## Abstracts of Selected Papers

# Agricultural and Rural Markets and Business

MODERATOR: Farhed Shah (University of Connecticut)

**"An Evaluation of Meat Advertisers' Reactions to Competitors' Advertising and Revenues." Jeffrey Hyde (The Pennsylvania State University) and Brent A. Gloy (Cornell University).**

This research analyzes dynamic relationships among meat advertisers. We model one group's advertising expenditures as a function of advertising and retail revenues of all groups. Results indicate that pork and beef may accommodate each other's advertising, suggesting potential joint benefits of advertising. These appear to compete more directly with poultry.

**"What Determines Productivity Growth of Agricultural Cooperatives?" Chatura B. Ariyaratne, Allen M. Featherstone, and Michael R. Langemeier (Kansas State University).**

This study examines productivity of a sample of grain marketing and farm supply cooperatives during the period 1990 through 1998. Findings show the industry's productivity was due to improvement in technology. This productivity was associated with the grain and agrochemical product lines. Policies that raise prices of grain and agrochemicals would encourage a cooperative to be more productive.

**"Impact of the Northeastern Dairy Compact on Retail Market Power." Benaissa Chidmi, Rigoberto A. Lopez, and Ronald W. Cotterill (University of Connecticut).**

This paper applies the Appelbaum model to the Boston fluid milk market case to assess both oligopoly power and the impact of the Northeast Dairy Compact on market power. Empirical results indicate that much of the increase in retail milk prices after the Compact was due to pre-existing market power and that small increases in markups ensued after its implementation.

# Consumer Acceptance of Genetically Modified or Organic Foods

MODERATOR: Gerard D'Souza (West Virginia University)

**"Consumer Willingness to Pay for Non-Genetically Modified and Organic Foods." John C. Bernard and Chao Zhang (University of Delaware).**

This study examines consumer willingness to pay for non-genetically modified (GM) foods in a market situation where consumers also had the option of purchasing organic foods. It was hypothesized that an organic premium would be significantly higher than a non-GM premium. Auction experiments were conducted with adult subjects in Delaware.

**"Consumer Acceptance of GMOs Revealed: A Market Experiment with Bt-Sweet Corn." Jennifer S. James, Twilla Parker, Shelby Fleischer, and Michael Orzolek (The Pennsylvania State University).**

Bt-sweet corn provides protection from major pests, but uncertainty regarding consumer acceptance reduces the incentive to adopt it. This market experiment was conducted to assess consumer choices between Bt and non-Bt sweet corn sold in the fresh market. The overall market share of Bt-sweet corn was over 40%.

**"Consumer Acceptance of Food Biotechnology: Willingness to Buy Genetically Modified Food Products." Ferdaus Hossain, Benjamin Onyango, Adesoji Adelaja, Brian Schilling, and William Hallman (Rutgers University).**

This study examines consumer acceptance of food biotechnology. Results suggest that younger, white, male, and college-educated individuals are more likely to accept GM foods. While confidence in scientists, corporations, and government, and religious views are important, income and political orientation do not appear to influence acceptance of GM foods.

**"An Evaluation of Consumer Willingness to Pay for Organic Produce in the Northeastern U.S." Ramu Govindasamy, Adesoji Adelaja, and Sanjib Bhuyan (Rutgers University).**

Many factors have been found to affect the willingness to pay for organic produce. In contrast to existing research, this paper focuses on the northeast United States. The results indicate that those consumers who read food labels, and have heard about IPM produce are more likely to pay a premium for organic produce.

# Valuation and Public Choice in Environmental Goods

MODERATOR: **Randy Rosenberger (West Virginia University)**

**"Advances in Pooling Revealed and Stated Preference Data in Nonmarket Valuation: Consistency of Choice and Out-of-Sample Performance." Brett R. Gelso and Jeffrey M. Peterson (Kansas State University).**

This paper presents a two-stage model of economic agents for natural resource locations. We also investigate the out-of-sample accuracy of predictions as well as welfare effects from the pooled approach. Results suggest that, in some cases, the combined models identify a greater degree of prediction success compared to separate models.

