# Selected Papers

# SAEA 2011 Annual Meetings

**Moderate versus Big Cows: Do Big Cows Carry Their Weight on the Ranch?** *Damona Doye and David Lalman, Oklahoma State University*

Efficiency in beef production and economics is impacted by cow maintenance requirements and output. Budget and linear programming analysis are used to evaluate cost and returns for two cow sizes on two different pasture systems. Moderate-sized cows on native pasture generate the greatest pre-tax returns to management and overhead.

**Economic Analysis of High Fertilizer Input, Over-Seeded Clover, and Native Pasture Production Systems in the Texas Coastal Bend** *Lawrence L. Falconer, Texas AgriLife Extension Service, Gerald W. Evers, Texas AgriLife Research, and Luis A. Ribera, Texas AgriLife Extension Service*

This paper examined the cost and risk of three grazing systems to provide information on economically sustainable systems for cattle producers in the Texas Coastal Bend. Results indicate the medium input (over-seeded clover) grazing system displays first-degree stochastic dominance relative to the high input and no input grazing systems.

**The Relevance of Information Sources on Adoption of Precision Farming Technologies by Cotton Producers** *Carlos I. García-Jiménez, Ashok K. Mishra, and Kenneth W. Paxton, Louisiana State University Agricultural Center, and Dayton M. Lambert, University of Tennessee – Knoxville*

The effectiveness of sources of information on adoption of precision farming technologies (PFT) by cotton producers is evaluated. By using multivariate probit regression, we find that the use of information from farm dealers, university publications, and attendance to university events have significant and positive effects on adoption of PFTs.

**Analysis of Texas Winery Visitor Spending and GOTEXAN Efforts to Promote Winery Tourism** *Roger Hanagriff, Texas A&M Kingsville, and Olga Murova, Texas Tech University*

Research efforts have been centered on the values of wine tourism to both an economy and the winery business. Results of this study found that Texas winery travelers spend $400 and outspend typical tourists in Texas. Wineries involved have significantly higher sales than those not focusing on tourism.

**Analysis of Factors Affecting Farmers' Willingness to Adopt Switchgrass Production** *D. Joshua Qualls, Kimberly L. Jensen, Burton C. English, James A. Larson, and Christopher D. Clark, University of Tennessee*

The Energy Independence and Security Act of 2007 mandates that by 2022 at least 36 billion gallons of fuel ethanol be produced, with at least 16 billion gallons being derived from cellulose, hemi-cellulose, or lignin. This study provides information regarding potential switchgrass adoption by agricultural producers in 13 southeastern states.

**Livestock Market Integration and Price Discovery: Case of Mali** *Jean Claude Bizimana and David Bessler, Texas A&M University*

The paper is about a study on cattle prices in six markets from Mali. The recent introduction of cell phones to disseminate cattle price information is analyzed to assess its impact on market integration. Price leadership to determine in which cattle market the price is discovered is examined too.

**Weather Derivatives as Risk Management Tool in Ecuador: A Case Study of Rice Production** *Dmitry Vedenov and Leonardo Sanchez, Texas A&M University*

This paper analyzes efficiency of weather derivatives as insurance instruments for rice in Ecuador. Weather derivatives were constructed for each county/season combination. Complicated weather models were estimated for the index, and a copula approach was used to get the probability distributions. We find risk-reducing efficiency varies across county and season.

**Profitability of Irrigated Improved Pecan Orchards in the Southern Plains** *Job Springer, The Samuel Roberts Noble Foundation, Inc., Wyatt Swinford, Oklahoma State University, and Charles Rohla, The Samuel Roberts Noble Foundation, Inc.*

The objective was to determine if an irrigated improved pecan orchard is economical relative to agronomic systems commonly implemented by producers with irrigation. Results show the improved pecan orchard is more profitable than competitive enterprises after 20 years, but is sensitive to pecan price, pecan yield, and risk tolerance.

**Searching for the Golden Grail: An Optimal Soybean Marketing Frequency Strategy** *C. Robert Stark, Jr., Kelly J. Bryant, and Paul B. Francis, University of Arkansas at Monticello*

Gross revenue from marketing frequency strategies varies with average soybean prices across time periods. A study examined statistical differences among trading days using a 4-year database of cash prices. Results applied to a hypothetical Arkansas soybean farm using four strategies over 4 years revealed the optimal gross revenue marketing strategy.

**Integrated On-Farm Decision Making: Economic Implications of Increased Variation in Litter Size** *David A. Widmar, Nicole J. Olynk, Brian T. Richert, Allan P. Schinckel, and Kenneth A. Foster, Purdue University*

Increased litter sizes, and associated piglet performance consequences, challenge swine producers. Stochastic modeling captured bioeconomic performance of individual piglets under different scenarios. As average litter size increased from 8.8 to 20.8 piglets, costs and revenues per head marketed from the demonstration herd decreased; total profit increased at a decreasing rate.

**Adoption and Profitability of Breeding Technologies on United States Dairy Farms** *Aditya R. Khanal, Virginia Tech, and Jeffrey M. Gillespie, Louisiana State University Agricultural Center*

Adoption decisions and profitability of advanced breeding technologies are analyzed for U.S. dairy farms. The bivariate probit with selection model is used. Results show that specialized, younger, more educated farmers with longer planning horizons are the likely adopters, with positive impacts on profitability and negative impacts on cost of production.

**Intensive versus Extensive Dairy Production Systems: Dairy States in the Eastern and Midwestern United States and Key Pasture Countries in the European Union: Determining the Competitive Edge** *Richard Nehring, U.S. Department of Agriculture-Economic Research Service, Johannes Sauer, University of Manchester, Jeffrey Gillespie, Louisiana State University Agricultural Center, and Charlie Hallahan, U.S. Department of Agriculture-Economic Research Service*

In recent years, significant structural and production system changes have been noted in the United States and European Union, as well as increased interest in pasture-based dairy systems. Technical efficiency, returns to scale, and farm characteristics are compared by size and production system in traditional U.S. dairy states and European Union countries.

