Abstracts
Selected Papers

LIVESTOCK MARKETING (Richard J. Crom, NED, ESS, USDA)

"A Semiannual Econometric Model of the Southeastern Feeder Pig Market: A Pooling Approach." Donald W. Reid, University of Kentucky.

In the Southeastern U.S., specialization in feeder pig production is widespread. In many areas this specialization along with special feeder pig markets has developed over the past fifteen years.

In order to utilize recent data to analyze the Southeastern feeder pig market, a time-wise autoregressive and cross-sectional heteroskedastic pooling technique was developed for simultaneous equation estimation. Data for January and July, 1971–1978, for eight Southeastern states were analyzed. The estimates indicate very inelastic own-price supply and demand short-run elasticities: .1542 for supply and −.2525 for demand. Further, the quantity of feeder pigs both supplied and demanded responds proportionally more to a change in the interest index than to any other factor.

"Monopsony Power in Livestock Procurement: The Case of Slaughter Hogs." Stephen E. Miller and Harold M. Harris, Clemson University.

This paper reports the results of an empirical analysis of the relationship between buyer concentration and slaughter hog prices. The results indicate that a one percent decrease in buyer concentration would increase hog prices by $0.018/cwt, c.p. Reduction of buyer concentration from the 1978 levels to a 50% level would increase average hog prices by $0.71/cwt. The implications for the potential success of electronic hog marketing and industrial reorganization policy are discussed.

"An Economic Analysis of Feeder Pig Price Formation In Virginia." Peter Fisher, Kenneth Baum, and Steven Buccola, Virginia Polytechnic Institute and State University.

Statistical analysis is used to identify market and biological characteristics that affect feeder pig prices in Virginia Tele-Auction sales. The results indicate producers may take advantage of particular market situations by changing sales location, production patterns, and sales weights to increase expected profits.

"Economic Evaluation of an Alternative Marketing System for Feeder Cattle in Alabama." Gregory M. Sullivan and Daniel A. Linton, Auburn University.

Low levels of economic efficiency in the present auction market system for feeder cattle in Alabama have led to development of Marketing Associations in the state. In 1979 and 1980, producers in the Marketing Associations received a significantly higher average price of $3.14 per cwt more for their cattle than for similar cattle sold at the Montgomery auction market. The price differential between the two markets for the cattle increased to $7.62 per cwt after all marketing costs were paid. Vertical coordination between Alabama producers and cattle feeders was found to have improved with delivery of "farm fresh" cattle with minimum shrink and stress. The greatest price differential between the two market channels was for lots with British breeds and their crosses. Data from farm surveys indicated that information on sex, breed, and finish of cattle had the greatest influence on prices paid.

"Analysis of the Price Received for Feeder Cattle Marketed Through Special and Regular Auction Market Facilities." Joe T. Davis, Barry W. Bobst, and Grady D. Steele, University of Kentucky.

The objectives of the study were to (1) identify the variables which affect the price received by producers in the special feeder cattle markets and the regular auction markets and (2) determine the magnitude of price differentials for the selected variables between regular and special sales.

Results indicated that location, sex, grade, breed, pen size, and size of sale significantly affected the price received in both type sales. Heifers were discounted more than steers in both types of sales; however, the discount was greater in the special sales. The A-1 early maturing grade was discounted more heavily in the regular sales.

ENERGY IN AGRICULTURE AND RURAL AREAS (Ivar E. Strand, University of Maryland)

"Energy Use in Agricultural Processing Firms." Kenneth C. Schneeberger and Francis P. McCamley, University of Missouri-Columbia.

This paper summarizes energy use by fuel type and seasonality of energy use for three major agricultural processor groups. The sample was from the central U.S. Natural gas was by far the most important energy source. That foreshadows some significant energy consideration as we move toward 1985 when natural gas is to be completely deregulated.

"Energy Efficiency in Food Processing In the Southern Region." Joseph M. Broder and John T. Booth, University of Georgia.

Food processing accounts for a large part of the total energy consumed in the food and fiber system. This paper summarizes results of an energy survey of food processors in the South. A measure of energy efficiency is developed and a model is designed to explain differences in energy consumption among processing industry groups. Energy efficiency, defined as average product of energy, was found to be related to energy prices, energy and non-energy input combinations, output levels, market share, storage capacity and industry type. Elasticity coefficients were computed for predictive purposes. This research is intended to complement current knowledge of energy use in agricultural production.

"A Multiobjective Analysis of Energy Tradeoffs: Costs of Crop Residue Collection." Thomas R. Harris, University of Nevada and Harry P. Mapp, Jr., Oklahoma State University.

The United States of America has become increasingly cognizant of the domestic shortage in liquid energy. Residue collection of agricultural crops may become a source of energy for this country. If profit maximization is the only goal of farmers, price of corn and soybean residue would have to be $8.00 per ton and $12.00 per ton, respectively, before these enterprises would become part of the farmer's production plan. However using multiple objective analysis (goal programming), corn and soybean residue collection enterprises will be used if the goal of residue collection has the highest priority.

"Wood Fuel: An Alternative Energy Source for Agribusiness and Industry." Glenn C. W. Ames and Harold O. Baxter, University of Georgia.