**"A Comparison of Revealed, Stated, and Actual Behavior in Response to a Change in Fishing Quality." Richard Ready, Willard Delavan, Donald Epp, and Yanguo Wang (The Pennsylvania State University).**

Due to problems at its hatcheries, Pennsylvania will stock 28% fewer trout in 2002. Two projections of the impact of this reduction on angling participation—one based on historical fishing behavior, and the other based on survey responses—are compared to the actual change in license sales that occurred.

**"Testing for Differences in Hypothetical and Real Willingness to Pay Under the Dichotomous-Choice and Open-Ended Contingent Valuation Formats:** Some Experimental Tests Using a Real, Deliverable, Environmental Public Good." Michael A. Spencer (Brown University), Stephen K. Swallow (University of Rhode Island), and Jason F. Shogren (University of Wyoming).**

The NOAA Contingent Valuation (CV) Panel of Economists (1993, *Federal Register*) concluded that (1) CV overestimates actual WTP, and (2) the open-ended (OE), unlike the dichotomous-choice (DC), elicitation format invites overstatement of WTP. Through a CV experiment using an environmental good, we find hypothetical WTP > real WTP, hypothetical $WTP^{OE}$ > hypothetical $WTP^{DC}$, but real $WTP^{OE}$ . real $WTP^{DC}$.

**"My Kingdom for a Parking Space: A Study of the Full Costs of a Campus Parking System." Corinne Pinkerton, Kimberly Pawlawski, Jennifer Hafner, Amy Culp, and John M. Halstead (University of New Hampshire).**

This paper examines the true costs of time associated with campus parking to individuals. Comparison is made of the value of the opportunity costs of time calculated via wages and respondents' willingness to pay to obtain guaranteed, convenient parking. Our findings indicate that these two methods yield widely varying results.

# International Agricultural Markets and Trade

MODERATOR: **Doug Morris (University of New Hampshire)**

**"A Differential Game-Theoretic Analysis of International Trade in Renewable Resources." Amitrajeet A. Batabyal and Hamid Beladi (Rochester Institute of Technology).**

We conduct a differential game-theoretic analysis of international trade in renewable resources between a single buyer and a seller. When harvesting costs are stock independent (dependent), the optimal tariff is time consistent (inconsistent). When the buyer uses both tariffs simultaneously, the monopolistic seller can be forced to behave competitively.

**"Implications of Dairy Imports: The Case of Milk Protein Concentrates." Kenneth W. Bailey (The Pennsylvania State University).**

Imports of milk protein concentrates (MPC)—a new dried milk protein product—are increasingly entering the United States with minimal trade restrictions. This

study analyzes the factors leading to increased imports, and whether they displace domestic use of nonfat dry milk and affect the dairy price support program.

**"Computer Simulation of the Trade and Environment Model (TEM)." Haixiao Huang and Walter C. Labys (West Virginia University).**

Computer simulations are conducted for the trade and environment model to examine the simultaneous interactions between trade and the environment, and to further validate the model upon which the interactions are based. The results show that the TEM system behaves with consistent patterns in all the deterministic and stochastic simulations.

# Land Allocation, Nonpoint Pollution, and Recreation

**MODERATOR: Kevin Boyle (University of Maine)**

**"Land Allocation Inefficiencies: A Comparison of Four Andean Pact Countries." Julio E. Molineros and James Shortle (The Pennsylvania State University).**

There is widespread concern about the increasing rate of deforestation, especially in tropical countries. A primary concern is that unsecured land ownership rights play a significant role in deforestation. Based on the findings of this study, we conclude that the relative political instability characterizing these Andean Pact countries has an effect on land allocation practices contributing to deforestation.

**"Public Funding of Environmental Amenities: New Taxes or Existing Revenues for Coastal Land Conservation?" Michael P. McGonagle (Rhode Island Resource Recovery Corporation) and Stephen K. Swallow (University of Rhode Island).**

We consider the potential for alternative sources of funds—new taxes or existing general revenues—to affect public preferences for conservation. Contingent choices (valuation) show a divergence between the marginal utility of income and the marginal utility of public expenditure, and raise an unacknowledged equity issue regarding lower income groups.

**"Recreation Opportunities and Health Status in West Virginia." Randall S. Rosenberger, Yoav Sneh, and Tim Phipps (West Virginia University).**

This study supports the hypothesis that leisure-time recreation provides options and opportunities for enjoyable physical activities, which in turn reduce health care burdens. Given the majority of Americans are considered to be physically inactive and/or obese, coupling preventative health care policy and recreation supply may help society overcome this serious health trend.