**The Economics of Rotational Grazing in the Gulf Coast Region: Costs, Returns, and Labor Considerations, Phase II** *Jeffrey Gillespie and Wayne Wyatt, Louisiana State University Agricultural Center, Brad Venuto, U.S. Department of Agriculture-Agricultural Research Service, David Blouin, Louisiana State University, and Robert Boucher, Weldon Nipper, and Berdikul Qushim, Louisiana State University Agricultural Center*

Profitability and labor associated with rotational grazing at three stocking rates and continuous grazing at a medium-stocking rate are compared. On a per-acre basis, profits are lowest for low stocking rate rotational grazing. Labor is greatest on both per-acre and per-cow bases with high stocking rate rotational grazing.

**Factors Impacting Participation in and Purchases Made by Members of the Oklahoma Food Cooperative** *Rodney Holcomb and Philip Kenkel, Oklahoma State University*

The Oklahoma Food Cooperative (OFC) facilitates locally-grown food transactions between producers and consumers. Even with 3,000 members and roughly $1M in annual sales, the OFC still needs to establish long-term sustainability. Both customer-members and supplier-members were surveyed to determine the factors driving their current and continued participation in the cooperative.

**The Analysis of the Banana Import Market in the United States** *Chia-Hsien Su, Ariun Ishdorj, and David J. Leatham, Texas A&M University*

This paper examines the U.S. consumer demand for fresh bananas and estimates the degree of market power in the import market. The result shows that Costa Rica and Ecuador have strong competitiveness while Honduras has least competitiveness and that the U.S. import market of fresh bananas is not perfectly competitive.

**Effects of No-Tillage Production Practices on Crop Yields as Influenced by Crop and Growing Environment Factors** *Dustin K. Toliver, James A. Larson, Burton C. English, Roland K. Roberts, and Daniel G. de la Torre Ugarte, University of Tennessee, and Tristram O. West, Pacific Northwest National Laboratory and University of Maryland*

This paper evaluated differences between yields of no-tillage compared with conventional or reduced tillage and their associated downside risk. Six crops were evaluated along with how those yields and risks differed by various environmental factors such as geographic location, precipitation, soil type, and how long the practice had been used.

**United States Tobacco Industry after the Buyout** *Anna Shermenko and James Epperson, University of Georgia*

We analyze the enacted policy change for the U.S. tobacco industry. The model was estimated using GMM with HAC standard errors. Elimination of the government program resulted in shifts in both supply and demand of tobacco, causing upward and downward pressure on price with a positive impact from net exports.

**The Causality of Foreign Direct Investment and Its Effects on Economic Growth: Re-estimated by a Directed Graph Approach** *Yarui Li, Joshua D. Woodard, and David J. Leatham, Texas A&M University*

The authors use the Directed Acyclic Graph approach to examine the causal patterns between foreign direct investment (FDI) and economic growth in both developed and developing countries. The results show that FDI causes economic growth in developing countries, while an opposite causation is found in developed countries.

**Structure of Interdependencies Among International Stock Markets and Contagion Patterns of 2008 Global Financial Crisis** *Zafarbek Ahmedov and David Bessler, Texas A&M University*

In this study, directed acyclic graphs and LiNGAM search algorithm are applied to obtain causal

structure of innovations from error correction model. The structure of interdependencies among six international stock markets is investigated. The results provide positive empirical evidence that there exist long-run equilibrium and contemporaneous causal structure among these markets.

**Determining Key Factors of Influence on the Profitability** *Zakou Amadou, Kellie Raper, and Clement E. Ward, Oklahoma State University, and Jon Biermacher and Billy Cook, Samuel Roberts Noble Foundation*

A price response function for slaughter cows is estimated using monthly price data. Net returns are then estimated and the relative effect of various factors on net returns is examined. Results suggest that average daily gain and feeding method are important contributing factors to net returns.

**Customizable Area Whole Farm Insurance** *Lekhnath Chalise, Dr. Keith Coble, and Dr. Barry Barnett, Mississippi State University*

The customizable area whole farm insurance (CAWFI) was designed and compared with no insurance program and currently available whole farm insurance based on farm level yield (CFWFI). The CAWFI yields higher certainty equivalents over no insurance program, but lower to CFWFI; CAWFI has fairly small indemnity compared with CFWFI.

**Promoting a Local Brand: Assessing the Economic Benefits of the Texas Superstar[®] and Earth-Kind[®] Promotion on Place Program** *Alba J. Collart, Marco A. Palma, Texas A&M University, and Carlos E. Carpio, Clemson University*

This paper aims to evaluate consumer's awareness and willingness-to-pay (WTP) for two ornamental brands, Texas Superstar[®] and Earth-Kind[®], after a local promotional campaign developed by the Texas Department of Agriculture. Consumer's characteristics that are more likely to influence brand awareness and WTP for Texas Superstar[®] and Earth-Kind[®] are identified.

**Determinants of Profitability Performance: An Analysis of Class I Railroads in the United States** *Albert J. Allen, Mississippi State University, Saleem Shaik, North Dakota State University, Albert E. Myles, Mississippi State University, and Osei-Agyeman Yeboah, North Carolina A&T State University*

The purpose of this study was to estimate the impact of internal and external variables on the net profit margins of Class I railroads for the period 1996–2009. Parameter coefficients show that market concentration had a significant and negative impact on the net profit margins of the carriers.

**Evaluating the Role of Migration on Technical Efficiency** *Anna Glazyrina and Saleem Shaik, North Dakota State University, and Albert J. Allen, Mississippi State University*

In this paper, the importance of migration treated as undesirable output on technical efficiency at the aggregate level using 76 countries worldwide for the period 1961–2007 is examined. Results suggest inclusion of migration in efficiency analyses results in lower (higher) technical efficiency gains across geographical regions and income groups.

**Evaluation of Crop Insurance Yield Guarantees and Producer Welfare with Upward Trending Yields** *Shyam Adhikari, Thomas O. Knight, Eric J. Belasco, and Emabeth Thompson, Texas Tech University*

The Risk Management Agency uses the average from 4–10 years of historical yields to determine crop insurance guarantees. Our findings indicate that this reduces the welfare benefits of insurance given an upward yield trend. These benefits also vary significantly with different trend correction approaches.

