Abstracts of Selected Papers

Resource Economics Issues in the Northeast: Marilyn Altobello, Presiding

"Heating Costs and Wood Stove Acquisition." Paul Scodari and Ian Hardie (Environmental Law Institute and University of Maryland)
This discrete choice model is based on the hypothesis that wood stoves are acquired to decrease the monetary costs of heating fuels. Data is from cross-sectional surveys of New Hampshire households. Results indicate that the probability of purchasing a stove varies inversely with the age and education of the household head and positively with the price of the non-wood fuel. Estimates by income class suggest that moderate-income households are most likely to purchase a stove. Results appear reasonable even though the model does not incorporate the investment trade-off between capital and operating costs.

"Agricultural Price, Quantity, and Welfare Effects of Air Quality Improvements." Marc Ribaudo and James Shortle (Pennsylvania State University)
The failure to allow for significant crop quality effects in a partial equilibrium model can lead to misleading inferences about the price, output and welfare implications of air quality improvements. It has been observed that air pollutants such as ozone, sulphur dioxide, and nitrogen dioxide affect the yield and quality of many crops. The economic benefits from improving air quality in crop producing regions have been measured using a partial equilibrium approach which accounts only for supply shifting yield effects. This yield-effect model predicts a decrease in market price, and increases in market quantity and economic welfare. The above results are based on an assumption that crop quality is known with certainty. If uncertainty exists, the results are less clear cut. A spread-preserving increase in expected crop quality, or a mean-preserving decrease in the spread of the distribution of quality, will increase quantity demanded at prevailing prices for a risk-neutral firm. The results are indeterminate for firms which are not risk neutral. Therefore, price and quantity changes may both be ambiguous.

"Managing Common-Property Resources: Agricultural Land in Colonial New England." Barry Field and Martha Kimball (University of Massachusetts)
Common use of land was widespread in early New England agriculture, given the relative costs of exclusion, group transactions, and production externalities. Regulations to prevent overuse were widely adopted; markets in commonage rights were active. The evolution to private property was gradual, as transactions costs rose and exclusion costs fell.

"Biomass Energy Potential from Livestock and Poultry Wastes in the Northeast." Harold B. Jones, Jr. and E. A. Ogden (USDA, University of Georgia)
This study estimates the potential energy available from livestock and poultry wastes in the northeastern United States for 1982, with projections for 1990. Anaerobic digestion of dairy cow, hog, and laying hen manures could have produced 16.9 billion cubic feet of methane gas in 1982, with little change for 1990. Direct burning of litter from broilers, turkeys, and pullets could have resulted in 8.9 trillion Btu's in 1982 and 10.3 trillion Btu's in 1990. The total potential farm value of biomass energy ranged from $166 to $255 million in 1982 and $289 million to $458 million in 1990.

Current Issues in Agricultural Production: Joachim Elterich, Presiding

"Do Bad Weather Forecasts Make Good Explanatory Variables." P. Geoffrey Allen and Bernard J. Morzuch (University of Massachusetts)
Econometric forecasts of cranberry yield as a function of weather and technology are updated through the year. After eliminating weather variables for which forecasts were particularly bad, inclusion of forecasts of remaining variables improved yield predictions. However, this added information was of zero value in making storage leasing decisions.

"Adjustments in a Beef/Sheep Farm in Response to the Cattle Cycle: The Potential for Increased and More Stable Income." Robert Burton and J. Wesseh Wollo (Kansas State University and University of Kentucky)
A dynamic linear programming model of a beef/sheep farm was used to evaluate the potential for increasing income and for maintaining a specified level of annual income during a cattle cycle. Results indicate that both objectives may be accomplished by adjusting animal numbers in response to changing price ratios: a higher proportion of cows should be kept during the accumulation phase of the cattle cycle and a higher proportion of ewes should be kept during the liquidation phase.

"Preliminary Estimates of Economies of Size in Vegetable Production." Hugo V. Fueglein and Boris E. Bravo-Ureta (University of Connecticut)

A linear programming model (LP) is used to study economies of size and optimal cropping patterns for vegetable production in the Connecticut River Valley. Enterprise budgets for 19 vegetable crops are constructed reflecting recommended practices for the study area. Farm size is determined by machinery capacity and restricted by the amount of time available to complete field operations. The LP model is initially specified as a profit maximization problem in order to determine minimum points on the short run average cost (SRAC) curves. Additional points for each SRAC curve are generated by solving the model several times as a cost minimization problem at decreasing levels of gross returns. The results indicate substantial economies of size from farms up to $100,000 of gross returns and negligible average cost reductions thereafter. The two smallest farms considered show the greatest crop diversification at their optimal levels of output while larger farms specialize in one crop once output reaches 90 percent of the optimal level.

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