# Food Demand and Consumer Marketing

**MODERATOR: Alberto B. Manalo (University of New Hampshire)**

**"Consumer Perception of Biotechnology: Uncovering Factors Driving Consumer Acceptance of Genetically Modified Food." Adesoji Adelaja, Ferdaus Hossain, Benjamin Onyango, William Hallman, and Brian Schilling (Rutgers University).**

Consumers are generally undecided about biotechnology. While there is broad support for plant genetics for health benefits, the public expresses disagreement about animal biotechnology for pure economic benefits. Consumers' perceptions of biotechnology are related to their socioeconomic characteristics. Skepticism exists about scientists, corporations, and government, all of which adversely influence public acceptance of biotechnology.

**"Consumer Knowledge of Food Biotechnology: A Descriptive Study of U.S. Residents." Brian J. Schilling, William K. Hallman, and Adesoji O. Adelaja (Rutgers University).**

A national survey conducted by the Food Policy Institute demonstrates the lack of knowledge and awareness most Americans have of genetically modified foods. This study provides insight into public perceptions of food biotechnology's risks and benefits, and a preliminary examination of consumers' stated preferences for genetically modified functional foods.

**"A Conjoint Analysis of Consumer Demand for Organic Apples in Vermont." Junjie Sun and Qingbin Wang (University of Vermont).**

A conjoint analysis is conducted to examine consumer preferences and willingness to pay for organic apples in Vermont. Results based on a sample of 382 respondents suggest that there is a significant niche market for organic apples, and Vermont consumers are willing to pay more for organic apples produced locally.

# Land and Water Management Over Time

**MODERATOR: Jacqueline Geoghegan (Clark University)**

**"Alternate Decision Rules, the Flexibility Premium, and Land Development Over Time Under Uncertainty." Amitrajeet A. Batabyal (Rochester Institute of Technology).**

This study examines the role played by time-independent and -dependent rules in the decision to develop land. We analyze the expected profit of a landowner who uses time-independent and -dependent rules. We then compare the properties of time-independent and -dependent rules and discuss the premium stemming from the maintenance of temporal flexibility.

**"Economic Analysis of Sedimentation Management in a System of Cascading Dams: A Case Study of the Mahaweli River in Sri Lanka." Shigekazu Kawashima and Farhed Shah (University of Connecticut).**

A model is developed to compare net benefits of several sediment control strategies for a system of cascading dams. Data from Sri Lanka are used to perform simulations for a range of economic and engineering parameters. External costs of sediment released from upstream dams are also estimated for policy purposes.

**"Agricultural Water Allocation Under Increasing Scarcity and Uncertainty: An Application to South Asia." Anita Chaudhry and Farhed Shah (University of Connecticut).**

This paper develops a micro-model of farmers' behavior when agricultural water supply is scarce and uncertain. Crop choices and water use across farmers are characterized for allocation regimes such as *warabandi* in South Asia, as well as water markets. Implications of uncertainty and increasing scarcity are discussed.

# Marketing, Decision Making, and Production Policy

**MODERATOR: Robert J. Johnston (University of Rhode Island)**

**"Analysis of Exchange Rate Linked Subsidies for Non-Price Export Promotion: The Case of Soybeans." Laxmi Paudel (University of Georgia), Henry W. Kinnucan (Auburn University), and Murali Adhikari (University of Georgia).**

An equilibrium displacement framework was developed to evaluate the effect of exchange rate linked subsidies for non-price export promotion for U.S. soybeans. Study results show that an increase in promotion expenditure increased the dollar value and producer welfare of soybean growers. The gross gain to the domestic soybean producers was positive.

**"An Association of Consumer Preferences and Behavioral Characteristics with Technology Based Grocery Shopping Efficiency Options." Lyndon E. Goodridge (University of New Hampshire).**

A focus group generated set of stimuli for using an online shopping option, either in combination with home delivery or a grocery drive-up, was linked to a number of customer attributes in an effort to identify potential target markets. Primary data from a 15-question survey instrument revealed a preference for several shopping efficiency options in addition to the traditional "internet purchase/home delivery" combination.