**Income Convergence in the South: Myth or Reality?** *Buddhi R. Gyawali, Swagata "Ban" Banerjee, Anquinette Hill, and James O. Bukenya, Alabama A&M University*

County-level data for 11 southern states were used in ordinary least squares regression of

logarithmic difference of average per-capita-income between 1980 and 2000. Conditional income convergence (3.82%/year) was obtained with higher income changes in counties with smaller initial populations, smaller changes in African Americans, employment, education, age structure, travel-time-to-work, or dependent-age populations.

**An Economic Performance Analysis of the Beef Cow-Herd Enterprise Using a Stochastic Frontier Function** *Jaesung Cho, Cornell University, Seong C. Park, Texas AgriLife Research, and Stanley J. Bevers, Texas AgriLife Extension Services*

Southwest Standardized Performance Analysis (SPA) data were used to examine the economic performance of beef cow herd operations by measuring their technical efficiency index. Factors that make significant impacts on the production are herd size, machinery investment, and rainfall. Little technical inefficiency among the cattle operations was found.

**The Impacts of Farm Size and Economic Risk on No-Till Rice Whole-Farm Profitability** *K. Bradley Watkins, Jeffrey A. Hignight, and Merle M. Anders, University of Arkansas Rice Research and Extension Center*

This study combines Mixed Integer Programming with simulation to evaluate farm size and stochastic return impacts on whole-farm no-till (NT) rice profitability. The results indicate NT farms exhibit second degree stochastic dominance over conventional till farms, and high input prices have less downward effect on the NT farm profitability.

**The Affect of Animal Gender on Fed Cattle Producer Marketing Behavior** *Scott W. Fausti, Bashir A. Qasmi, Matthew A. Diersen, Jing Li, and Brent Lange, South Dakota State University*

A comparison of weekly grid market share by volume for slaughter steers and heifers is conducted. Analyses indicate average grid market share for steers (42%) is 27% higher than heifers (33%). Market share differential is consistent with the supposition that marketing heifers is riskier than marketing steers on a grid.

**Is Chocolate Milk the New-Age Energy\ Sports Drink in the United States?** *Senarath Dharmasena and Oral Capps, Jr., Texas A&M University*

Data from U.S. households for calendar year 2008 were used in examining demographic and economic factors affecting demand for chocolate milk using Heckman two-step procedure. Price, income, age, education, region, race, Hispanic status, and presence of children were significant drivers of consumption of chocolate milk. Sample selection bias was statistically significant.

**Demographic and Economic Profiling of U.S. Demand for Probiotics: The Case of Drinkable Yogurt** *Senarath Dharmasena and Oral Capps, Jr., Texas A&M University*

Data from U.S. households for calendar year 2008 were used in examining demographic and economic factors affecting demand for drinkable yogurts using Heckman two-step procedure. Price, region, race, and gender of household head were significant drivers of consumption of drinkable yogurts. Statistically significant sample selection bias was observed.

**Economically Efficient Cow Size Selection Using the Product/Product Model** *Kelly J. Bryant and Thomas G. Montgomery, University of Arkansas, and Whitney A. Whitworth and C. Robert Stark, Jr., University of Arkansas at Monticello*

A Total Revenue Curve for sales of small and large calves is constructed using auction price data. A Production Possibilities Curve is constructed for a farmer with 100 animal units of resources. Results show that smaller calves are the solution regardless of calving season or market location.

**Effect of Agricultural Activity on River Water Quality: A Case Study for the Lower Colorado River Basin** *Naveen C. Adusumilli,*

*Ronald D. Lacewell, M. Edward Rister, Joshua D. Woodard, and Allen W. Sturdivant, Texas AgriLife Research and Extension, Texas A&M University*

This case study investigates the effect on nutrient discharge to rivers from expanded crop acres for biofuel feedstock. Annual data from 1968–2008 on stream flow, cropped acres, and precipitation for Wharton County, Texas are used. A positive impact of increased corn acreage on river discharge is identified.

**Estimation of Irrigation Water Demand: A Case Study for the Texas High Plains** *Naveen C. Adusumilli, M. Edward Rister, and Ronald D. Lacewell, Texas A&M University*

On the Texas High Plains, water from the Ogallala aquifer is used to supplement irrigation requirements, since annual rainfall is below 20.5 inches/year. This study addresses land and water demand by testing the effects of water costs, crop prices, and technology on water use and crop production acreages.

**Winter Safflower Biodiesel: A Green Biofuel for the Southern High Plains** *Bing Liu and Aaron Benson, Texas Tech University*

This study aims to assess and compare the life-cycle energy and greenhouse gas emission impacts of winter safflower biodiesel, and determine its suitability as an energy crop on the Texas High Plains. In order to do that, sensitivity analyses and a related profit function were also developed.

**Potential Biomass Yields in the South Central United States** *Arjun Basnet, Theo Depona, Wesley Hedges, and Michael R. Dicks, Oklahoma State University*

This paper provides an estimate of switchgrass yield for the five most productive and abundant soils for each county in Oklahoma. A simple approach of ratio calculation and estimation is used to predict switchgrass yield in one soil type by comparing it with the yield of several other crops in another soil type. Switchgrass supply for Oklahoma was estimated to be 49.5

million tons computed from the top five soils with the Northeast crop-reporting district in Oklahoma to be the dominant supplier.

**The Impact of Biofuel Mandates and Switchgrass Production on Hay Markets** *Kwame Acheampong, Michael R. Dicks, and Brian D. Adam, Oklahoma State University*

This study uses ordinary least squares to predict Oklahoma hay price, which is used as the objective value in a linear programming (LP) model to determine the profitability options between hay and switchgrass production. Ordinary least squares results show that Oklahoma hay price is fairly stable, and hay is shipped across adjoining states. LP results show that switchgrass production would be more profitable than hay and that production likely will bid land away from hay.

**Producers and Consumer Attitudes Toward Biotechnology in Ghana** *Annie Nsafoah and Michael R. Dicks, Oklahoma State University, and Collins Osei, Kwame Nkrumah University of Science and Technology*

This study analyzes the consistency between the arguments for and against biotechnology adoption by producers and consumers in Ghana. In a survey of 111 producers and consumers no consistency was found to exist in perceptions of benefits and problems of biotechnology use.

