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grams. Our findings reveal that the majority of districts are continuing to use fixed charges independent of water deliveries and that almost all conservation rate structures are designed so that the first tier allocation satisfies most crop water needs. With ample water allocation in the initial block there is no effective difference in rate structure and the price incentive impact is

diminished or nonexistent. However, the rate structures implemented may be achieving desired district hydrologic, legal, political or internal management objective. Under existing reclamation policy, the question of whether conservation is being achieved by price or other programs depends on how a district defines conservation.

Selected Papers

Session: Surface Water Allocation Issues. Moderator: Molly Espey (University of Nevada, Reno)

"The Edwards Aquifer Water Resource Conflict: Examining Impacts of USDA Programs." Glenn D. Schaible (USDA/ERS), Ronald D. Lacewell, and Bruce A. McCarl (Texas A&M University)

This paper summarizes results of economic analysis of the impact 1990 and 1996 USDA farm programs have on irrigation water withdrawals from the Edwards Aquifer (south-central Texas). Economic modeling, a producer behavioral survey, characteristics of program participating farms, and economic theory are used to explain producer irrigation behavior.

"An Economic Model of Water Transfer Analysis for the Central Valley Project Improvement Act." Bin Zhang, Steve Hatchett, and Roger Mann (Ch2M HILL)

This paper describes the Central Valley Production and Transfer Model developed for the analysis of Central Valley Project Improvement Act (CVPIA) alternatives. While some general results are discussed, this paper focuses on modeling methods and results of a model confirmation run to simulate the 1991 California Drought Water Bank.

"Analysis of Agricultural Economics for the Central Valley Project Improvement Act Programmatic Environmental Im-

act Statement." Steve Hatchett, Roger Mann, and Bin Zhang (Ch2M HILL)

Section 3409 of the Central Valley Project Improvement Act (CVPIA) requires a Programmatic Environmental Impact Statement (PEIS) of the Act. The CVPIA may affect Central Valley agriculture in many ways. This paper describes the analysis of agricultural economics for the PEIS with emphasis on the Central Valley Production Model.

"The Impact of Surface Water Reallocations on the Eastern San Joaquin Valley." Cheryl Brown, George Goldman (University of California, Berkeley), Richard Howitt (University of California, Davis), Jerome Siebert (University of California, Berkeley), and Jim Sullins (University of California, Tulare County Cooperative Extension)

This study considers the impact that surface water reallocations from agriculture could have on the agricultural economy of California's eastern San Joaquin Valley. Using simulations of ten years of surface water cuts, we report changes in groundwater levels, water use, acreage, crop mix, total personal income, and employment.

Session: Resource Demand and Fine Wines. Moderator: Chris Bastian (University of Wyoming)

"Effects of Wood Quality and Technology on Output and Input in the Wash-

ington Sawmill Industry.” Eric Weiner (American Express Corporation), Ron C. Mittelhammer, and Keith Blatner (Washington State University)

A normalized quadratic profit function is used to model the economic behavior of the Washington sawmill industry. Effects of technological change and wood quality are explicitly modeled based on mill-survey information rather than simple time trends. The influence of technology and log quality on industry supply and demand is analyzed.

“The Demand for Wines: Variety and Regional Effects.” Steven Buccola and Loren Vander Zanden (Oregon State University)

Among Oregon consumers, red wine demand is inelastic and white wine demand elastic. Red and white wines complement one another. Partly because of this complementarity, Oregon wine prices appear to be too high to maximize revenues. However, the deadweight loss from a wine tax increase would be minor.

“Land Allocation, Soil Quality, and the Demand for Irrigation Technology.” Gareth P. Green (Washington State University) and David L. Sunding (Council of Economic Advisers)

Logit models are estimated for citrus and vineyard crops to show under what land quality conditions water price is an effective policy tool for inducing adoption of modern irrigation technologies, and to show how welfare impacts of water policy depend on cropping patterns and the distribution of land quality characteristics.

“A Two-Constraint AIDS Model of Recreation Demand and the Value of Leisure Time.” Douglas M. Larson, Sabina L. Shaikh, (University of California, Davis), and John B. Loomis (Colorado State University)

An AIDS-based model of recreation, donation, and other goods allocation subject to money and time constraints is developed, and the resulting two share systems are jointly estimated. Applied to California

whale watching and donations activities, the model has significant own-price, cross-price, and budget effects in both share systems.

Session: Capital Structure and Firm Efficiency. Moderator: Joe Arata (Merrill Lynch Future Inc.)

“Asset/Liability Management in Kansas Banks.” Christine A. Cole and Allen M. Featherstone (Kansas State University)

A survey of 441 Kansas banks was used to document the asset/liability management techniques used in commercial banks. Results indicate gap analysis, diversification, and specialized asset/liability management computer software are the major risk management techniques used; derivative products are seldom used. Results suggest no clear consensus on the software used.

“Optimal Capital Structure in Centralized Agricultural Cooperatives.” David G. Barton, Joe L. Parcell, and Allen Featherstone (Kansas State University)

This research uses a stochastic interest rate to determine the optimal solvency (equity to asset) for 14 Kansas-centralized agricultural cooperatives. Solvency is sensitive to including a stochastic interest rate. Additionally, solvency is sensitive to the change in business and financial risk.

“A Nonparametric Analysis of Efficiency for a Beef-packing Firm: Implications of Federal Food Safety Regulations.” Allen M. Featherstone (Kansas State University) and Nicole L. Klein (South Dakota State University)

Nonparametric analysis is used to measure efficiency and examine the impact of the zero tolerance directive on the efficiency of a major U.S. beef packer. Regulatory compliance costs have not allowed the plants to use the best available technology in the production process.