**"Two-Tier Voluntary Supply Management Under Maximum Uncertainty: The Northeast Interstate Dairy Compact Program." Douglas E. Morris (University of New Hampshire).**

Funds contributed by all farms in the Northeast Interstate Dairy Compact were distributed to farms that increased production by 1% or less over the period 1 July 2000 to 30 June 2001. Half was paid on a per farm basis and half on production. Forty percent qualified and received a per farm payment of $1,005.71 and 6.62¢ per cwt.

**"An Empirical Analysis of Information Sourcing in Agriculture." David R. Just (Cornell University) and David Zilberman (University of California, Berkeley).**

Information sourcing decisions are largely governed by internal capacity to understand information. By including individuals' roles, and human capital characteristics, we are able to derive a hedonic model of information demand. Using a survey of agricultural decisions makers, this study explores how many information sources target groups of agricultural consumers.

# Rural Development

**MODERATOR: Todd Gabe (University of Maine)**

**"Convergence of Income and Heterogeneity in the United States." Derek Brewin and Martin Shields (The Pennsylvania State University).**

According to neoclassical theory, economies with low starting incomes should grow faster than their richer neighbors—their output and incomes should converge. This paper examines this assertion across the counties of the United States. The hypothesis of convergence is supported for rural and suburban counties, but not for urban cores.

**"Are State Economic Development Programs Effective in Rural Areas? An Examination of Pennsylvania's Major Economic Development Programs." Martin Shields, Stephen M. Smith, and Twilla Parker (The Pennsylvania State University).**

We examine three programs designed to create jobs in rural Pennsylvania. Drawing on nearly 30 interviews, we find that low-interest loan programs often substitute for private capital, while the training grant program provides training which might not otherwise take place. Findings also reveal that national business trends often overwhelm state efforts.

**"Economic Development Policy in Rural Counties." Sara-Beth James, Thomas W. Ilvento, and Steven E. Hastings (University of Delaware).**

This paper analyzes the role of local economic development strategies on employment. Data were collected on employment changes in 146 nonmetro counties along with a survey of economic development offices (99 surveys, 67.8%). Using OLS, results show that counties placing increased emphasis on economic development had higher employment growth.

**"User Access Fees: Revenue Generation Potential and Impact on Low-Income Recreational Users at a State Forest in West Virginia." Alan R. Collins and Craig Colistra (West Virginia University).**

Survey data from 218 recreational users at Coopers Rock State Forest showed that 73% of respondents said they would be willing to pay a user access fee. The average willingness to pay (WTP) was $2.32 per person. Implementation of a $2 fee maximized revenue at over $116,000, but decreased current usage by 53%. Low-income respondents had a higher WTP, but their usage was reduced more by fees compared to those with high incomes.

# Agricultural Production and Risk

**MODERATOR: James W. Dunn (The Pennsylvania State University)**

**"Yield and Income Risk-Efficiency Analysis of Alternative Fallow Systems for Rice Production in the Guinea Savannah of Northern Ghana." Augustine S. Langyintuo (Purdue University), Emmanuel K. Yiridoe (Nova Scotia Agricultural College), Wilson Dogbe (Savanna Agricultural Research Institute), and James Lowenberg-Deboer (Purdue University).**

Risk efficiency of rice yields and income from an improved short-duration cover crop-fallow were compared with traditional natural bush fallow, and contin-uous rice cropping systems. Production systems that incorporated the leguminous cover crop-fallow were superior to the traditional natural fallow system, based on both yield and income risk-efficiency considerations.

**"Farmers' Perceptions of Risk Sources and Risk Management Strategies in Agriculture in an Urban Influenced Region: Evidence from New Jersey Agriculture." Benjamin Onyango and Ferdaus Hossain (Rutgers University).**

Farmers' perceptions of risk sources and their risk management strategies are explored using data from New Jersey agriculture. This study finds wide divergence in farmers' perceptions of risk sources and their views about available risk management strategies, which are significantly influenced by farmers' socioeconomic characteristics and farm attributes.

**"The Risk Management Economics of Supplemental Irrigation: Scale and Technology Choice in Northern Maine." Timothy J. Dalton (University of Maine).**

Potato growers in northern Maine face numerous production perils, with drought and heat producing the greatest losses. This research evaluates scale effects and technology choice in the irrigation adoption decision for a typical Maine potato farm in an expected utility framework. Overall, there is a breakeven acreage scale above which supplemental irrigation reduces production risk.