**Using Digital Learning Objects to Improve Student Problem Solving Skills** *S.A. Mehlhorn, S. Parrott, J.E. Mehlhorn, T.N. Burcham, J. Roberts, and P.L. Smartt, University of Tennessee at Martin*

Digital learning objects (DLO) were introduced to increase student problem solving skills. Data from two sections of an agriculture course were compared with determined student outcomes. The course utilizing DLO showed higher final exam scores than the traditional section. The overall student perceptions of DLO were positive.

**Local Food Procurement and Promotion Strategies of Food Cooperatives** *Ani L.*

*Katchova and Timothy A. Woods, University of Kentucky*

We identify the business practices in local food procurement and promotion strategies for food cooperatives. Using a national survey of general managers, the findings show that when compared with other grocers, food cooperatives have advantages in working with local producers and play a key role in the producers' business viability.

**Factors Influencing Successful Small-Farm Operations in North Carolina** *Anthony K. Yeboah, John Paul Owens, and Jarvetta S. Bynum, North Carolina A&T State University*

Project outcomes yielded possible ways to further enhance the success of small farms in North Carolina given the importance of small farm viability on the local communities. However, profit maximization was not found to be as important in the farmer's view of success as the overall "love of farming."

**Community Food Store Types Availability is Associated with Fruit and Vegetable Consumption in North Carolina** *Kofi Adu-Nyako and Ralph Okafor, North Carolina A&T State University*

Multilevel analysis of the determinants of fruit and vegetable intake in North Carolina indicate, in addition to individual factors, supermarkets and full service restaurants are associated positively with fruit and vegetable consumption. A complementary role for interventions to improving supermarket type stores availability to impact healthy food purchases and consumption is indicated.

**Contract Grazing on Winter Annuals: Risks and Returns for Cattle Owners** *Manik Anand, Patricia A Duffy, David Bransby, and Carla Shoemaker, Auburn University and Jason S. Bergtold, Kansas State University*

Critical factors affecting risk and profitability for cattle owners under contract grazing include cattle weight at purchase and time spent on pasture and feedlot. Buying lighter animals and placing them on pasture before sending them to feedlot is the most profitable as well as least risky option.

**The Beneficial Impact of Sorting Heavy Cattle at Re-Implant** *David J. Link, Lal K. Almas, Michael S. Brown, and Ty E. Lawrence, West Texas A&M University*

This research examined a simple sorting strategy to reduce the prevalence of heavyweight carcass discounts. Cattle that were identified and sorted off at re-implant had a reduced prevalence of heavyweight carcasses versus unsorted cattle. Re-implant sorting was profitable at pen average in-weights of 800 pounds or less.

**Efficiency Measure in Nitrogen Management Under U.S. Trade Induced Corn Production** *Osei Yeboah, Cihat Gunden, and Akua Akuffo, North Carolina A&T State University and Albert Allen, Mississippi State University*

The study addresses the issue of pollution and trade liberalization. Data Envelopment Analysis was used to measure environmental efficiency using corn production and nitrogen outputs in 15 U.S. states from 1994–2008. Projected levels of nitrogen to be reduced by years and states were determined. Overall results showed increasing environmental inefficiency.

**Applied Theory of Energy Substitution in the Southeast: An SUR Approach** *Osei Yeboah and Obed Quaicoe, North Carolina A&T State University, Henry Thompson, Auburn University, and Saleem Shaik, North Dakota State University*

The southeast is a net energy consuming region, importing virtually all of its fuel resources. The theory of energy substitution is applied to determine the potential substitution of renewable energy for conventional energy forms between 1970 and 2008. Findings indicate limited substitution potential between renewable energy and conventional energy forms.

**Measurements of Agricultural Productivity and Efficiency Gains from North American Free Trade Agreement** *Osei Yeboah, Cihat*

Gunden, and Tongzhe Li, North Carolina A&T State University, Saleem Shaik, North Dakota State University, and Albert Allen, Mississippi State University

The objective of this study is to determine whether North American Free Trade Agreement has contributed to increased agricultural productivity in member countries. Data Envelopment Analysis and Malmquist Productivity Index were used to estimate total factor productivity change, technical, and efficiency change of agricultural production. Mexico performed better by achieving higher levels of productivity.

**Impact of United States Corn-Based Ethanol Production on Land Use** *Folakemi Sobowale, Michael R. Dicks, and Jody Campiche, Oklahoma State University*

This study examined the impact of ethanol production in the United States on land use in other countries. Based on our current estimates, it is hypothesized that indirect land use from ethanol production is minimal.

**An Analysis of the Determinants of Flood Damages** *Susana Ferreira, University of Georgia*

We analyze mortality from 2,194 large floods in 108 countries between 1985 and 2008. Yearly changes in income and governance do not affect mortality directly. They influence mortality only through impacts on flood intensity and frequency. Larger populations result in more deaths conditional on flood occurrence, but are associated with smaller floods.

**The Killer Course Hypothesis** *Justin G. Gardner, Middle Tennessee State University*

Due to recent legislative changes, universities in Tennessee will receive funding based on student retention and graduation rates. Therefore, it is important to identify areas where retention can be improved. I investigate the impact of "killer courses" on student retention and find no evidence to support the killer course hypothesis.

**Utilizing Cow-Calf Producer Information to Increase Profits in Retained Ownership of Beef Cattle** *Brian Williams, Oklahoma State University, and Matt Stockton, University of Nebraska-Lincoln*

Retained ownership has been found to be profitable, yet many cow-calf producers don't retain. This paper explores producer information that might reduce some uncertainty. In a regression analysis, birth weight, weaning weight, and weaning age are found to be important when selecting animals to retain.

**Price Signals as Indicators of Profitability at Various Stages of Production in Oklahoma Beef** *Brian Williams and Eric Devuyst, Oklahoma State University*

Cow-calf producers decide annually how to market calves. This paper investigates the use of price signals to determine profit maximizing selling points/retention strategies. These signals indicate the optimal selling point based on observable price ratios at weaning. Factors including preconditioning premiums and the length of the preconditioning period are considered.