“An Analysis of Efficiency of Midwestern Agricultural Cooperatives.” Chatura B. Ariyaratne, Allen M. Featherstone,

Michael R. Langemeier, and David G. Barton (Kansas State University)

This paper uses nonparametric analysis to examine the efficiency of a sample of grain-marketing and farm supply cooperatives in the Great Plains. Although larger cooperatives were more efficient, in general, a cooperative is more likely to reduce costs by focusing on technical or allocative efficiency than by adjusting scale.

Session: Economics of Cow/Calf and Fed Cattle Production. Moderator: Kevin Dhuyvetter (Kansas State University)

“Retained Ownership of Beef Cattle When Considering Production and Price Risk.” Larry W. Van Tassel, Scott M. McNeley (University of Wyoming), Michael D. MacNeil, Robert E. Short, and Elaine E. Grings (USDA/ARS)

This study utilized a discrete stochastic programming model to examine optimal retained-ownership decisions given stochastic production, price, and risk aversion levels. Optimal retained-ownership decisions varied with sire growth potential, production year, level of risk aversion, and profit realization at the selling point.

“Economic Evaluation of Cellulosics Enzymes in Beef Cattle Feeding.” Brian Freeze (Lethbridge Research Centre)

The economics of enzyme addition to beef cattle diets was evaluated for past feed and cattle prices (1979 to 1996). Only intermediate levels of enzyme addition (2.5 to 3.5 litres per tonne dry matter of feed) were economical at only the lowest potential enzyme cost (\$2 per litre).

“Value of Pregnancy Testing Range Cows.” Russell Tronstad (The University of Arizona)

Pregnancy information increases long-term profitability by 7 to 11% using optimal culling rules. However, the more traditional strategy of keeping all pregnant cows and culling all open cows results in 8 to 18% less profit than optimal culling decisions with no pregnancy information.

“Measuring the Productivity of Cattle Finishing.” Michael Langemeier and Rodney Jones (Kansas State University)

This study examines the productivity of steer placements from 1980 to 1994 for two feedlots in western Kansas. Regression analysis is used to examine the trend in feed conversions and to examine the growth in output. Growth in output is decomposed into changes in productivity and changes in input use.

Session: Industrial Organization in Agricultural and Food Production. Moderator: David L. Sunding (University of California, Berkeley)

“Evaluating the Competitive Yardstick Effect of Cooperatives on Imperfect Markets: A Simulation Analysis.” Susan H. Hoffman and Jeffrey S. Royer (University of Nebraska, Lincoln)

This paper analyzes the effect of farmer cooperatives on the performance of imperfect markets through simulation analysis. Results suggest that, in addition to restricting output or overproducing, cooperatives can contribute to the diminution of economic welfare because of the increased costs of producing raw product due to disproportionate market shares.

“Efficient Land Tenure Contract under Asymmetric Information.” Siddhartha Dasgupta and Stephen Devadoss (University of Idaho)

Asymmetric information between landlord and tenant is characteristic of U.S. land tenure contracts. Consequently, contracts negotiated for single time periods are inefficient, however, full-information efficiency is attainable through long-term contracts. This article takes a repeated principal-agent game and develops a full-information efficient contract under asymmetric information.

“Production Control and Production Contracts: Why Do Integrators Control Inputs?” Rachael E. Goodhue (University of California, Berkeley)

In broiler and hog production contracts the integrator provides or specifies major non-labor inputs. Previous work attributed this pattern to quality considerations, which does not explain widespread producer concern regarding their loss of management control. I demonstrate that integrators reduce payments to producers by controlling inputs, regardless of quality considerations.

“Product Liability, Entry Incentives, and Industry Structure.” Stephen F. Hamilton (Kansas State University) and David L. Sunding (University of California, Berkeley)

Numerous studies suggest that increasing producer liability in hazardous sectors stimulates small firm entry as incumbent firms divest risky activities. This paper considers the effect of increased producer liability in a fully capitalized industry and shows that the effect on industry structure depends on the shape of the marginal injury relationship.

Session: Integration, Regulation, and Structural Change in the Livestock and Meat Industries. Moderator: Kyle Stiegert (Kansas State University)

“Vertical Integration Comparison: Beef, Pork, and Poultry.” Clement E. Ward (Oklahoma State University)

Will the beef and pork subsectors integrate vertically as completely as poultry? This paper compares several aspects of the three subsectors. Pork will continue vertically integrating similar to poultry. Beef is the least vertically integrated to date and has the most barriers to overcome to vertically integrate further.

“Economic Impacts of the Zero Tolerance Directive on the Cost Structure of Beef-Packing Companies.” Nicole L. Klein (South Dakota State University) and Gary W. Brester (Kansas State University)

Data from a major beef-packing company (including regulatory compliance costs) are used to estimate a translog cost function

and a system of input demand equations. Regulatory compliance costs associated with the zero tolerance directive have increased the cost share of cattle while reducing the demand for all inputs.

“Causality, Input Price Variability, and Structural Changes in the U.S. Livestock-Meat Industry.” M. Akhtar Khan and Glenn A. Helmers (University of Nebraska)

The causality relationships between corn price variability and livestock prices and quantity variabilities were estimated. Relatively weakly causal relationships were observed for 1982–93 compared with 1970–81 period implying that corn price volatility may have been one of the predominant factors which triggered structural changes in the industry. Beef was found more susceptible to corn price shocks than pork was.