# Environment, Production, and Trade

**MODERATOR: Titus O. Awokuse (University of Delaware)**

**"Energy Demand in the Kansas Agriculture Sector: Correcting Serial Correlation and Imposing Curvature." Chatura B. Ariyaratne and Allen M. Featherstone (Kansas State University).**

This study evaluates the impact of energy shocks on other farm input demands imposing homogeneity, symmetry, monotonicity, and curvature while testing and correcting serially correlated errors for Kansas agriculture during 1973−98. All inputs were Morishima substitutes. A major economic policy regime change was observed around the late 1980s and early 1990s.

**"An Economic Analysis of Variable Rate Technology for Nitrogen on Corn Using Experimental Data." Chatura B. Ariyaratne, John Schmidt, Allen M. Featherstone, and Terry Kastens (Kansas State University).**

The economic viability between constant rate technology versus variable rate technology (VRT) for nitrogen fertilizer was analyzed. The model showed the adoption of VRT by a competitive firm occurs with increases in output price, increases in output, and increases in input savings. Findings revealed no productivity differences between the two techniques.

# Environmental Conservation, Development, and Recreation

**MODERATOR: Kelly L. Giraud (University of New Hampshire)**

**"Estimating Recreational User Counts in a Multiple-Site Environment." Robert J. Johnston and Timothy J. Tyrrell (University of Rhode Island).**

This paper outlines a methodology for estimating the total number of visitors to a predefined set of recreational sites. The model provides statistically consistent estimates based on efficient use of the information embedded in site-level count and survey data. Monte Carlo analysis illustrates the properties of visitor count estimates.

**"Are Stated Preferences Invariant to the Prospect of Real-Money Choice?" Laurienne Whinstanley Newell and Stephen K. Swallow (University of Rhode Island).**

This paper reports on a choice experiment where respondents stated their preferences for different wetland parcels. The results indicate that those respondents who received hypothetical surveys which included a real-money question registered a different preference function from those respondents who received a survey asking respondents to answer hypothetical questions only.

**"Urban Fuelwood Supply and Deforestation in Zambia." Samuel Mulenga Bwalya (University of Rhode Island).**

Agricultural expansion, timber logging, and fuelwood harvests are some of the major factors behind tropical deforestation. The evidence on the importance of the last two factors is inconclusive. This paper shows that urban fuelwood supply causes considerable deforestation in Zambia. Synchronizing energy and forest policies can help reduce fuelwood-based deforestation.

**"The Value of Habitat Conservation for Biopros-pecting." Sean B. Cash (University of California, Berkeley).**

This paper presents a model of pharmaceutical firms' incentives for land conservation that incorporates expected habitat loss and allows the probability of a species proving commercially useful to be spatially de-pendent on the outcomes for other species. The result-ing value of protecting land for bioprospecting may be much higher than suggested by other recent studies.

# Farm Management and Investment

**MODERATOR: Jeffrey Hyde (The Pennsylvania State University)**

**"Estimating the Value of Robotic Milkers on U.S. Dairy Farms Using Monte Carlo Simulation." Jeffrey Hyde and Phoebe Engel (The Pennsylvania State University).**

Breakeven costs for investment in a robotic milking system, equating the annualized returns with those of a parlor, are estimated. Results indicate that the mean breakeven is slightly above the assumed actual cost. However, the mean may not cover complementary costs. Furthermore, there is significant variability in breakeven values.

**"Phosphorus Management Practices on Lake Champlain Dairy Farms: Financial and Environ-mental Implications." Robert Parsons (University of Vermont).**

FLIPSim and GISPLM are used to estimate financial impacts of phosphorus management practices (BMPs) on three Vermont dairy farms. Three BMPs are needed to achieve an 8% reduction, and more costly BMPs are required to meet a 10% goal. Small farms are finan-cially threatened while medium and large farms are slightly impacted.

**"Debt Servicing Plans Under Alternative Farmland Control Arrangements of Grain Farms." Cesar L. Escalante (University of Georgia) and Peter J. Barry (University of Illinois).**

Leasing contracts define a choice set of debt repayment plans according to inherent differences in their risk-return tradeoff and cash flow profiles. Cash-leasing farms emphasize farm revenue enhancement due to high farm income benchmarks used in making leasing decisions. Risk-sharing and more favorable cash-flow advantages provide share-leasing farms with flexibility in setting such benchmarks and choosing alternative plans for successful debt repay-ment.