**Optimal Marketing Strategies for Southeastern Cattle Producers** *J. Ross Pruitt, Louisiana State University AgCenter, and John Michael Riley, Mississippi State University*

The size of cow/calf operations often limits price risk management strategies in the face of volatile prices. This paper determines the optimal marketing strategy for cow/calf producers facing risk. For herds with less than 150 cows, results indicate the optimal marketing strategy is to market cattle at weaning without hedging.

**Measuring the Relative Profitability of Mid-South Cotton Production from an Alternative Gin Seed Rebate Model** *J. Matthew Fannin and Kenneth W. Paxton, Louisiana State University AgCenter*

Opportunity net returns are calculated for each acre within selected counties to assess returns forgone by planting cotton instead of alternative

crops. Results indicate opportunity revenues averaged 20% between 1997 and 2002 and 43% between 2003 and 2008. This suggests higher corn prices encouraged shifting to alternative crops.

**The Law of the Minimum and Sources of Nonzero Skewness for Crop Yield Distributions** *Emmanuel Tumusiime, B. Wade Brorsen, and Christopher N. Boyer, Oklahoma State University*

This study determined the degree to which a linear response stochastic plateau (LRSP) production function can explain skewness of Oklahoma wheat yields at varied nitrogen rates. The LRSP provides negative skewness at all levels of nitrogen. Observed skewness is positive. The variation in the plateau by year shows positive skewness.

**Determinants of Cost Inefficiency of Critical Access Hospitals: A Two-Stage, Semi-parametric Approach** *I. Cristian Nedelea and J. Matthew Fannin, Louisiana State University AgCenter*

This study examines, post-conversion, cost inefficiency of Critical Access Hospitals (CAH) using a two-stage approach. While the results suggest that Medicare cost-based reimbursement and longer participation in the CAH program may increase the cost inefficiency of CAHs, the extent of this inefficiency increase is lower than what previous literature showed.

**World Agriculture Organization: New Global Governance for Climate Change, Sustainability, Food Security, and Trade** *Wanki Moon, Southern Illinois University, Won W. Koo, North Dakota State University, and Changgil Kim, Korea Rural Economics Institute*

The primary objective of this article is to propose that a new form of global governance for agriculture is needed in order to effectively deal with problems arising from the interactions among climate change, sustainability, food security, and trade. We propose the creation of World Agriculture Organization as the central institution exclusively governing agriculture-related problems.

**The Farm Level Impacts of Replacing Current Farm Programs with a Whole Farm Revenue Program** *J. Marc Raulston, James W. Richardson, Joe L. Outlaw, and George M. Knapek, Texas A&M University*

This study evaluates the farm level economic impacts of implementing a whole farm revenue program in lieu of current government program payments and crop insurance. This study demonstrates how a whole farm revenue program might work and compares the current baseline situation to alternative levels of revenue coverage implementation.

**The Effect of Water Use and Water Availability on Optimal Cropping Patterns on the Texas High Plains** *Andrew Wright and Darren Hudson, Texas Tech University*

The effect of accessing the Dockum Aquifer while restricting pumping from the Ogallala Aquifer on the Texas High Plains was measured. The results showed that accessing the Dockum would lessen the effect of restricting the Ogallala on net revenue, but that water use would increase above the unrestricted baseline.

**Taxpayer Preferences for Farm Policy and U.S. Department of Agriculture Budget Expenditures** *Brenna Ellison and Jayson Lusk, Oklahoma State University, and Brian Briggeman, Federal Reserve Bank of Kansas City*

We determine taxpayer's preferences for six categories of U.S. Department of Agriculture expenditures using data from a nationwide survey. Our results reveal taxpayers want more dollars allocated to food safety and inspection, rural development, research and education, and natural resources and environment, and less dollars to farm support and food assistance.

**Socio-economic and Demographic Factors Affecting the Likelihood of Being an Overweight Korean Woman** *Anand Nambiar and Wojciech Florkowski, University of Georgia, and*

*Dong-Kyun Suh, Rural Development Administration, Republic of Korea*

Using data from urban Korean women survey, the study examines factors associated with the body mass index ≥ 25, indicating overweight or obesity. Logit equation results identify low income, low education, household location and preference for convenience, sweet-tasting foods, and home vegetable processing as characteristics linked to a high body mass index.

**Determinants of Swine Farm Sale Prices under a De Facto Moratorium** *Kelly Zering, Guido van der Hoeven, and Sofia Kotsiri, North Carolina State University*

Exploratory analysis of 130 swine farm sales under a *de facto* moratorium on new or expanded swine production capacity in North Carolina between 1997 and 2010 correlated sales value "premium" to swine production assets and land value. Improved specification and additional data will be used to address remaining ambiguous results.

**Homogeneity of Farm Labor: A Dual Approach** *Jeremy D'Antoni, Ashok K. Mishra, and Jeffrey M. Gillespie, Louisiana State University*

Controlling for region and farm size, we use seemingly unrelated regression to jointly estimate a translog cost function and factor cost shares to determine the elasticity of substitution between hired and family farm labor. The results demonstrate heterogeneity of labor in both cash grain and hog farms in the United States.

**The Impact of Spatial Heterogeneity in Land Use Practices and Aquifer Characteristics on Groundwater Conservation Policy** *David B. Willis, Clemson University, Jeff Stovall, Espey Consultants Inc., and Jeffrey Johnson, Ken Rainwater, Lucia S. Barbato, Kevin Mulligan, Ernest B. Fish, and Erin Wheeler-Cook, Texas Tech University*

Ground-water use and economic return projections significantly vary between modeling approaches that account for heterogeneity in aquifer characteristics versus those that do not. For three relatively homogenous 400 square mile sites, agricultural returns are as much as 29.8% greater when spatial heterogeneity is ignored and aquifer characteristics are assumed homogenous.

**Reasons for Adopting Precision Farming: A Case Study of U.S. Cotton Farmers** *Mahesh Pandit, Ashok K. Mishra, and Krishna P. Paudel, Louisiana State University*

We used survey data collected from cotton farmers in 12 U.S. states to identify variables affecting precision farming technology adoption. Using a seemingly unrelated ordered probit model, we found that variables such as education, computer literacy, age, concerns about environmental quality, profitability, and coastal locations are important.

