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NAREA Awards

Outstanding Master's Thesis Award

The Distinct Impact of Food Stamps on Food Spending: Comparing Evidence from Economic Theory, Policy Experiments, and Non-Linear Regression Methods

Parke E. Wilde

Cornell University
Advisor: Christine Ranney

Despite the size and importance of the federal Food Stamp Program, economists have remained unsure whether targeted food stamp coupons are significantly more effective than cash benefits in increasing consumer food expenditures. This uncertainty has hindered decision-making regarding proposals to "cash out" the Food Stamp Program.

In the past, the main contributions of theoretical and empirical economics to this question have contradicted each other. A famous application of economic theory, known as the Southworth Hypothesis, held that those food stamp recipients whose food expenditure exceeds their benefit allotment should exhibit the same spending pattern whether they receive their benefits as checks or as targeted coupons. In theory, such recipients are "unconstrained" by the form of benefits they receive. Although most current recipients are unconstrained, twenty years of empirical studies using regression techniques on cross-sectional survey data found that food stamp coupons do appear to have a distinct impact on food spending.

Cashout demonstrations in San Diego and Alabama in the early 1990s randomly assigned recipients to receive either coupons or cashable checks. The Alabama experiment found no difference in food spending between the check and coupon cohorts, while the San Diego experiment found the check cohort spent on average about 7% less money on food at home per person per week than did the coupon cohort. A larger proportion of recipients in San Diego were unconstrained, so these results appeared in conflict with the Southworth Hypothesis.

In this thesis, the San Diego and Alabama data were employed to estimate Engel functions for food expenditure using a non-linear regression model that was developed in the 1980s. This model accounts for the piecewise-linear budget constraint (PLC) that recipients are

expected to face according to the Southworth Hypothesis. By using this model in combination with the experimental data, it was possible to improve estimates of the marginal impact of food stamp coupons and cash benefits and, more importantly, to test whether explicitly modeling the budget constraint in this manner accounted for the observed differences in consumer responses to these benefits. The models were estimated with four different functional forms for the underlying Engel relationship.

The principal results were the following: (1) the PLC model yielded estimates of the relevant marginal impacts that were similar in magnitude to corresponding estimates by ordinary least squares (OLS); (2) the PLC model did not remove the evidence from San Diego that coupons and checks had different effects even for unconstrained families; (3) even ordinary income and check benefits appeared to have different impacts on food spending. Because of evidence that all three types of household resources could have different parameters in the Engel equation, a more general model was estimated that allowed these parameters to differ. A Likelihood Ratio test of restrictions on this general model again rejected predictions implied by the Southworth Hypothesis.

Several explanations for these surprising results were explored. Some explanations imply only minor alterations to the Southworth Hypothesis. Others require changes in the model's basic presumptions. Evidence from survey data and focus group interviews in San Diego and Alabama were used to evaluate alternative modifications to the traditional theory. In sum, this research suggested that the Southworth Hypothesis does not capture at least some relevant effects of the different possible delivery systems.

*Master's Thesis Award of Merit***Economic Analysis of Different Herbicide Treatment Recommendations for Groundwater Protection**

Wei Liu

University of Massachusetts
Advisor: L. Joe Moffitt

Although there is evident public concern about pesticide contamination of groundwater, few quantitative studies have been done to incorporate economic efficiency considerations in achieving groundwater quality goals with respect to pest control recommendations used in agricultural production. Moreover, even fewer empirical studies have focused on pesticide contamination of groundwater. Based on an existing theoretical method for incorporating environmental quality goals with respect to pesticides into the economic threshold, this thesis explicitly incorporates groundwater quality into calculation

of herbicide treatment recommendations for weed control by utilizing a groundwater loading model in conjunction with an empirical crop-weed pest system and economic optimization.

Results provide profit maximizing herbicide treatment recommendations corresponding to specific expected herbicide concentrations in groundwater. Moreover, results verify the potential for use of existing pest management information efforts in accommodating public concern for groundwater protection and for supporting farm profitability.