“Spatial Price Linkages in U.S. Regional Broiler Markets.” Titus Awokuse (Texas A&M University), Siddhartha Dasgupta, and Stephen Devadoss (University of Idaho)

Price linkages among markets is affected by economic entities exercising market power such that price differences need not equal intermarket transportation costs. This article uses cointegration techniques to test for market integration in four regional U.S. broiler markets suspected of being affected by oligopsony power.

Session: Agricultural Policy, Technological Change, and the Environment. Moderator: Rachael Goodhue (University of California, Berkeley)

“Economic Impacts of Post-CRP Policy Options in South Dakota.” Larry Janssen, Laurel Venhuizen, and Martin Beutler (South Dakota State University)

Farm- and regional-level economic impacts of alternative post-Conservation Reserve Program (CRP) policy and land use changes are estimated. Policy changes that reduce (eliminate) CRP acres had negative

economic impacts on total value added and farm-level net returns in most regions of South Dakota.

“Political and Economic Factors Affecting Agricultural PAC Contribution Strategies.” Dana Hoag, Elizabeth Hornbrook, and Terry Van Doren (Colorado State University)

Some expect the political power of agriculture to decrease with declining agricultural populations. However, the last three farm bills adopted supportive policies. Public choice theory may explain this, asserting there is a market for political favors. Our objectives are to measure political influence from contributions to members of Congress.

“Kansas Wheat Breeding: An Economic Analysis.” Andrew P. Barkley (Kansas State University)

The increase in wheat production due to Kansas semidwarf varieties is quantified, and the costs and benefits of the wheat research program are evaluated using a two-region model of the world wheat market. The economic rate of return of the wheat-breeding program is calculated, and policy implications are derived.

“Declining Commodity Program Payments and Enhanced Environmental Regulations: Impacts on Acreage Allocation in the Great Plains.” Chien-Pang Lin and Andrew P. Barkley (Kansas State University)

Seemingly unrelated regression is used to quantify the impacts of decreasing commodity program payments and enhanced environmental regulations on acreage allocations for the five major crops in 105 Kansas counties, from 1970 to 1995. Price and policy elasticities are calculated and policy simulations are conducted for commodity and environmental policies.

Session: Environmental Valuation and Externality Management. Moderator: Gareth P. Green (Washington State University)

“Opportunity Costs of Wild Horses: An Allotment Case Study in Wyoming.” C.

T. Bastian, L. W. Van Tassell, A. C. Cotton, and M. A. Smith (University of Wyoming)

This study estimates opportunity costs of foregone wildlife and domestic livestock due to wild horses using a Bureau of Land Management allotment in Wyoming. Results indicate the marginal opportunity costs associated with horse numbers beyond the median target level specified in the allotment management plan are well over \$1,900/horse.

“Environmental Valuation and Declining Marginal Utility of Preservation: The Case of the Minke Whales in the NE Atlantic.” Erwin Bulte (Wageningen Agricultural University) and G. Cornelis van Kooten (University of British Columbia)

For a given estimate of total preservation value, strict conservation and extinction of minke whales in the northeast Atlantic can both be optimal policies depending on what is assumed about marginal preservation value. This finding highlights the importance of collecting marginal values in CV surveys.

“Forest Resource Management and Alternative Incentive Mechanisms: Controlling Deforestation in the Philippines.” Marissa C. Garcia (University of Hawaii, Manoa) and Donna J. Lee (University of Florida)

A dynamic model of deforestation and agricultural expansion in the Philippines is developed to elucidate the economic factors driving current land use trends and to determine the efficacy of prevailing forest regulations by quantifying trade-offs between status quo and social optimum resource use. Model results indicate intervention areas for improving public forest management.

“No Plane, Big Gain: Airport Noise and Residential Property Values in the Reno-Sparks Area.” Molly Espey (University of Nevada, Reno) and Hilary F. Kaufman (University of Denver)

The hedonic price method is used to ex-

plore the relationship between residential property values and airport noise in the Reno-Sparks area. Empirical results suggest that there is a statistically significant negative relationship between airport noise and residential property values, but that the disamenity value diminishes as distance from the airport increases.

Session: Fed Cattle Captive Supplies, Valuation, and Price Forecasting. Moderator: James Mintert (Kansas State University)

“A Bayesian Vector Autoregression Model for Forecasting Regional Cattle Prices.” Kenneth A. Foster and John A. L. Cranfield (Purdue University)

A Bayesian vector autoregression model is developed to forecast six regional U.S. cattle prices and one futures price. Results suggest a second-order lag is appropriate. Out of sample forecasts from the BVAR(2) were better than those from VAR(2), but were not appreciably different from a state space model.

“Live, In-the-Beef, or Formula: Is There a “Best” Method for Selling Fed Cattle?” Dillon M. Feuz (University of Nebraska)

Descriptions of grid pricing, formula pricing, and marketing alliances for fed cattle are provided. These pricing methods are compared with traditional live-weight and in-the-beef pricing. Expected revenue variability are compared as well as determining what type of cattle are most profitable under each pricing method.

“The Effect of Captive Supply Cattle on Live Cattle Basis.” Joe L. Parcell, Ted C. Schroeder, and Kevin C. Dhuyvetter (Kansas State University)

Live cattle basis is used by cattle producers and beef packers to formulate price expectations. The most recent basis study was in 1979, structural changes in the cattle industry require updating the basis literature. Increasing deliveries of captive supply cat-

tle weakened basis by a small amount in some states and had no impact in others.

