little to the discussion.

Ahrari’s attempts at analysis are perfunctory and often unsatisfactory. He manages to recognize the priority of economic forces in influencing OPEC. However, he provides an unsatisfactory discussion of Adelman’s work on oil and employs a concept of price hawks that fails to recognize that what really was involved is the classic effort to get someone else to restrict output.

Either book will serve as a source for a review of the facts but provides no serious analysis. Neither of them (nor their various rivals) stands out as the most clearly superior contribution, and readers probably will do as well or badly taking the first one they run into.

Scull is a pure reference book—a description of every journal that can be identified dealing with energy. Useful information is provided on what is covered and how

to submit material. Technological magazines predominate, but economically orientated ones also are included.

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John C. Moorhouse, ed., *Electric Power: Deregulation and the Public Interest* (San Francisco: Pacific Research Institute for Public Policy, 1986), 516 pages.

Sixteen authors and the editor combined their talents to produce a fascinating sampling of views on the U.S. electric utility industry, its regulation, and its prospects for deregulation. The book is divided into four parts dealing with (1) price regulation; (2) nonprice regulation (environmental, fuel, social); (3) behavior of regulatory bodies; and (4) regulatory reform.

An inevitable problem, as with other such efforts, is that the chapters are somewhat uneven in style and quality and suffer from overlaps in coverage. (On the positive side, the presence of so many authors guarantees a variety of views though 15 of the 17 contributors are professors of economics or business.)

With such a line-up, it is natural to find a lot of attention given to those topics dear to academicians' hearts: theories of regulation, natural monopolies, marginal cost-pricing, the Averch-Johnson model, and other mathematical models. Offsetting this attention to theoretical considerations are good summaries of environmental regulation, public power, and the performance of utility commissions. One uncommon inclusion is a chapter on relationships between regulation and tax policy.

The final chapter by R. L. Gordon is a clarion call for "rapid action" on deregulation. In deciding what actions to take, the author suggests we "ignore political feasibility" on the grounds that *no one can be sure what is possible before trying*. To resolve the problem that "our need for rapid action conflicts with our present inability to decide what will work," the author suggests small experiments to test various deregulation schemes.

The chapter concludes by offering "some easy starting points" for action: repeal the *Public Utility Holding Company Act* and shift air pollution regulation toward use of pollution fines. In addition there are proposals for abolition of the NRC and cessation of state energy planning. With regard to specific changes in electric utility regulation, the relevant choices are said to be either total deregulation or deregulation of the generating function after its separation from the transmission and distribution functions. Of these two, "on balance total deregulation seems more attractive." Earlier in the chapter this choice is supported as follows: "Given the hopelessness of getting to regulators, I still tend toward total deregulation as a better option. This leaves the task of getting to our equally intractable legislators.

With luck, though, this could mean replacing incessant struggles with a single decisive battle."

At a more detailed level of review, I was disturbed by portions of the Moorehouse "Introduction," found my attention drawn particularly to differences of opinion on marginal cost-pricing and the theories of regulation, and was surprised at seeing several erroneous conclusions that authors reached by using out-of-date references (possibly because of the long delays that plague such an anthology). Finally, the models presented in an early chapter on inflation, regulation, and financial adequacy and the possibilities for competition at the distribution level in a later chapter deserve special comment.

One statement in the "Introduction," that is, "The recent dismal performance of the electric power industry according to the canons of economic efficiency, equity, and innovation has led a growing number of scholars to think about new models of electric utility regulation," may suggest to the reader that the remainder of the book will be other than an objective, balanced review of the subject. Fortunately, not all the chapters are couched in such terms. And where similar statements do appear, they are often contradicted in another chapter.

Several chapters include interesting views on the theories of regulation and natural monopolies. The three theories of regulation are summarized by John T. Wenders as follows: (1) the public-interest theory argues that regulation is needed to avoid market failures when the market is naturally monopolistic; (2) the special-interest theory concludes that the dominant group in any regulatory situation will be the one with the largest per-capita stake in the results of regulation (i.e., producers prevail over consumers); and (3) a variant of the special-interest theory proposes that in the electric utility case, where price information is readily available and recourse to the political process is easy, the dominant group will be the one that has the largest numbers and can exert an impact via the ballot box.

With regard to the oft-cited proposition that electric utilities no longer need to be regulated because economies of scale have been exhausted, Claire H. Hammond presents an interesting counterargument. This argument holds that electric utilities are multiproduct firms and that ". . . it is entirely possible for a multiproduct industry to be a natural monopoly because of extensive economies of joint production even if all economies of scale have been exhausted."

Several authors have reached questionable conclusions by using outdated reference materials, and careful editing by someone familiar with the industry could have cleansed the book of such conclusions.

Nevertheless *Electric Power: Deregulation and the Public Interest*, makes interesting and challenging reading, though caution is advised for those readers with only a superficial knowledge of the industry.

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David L. Anderson, *An Analysis of Japanese Coking Coal Procurement Policies: The Canadian and Australian Experience* (Kingston, Ontario: Queens University Centre for Resource Studies, 1986), 214 pages.

Kathryn S. Rogers, *United States Coal Goes Abroad: A Social Action Perspective on Interorganizational Networks* (New York: Praeger Publishers, 1985), 259 pages.

Anderson analyzes Japanese practices in coking-coal procurement and what, if anything, the suppliers can do to protect themselves. After presenting background information, he first reviews the Japanese coking-coal procurement process and then reviews the supply economics, particularly in Canada and Australia. He gives a useful description of Japanese practices, which emphasize centralized negotiations with one agent dealing with each supplying country. Then the pros and cons of the argument that the Japanese deliberately sought to create excess capacity are examined. Anderson concludes that such an effort was undertaken, but it was sufficiently transparent and should have been recognized by the suppliers.