*Master's Thesis Award of Merit***Implications of Changing European Union Trade Policies on Latin America's Trade in Bananas**

Kleber Machado

Cornell University
Advisor: David R. Lee

Bananas are among the largest agricultural export crops worldwide and are, after citrus, the second most important fresh fruit entering international trade. Furthermore, of all tropical fruits of importance to developing countries, bananas rank fifth in export value, after sugar, coffee, cocoa, and rubber.

In 1992, the European Union (EU) became the largest banana market, accounting for 37% of global imports. EU imports come mainly from three sources: (1) EU territories, (2) producers from African, Caribbean, and Pacific signatories of the fourth *Lome* Convention (ACP), and (3) producers from Central and South America. Within the framework of the EU common agricultural policy (CAP), the EU has adopted a new single Community market for bananas ruled by a single banana policy. This policy is expected to have an enormous effect on Latin America's banana trade. This study at-

tempts to clarify the impacts of changing EU banana policies on Latin America's banana trade.

In this study, a multicountry trade model is used to investigate the effects of EU banana policy alternatives on trade flows, market share composition, and prices in the international banana trade. This model has seven exporters (Costa Rica, Colombia, Ecuador, Guatemala, Honduras, Panama, and ACP countries) plus ROW; and five importers (EU without France and Germany, France, Germany, the United States, and Japan) plus ROW. The model is an Armington-type model; it assumes that the trade system is primarily demand driven. The model is econometrically estimated and the estimated coefficients are used to stimulate four different policy scenarios: S1, the "status-quo" scenario; S2, the "free-trade" scenario; S3, the "1993 EU Banana Policy" scenario; and S4, the "GATT-bound Agreement of

1994" scenario. The simulation is an "out of sample" exercise for five years (1994 to 1999) and forecasts the effect of EU banana policy alternatives on trade flows and market share composition.

The individually estimated equations (export supply equations, first-stage demand equations, and second-stage demand equations) have good statistical fits. The model estimated in this study results in elastic export supply elasticities and inelastic import demand elasticities. It appears that market intermediaries have an important role in international trade of bananas.

The study presents strong evidence that the banana market responds differently to different types of changes in trade policy. The effect on the banana market when trade is liberalized is smaller (in absolute terms) than the effect when trade is further restricted; this occurs mainly because banana trade is already largely liberalized.

The effects of the different policy scenarios on exports are different for each exporting country. The results suggest that when trade is liberalized, Latin American countries increase their exports, while ACP countries decrease theirs. However, when the EU banana policy alternatives are simulated, ACP countries increase their exports to EU markets at the expense of exports from Latin America. The EU banana policy of 1993 is more costly, in terms of total exports and export revenues, for Latin American countries compared with the GATT-bound agreement. The effects of the different policy scenarios on imports is different for each importing country as well. The results suggest that when trade is liberalized, the protected EU markets (i.e., EU-FG and France) increase their imports, while the free market importers (i.e., Germany, Japan, and the United States) decrease theirs. However, when the EU banana policy

alternatives are simulated, the protected EU markets and Germany decrease their imports while Japan and the United States increase theirs.

This study shows that the effects of EU banana policy alternatives on the market shares that individual Latin American countries will have of the total imports to the EU from non-ACP sources are small. The results show that the implementation of either the 1993 EU Banana Policy or the GATT-bound Agreement of 1994 will result in a reduction of Latin America's market share in the EU market. The magnitude of the effect, however, is smaller when the GATT-bound agreement is simulated. The loss of Latin America's market share is primarily gained by ACP countries, which will improve their terms of trade as a result. The analysis of these two scenarios, in terms of their effects on Latin American exporters, shows that the GATT-bound agreement offers a preferable scenario for non-ACP exporters than the previous policy.

The effects of the different policy scenarios on export prices was a priori expected. Under the free-trade scenario, export prices increase in the short run as increasing demand drives total exports up. Under the trade-distorting scenarios, export prices decrease as diminishing demand drives exports down. Interestingly, the effects on export prices, as well as the effects on the market shares and trade flows, indicate that a free-trade scenario does improve the terms of trade for Latin American countries. Also, the results indicate that of the two EU Banana Policy alternatives analyzed in this study, the new GATT-bound agreement, signed on April 15, 1994, is less damaging to Latin American exporting countries than was the previous policy.