“Value-Based Pricing of Fed Cattle: Challenges and Research Agenda.” Ted C. Schroeder (Kansas State University), Clement E. Ward (Oklahoma State University), James Mintert (Kansas State University), and Derrell Peel (Oklahoma State University)

Beef has lost considerable market share because it does not offer adequate value to consumers. An important component of value is quality problems related to pricing cattle on averages. This study summarizes results of industry surveys solicited to investigate this problem. A research agenda to resolve the problem is proposed.

Session: Regional Economic Modeling. Moderator: Christine Cole (Kansas State University)

“U.S. Agricultural Exports: A Balanced Regional Model.” Darryl S. Wills and Chinkook Lee (USDA/ERS)

Using a balanced regional input-output model we estimate that U.S. agricultural exports generated 951,000 jobs in 1995 and will create 1.7 million jobs in 2005. The Corn Belt is the number one region for export-related jobs in 1995. In 2005 the Pacific region will be number one.

“Regional SAM’s from IMPRO for CGE Models.” Kenneth Hanson (USDA/ERS)

Regional economic analysis using input-output has been enhanced with the new IMPRO version of the IMPLAN database and software. IMPRO can generate a regional social accounting matrix (SAM). This paper provides a discussion of the IMPRO SAM structure and how it can be used for a small region CGE model.

“Factors Influencing Trade Area Capture in the Great Basin Area.” Thomas R. Harris and George Ebai (University of Nevada, Reno)

Tobit estimation procedures were used for

pull factors for eight retail sectors to determine factors which influence the capture of local and nonlocal retail demands. These significant factors were derived and discussed as elements to be implemented into future retail extension/outreach programs.

“Application of Computable General Equilibrium Model to Derive Impacts of Surface Water Reallocation Policy.” Chang Kyu Seung, Jeffrey Englin, and Thomas Harris (University of Nevada, Reno)

This study incorporates a recreation demand model into a dynamic computable general equilibrium (CGE) framework to examine the impact of surface water reallocation policy in Churchill County, Nevada. This analysis indicates that transferring water from agriculture to the Stillwater National Refuge reduces the total welfare of the residents of the region.

Session: Cointegration, Bargaining, and Price Uncertainty. Moderator: Stephen Devadoss (University of Idaho)

“Cointegration between Prices of Pecans and Other Edible Nuts: Forecasting and Implications.” Wojciech J. Florkowski and Yue Lai (University of Georgia)

The use of cointegration relationship between prices of pecans, almonds, and walnuts is found to forecast pecan prices more accurately than some of the best time-series models. This indicates that cointegration also exists among substitutes. The findings can be used by the pecan industry in decision making.

“Cointegration Tests of Spatial and Variety Price Linkages in Regional Dry Bean Markets.” Chyi-lyi Liang, Dillon M. Feuz, and R. G. Taylor (University of Nebraska)

Two sets of cointegration tests were performed on regional dry bean prices. The results show (1) prices for the same variety were cointegrated across geographically separated production areas, and (2) prices

for different varieties grown in the same production area were not cointegrated. Processors respond to the same export demand signals.

“A Bargaining Model of Price Discovery in the Washington/Oregon Asparagus Industry.” Raymond J. Folwell, Ron C. Mittelhammer, and Changru Wang (Washington State University)

The bargaining process and its role in price discovery within the U.S. asparagus industry is modeled. The growers and processors inverse supply and demand functions define boundaries for the negotiated processed asparagus prices. OLS and Heckman's two-stage estimation procedures are used to estimate the bargaining model, and implications of the results are discussed.

“Soybean Hedge Ratios for Eastern South Dakota Producers Facing Production and Price Uncertainty.” Karen Brovold and Bashir A. Oasmi (South Dakota State University)

Optimal hedges with production and price uncertainty for eastern South Dakota soybean producers are investigated. Assuming a constant absolute risk aversion utility function and jointly normally distributed, futures prices, cash prices, and yields, optimal preplanting hedges are estimated with county-level yield data and varying degrees of risk aversion.

Session: Methodological Approaches for Incorporating Information. Moderator: Charles Moss (University of Florida)

“A Monte Carlo Sampling Approach to Testing Separate Families of Hypotheses: Monte Carlo Results.” Nouhoun Coulibaly and B. Wade Brorsen (Oklahoma State University)

Monte Carlo experiments are designed to compare the finite sample performance of two Monte Carlo hypothesis tests with Pesaran and Pesaran's Cox-type test. The size of the Pesaran and Pesaran test is generally incorrect. The Monte Carlo tests perform

equally well and are both preferred to Pesaran and Pesaran's test.

"Alternative Price Expectation Formulation and Information Access." Duncan M. Chembezi (Alabama A&M University) and Joyce A. Cacho (University of Missouri)

Access to information is pivotal to formulating price expectations included in acreage allocation decisions. Rationality coefficients imply coexistence of rational and naive expectations in the soybean market. Results confirm the "biased predictor" nature of naive expectations, suggesting that Extension Service resources should focus on programs that improve producers' information access.

"A Distance Function Approach to Multifactor Productivity Measurement in U.S. Agriculture." David K. Lambert and Mohammad Al-Amin Ussif (University of Nevada)

A new procedure is developed to derive estimates of productivity. Distance function values are calculated between observed netputs and a reference technology constructed by augmenting observed netputs for quality changes. MFP growth rates average around 2% over the postwar period. Discrepancies occur between the distance function estimates and traditional measures.

"Approximating Bayesian Posteriors Using Multivariate Gaussian Quadrature." John A. L. Cranfield, Paul V. Preckel, and Songquan Liu (Purdue University)

Multiple integrals encountered when evaluating posterior densities in Bayesian estimation were approximated using multivariate Gaussian quadrature (MGQ). Experimental results for a linear regression model suggest MGQ provides better approximations to unknown parameters and error variance than simple Monte Carlo based approximations.

