DUSTRIAL ORGANIZATION AND INTERNATIONAL TRADE: HODOLOGICAL FOUNDATIONS FOR INTERNATIONAL FOOD AND AGRICULTURAL MARKET RESEARCH

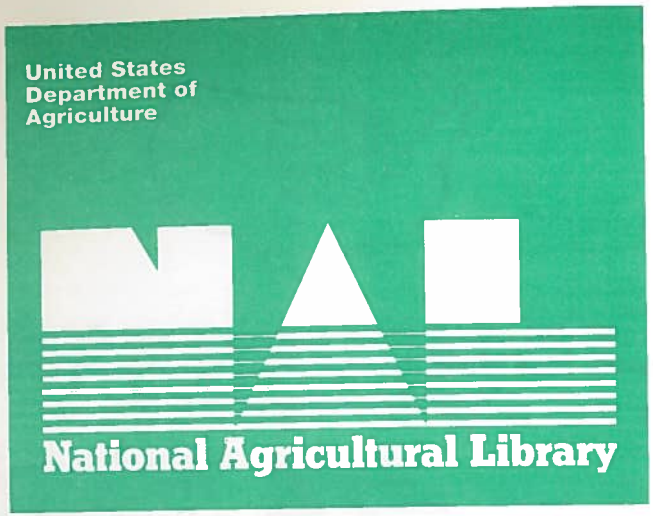
Ian M. Sheldon and Dennis R. Henderson, editors

North Central Regional Research Publication Number 334

NC-194 Research Monograph Number 1

July 1992

Agricultural Experiment Stations of California, Connecticut, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New York, North Dakota, Ohio, Oklahoma, Oregon, Texas, Virginia, Washington, and Wisconsin, and the U.S. Department of Agriculture, cooperating.



Spons
Unive
Unive
Corne

University of Florida	James Seale, Ronald Ward
University of Illinois	Gerald Nelson, Lowell Hill
Iowa State University	William Meyers, Marvin Hayenga
Kansas State University	Brooke Wilson, Marc Johnson
University of Kentucky	Michael Reed, Loys Mather
Louisiana State University	
University of Maryland	Earl Brown
Michigan State University	James Shaffer
University of Minnesota	Harald von Witzke
Mississippi State University	Ying-Nan Lin
University of Missouri	Maury Bredahl, Michael Cook, Kenneth Schneeberger
University of Nebraska	Wesley Peterson, Azzeddine Azzam, Nancy Cottrell
North Dakota State University	Won Koo
Ohio State University	Dennis Henderson, Ian Sheldon, James Dayton, Thomas Sporleder, Joseph Hirschberg
Oklahoma State University	Shida Henneberry
Oregon State University	Patricia Lindsey
Purdue University (Indiana)	John Connor, Thomas Hertel, Philip Abbott, Lee Schrader, James Binkley, Marie Thursby
Texas A&M University	Gary Williams, John Nichols, Alan Love
Virginia Polytechnic Inst. & SU	Eluned Jones
Washington State University	Thomas Wahl
University of Wisconsin	Bruce Marion, Jay Coggins
U.S. Department of Agriculture	
Agricultural Coop. Serv.	James Haskell, Stuart Frank, Bruce Reynolds
Agricultural Marketing Serv.	Larry Summers, Ken Clayton
Cooperative State Res. Serv.	Roland Robinson, Paul Farris
Economic Research Serv.	Lester Myers, John Dunmore, Charles Handy, Michael Ollinger, David Kelch, Bradley McDonald, Jerry Sharples, Lee Christensen
Extension Service	David Holder
Farm Foundation	Walter Armbruster

Administrative Advisor = Kenneth Schneeberger; Executive Director = Dennis R. Henderson; Administrative Assistant = Carol A. Russell

Proceedings of a Workshop On Industrial Organization and International Trade

Editors:
Ian M. Sheldon
Dennis R. Henderson

Published at The Ohio State University
Columbus, Ohio 43210-1099

Discussion: Experimental Economics: An Introduction for Applications to International Trade

Lee F. Schrader

Davis and Mitchell provide an excellent review of experimental economics. They give us a picture of what it is, what has been accomplished, and its limitations. Less than 5 of 35 pages of text are devoted to potential applications of experimental methods to trade issues. This might imply that the potential for use of these methods on trade issues is very limited. The applications that the authors have suggested are interesting and the paper should lead to others.

