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## **NAREA Awards**

### ***Outstanding Master's Thesis Award***

## **Consequences of the Expanded Renewable Fuel Standard on Greenhouse Gas Emissions**

**Richard Klotz**

**Cornell University**

**Advisor: Antonio Bento**

Recent studies that have assessed the emission impacts of U.S. biofuel policies focused primarily on emissions resulting from adjustments in agricultural and land markets. This thesis builds on these studies by providing a comprehensive assessment of emissions from adjustments in both land and fuel markets that result from a large-scale U.S. biofuel policy, the Renewable Fuel Standard (RFS) for conventional biofuels.

I develop a multi-market economic model that integrates land, food, and fuel markets, and link this model to a lifecycle emissions model. With this framework, the impact of the RFS on land and fuel markets, both domestic and international, is simulated and mapped to changes in greenhouse gas emissions. The RFS will reduce emissions if the intended emission savings from reduced gasoline consumption are greater than total carbon leakage, which are changes in emissions from

sectors not constrained by the RFS. This framework contrasts sharply with prior emission assessments of biofuel policies, which rely either on agricultural models that do not account for leakage in fuel markets, or on lifecycle emission accounting methods that fail to capture sources of emissions induced by price adjustments.

I find that the RFS reduces gasoline consumption by 0.6 percent and 2.5 percent relative to baseline levels in 2009 and 2015 respectively. These reductions lead to intended emission savings of 6.5 TgCO<sub>2</sub>e in 2009 and 26.32 TgCO<sub>2</sub>e in 2015. Approximately 50 percent of the intended emission savings is offset by leakage in domestic land and fuel markets. Leakage in international crude oil and land markets is substantially larger, each more than offsetting intended emissions savings. As a result, the RFS has a substantially positive impact on greenhouse gas emissions.

### ***Master's Thesis Award of Merit***

## **Impacts of Agglomeration Economies and Market Access on Firm Growth: An Empirical Assessment of Food and Beverage Manufacturers in New York State**

**Jeffrey Hall**

**Cornell University**

**Advisor: Todd M. Schmit**

From 1998 through 2007, total manufacturing employment declined 29 percent in New York State, while food manufacturing employment actually grew slightly (0.96 percent). Policymakers wish-

ing to retain or develop new manufacturing jobs may find that public support for agribusiness manufacturing is a useful method for creating and retaining manufacturing employment, especially

in rural areas. Moreover, the establishment of a healthy food manufacturing sector can be beneficial to local agricultural producers by increasing the local demand for raw agricultural inputs.

To help guide policymakers, agricultural economists have investigated the factors affecting the location decisions and growth of agribusiness manufacturers. To further the understanding of these factors, a comprehensive survey of food and beverage manufacturing establishments in New York State was conducted in 2009. The objectives were to investigate the effect of various aspects of the business environment within the state, identify the effectiveness of various firm-collaborative strategies and public policy interventions on improving firm performance, and collect plant-specific information on current and expected growth across several metrics. The unique plant-level data contains nearly 400 responses, and encompasses a range of firm sizes and industry sectors, allowing for the evaluation of important growth factors differentiated by firm size and sector.

This thesis first provides a detailed analysis of the survey results to identify relationships based on firm size and industry sector. This includes a principal components analysis of business environment factor ratings to identify benefits provided by New York State's business environment, as well as impediments to growth. Then, a growth analysis is presented to estimate the effects of both firm-level and location-specific factors (including labor supply, markets, clustering, and firm characteristics) on firm-level measures of revenue growth. This work contributes importantly to the literature in the following ways:

- The unique dataset used in this analysis provides firm-level measures of growth. While past studies have examined spatial factors affecting new plant location decisions, we are instead able to examine how

these spatial factors affect the actual performance of existing plants.

- Past studies have attempted to examine the agglomeration benefits derived from firm clustering. This study models upstream, within-stream, and downstream firm clustering simultaneously to compare the relative benefits of each.
- To account for the heterogeneous nature of the data that includes representation from both rural and urban processing plants, within-stream firm clustering effects are allowed to vary across urban and rural areas. Previous studies did not account for differences in urban and rural clustering. We propose that differences in firm behavior and market environments between urban and rural firms may create different agglomeration effects.
- We test for potential endogeneity of our agglomeration variable and use instrumental variables estimation to correct for potential endogeneity. While Jaenicke et al. (2009)<sup>1</sup> used survey-derived variables to instrument for clustering, we instead use county-level historical data as instruments.

We find evidence of (i) positive effects from firms locating near upstream and downstream clusters, (ii) different effects from within-stream clustering between urban and rural areas, (iii) negative effects of within-stream clustering in rural areas, and (iv) evidence of little endogeneity problems in model estimation.