**Determinants of Adoption of Conservation Agriculture Technologies on Smallholder Farmers in the Shamva District of Zimbabwe: A Tobit Application** *Brian Chiputwa, University of Georgia, Augustine S. Langyintuo, Alliance for a Green Revolution in Africa, and Patrick Wall, International Maize and Wheat Improvement Center*

We use a Tobit model to assess factors affecting adoption and extent of use of zero-tillage, crop rotation, and contour ridging. Results suggest that adoption of each technology is affected by a set of distinct factors and hence the need for technology-specific policy interventions to promote their uptake.

**Economic Analysis of Cellulosic Feedstock for Bioenergy in the Texas Rio Grande Valley** *Ann Conrad, Will McLaughlin, M. Edward Rister, Ronald D. Lacewell, Larry L. Falconer, Juerg M. Blumenthal, William L. Rooney, Allen W. Sturdivant, and Dean McCorkle, Texas A&M University*

This research discovers methods for minimizing the cost of supplying a 30-million gallon cellulosic bioenergy refinery with feedstocks in the Rio Grande Valley of Texas. A multiple-period

linear programming model evaluates alternatives for feedstock and timing of production practices and harvesting, plus transportation from field to storage and storage activities.

**The Economic and Financial Implications of Supplying a Bioenergy Conversion Facility with Cellulosic Biomass Feedstocks** *Will McLaughlin, Ann Conrad, M. Edward Rister, Ronald D. Lacewell, Larry L. Falconer, Juerg M. Blumenthal, William L. Rooney, Allen W. Sturdivant, and Dean McCorkle, Texas A&M University*

This paper evaluates the production, harvesting, transportation, and storage financial and economic logistics costs for biofuel feedstocks for a 12-month period on a sustainable basis. A linear programming model is used, intending to provide a realistic representation of the total costs associated with supplying a conversion facility with feedstocks.

**Estimation of a Composite Food Demand System for the United States—A Revisit** *Haobo Luo and Chung L. Huang, University of Georgia, and Biing-Hwan Lin, Economic Research Service, U.S. Department of Agriculture*

A composite food demand system for the United States was estimated covering the period from 1953–2008. The estimated cross-price elasticities show considerable differences in the complementary and substitution relationships among food groups. Demand for food is more inelastic and more responsive to income changes than previously reported.

**Hybrid Rice and Its Impact on Food Security and the Pattern of Global Production and Trade** *Alvaro Durand-Morat, Eric J. Wailes, and Eddie C. Chavez, University of Arkansas*

This study shows that the hybrid rice technology has made sizable contributions to per-capita availability of rice in adopting countries with marginal spillover effects to other regions. However, a massive intensification of adoption will be needed to maintain global per-capita

availability of rice at current levels. Even with adoption rates climbing significantly, much higher equilibrium prices are required without other sources of productivity growth.

**Analysis of U.S. Rice Policy in a Global Stochastic Framework** *Eddie C. Chavez and Eric J. Wailes, University of Arkansas*

U.S. rice policy is evaluated in this paper with a global modeling framework to examine the potential impacts of domestic policy reforms using stochastic analysis. Results of this study show that with elimination of U.S. government payments that international rice prices and U.S. farm price volatility increase. For the U.S., rice area harvested, production, net exports, and the country's share in global net exports will also decrease.

**Farmers' Perceptions About Spatial Yield Variability and Precision Technology Adoption: An Empirical Study for Cotton Production in 12 Southeastern States** *Sofia Kotsiri, Roderick Rejesus, and Michelle Marra, North Carolina State University, and Margarita Velandia, University of Tennessee*

We study the effect of perceived spatial yield variability on precision farming adoption. Utilizing cross-section survey from 12 Southeastern states and a two-step econometric modeling approach, we find that producers who perceive their yields as more heterogeneous will more likely use site-specific information gathering and variable rate input technologies.

**Effect of Cover Crop Adoption on Nitrogen Use Among Conventional and Organic Corn Farms – An Empirical Analysis** *S. Chintawar and J. Westra, Louisiana State University and G. Gabrielyan, Washington State University*

Developing a two-stage limited dependent variable model, we estimate factors influencing cover crop adoption (probit) and nitrogen-use intensity (tobit) by organic and conventional corn producers. Conservation Reserve Program payments, farm size (acreage), and other farmers for information increased probability

of adoption. Nitrogen-use decreased significantly with cover crop adoption and working off-farm.

**An Ethanol Blend Wall Shift is Prone to Increase Petroleum Gasoline Demand** *Cheng Qiu, Gregory Colson, and Michael E. Wetzstein, University of Georgia, and Zibin Zhang, Zhejiang University, China*

An empirical study is undertaken examining the anomaly where a relaxation of a blend wall elicits a demand response. Under a wide range of elasticities, this demand response can increase gasoline consumption and thus lead to greater energy insecurity. Supporting economics and associated policy implications are developed and discussed.

**Measuring Fiscal Effects Based on Changes in Deepwater Off-Shore Drilling Activities** *Caroline Boen, Arun Adhikari, J. Matthew Fannin, and Walter Keithly, Louisiana State University Agcenter*

The study forecasts the number of oil and gas wells to be drilled in the Gulf of Mexico in the future by using a hybrid model and calculates fiscal impacts by applying a MAG-PLAN model which provides changes in final demand that acts as an exogenous input into the LCIM model.

**Retail Competition in the Milk Market in a U.S. Midwestern City** *Vardges Hovhannisyan and Brian W. Gould, University of Wisconsin-Madison*

We explore the retailer conduct in the U.S. milk market, based upon a structural estimation of Almost Ideal Demand System demand and retailer optimality in the spirit of conjectural variation approach. We find that two major retailers in the market are engaged in an oligopolistic competition, and private labels serve an important competitive tool.