Session: Contracting, Information, and Commodity Futures Markets. Moderator: Joseph L. Parcell (Kansas State University)

"The Fallacy of Nearby Contract Commodity Futures Price Analysis: Intra-market Futures Contracts Are Not Identically Distributed." Christopher B. Barrett, Jay-Rong Li, and Dawn D. Thilmany (Utah State University)

Researchers and analysts commonly use nearby contract futures prices series as a proxy for more distant contracts in empirical analysis and commodity hedging applications. This paper tests for equivalence between nearby and specific contract Chicago Board of Trade wheat futures price behavior.

"Cost of Forward Contracting Hard Red Winter Wheat." John P. Townsend and B. Wade Brorsen (Oklahoma State University)

Two methods were used to determine the cost of forward contracting hard red winter wheat. One hundred days before delivery, the parametric method estimated the cost of forward contracting at four cents and the nonparametric estimated costs at ten cents.

"The Effect of USDA Cattle on Feed Reports on Feeder Cattle Futures Prices." Kevin C. Dhuyvetter, Ted C. Schroeder, and Joseph L. Parcell (Kansas State University)

Unanticipated information in USDA *Cattle on Feed* reports is the difference between actual reported values and prerelease estimates. Feeder cattle futures prices respond to unanticipated information even after accounting for live cattle price response, indicating these reports convey information relevant to the feeder cattle market beyond that reflected in the live cattle market.

"Basis Convergence in Cattle Contracts Before and After Changes to Delivery Specifications." John Schmitz (University of Wyoming)

Cattle markets have undergone considerable change, affecting basis convergence.

Since convergence is essential to the market's risk transfer role, revised delivery specifications have been a necessary response. However, basis analysis shows little resulting improvement. Evidence from feeder cattle suggests that cash settlement may not achieve satisfactory results for live cattle.

Session: Agricultural Economic Education and Student Achievement. Moderator: David Barton (Kansas State University)

"What Is Agriculture and Its Contribution to the U.S. Economy?" Elizabeth Hornbrook and Dana Hoag (Colorado State University)

Agriculture is evolving and changing and efforts to define it create ambiguities. Its definition and measurement are influenced by factors including the data, timing, audience, and financial support for its study. The purpose of this paper is to discuss how the impact of agriculture can be and has been measured.

"The Effects of Historical Settlement Patterns on Oklahoma Student Achievement Test Scores." B. Wade Brorsen and Charles Jacques (Oklahoma State University)

This research demonstrates how cultural differences affect the efficiency of increased public school district expenditures on students' achievement test scores. Results indicate that equality of outcome as measured by achievement test scores may be impossible to achieve using school district expenditures.

"A Decade of Decline and Evolution in Agricultural Economics Programs: 1985-96." Steve Blank (University of California, Davis)

This study identifies impacts of changes in the academic environment on university programs. Survey results show that enrollments in agricultural economics departments declined over the last decade. To slow the decline, many departments have

changed their name and/or curriculum to attract domestic students who are not interested in production agriculture.

"Helping Russian Students See the Invisible Hand." Dale J. Menkhaus, Chris T. Bastian (University of Wyoming), Alla V. Yakunina, and Victor E. Esipov (St. Petersburg University of Economics and Finance)

The purpose of this paper is to describe a laboratory approach to teaching market economic theory and to highlight its application to Russian students. This approach encourages student involvement, creates an active learning environment, provides classroom generated data for instruction, and has appeal for economics instruction in former planned economies.

Session: U.S. Government Programs and Trade Distortions. Moderator: Rhonda Skaggs (New Mexico State University)

"U.S. Agricultural Exports: Projected Changes under FAIR and Potential Unanticipated Changes." Daryll E. Ray and Kelly H. Tiller (University of Tennessee)

This research simulates agricultural exports of four major crops from 1996-2004. Export value and volume is evaluated in relation to historical performance, as are potential implications of alternative assumptions about world trade expectations. The paper also highlights potential export ramifications of current FAIR Act policy provisions.

"Liberalizing World Sugar Trade: The Impact of U.S. Tariff Rate Quota Changes." Martin Benirschka and Won W. Koo (North Dakota State University)

A dynamic partial equilibrium model of the world sugar economy is used to examine the impact of U.S. tariff rate quota liberalization. Simulation results indicate that U.S. sugar prices fall significantly and that imports gain U.S. market share. However, declines in U.S. sugar production will be modest.

“Sales and Excise Taxes: Estimating Agricultural Payments and Subsidies.” Gregory M. Perry (Oregon State University) and Clair J. Nixon (Texas A&M University)

The GATT agreement clarified many issues concerning direct farm payments and whether they should be considered subsidies. Not directly addressed in the GATT agreement are tax subsidies, where the benefit is harder to identify and measure. This paper focuses on sales and excise taxes as a subsidy source to U.S. farmers.

“Testing the Validity of Standard Representative Agent Import Demand Systems.” Harvey Hill, Kyle Stiegert (Kansas State University), and Alan Love (Texas A&M University)

This paper tests the validity of standard import demand systems (i.e., Rotterdam) built in the Armington tradition. We reject the hypothesis that characteristic differences in wheat can be ignored and argue that standard models are misspecified. This is an important step in improving our measurement techniques on policy-relevant import demand parameters.