**"The Effect of Surrounding Land Use on a Farm-er's Investment." Lori Lynch (University of Mary-land) and Hernan Gonzalez (University of Con-necticut).**

This study investigates the effect of development pressure and expectation of adjacent land use on a farmer's investment. A binary probit model examines the impact on investment choice of adjacent developed land use, undeveloped but developable land use, or permanently preserved open space using survey and spatial data. An ordered probit examines the impact on the dollar level of investment. While both developable and permanently preserved land within a 1-mile radius increases the likelihood of investing, this effect is cancelled by the impact of the 5-mile radius land-use measures.

# Land Conservation and Environmental Factors in Rural and Regional Development

**MODERATOR: Paul Ferraro (Georgia State University)**

**"The Effect of Health and Environmental Factors on Migration Decisions: A Spatial Econometric Analysis." Anil Rupasingha and Stephan J. Goetz (The Pennsylvania State University).**

U.S. county-level migration data and a spatial error model are used to examine the effects of health and environmental factors on migration decisions. Results suggest that higher county cancer risks and the presence of a superfund site in a county reduce the relative attractiveness of a county to prospective migrants.

**"Transitioning Economies in Rural Appalachia: Does Wilderness Play a Role?" John Murray and Randall S. Rosenberger (West Virginia University).**

This project investigates the negative and/or positive impacts of wilderness designation on rural counties in the Appalachian region. A random-effects trend model with autocorrelation is estimated for longitudinal estimates of location quotients. We did not find any conclusive evidence to suggest wilderness designation impacts rural economies in Appalachia.

**"Marginal Property Tax Effects of Conservation Easements: A Vermont Case Study." Jonathan R. King and Christopher M. Anderson (University of Rhode Island).**

Conservation easements allow landowners to transfer their land's development rights to organizations that protect the land from development. However, easements can significantly affect a town's property tax base. Results show that in the short-run, easements increase property tax rates but are tax neutral or tax negative in the long run.

**"Deployment of ISDN Telecommunications Infrastructure in the Northeastern United States." Todd M. Gabe and Jaison R. Abel (University of Maine).**

Results of this study show that over 90% of the telephone lines in New Jersey, Rhode Island, and New York were equipped to provide ISDN in 1999, compared to less than 50% of the lines in Maine and Vermont. Further analysis reveals an ISDN "digital divide" between urban and rural areas.

# Marketing, Health, Agricultural Trade, and Rural Development Topics

**MODERATOR: Jannelle M. Larson (The Pennsylvania State University, Berks)**

**"An Analysis of Price and Exchange Rate Elasticities for U.S. Soybeans." Laxmi Paudel (University of Georgia), Henry W. Kinnucan (Auburn University), and Murali Adhikari (University of Georgia).**

Given the conflicting views among researchers regarding the law of one price, this study attempts to determine whether international price transmission elasticity for U.S. soybeans confirms the law of one price. Our study yields different results for different countries, showing that the law of one price does not hold for all markets.

**"Economic Impact of Vertical Coordination: A Multi-Stage, Multi-Player Analysis Under Alternative Market Structures." Jebaraj Asirvatham and Sanjib Bhuyan (Rutgers University).**

Using explicit theoretical models, this study analyzes the economic impact of alternative vertical coordination mechanisms in a three-stage production-marketing chain where interactions among multiple players at each stage, among players at different stages, and the price, output, and welfare impact of such strategic behavior were computed. Policy implications are discussed.

**"Congestion and Agricultural Transport: Its Contribution and Impact on Consumer Costs and Farm Prices." James W. Dunn (The Pennsylvania State University).**

A transportation model estimates the cost of congestion on food consumers and producers. Rural congestion costs are borne almost entirely by the farmers in the congested area. Urban congestion costs are split between farmers and consumers. The costs to farmers and consumers are billions of dollars.

**"Public Health Quality Control and Plant Exits in the Meat Products Industry." Michael Ollinger and Ram Chandran (USDA/Economic Research Service).**

This paper gauges the extent to which meat producers can profitably reduce public health quality control. Empirical results from 1992 and 1996 data suggest that large slaughter and all processing plants in the lowest ten percentile of quality control performance were more likely than other plants to exit their industries.