**Imperfect Competition between Milk Manufacturers and Retailers in a U.S. Midwestern State** *Vardges Hovhannisyan and Kyle W. Stiegert, University of Wisconsin-Madison*

We estimate market conduct of milk manufacturers and retailers via Lerner Index in the United States, following the menu approach. Random coefficient logit demand is contrasted to several supply scenarios ranging from linear pricing to vertical monopoly. The results are most supportive of the conjecture that manufacturers behave competitively letting the retailers maximize profit.

**Cost-Efficient Valuation of Aesthetic Amenities** *Jack Purvis, Elizabeth Kramer, and Jeffery H. Dorfman, University of Georgia*

In order to avoid costly data collection, inexpensive secondary county tax and geospatial data are used to value canopy and impervious land-cover. Time-invariant regressors describe neighborhood layout and distances. Pooled ordinary least squares performed with data normalized by log-transformation yields practical, statistically significant results.

**Optimal Coverage Level Choice with Individual and Area Plans of Insurance** *Harun Bulut, Keith Collins, and Tom Zacharias, National Crop Insurance Services*

A risk-averse farmer's coverage demand with area and individual insurance plans are theoretically investigated. With imperfectly and positively correlated losses and actuarially fair rates, the farmer will fully insure with the individual plan and demand no area insurance regardless of the plans being separate or integrated options.

**Economic Potential of Using High Tunnel Hoop Houses to Produce Fruits and Vegetables** *Jeri Donnell, Jon T. Biermacher, and Steve Upson, The Samuel Roberts Noble Foundation*

The objectives were to determine the expected cost of production and breakeven prices for two fruit and vegetable crop systems. Breakeven prices for winter spinach and summer tomato were $3.32 and $0.83 per pound, respectively, and $6.16, $0.92, and $1.40 per pound for strawberry, yellow, and zucchini squash, respectively.

**How a National Carbon Policy Could Affect Grain Variety Selection: The Case of Rice in Arkansas** *Brandon McFadden and Lanier Nalley, University of Arkansas*

Given the uncertainty regarding future carbon legislation, and increased consumer and industry demand for "greener" products, this study estimates how potential carbon policies would affect rice cultivar selection. This study conducts a life cycle assessment of carbon emissions and estimates the carbon sequestered in 14 commonly sown rice varieties across the Arkansas Delta.

**United States Chicken and Grain Exports to Mexico: Competing for the Same Market?** *Teresa Duch-Carvallo and Jaime Malaga, Texas Tech University*

The impacts of increasing Mexican chicken meat imports from the United States on U.S. grain sorghum exports to Mexico were modeled using a non-spatial, partial equilibrium, international trade model. Results showed that increasing Mexican chicken meat imports from the United States would decrease the Mexican grain sorghum imports from that country.

**Market Coordination in the Beef Stocker Sector: Short and Long Run Implications of Higher Corn Prices** *Derrell S. Peel, Oklahoma State University*

Market coordination in the beef industry involves price signals connecting multiple production sectors. A conceptual framework is presented to understand feeder cattle price signals and how changing feed and cattle market conditions adjust those signals. Permanently higher corn prices are shown to have implications for long run feeder price relationships.

**An Optimal Control Framework to Address the Relationship between Water Resource Management and Water-Borne Health Impacts: Focus on the Texas Lower Rio Grande Valley** *Andrew J. Leidner, Ronald D. Lacewell, M. Edward Rister, and Allen W. Sturdivant, Texas A&M University*

The objective of this study is develop a model that evaluates two types of public health expenditures on water-borne health risks: water-supply infrastructure, an *ex ante* preventative measure of water-borne pollutants, and medical treatment, an *ex post* treatment of the water-borne pollutant's harmful effects on human health.

**Seawater Desalination for Municipal Water Production** *Andrew J. Leidner, Ronald D. Lacewell, M. Edward Rister, Joshua D. Woodard, and Allen W. Sturdivant, Texas A&M University, and Jacob White, NRS Consulting Engineers*

Using methods that have been traditionally applied to investigate input substitution in crop production studies, this paper constructs a model to evaluate how expensive input substitution between energy and capital is in the production of municipal (or commercial or industrial) water by seawater desalination.

**Effects of China's Antidumping Tariffs on United States–China Bilateral Poultry Trade** *Xiaofei Li, Lewell F. Gunter, and James E. Epperson, University of Georgia*

In order to evaluate United States-China poultry trade under China's antidumping tariffs, this study used an excess-supply-excess-demand model, which was estimated using GMM with HAC standard errors to obtain structural coefficients. Preliminary results show that U.S. producers bear 40% of the incidence of the tariff for wings and 19% for legs.

**Economic Feasibility of Commercial Algae Oil Production in the United States** *Bart Fischer, James Richardson, and Joe Outlaw, Texas A&M University, and Marc Allison, Kansas Farm Management Association*

A Monte Carlo simulation model was constructed to analyze the economic feasibility of growing algae as a renewable fuel source. Increasing growth rates, pond water depth, oil content, and facility size are important for ensuring the economic viability of a commercial algae facility.

**A Categorical Data Analysis on Risks in Agriculture** *Hiroki Uematsu and Mishra Ashok, Louisianna State University*

This study compares farm operators' risk perceptions and actual realization of risk attitudes revealed through use of five risk management strategies using data from a national survey. Unexpectedly, results from ordered logit and multivariate probit models show that risk-loving farmers are more likely to employ risk management strategies.

**Motivation for Technology Adoption and Its Impact on Abandonment: A Case Study of U.S. Cotton Farmers** *Hiroki Uematsu and Mishra Ashok, Louisianna State University*

We estimate bivariate probit model with sample selection to identify factors affecting adoption and abandonment of precision farming technologies, using the 2009 Southern Cotton Precision Farming Survey. Farmers for whom keeping up-to-date with the latest technology in agriculture is not important are more likely to abandon precision farming technologies.

**Competitiveness of Latin American Exports in the U.S. Banana Market** *Andrew Muhammad and Steven Zahniser, U.S. Department of Agriculture, Economic Research Service, and Greg E. Fonsah, University of Georgia*

U.S. banana demand differentiated by source is estimated using the generalized dynamic Rotterdam model. Results indicate that dynamic factors play a significant role in determining the allocation of U.S. expenditures across exporting sources. Of particular interest is Guatemala's increased share and Costa Rica's decreased share of the U.S. banana market.