Session: Food Consumption, Advertising, and Market Power. Moderator: Nicole Klein (South Dakota State University)

“Generic Milk Advertising: Optimal Allocation among Types of Media.” James G. Pritchett, Donald J. Liu (University of Minnesota), and Harry M. Kaiser (Cornell University)

Two hundred million is spent annually on generic dairy promotion. Consequently, allocation of expenditures by media type (print, radio, television, and outdoor) is important. This analysis frames the allocation of expenditures in an optimal control framework. Results suggest benefits occur by redistributing funds.

“A Selectivity Model of Household Pork Consumption Behavior in Taipei, Tai-

wan.” Jay-Rong Li (Utah State University)

This paper studies branded pork consumption behavior in Taipei, Taiwan. Since branded pork is only available in some markets, the consumption decision process involves two stages: the first concerns which market to purchase; the second is what product to purchase. A bivariate probit model with sample selection is used.

“A Nonparametric Test for Monopoly Market Power Exertion by Breakfast Manufacturers.” Maria-Cristina Espinoza and H. Alan Love (Texas A&M University)

Using a nonparametric method, monopoly market power exertion is estimated for the breakfast cereal industry for the period 1963–92. This model does not require the assumption of a functional form, constant returns to scale, nor Hicks neutral technology. Our results indicate that a limited amount of market power is exerted.

“The Impact of Demographics, Market Characteristics, and Prices on the Consumption of Food-Away-From-Home.”

State data are used to determine the impact of price and nonprice variables on consumption of several types food-away-from-home (FAFH). Results show that outlet density is important, as are several demographic variables. An AIDS model of total food expenditure reveals that elasticities vary by type of FAFH facility.

Session: Risk and Uncertainty in Agricultural Production. Moderator: Michael Langemeier (Kansas State University)

“Crop Flexibility in Dryland Corn and Soybeans Using Predicted Yields and Prices.” Glenn A. Helmers, Charles F. Yamoah, and Weeratilake Dias (University of Nebraska)

Using experimental data on corn and soybean yields in eastern Nebraska, a yield prediction model was constructed. In concert with the use of futures prices, a pro-

gramming model was constructed to select optimum short-run cropping systems. The performance of the model was compared with models using actual outcomes. The results demonstrate significant advantages over conventional rotation cropping.

“Seed Corn Tournament Contracts and Excess Nitrogen Application.” Paul Preckel, Timothy Baker, and Jessica Eide (Purdue University)

The incentive for excess nitrogen application in seed corn production contracts is analyzed. We find that the lack of contract renewal certainly can encourage greater input use. In a geographic region where contract seed corn production is prevalent, we estimate that nitrogen use is increased by about 15%.

“The Demand for Specialty-Crop Insurance: Adverse Selection and Moral Hazard.” Timothy J. Richards and Pamela Mischen (Arizona State University)

Moral hazard and adverse selection are often blamed for the lack of an active crop insurance market for fruits and vegetables. This paper develops an alternative method of estimating the demand for insurance that uses a contingent valuation approach to elicit growers' willingness to pay. Technical inefficiency is interpreted as an indicator of a moral hazard effect. The results support this hypothesis.

“Teaching Agricultural Producers to Consider Risk in Decision Making.” A. Gene Nelson (Texas A&M University)

The 1996 FAIR Act has emphasized the importance of teaching agricultural producers to understand and respond rationally to risk. The following are guidelines for considering risk: (1) analyze decisions using a payoff matrix, (2) estimate the probabilities of events, (3) consider individual attitudes about taking risks, and (4) adopt management strategies to control risk. Much still remains to be learned about how to teach risk management.

Session: The Effect of Exports on Firms, Industries, and Economic Growth. Moderator: Martin Benirschka (North Dakota State University)

“The Factor Content of U.S. Trade: An Explanation for the Widening Wage Gap?” Chinkook Lee and Kenneth Hanson (USDA/ERS)

We use input-output to analyze the impact of changes in final demand on the demand for low- and high-skilled labor. Net trade during 1972–87 had an adverse impact on low- and high-skilled labor, but we do not find that changes in trade have been a source for widening the wage gap.

“Exports and Economic Growth.” Muhammad S. Anwer and R. K. Sampath (Colorado State University)

Utilizing unit roots and cointegration techniques we find out of 96 countries only 8 show unidirectional or bidirectional causality from exports to GDP with positive relationship between the two variables. Causality from GDP to exports with positive relationship between the two variables is found for only nine countries.

“A probit Analysis of the Characteristics of Firms Engaged in the Fruit and Vegetable Trade between the United States and Latin America.” L. Rebeca Marin, J. E. Epperson, and Glenn C. W. Ames (University of Georgia)

This research analyzed characteristics of 109 firms engaged in international fruit and vegetable trade. A probit model was used to determine the probability that a firm was of U.S. or Latin American origin. Results indicated that firms were rather homogeneous, similar in structure, market outlets, and price-setting information and strategies.

“Impacts of Foreign Investment and Advertising on the Export Demand for U.S. Frozen Potatoes.” Kent Lanclos (National Cotton Council), Stephen Devadoss, and Joseph Guenther (University of Idaho)

Import demand for U.S. frozen potatoes is

estimated for Japan, Mexico, Philippines, and Thailand. Import demand in Japan is primarily influenced by own-price and income. In the other three countries, however, potato industry advertising and foreign investments by the U.S. food service industry are found to be significant factors influencing import demand.

Session: Value of Surface Water Quality and Amenities. Moderator: Stephen Hamilton (Kansas State University)

"Relationship between the Implicit Value of Riverside Property, Environmental Amenities, and Stream Bank Protection." Sian Mooney (Oregon State University)

Riparian protection and enhancement measures have been targeted primarily on lands used for a consumptive use. The costs of these measures are well documented. This study estimates the marginal implicit value of planting a treed riparian buffer on residential properties. Results show that non-consumptive users of riparian areas also value a stream bank with few trees.