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<sup>1</sup> E.C. Jaenicke, S.J. Goetz, P.-C. Wu, and C. Dimitri. 2009. "Identifying and Measuring the Effect of Firm Clusters Among Certified Organic Processors and Handlers." Paper presented at the Agricultural and Applied Economics Association's annual meetings, Milwaukee, WI (July).

### *Master's Thesis Award of Merit*

## **Effects of Food Safety Regulations on International Trade in Shrimp and Prawns: The Case of Oxytetracycline Regulation**

**George Finley Szczepanski**

**University of Delaware**

**Advisor: Titus O. Awokuse**

The purpose of this thesis is to investigate the impacts of changes in the maximum residual limit (MRL) of the antibiotic oxytetracycline on international trade in shrimp and prawns. The MRL is a food safety regulation set by the importing country, which is not consistent among the major importing countries. Increasing limitations on traditional barriers to trade over the past twenty years have caused importers to use sanitary and phytosanitary (SPS) restrictions, such as food safety regulations, as barriers to trade. Much research has been done to identify SPS restrictions that limit trade and that function as a barrier, but, while previous models have looked at the effect of different regulations on seafood, to the best of my knowledge this is the first analysis on the effects of oxytetracycline regulation on interna-

tional trade of shrimp. This is important because shrimp is a highly traded and valuable product that is created primarily in aquaculture. Focusing on a commodity mainly produced in aquaculture helps to isolate the effect of the regulation, which applies only to seafood produced in aquaculture.

This thesis uses a gravity model and simulation analysis to analyze a panel data set including trade values from top exporters of shrimp and prawns to top importers from 1995–2007. The simulations estimate the trade effects of harmonizing regulations on a number of different suggested MRLs. The results show the MRL to be a limiting factor, and that a harmonization on the recommended Codex Alimentarius standard would increase trade by 26 percent, or \$1.5 billion.

### *Distinguished Member Awards*

*This award recognizes members who have made continuous and outstanding contributions to the Association, the region, and the profession. The award recognizes members for significant recent professional achievement in the context of an overall meritorious record. Recipients must be members in good standing and be nominated by three other members. A recipient can receive the award more than once, based on recent achievements.*

### **Jill Caviglia-Harris**

Jill Caviglia-Harris is a Professor in the Department of Economics at Salisbury University. She received her Ph.D. from the Department of Economics at the University of Tennessee, with a major in environmental and natural resource economics and public finance and a minor in urban and regional economics. Since she started her career at Salisbury University, she has established a research agenda that covers a wide variety of issues concerning

forestry, sustainable agriculture, and land use in the Brazilian Amazon. She has received over \$880,000 in research support from numerous funding agencies, including the National Science Foundation, National Security Education Program, Organization of American States, and McClure Fund Foundation.

Dr. Caviglia-Harris has also received numerous accolades as a teacher and mentor. In 2010, she received the University of Maryland

System Board of Regents Faculty Award for Excellence in Teaching, the Salisbury University Outstanding Research Mentor Award, and more recently, the Southern Economic Association Kenneth G. Elzinga Teaching Award. She has also demonstrated scholarship in her teaching through several publications that examine various tools and approaches to improve economics instruction and enhance program assessment. She received in 2005 the Emerald Literati Club Highly Commended Award for the article “Interdisciplinary Teaching: Analyzing Consensus and Conflict in Environmental Studies.” Her contribution to instruction was also recognized by the Institute for Service Learning, from which she received a grant in 1999.

Dr. Caviglia-Harris has served Salisbury University and the profession in numerous capacities. She has advised the research of numerous undergraduates at Salisbury University and has served as a reviewer for various journals in her field, in addition to serving as a proposal reviewer for the National Science Foundation. For her outstanding service, she has received many recognitions as well. She has received the NAREA Award for Outstanding Service in 2010 and the Salisbury University President’s Award for Outstanding Leadership of the 7th Annual Student Research

Conference in 2006 and 2007. She also received the Distinguished Faculty Award from Salisbury University in 2004.

Dr. Caviglia-Harris’ service and dedication to NAREA in the past decade is unparalleled. Her willingness to contribute her time and expertise to the Association is truly inspiring. She is almost single-handedly responsible for the creation of an entirely new website template for the NAREA annual meetings, including a new submission and review portal. These contributions have revolutionized the way that NAREA interacts with members regarding such things as abstract submission and review, and provision of information on the annual meeting. At the same time, Dr. Caviglia-Harris has also been a driving force behind the creation and implementation of the NAREA Young Scholars Program, through which new members of the Association are given the opportunity to learn about NAREA, discuss various aspects of scholarly productivity, and get to know senior members of the Association. She was also a Board member from 2007 to 2010, at which point she took over as NAREA President-Elect. In her role as President-Elect, she has overseen coordination of the 2011 AAEA and NAREA joint meeting—a task that has required great personal time and effort.