Journal Article of the Year for 1995

Recreational Swimming Benefits of New Hampshire Lake Water Quality Policies

Michael Needleman and Mary Jo Kealy

University of Delaware and U.S. Environmental Protection Agency

Water pollution control policies generally direct sources (i.e., industry, agriculture) to reduce loadings of certain pollutants. Thus, evaluating the relative net recreational benefits of policies to improve water quality requires establishing a linkage between the sources, the resultant water quality degradation at the affected water bodies, and, ultimately, the effect on recreational behavior. This linkage is rarely present in the empirical literature, which is, thus, deficient for water pollution control policy assessment purposes. In this paper, we estimate the

relative recreational swimming benefits that may result from controlling point and nonpoint sources of pollution, respectively, in New Hampshire's lakes. We use a repeated discrete choice framework to model swimming behavior as a function of each lake's level of eutrophication, bacteria, and oil and grease. For each pollutant, at each affected lake, we identify which source is responsible for the pollution, and we conduct scenarios controlling each pollution source independently and then taken together. Seasonal benefit estimates are presented

for each scenario. Coupled with information on the most cost-effective means of generating the scenarios, these estimates provide a useful starting point for a quantita-

tive assessment of the net recreational benefits of policies to improve the quality of New Hampshire lakes.

Honorary Life Member Award

Olan D. Forker

Department of Agricultural, Resource and Managerial Economics Cornell University

Dr. Olan Forker is recognized as Honorary Life Member of NAREA based on his exemplary career at Cornell University, his contribution to agricultural marketing research in the United States, and his active participation in NAREA for many years.

Olan Forker retired in 1995 after thirty-three years of distinguished service to the profession, with thirty of those years at Cornell University. Raised in Indiana, Olan received a B.S. degree from Purdue, an M.S. degree from Michigan State, and the Ph.D. from the University of California, Berkeley. He was an extension economist at Berkeley for three years until he joined the faculty at Cornell in 1965.

He served as chair of the department from 1976 to 1985, was director of the graduate program from 1971 to 1973 and 1975 to 1976, and was director of the undergraduate program in applied economics and business management from 1986 to 1993. He served Cornell as a faculty trustee from 1984 to 1988. Despite all of these administrative assignments, Olan has continuously maintained an active research program and is generally recognized as one of the leading agricultural marketing

professors in the United States and as a national authority on generic commodity promotion programs.

Olan served the NAREA as president in 1991–92. Earlier, during the formative years of NAREA, he served as a member and president of the Northeast Assembly, which directed the affairs of the association. He has been a regular participant at the annual meeting of the association and coauthored the article that received the first "Journal Article of the Year" award of the association in 1990. He was named a Distinguished Member of the NAREA in 1994.

Olan Forker's career is marked by outstanding service and quality of professional accomplishment. He has been a wonderful role model and mentor for young colleagues and has made an impact on the profession and the agricultural community through his contributions to research and extension. More than most in our profession, through his efforts, he has had measurable impacts on decision makers and on other professionals. We recognize Dr. Forker as an Honorary Life Member based on his record and his contributions to NAREA.

Distinguished Member Award

Conrado "Bobby" Gempeaw II

Department of Food and Resource Economics University of Delaware

Dr. Conrado "Bobby" Gempeaw II is recognized as Distinguished Member of NAREA for his extraordinary efforts as editor of the *Agricultural and Resource Economics Review* during his three-year term. His major initiatives for the journal include implementing the changes in the journal's name and appearance, active solicitation of quality papers, increasing submissions during his tenure, designing and implementing two special theme issues of *ARER*, and developing a national pool of reviewers to supplement the existing pool, which

introduced more people to the journal and led them to consider it as an outlet for their papers.

The success of these and numerous other efforts that Bobby made to enhance the *ARER* are evident in looking at the journal's content and appearance. Because of his efforts the journal has made an excellent transition from a regional to a national journal, while continuing its Northeast roots and publication of Northeast authors. We recognize Dr. Gempeaw's contribution to NAREA through the Distinguished Member Award of NAREA.