"Industrial Benefits of Controlling Saltwater Intrusion in the Neches River." Manzoor Chowdhury, Ronald Lacewell (Texas A&M University), Garry McCauley (Texas Agricultural Experiment Station), and Roger Freeman (U.S. Army Corps of Engineers)

The Lower Neches Valley Authority in Texas uses the Neches River to supply water to its agricultural, industrial, and municipal customers. Temporary saltwater barriers are currently being used to prevent saltwater intrusion in the lower Neches River from the Gulf of Mexico. This study estimates the industrial benefits of a proposed federal permanent saltwater barrier.

"The Value of Additional Central Flyway Wetlands in Nebraska's Rainwater Basin Wetland Region." Joan Poor (University of Nebraska, Lincoln)

Nebraska's Rainwater Basin wetland region is recognized internationally as a sig-

nificant wetland complex for migratory waterfowl habitat. A contingent valuation study was undertaken to determine Nebraska's willingness to pay for government acquisition/ management programs for this resource. The study consisted of a double-bounded referendum format. A censored regression model was utilized for data analysis.

"Nonpoint Source Pollution, Incomplete Information, and Learning: An Entropy Approach." Jonathan D. Kaplan and Richard E. Howitt (University of California, Davis)

Kullback's cross entropy, a methodology for modeling incomplete information and learning, is applied to nonpoint source pollution management. By definition, incomplete information on the linkages between nonpoint source and load exists. We have explicitly model monitoring and learning to focus attention on the manager's budget tradeoff between monitoring and abatement.

Session: Effects of Specialized Farm Programs. Moderator: Andrew Barkley (Kansas State University)

"Regional Economic Impacts of the 1996 U.S. Peanut Program." Changping Chen and Stanley M. Fletcher (University of Georgia)

Major changes in the 1996 U.S. peanut program include reducing the quota support price, lowering quota level, and eliminating the price escalator and undermarketings provisions. Economic impacts of the program were profound and different across production regions. Farm income reduction and its regional differences present the industry with serious challenges.

"Time Series Analysis of a Policy-Created Asset: The Case of the California Dairy Quota." Norbert Wilson, Daniel A. Sumner, and Arthur M. Havenner (University of California, Davis)

A model of California milk quota is fitted for monthly observations with state space

techniques. The multivariate model uses quota milk price over base price and the value of the quota asset to characterize the dairy farm portfolio. The model performed well with small errors and no residual autocorrelation.

“Market and Welfare Effects of Livestock Feed Subsidies.” Rhonda Skaggs and Constance Falk (New Mexico State University)

Livestock feed subsidies have not been the subject of previous economic research. Across federal fiscal years (FFY) 1992–96, the USDA paid out an annual average of \$73.2 million in feed subsidies. This research examined the market and welfare effects of livestock feed subsidies using welfare analysis in southeastern New Mexico.

“The Potential Impact of Nutrient Management Legislation on the U.S. Broiler Industry.” Christopher S. McIntosh, Timothy Park (University of Georgia), and Chandrasekar Karnum (Iowa State University)

Increasing numbers and concentration of broiler production has raised concern over waste disposal practices. This article uses a Bayesian vector autoregression to analyze the dynamics of the U.S. broiler industry and to examine the impact of nutrient management legislation. Such legislation would increase production costs and impact production and wholesale prices.

Session: Precision Agriculture and Alternative Production Practices. Moderator: Ted C. Schroeder (Kansas State University)

“Estimates of Long-Run Multicropping Efficiencies for Alternative Crops.” Joseph A. Atwood (Montana State University), Glenn A. Helmers (University of Nebraska), and Kevin Bernhardt (University of Wisconsin, Platteville)

Machine ownership, labor, and machine operating costs were minimized for four crops (corn, soybeans, oats, and alfalfa) in various crop proportions. These longer-run

costs which are omitted in short-run studies add a perspective of the nature of cropping system economies. The results demonstrate considerable difference between crops and their proportions in systems in terms of cost reduction potential.

“The Pitfalls of Constructing Yield Maps.” R. Anthony Valvo, Ernest S. Humphrey, and John G. Lee (Purdue University)

A yield map can be an important tool in guiding the variable rate application of inputs and in assessing the effects that variable rate input application can have on crop yields for a farm field. This paper identifies and examines several factors which determine the quality of a yield map.

“An Economic Analysis of Variable Rate Nitrogen Management.” Carol Snyder (Farmer’s Software Association), Ted C. Schroeder (Kansas State University), John Havlin (North Carolina State University), and Gerard Kluitenberg (Kansas State University)

Site-specific farming is used to prescribe inputs based on unique soil and crop characteristics. A three-year study compares variable and uniform nitrogen (N) management on corn. Spatially detailed yield mapping and soil sampling were used to impose spatially variable N rates. Economic comparisons of variable and uniform N management were conducted.

“Economic Analysis of the Effects of Winter Cover Crops on No-Tillage Corn Yield Response to Fertilizer Nitrogen.” Roland K. Roberts, James A. Larson, (The University of Tennessee, Knoxville), Donald D. Tyler (The University of Tennessee, Jackson), Bob N. Duck (The University of Tennessee, Martin), and Kim D. Dillivan (The University of Tennessee, Knoxville)

Winter cover crops can substitute for fertilizer nitrogen in no-tillage corn production. Tennessee data for 1986–95 were analyzed for profit-maximizing nitrogen rates. Vetch was \$6 per acre more profitable than no cover when rainfall was aver-

age, but became less profitable than no cover when rainfall was 37.5% below average.