## Jacqueline Geoghegan

Jacqueline Geoghegan is a Professor in the Department of Economics at Clark University. She received her Ph.D. from the Department of Agricultural and Resource Economics at the University of California, Berkeley, with a minor in environmental law and economic development. She specializes in environmental and natural resource economics and is a leading authority in spatial modeling of land use using Geographic Information System (GIS) data. She has analyzed a wide variety of issues on urban and rural land use changes including those that relate to patterns of deforestation, growth in carbon stocks, job decentralization and labor scarcity, capitalization of open spaces in residential property values, and plant species invasions. She looks beyond spatial

modeling of land use issues in the United States and examines different land use issues in the Yucatan region as well. As evidence of her important scholarly contributions, Dr. Geoghegan received the NAREA Award for Article of the Year in 2003. To date, she has published 22 highly cited peer-reviewed journal articles, 2 books, and 17 book chapters in addition to various presentations at seminars and workshops on the economics of spatial and land use changes. She has also been a principal investigator or co-investigator in various grants totaling over \$1.7 million.

Dr. Geoghegan’s contribution to her field is not limited to research. At Clark University, where she teaches courses in natural resource and environmental economics, international environmen-

tal policy, spatial environmental analysis, and econometric theory, she has been an exceptional teacher. In 2008 she was nominated as "Teacher of the Year" by the Clark senior class, and has three times received a Clark University Exceptional Performance Award.

Dr. Geoghegan's contributions beyond teaching and research have been equally impressive. She has served Clark University and the economics profession in various capacities. She was the Inaugural Director of the Mosakowski Institute for Public Enterprise in 2007 and served as the Director of the George Perkins Marsh Institute from 2007 to 2008. Professor Geoghegan has also supervised numerous Ph.D. dissertations at the Department of Economics and has been Director of the Graduate Program in Economics since 2005. Since 2008, she has served as an Associate Editor of the *American Journal of Agricultural Economics*. Additionally, she has served as a reviewer for numerous journals and funding agencies including the U.S. Department of Agriculture's Economic Research Service, the National Science Foundation, the U.S. Environmental Protection Agency, U.S. Agency for In-

ternational Development, and the National Aeronautics and Space Administration.

Dr. Geoghegan's dedication and contributions to NAREA have been profound and matched by few. She has been active in the association for nearly two decades, and is a mainstay of NAREA's annual meetings and workshops. She has served on countless official and ad hoc committees, including key contributions to the selected papers committee. She has also been active in numerous NAREA workshops over the past ten years. Professor Geoghegan served on the NAREA Board of Directors from 2005 to 2008, as President-Elect in 2008, President in 2009, and has just completed her term as NAREA Past-President. During each of these terms of service, she has made important contributions to the Association, including much needed improvements to NAREA's structure and function. Dr. Geoghegan is currently serving as the co-coordinator for local arrangements for the 2012 NAREA Annual Meeting in Massachusetts, and is on the organizing committee for the 2012 NAREA Workshop on Ecosystem Services.

### ***NAREA Award for Outstanding Public Service Through Economics***

*This award was created to recognize and encourage contributions to the general public welfare. The intent is to recognize that agricultural, environmental, consumer, resource, or community development economics can be applied to solve important problems affecting the quality of life of the general public, and that such contributions may come outside the traditional, sometimes narrowly defined, contributions to research, teaching, or extension. The award may be given to anyone, including noneconomists and nonmembers of NAREA.*

### **Ronald W. Cotterill**

Professor Ronald W. Cotterill is Professor Emeritus, is founder and Director of the Food Marketing Policy Center (herein FMPC) at the University of Connecticut, and has been a faculty member in the Department of Agricultural and Resource Economics at the University since 1981. Prior to his arrival at the University of Connecticut, Professor Cotterill was Assistant Professor of Agricultural Economics at Michigan State University, from 1977 to 1981. He received a joint Ph.D. in economics and agricultural economics from the University of Wisconsin-Madison in 1977, an M.A. in economics and M.S. in agricultural economics from Wisconsin, and was a Marshall

Scholar in economics at the University of Copenhagen. He graduated from Cornell University in 1970 with distinction and honors in agricultural economics, and was raised on a dairy farm that is now Cornell's Dairy, Sheep, and Beef Research Center.