Australia has tried various devices to offset Japanese pressure, while Canada has only engaged in discussion. Thus, the book treats Australian practice and Canadian theory. The key Australian device is considered an export permit system. Permits to export are required, and the price must be reviewed by the government. Anderson feels this system works well in stiffening resistance to the Japanese but may restrict exports elsewhere. However, his caveats raise doubts about whether the administration is stringent enough to be effective. To force an increase in prices, the controls must be draconian enough so that some supplies are made uneconomic to the Japanese by refusal of quotas or a price far above what the Japanese would pay. A classic problem in price fixing is the inability to limit output, and the Australians do not seem to have developed a strong output restriction scheme.

Anderson also examines other Australian devices such as public and private consultative organizations and rent taxes, including those levied through high rail rates. All this is preceded by a useful review of the impact of high fixed costs and the problems of market rigging. The conclusion of the study is that producer collusion would be desirable to offset Japanese oligopoly power but difficult to effect.

This, in short, is a study that appropriately handles the issues considered. Anderson has given about as much as is available on the critical points and has avoided simpleminded conclusions. Some might consider that his view of the Japanese (as muted as it is compared to coal industry tirades) still gives them too much credit. However, this is a valuable addition to our understanding of world trade in coking coal.

Rogers presents an analysis of the 1980–1982 coal export boom. She was working during much of this period for an unidentified “major United States coal firm.” The discussion draws on her personal experiences and on an inordinately cumbersome analytic framework. She identifies and devotes a chapter to each of five types of behavior—entrepreneurial activity, new sources of information, coalitional activities (apparently of a more informal nature), supraorganizations (i.e., trade-association lobbying), and macrocooperation (i.e., international cooperation). These are preceded

by a discussion of methodology and by a quick view of the coal industry and the export boom.

The entrepreneurial activity chapter covers actions by railroads and producers, including investments by foreign companies. The information discussion covers the periodicals available, the conferences held, and the various coal studies.

The two chapters on coalitional activities and supraorganizations deal with coal-industry lobbying. The first chapter concentrates on the substance of the unsuccessful efforts to reach accord on port deepening. The second chapter analyzes the organization position of the National Coal Association and its affiliate, the Coal Exporters Association, and their actions on railroad rates and "hot coal" (spontaneous combustion in transit). Macrocooperation deals with United States government policy, the International Energy Agency's coal work, and the world coal study.

In this case the author has made too much rather than too little out of the subject. A useful survey is provided on the coal industry's (over) reaction to the export boom. Rogers is aware of the transitory nature of influences such as unrest in Poland, strikes in Australia, and turmoil in the world oil market. The coverage ends before the dreams were dashed by the realities of vigorous competition and limited markets. Thus we get an incomplete picture.

The book, moreover, is marred by numerous examples of unfamiliarity with the coal industry. It is useful in providing an impression of the coal export boom, but the assertions must be viewed warily.

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Matthew J. Sagers and Milford B. Green, *The Transportation of Soviet Energy Resources* (Totowa, N.J.: Rowman and Littlefield, 1986), 185 pages.

This monograph should prove to be a significant addition to the literature on Soviet energy resources. The general pattern of movement for each of the main forms of energy (gas, crude petroleum, refined products, coal, and electricity) is determined, and constraints in their transportation systems are identified. Sagers and Green add a comprehensive database and an innovative methodology for modeling Soviet energy flows to existing work in the field.

The introductory chapter is somewhat terse and perfunctory. Major energy problems the USSR faces, and their implications for the transportation of energy resources, are briefly reviewed. A more expansive consideration of these broader issues is left to numerous references. The second chapter presents an excellent pedagogic description of the methodology used in subsequent analyses. Each energy transportation system is modeled as an abstract capacitated network consisting of production sites, consumption sites, and transport linkages. Optimal flows and associated costs for each network are determined by applying the Out-of-Kilter Algorithm, a network allocation model, to each abstracted system. This is done for each

network using 1980 as a base year. Gas flows are also modeled for 1970, 1975, and 1985.

The choice of an optimization technique is particularly appropriate as the systems under study are centralized coordinated ones with declared goals. Analyses are hampered, however, by the inability to model short-term flow fluctuations. The concealment of such fluctuations may cause optimal short-term behavior to appear as suboptimal in the longer term, limiting the relevance of the analysis, especially in a planning context. Sagers and Green handle this problem by introducing anecdotal information on short-term fluctuations whenever possible. The extent and quality of the database used rivals any collected for similar purposes.

The body of the monograph consists of five chapters, each devoted to modelling the transportation system of one of the main forms of energy. Generally, the models provide justification for the post-1980 developments in each system. Often these developments appear as solutions to transportation constraints identified in the analyses. A final chapter summarizes the major findings and speculations of the study and concludes that the current Soviet energy program is a rational response to existing problems. The monograph also includes a timely epilogue on the impact of the recent Chernobyl nuclear power station accident.

The monograph lacks some cosmetic touches. It could benefit from better typesetting, and there are a few typographic errors. The text is generously illustrated with 19 monochrome figures (mostly maps) of good quality, and 22 tables. It bears repeating that this is a significant and comprehensive treatment of the transportation of Soviet energy resources. Readers will need an extensive background in Soviet studies to appreciate fully the implications of some findings. Those with a background in energy economics or transportation geography should find the methodology of interest. This monograph is a good acquisition for those involved in state-of-the-art research on Soviet energy resources.

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