Session: Production Uncertainty, Technological Change, and Investment Decisions. Moderator: Allen Featherstone (Kansas State University)

“Natural Disasters and the Yield Curve of Florida Valencias.” Blair Zanzig, Charles Moss, and Andrew Schmitz (University of Florida)

This study estimates a model of the age-yield relationship for Florida Valencia oranges as a Sigmoid curve using a modified hyperbolic tangent function. From this model, the absence of natural disaster risk in the lower interior region is shown to have resulted in a higher yield function compared with other areas of the state. It is also shown that the rate of technology adoption influences the yield function.

“Irreversibility Investment Decisions with Yield and Price Uncertainty.” T. Jeffrey Price and Michael E. Wetzstein (University of Georgia)

Dixit and Pindyck's model of a firm's entry and exit decisions under price uncertainty is expanded by adding output uncertainty. While additional uncertainty usually has the effect of further widening the gap between optimal entry and exit thresholds, the analytical results are inconclusive when uncertainty takes the form of a product of two stochastic variables.

“Technical Change and Productivity and Welfare under Distorted Prices.” Richard K. Perrin and Lilyan E. Fulginiti (University of Nebraska)

Three conceptual scalar measures of technical change are change in consumer welfare, the rate of technical change, and total factor productivity. The last two are biased measures of the first, if commodities are subsidized or taxed. A general equilibrium analysis reveals the relationships among these three alternative suggests an alterna-

tive graphical interpretation of welfare gains from technical change.

“Policy Alternatives for Improving Groundwater Quality in Irrigated Areas.” Saeed Ahmad, Roger A. Selley, and Raymond J. Supalla (University of Nebraska)

Policy alternatives for reducing nitrate pollution of groundwater from irrigated agriculture were evaluated using a regional linear program. Trade-offs between economic and environmental goals suggest the most efficient policies are educational and regulatory. Increasing nitrogen removed from the aquifer by 20% would cost producers an average of \$1.70 per pound.

Session: Consumer Demand and Consumption Behavior. Moderator: John A. L. Cranfield (Purdue University)

“Consumer Willingness to Pay for Improved Attributes of Fresh Vegetables: A Comparison between Atlanta and Berlin.” Yue Lai, Wojciech Florkowski, Chung Huang (University of Georgia), B. Bruckner, and I. Schonhof (Institute for Ornamental and Vegetable Crop Research, Grossbeeren, Germany)

Consumer willingness to pay for quality attributes of fresh vegetables was analyzed based on surveys conducted in Atlanta and Berlin. Most consumers were willing to pay for the improved attributes. Demographic and socioeconomic characteristics of Atlanta consumers were less sensitive to their willingness to pay than those of Berlin respondents.

“Rural Household Food Consumption in China: Evidence from the Rural Household Survey.” Tong Han, Gail L. Cramar (University of Arkansas), and Thomas I. Wahl (Washington State University)

A two-stage budgeting LES-LA/Aids system is used to estimate rural household demand in China with special emphasis on changes of demand for food commodities across different income groups. The own-

price elasticity for food is more elastic than those for clothing, housing, durable goods, and other items. Within the food group, wheat and coarse grains are still important staple foods for the average rural household. Meat is the most price elastic among nonstaple foods.

“The Relationship between Dietary Change and Rising U.S. Obesity.” James K. Binkley (Purdue University)

A serious U.S. health problem is an unexplained increase in obesity. Using state and large-market data, diet's role is examined by relating diet differences and obesity differences across areas. Results suggest that the obesity problem is not due to recent changes in food consumed at home or away.

“Cigarette Consumption by U.S. Men.” Steven T. Yen (University of Illinois, Urbana-Champaign)

Heckman's sample selection model is derived from maximization of a utility function with stigma and health concern effects. The model outperforms the tobit model and suggests that social stigma and health concerns play important roles in cigarette consumption.

Session: Effects of Economic Development Programs on State and Rural Communities. Moderator: David Leatham (Texas A&M University)

“The 1996 One-Percent Initiative in Idaho.” Stephen Cooke (University of Idaho)

The 1996 one-percent initiative in Idaho would have limited property taxes, rates, and local government expenditures while shifting public school funding to the state. This study shows that Idaho's property tax is unfair and that the proponents tried to

use the voter dissatisfaction to reduce government spending.

“An Estimation of Benefits Associated with the Wyoming State Snowmobile Trails Program.” J. A. May, C. T. Bastian, D. T. Taylor, and G. D. Whipple (University of Wyoming)

The Wyoming snowmobile trails program required information which could be used to evaluate benefits and costs associated with the program. This study found that earned income for Wyoming for each non-resident day of snowmobiling on state trails amounted to \$52.04/day. The estimated consumer surplus for resident snowmobilers was \$36.30/day.

“Defining the Financial Capacity of Rural Communities to Meet Sewer and Water Needs.” Raymond J. Supalla and Saeed Ahmad (University of Nebraska)

The relative ability of rural communities to pay for sewer and water systems was analyzed. It was found that median household income, as currently used for many grant programs, is a poor measure of relative need. An alternative approach using measures of wealth and income distribution was developed.

“Economic Impact of Crop Insurance on the North Dakota State Economy.” David J. Leatham, Lonnie L. Jones (Texas A&M University), and Laurence M. Crane (National Crop Insurance Services)

An input-output model was used to estimate the direct and indirect economic effects of crop insurance on the North Dakota economy. Crop insurance indemnities paid to farmers result in an annual average increase (preservation) in business sales, personal income, and GSP of \$211 million, \$94 million, and \$104 million, respectively.