Experimental economics, which has grown rapidly, and market simulation, which has not flowered, suffer from similar credibility problems. If the results are consistent with conventional wisdom, the attitude is often "We already knew that". If the results are counterintuitive, we hear "The conditions were unrealistic". Nevertheless, the ability to replicate results and to abstract from the complexity of reality enables experimental economics to make significant contributions. However, generalization from the actions of university sophomores in a make-believe environment must be done cautiously.

Very interesting questions can be explored. Some years ago I wondered what price best represents a market equilibrium. We often use period averages in empirical analyses except in the case of futures markets where we use the close. The last price of a trading day has some theoretical support as a candidate to represent the equilibrium price for the day regardless of preceding contract prices. We borrowed data from Arlington Williams on 5 market experiments of 13 to 15 periods or days. The variance of the estimate of equilibrium price around the known equilibrium was calculated for each of the following measures that are listed in order of increasing variance:

Last trade price
Mean of last half of trades
Mean of all prices
Mean of all excluding high and low
Mean of first half of trades

This result has implications for price analysis.

Davis and Mitchell concentrate their discussion of the results of experiments to only a part of the potential for use in industrial organization work. One can structure experiments that measure the impact of imperfect information and product differentiation, although complexity of the experiment increases rapidly as one introduces more complex situations. Baker and Babb (1984) have used business simulation (games) to study manager behavior with some success. Their experiments were structured as a part of management workshops where the participants were experienced managers. The business simulation environment does introduce a degree of realism, but, of course, also increases the complexity of analysis.

Experiments can also be designed to test hypotheses about the negotiation of contracts in specific industry situations with industry personnel in the negotiation roles. This approach to contract design might well reduce conflict if it does not test more general hypotheses. Progress toward a more efficient food system may be achieved without hypothesis testing as such.

Of the experimental economics literature discussed by Davis and Mitchell, the tests of noncooperative game theory appear to be most relevant for industrial organization research and perhaps, for international trade research. So much of the basis for suppositions about conduct is theory that the predictive power of these theories should be tested to the extent possible. The evidence that some game theory results are not confirmed in experiments demonstrates the need for work in this area.

It is not clear why Davis and Mitchell limit themselves to "the typical 2 to 3 hour laboratory session" in discussion of applications to trade issues. If simple trade theory needs testing, there is no reason (except funds) to reject the experimental approach. In fact it seems to me that the more limited market experiments tell the competitive, homogeneous product story reasonably well. There appears to be little to be gained from extension of these experiments into a multi-national context with all operating under the same rules. A major conclusion from market experiments is, "Manipulations in the trading rules defining the institution of exchange importantly affect the performance of laboratory markets" (p.181). In international trade, institutional arrangements are the essence of the problem. The impact of differences in quality specifications for a given product from different countries of origin might be a candidate for study using experimental methods. As the problem complexity increases, the appropriate experiment becomes messy, but, in spite of that, may lead to some interesting ideas.

The paper does not provide sufficient detail for me to visualize the experiments that might be associated with the trade questions addressed. The questions are appropriate. A major share of the interesting action related to trade negotiations is within each participating country. The domestic political considerations of participant countries are very important in the process as is now being indicated relative to a North American free trade agreement. I am optimistic that the methods of experimental economics can make a contribution in trade research, and I look forward to more from Davis and Mitchell on the application of experimental economics to trade issues.

References

Baker, G.A. and Babb, E.M. 1984. "Managerial Goals and Firm Performance: A Laboratory Experiment", *North Central Journal of Agricultural Economics, 6*: 88-94.