Over the past four decades, Professor Cotterill has developed an internationally recognized program in applied industrial organization and economic research in food industries. Among his many contributions to the profession, he has been at the forefront of research using scanner data to answer critical questions in the economics of food policy. He was among the first to use such data to

advance empirical industrial organization research. Through FMPC, Professor Cotterill provided open access to these scanner panel data bases, attracting Food Marketing Policy Research Fellows from over a dozen universities including Harvard, Yale, Oxford, London Business School, University of Paris, Virginia, VPI, Cornell, Johns Hopkins, Toronto, and Wisconsin. Among many other advances, these data have been used to explore and develop new approaches to demand estimation and analysis of price transmission.

Perhaps his most important contributions, however, have been through the application of economic research and insight to food policy in the United States and elsewhere. Among other contributions, his work has had a profound impact on the evolution of antitrust analysis and policy, with major impacts in food industries and the prices consumers pay for food items such as milk and cereal. Through these and other efforts, he has saved U.S. consumers billions of dollars. One of his most prominent accomplishments was his impact on reducing breakfast cereal prices in the 1980s, with work that addressed tacit collusion in the cereal industry. His policy analyses and insights into food industry strategies have impacted public policy at the U.S. Congress, the U.S. Federal Trade Commission, the Department of Justice, state legislatures and attorneys general, private firms and cooperatives, the British Competition Commission, the New Zealand Competition Commission, Australian Competition Authorities, and the Turkish Competition Bureau.

Professor Cotterill has been a leader in the dissemination of research and information to policymakers and the public at large, leading to significant national-level policy impacts. These impacts have led to improvements in consumer welfare throughout the United States and in other countries. For example, his work on tacit collusion in the cereal industry (FMPC Issue Paper No. 6) prompted an investigation by Congressman Samuel Gejdenson and then-Congressman Charles E. Schumer. Through the campaign to address this important consumer issue, Cotterill appeared in numerous media outlets including *Good Morning America*, 20/20, and the Phil Donahue Show. He organized two Congressional forums and assisted on papers authored by the Congressmen that disseminated his research. The campaign was successful, and as a direct result cereal prices

were reduced by roughly 10 percent. Dr. Cotterill estimated consumer price savings to be \$2.6 billion in the three years after the public campaign alone. Of his contributions, Senator Charles E. Schumer wrote: "Professor Cotterill's assistance was firmly grounded in accurate, understandable, factual analyses of the situation. When we submitted his work to other economists for review, they supported his analysis. Ultimately, Phillip Morris/Post—the firm that threatened to sue him for libel—led the shift to lower prices. Professor Cotterill's careful and unflinching economic analysis benefited the American public."

Professor Cotterill also made major contributions through his research on milk pricing at the farm and retail level and his related testimony before Congress and in the courts. Of these contributions, Senator Patrick Leahy wrote: "Dr. Cotterill and the Food Marketing Policy Center have provided my office, and the United States Senate Judiciary Committee, with several constructive policy relevant examinations of dairy policy issues. Also his work on both the relationship between market share and prices in food industries, and the causes and effects of increasing agribusiness concentration, has provided very important information to both Congress and federal agencies which has been useful in both evaluating pending mergers, and in crafting federal legislation."

While making these and many other contributions to research and policy, Dr. Cotterill has been a valued colleague to the faculty, and a teacher and advisor to students in the Department of Agricultural and Resource Economics at the University of Connecticut. Through his support, leadership, teaching, and scholarship, Professor Cotterill has helped propel countless students into careers in academia, government, and the private sector. Much of the success of the Department over the past three decades can be traced back to his many contributions, and to the activity of FMPC, which he founded and directed.

Through the 2011 Award for Outstanding Public Service Through Economics, NAREA recognizes these and many other contributions of Professor Ronald W. Cotterill. As a scholar, he has advanced our understanding of food marketing, industrial organization, and food markets. He has used that understanding to help the everyday consumer. His ability to utilize innovative methods to disseminate his research has had significant im-

pacts on public policy and improved the performance of markets worldwide. Recognizing these and many other contributions, this award reflects

Professor Cotterill's distinguished service to the field and unique impact on public policy through economics.

### *Journal Article of the Year for 2010*

## **Incomplete Demand Systems, Corner Solutions, and Welfare Measurement**

(*ARER* Vol. 39, No. 1, February 2010: 22–36)

**Roger H. von Haefen**

The paper demonstrates how corner solutions raise difficulties for the specification, estimation, and use of incomplete demand systems for welfare measurement with disaggregate consumption data, as is common in the outdoor recreation literature. A simple analytical model of consumer behavior is used to elucidate the potential biases for welfare measurement arising from modeling

the demand for  $M$  goods as a function of  $M + N$  prices ( $N > 1$ ) and income when individuals do not consume all goods in strictly positive quantities. Results from a Monte Carlo experiment suggest that these biases can be substantial for large-scale policy shocks when prices are highly correlated.