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Pages 1-26

Regulatory Remedies to the Common Pool: The Limits to Oil Field Unitization

by Gary D. Libecap (University of Arizona, Carl Eller Center; and National Bureau of Economic Research, USA) and James L. Smith (Southern Methodist University, Edwin L. Cox School of Business, Dallas, TX, USA)

Abstract

We examine the potential inability of voluntary unitization to remedy common property losses associated with oil field development. Unlike the traditional literature, we show that if the field contains two (or more) substances that differ in kind (like oil and gas), then it is possible that non-unitized forms of ownership and operation (with conflicted production incentives) may dominate unitized development of the resource. More specifically, it may be impossible to identify any plan of unitized development that is not pareto-dominated by initial endowments or other non-unitized production arrangements which the parties might devise. These results cast the role of the regulatory agency in a new light. Whereas compulsory unitization has tended to be viewed as a uniformly helpful form of outside influence that succeeds by reducing or overcoming the deadweight cost of bargaining, from our perspective it could also be seen as forcing on the parties a "solution" that unavoidably harms one or more of them.

Pages 27-49

Oil Production in the Lower 48 States: Economic, Geological, and Institutional Determinants

by Robert K. Kaufmann and Cutler J. Cleveland (Center for Energy & Environmental Studies, Boston University, Boston, MA, USA)

Abstract

In this paper, we establish an empirical model for oil production in the lower 48 states that represents its economic, physical, and institutional determinants. We estimate a vector error correction model for oil production in the lower 48 states that specifies real oil prices, average production costs, and prorationing by the Texas Railroad Commission. These modifications enable us to generate a model that accounts for most of the variation in oil production in the lower 48 states between 1938 and 1991. The result that oil production in the lower 48 states shares stochastic trends with real oil prices, average production costs, and prorationing indicates that accuracy of Hubbert's bell shaped curve is fortuitous. The importance of these factors also indicates why the basic Hotelling model cannot replicate the production path for oil in the lower 48 states. This inability is critical. The negative economic effects associated with high prices and energy shortages imply that the importance of inconsistencies with the basic Hotelling model identified by this analysis may be sufficient to warrant a greater degree of government intervention in the transition from oil than is currently envisioned by most policy makers.

Pages 51-73

Zonal Pricing in a Deregulated Electricity Market

by Mette Bjørndal and Kurk Jørnsten (Norwegian School of Economics and Business Administration, Bergen, Norway)

Abstract

In the deregulated Norwegian electricity market a zonal transmission pricing system is used to cope with network capacity problems. In this paper we illustrate some of the problems with the zonal pricing system as it is implemented in Norway. With the use of small network examples we illustrate the difficulties involved in defining the zones, the redistribution effects of the surplus that a zonal pricing system has, as well as the conflicting interests concerning zone boundaries that are present among the various market participants. We also show that a zone allocation mechanism based on nodal prices does not necessarily lead to a zone system with maximal social surplus. Finally, we formulate an optimization model that when solved yields the zone system that maximizes social surplus given a pre-specification of the number of zones to be used.

Pages 75-120

Explaining Cointegration Analysis: Part II

by David F. Hendry (Department of Economics, Oxford University, Nuffield College, Oxford, UK) and Katarina Juselius (University of Copenhagen, Denmark; and Visiting Professor, European University Institute, Florence, Italy)

Abstract

We describe the concept of cointegration, its implications in modelling and forecasting, and discuss inference procedures appropriate in integrated-cointegrated vector autoregressive processes (VARs). Particular attention is paid to the properties of VARs, to the modelling of deterministic terms, and to the determination of the number of cointegration vectors. The analysis is illustrated by empirical examples.