**Demand Estimation for U.S. Apple Juice Imports: A Restricted Source Differentiated Almost Ideal Demand System Model** *Dawit Kelemework Mekonnen and Esendugue Greg Fonsah, University of Georgia*

A restricted version of Source Differentiated Almost Ideal Demand System was used to examine U.S. import demand for apples. The results showed that inelastic own price demand and relatively higher expenditure elasticity enabled China to capture three quarters of the U.S. apple juice market in less than a decade.

**It Pays to Be Green: A Hedonic Stock Price Model for Environmentally Friendly Large U.S. Firms** *Muhammad Ahmadin, University of Kentucky and Sullivan University*

Using Rosen's theory we developed hedonic stock price models, regular inverse demand model, and modified CAPM to estimate non-market value of firm's environmental attributes, environmental impact, policy, reputation, and overall score. We found willingness-to-pay of $0 (not significant), 3¢, 5¢, and 18¢, and willingess to accept compensation of 0.06%, 0.38%, 0.40%, and 2.06%.

**What can we Learn from our Mistakes? Evaluating the Benefits of Correcting Inefficiencies in U.S. Department of Agriculture Cotton Forecasts** *Olga Isengildina-Massa, David Tysinger, and Patrick Gerard, Clemson University, and Stephen MacDonald, U.S. Department of Agriculture-Economic Research Service*

This study evaluated the magnitude of forecast improvements in U.S. Department of Agriculture cotton forecasts over 1999–2008 resulting from correction of inefficiencies such as bias, correlation of forecast errors with previous errors and forecast levels, and correlation in forecast revisions. Results demonstrate that corrections for most inefficiencies significantly reduced MAE of the United States, China, and World upland cotton forecasts.

**Alcoholic Beverages and Cigarettes: Complements or Substitutes? A Pseudo Panel Approach** *Aycan Koksal and Michael Wohlgenant, North Carolina State University*

Using pseudo panel data we analyze the relation between cigarette and alcohol consumption within the rational addiction framework. We found that alcoholic beverages are complements

for cigarettes, while it is not the same the other way around. We believe that drinking works as a trigger for smoking in social settings.

**Evaluating the Feasibility of Expanding Direct Marketing Opportunities for Small Producers in Alcorn County, Mississippi** *Albert E. Myles, Patrick Poindexter, and Albert J. Allen, Mississippi State University*

The primary objective of this paper was to use a business model to evaluate the feasibility of a direct marketing facility in North Mississippi. The model calculated four decision variables (PB, NPV, B/C, and MIRR), which were all positive. Thus, the facility was deemed feasible.

**Flood Insurance Demand Along the Gulf and Florida's Atlantic Coasts** *Jihyun Lee and Daniel R. Petrolia, Mississippi State University*

The objective of this research is to identify factors that influence both the decision (yes or no) and level of flood insurance among coastal homeowners in the southeast United States. Recently flood damage has dramatically increased, and some report that coastal populations are growing.

**The Role of Specialty Food Stores and Farmers' Markets in the Procurement of Local Foods** *Sarah E. Wixson, Ani L. Katchova, Timothy A. Woods, and Wuyang Hu, University of Kentucky*

This study examines the importance that people place on the local attribute for specific foods and how that affects their likelihood to shop at specialty food stores and farmers markets. Therefore, specialty food stores and farmers markets are uniquely positioned within local food networks to supply local foods to consumers.

**Producers Cooperative Oil Mill: A Case Study in Strategic Planning for a Cooperative** *Phil Kenkel and Rodney Holcomb, Oklahoma State University*

The formulation and implementation of strategy in a cooperative is impacted by business structure. The strategic decisions of a cooperative are discussed in the content of the unique structure and values of a cooperative firm. The case study can be used as three interrelated mini case studies. Questions for students are included.

**Modeling Pine as a Carbon Sequestering Crop in Arkansas** *Aaron Smith, Micheal Popp, and L. Lanier Nalley, University of Arkansas*

This analysis estimates the impact of a carbon offset policy on agriculture net returns, carbon footprint, and acreage reallocation in Arkansas with the addition of pine as a carbon sequestering crop. Further, the analysis provides a spatial estimate of where pine acres would occur and the source of changes in producer revenues.

**"Buying Local" Means "Selling Local" – Using a Transportation Alliance of Environmental and Food Horticulture Producers in Georgia** *Forrest Stegelin, Jack Houston, Javier Mantilla, Paul Thomas, and Matthew Chappell, University of Georgia*

A transportation alliance is an arrangement involving at least two firms pursuing some common goals and close coordination between them. Using geographic information systems software, three location clusters were identified for sharing routings, vehicles, and time windows. Average total cost savings to Georgia plants and produce growers was 8% and 7%, respectively.

**Equal or Just? Intergenerational Allocations within Family Farm Businesses** *Kelly Y. Lange, Jeffrey W. Johnson, Darren Hudson, Phillip N. Johnson, and Bill Gustafson, Texas Tech University*

A multi-disciplinary literature review was conducted in order to integrate multiple perspectives pertaining to family farm business transfer. Factors affecting perceptions of equality in family farm transfers were identified. Preliminary survey results analyze perceptions of equality within farm families and how these perceptions affect family farm transfer planning and implementation.

**Using Multiple-Scenario Contingent Valuation Data to Estimate Willingness to Pay for Restoration of Mississippi's Barrier Islands** *GwanSeon Kim, Daniel R. Petrolia, and Matthew Interis, Mississippi State University*

This research applies a novel method of non-market valuation to the case of barrier island restoration in Mississippi. The objective is to estimate peoples' willingness-to-pay for restoration to pre-Camille status (i.e., as the barriers islands existed prior to Hurricane Camille in 1969).

**Alabama Restaurant Preferences and Willingness to Pay for Local Food: A Choice Based Approach** *Kenesha Reynolds-Allie and Deacue Fields, Auburn University*

Local food marketing is a growing trend in the United States and restaurants are looking to capitalize on this market. This study utilized choice based conjoint analysis to determine restaurants' preferences and demand for local foods in Alabama. Findings indicate restaurants prefer naturally produced fresh/whole products, below their current average weekly price.