Lecture outline

Topic: Strategic relationships in resource markets

Schedule:

June 20, 09:00-11:00, room MD 003

June 21, 10:00-12:00, room MD 003

June 22, 10:00-12:00, room MD 003

Lecturer: Matti Liski, Aalto University School of Economics, Helsinki, http://www.hse-econ.fi/liski/

Introduction: The lecture covers recent theoretical developments on strategic issues in resource markets. The starting point is the conceptual connection between the exhaustible-resource monopsony and durable-good monopoly problems. The latter is among the best-understood models of dynamic behavior in economics. The objective is to cover the lessons from the durable-good theory for understanding the dynamic relationship between resource importers and sellers. The lessons prove useful in evaluating the effects of demand-side policies such as technology programs, subsidies to alternative energy, emissions taxes and quotas, fuel tariffs, and asymmetric information on the supply side behavior in the resource markets. Other recent topics include the effects of market structure such as the possibility of forward contracting of stocks on resource depletion. The lecture provides tools for studying the relevant applied questions in the field, and seeks to point out potential directions for further research.

Level: advanced undergraduate/graduate

Lecture 1: The connection between Coase and Hotelling

The connection under commitment stated in:
Hörner, J., and M. Kamien. 2004. " Coase and Hotelling: A Meeting of the Minds", Journal of Political Economy 112, 718-723.

The most relevant durable-goods paper for resources:
Kahn, C. M. 1986. "The Durable Goods Monopolist and Consistency with Increasing Costs", Econometrica 54, 275–94.

The subgame-perfect outcome is in:
Liski, M., and J.P. Montero, On Coase and Hotelling, available at www.hse-econ.fi/liski/papers/HotCoase.pdf

Survey of the resource literature:

Karp, L., and D. Newbery. 1993. "Intertemporal Consistency Issues in Depletable Resources", In Handbook of Natural Resource and Energy Economics, vol. 3, edited by Allen V. Kneese and James L. Sweeney. Amsterdam: Elsevier Science.

Application of the result:
Liski, M., and J.P. Montero, Market Power in an Exhaustible Resource Market: The Case of Storable Pollution Permits, The Economic Journal, Volume 121, Issue 551, pages 116–144, March 2011.

Lecture 2: bilateral dynamic resource monopoly

Example and survey of the older literature:
C. Harris, J. Vickers, Innovation and natural resources: A dynamic game with uncertainty, RAND J. Econ. 26 (1995) 418–430.

Adoption of technologies reducing resource dependence and methods:
Gerlagh, R., and M. Liski, Strategic resource dependence, Journal of Economic Theory 146 (2011) 699–727

Optimal tariff-design for resource monopoly:
Liski, M., and O. Tahvonen, Can carbon tax eat OPEC's rents?, Journal of Environmental Economics and Management 47 (2004) 1–12

Lecture 3: Contracting and resource use

On the effect of contracting on oligopoly:
Allaz, B., and J.-L. Vila (1993), Cournot competition, forward markets and efficiency, Journal of Economic Theory 59, 1-16.

Contracting and resources:
Liski, M., and JP, Montero, Forward contracting in exhaustible-resource oligopoly, available at http://www.hse-econ.fi/liski/papers/ExhResFor.pdf

Readings on dynamic games

E. Dockner, S. Jorgensen, N. V. Long, G. Sorger: Differential Games in Economics and Management Science, Cambridge University Press, Cambridge, 2000.

Fudenberg, D. and J. Tirole, Game Theory, MIT Press 1991.

Bergemann, Dirk and Välimäki, Juuso (2006) Dynamic price competition. Journal of Economic Theory, 127, (1), 232-263.