The objective of this study was to determine the potential supply of wood fuels for 14 non-forest product firms in Georgia. Sawmill and logging residues were considered as alternate energy sources. A survey of 173 sawmills and other sources of wood residues in Georgia revealed that wood fuels were available at $4 to $6 per ton FOB the source. Unsold wood residues were available in volumes necessary to meet the needs of seven of the 14 firms considering wood fuels as a supplementary energy source. The remaining seven firms would have had to pay more than $6 per ton in order to secure their wood fuel requirements. As prices rise above current levels, additional quantities of wood fuels will become available, possibly in the form of whole tree green chips.

"Energy Conservation in Kentucky: A Heuristic Analysis of Residential Patterns." Joel J. Sokoloff and Dae Sung Lee, Kentucky State University.

Based on an initial assumption of conservation as an alternative source of energy, this study attempted to measure the potential for energy conservation by households in the Central Kentucky area. Residential usage was divided into three main subsectors: appliances, lighting, and water heating; heating and cooling; and automobile transportation. Actual consumption patterns in the three subsectors were presented. Various possibilities for conservation in these subsectors were then postulated. These possibilities were combined into 18 possible scenarios, and levels of BTU savings were calculated for each of these scenarios. Under the most efficient scenarios, overall savings were within the 30–40% range estimated by a recent Harvard Business School study.

ASSESSMENT OF U.S. COMMODITY POLICY (John E. Lee, Jr., NED, ESS, USDA)

"The 1977 Farm Act: A Review of Performance and Implications for the 1981 Farm Bill." Abner W. Womack, University of Missouri; Harry S. Baumes, Jr., Virginia Polytechnic Institute and State University; and Maury E. Bredahl, University of Missouri.

Issues associated with the 1977 farm bill for grains are the primary focal point of this paper. A graphical interpretation of the reserve program is presented and decisions regarding the management of the grain reserve are discussed. Given this background information, generalizations are made as to problem areas, possible modifications and research issues to be considered for the future.

"The Agriculture and Consumer Protection Act of 1973 and the Food and Agriculture Act of 1977: Comparison and Evaluation." Harry S. Baumes, Jr., Virginia Polytechnic Institute and State University; Harlan Burnstein, Robert Green and James Johnson, NED, ESS, USDA.

The 1973 and 1977 Farm Bills are two legislative acts specifying guides for agriculture policy. The acts are similar in content and purpose, but differ in the incentives to induce producer participation in commodity programs. This paper discusses these differences and the consequences to the grain sector. The analysis assumes an extension of the 1973 Act in lieu of the 1977 Act.

"Optimal Wheat Carryover Stocks: An Alternative Viewpoint." James N. Trapp, Oklahoma State University.

Optimal carryover stocks of wheat are estimated as that stock level which yields "breakeven" returns to wheat storage. Assuming a perfectly competitive market for storage services, "breakeven" returns occur when the market is in

equilibrium. Theory indicates a perfectly competitive market in equilibrium is socially optimal. Estimates of the competitive equilibrium quantity of wheat storage indicate the optimal carry-over stock level is approximately one-half the annual consumption level. This estimate is greater than those of previous studies using maximization of welfare as an objective, but approximately equal to estimates made by studies considering price stability as their objective.

"The Farmer-owned Wheat Reserve Program: A Regional Perspective." Harlan Burnstein, NED, ESS, USDA.

The farmer-owned wheat reserve program, by accumulating wheat when prices are low and by releasing wheat to the market when prices escalate, has helped to stabilize farm prices and has encouraged a more orderly marketing of grain.

Differences in producer responses to spatial variation in market conditions relative to uniform program provisions are reflected in the location of the wheat reserve and the differential rates of redemption across regions.

Three factors appear to be useful in explaining the regional variability in producer response: the expected returns to storage, the access to and availability of transportation facilities, and the availability and utilization of on-farm storage facilities.

"Cross-Sectional Variation in Rates of Participation in the Wheat and Feed Grain Programs." Randall A. Kramer, Virginia Polytechnic Institute and State University; Rulon D. Pope, Texas A&M University; and B. Delworth Gardner, University of California-Davis.

An examination of data on participation in the 1978 Federal wheat and feed grains programs reveals that a great many of the nation's farmers chose not to participate. An expected utility model of participation is proposed, and several hypotheses are derived. Estimation results for an econometric model generally confirm the hypothesized direction of influence of the explanatory variables. Of the set of variables considered, debt/asset ratio, diversification, and variance of yields appear to be most important in explaining variation in participation rates.

FARM MANAGEMENT TECHNIQUES (Donald C. Huffman, Louisiana State University)

"Economic Analysis of Alternative Stocker Cattle Production Systems Using a Mini-Computer." Barton Wade Brorson, Texas A&M University; and Odell L. Walker, Gerald W. Horn, and Ted R. Nelson, Oklahoma State University.

A simulation model for stocker cattle is presented for use in projecting economic results of alternative stocker production systems. Intake of the animal is a function of body weight and forage quality. Animal growth is a function of forage quality and intake across months and may be adjusted for effects of compensatory growth, use of Rumensin and/or implants, and frame size of the animal. The model is implemented on a Radio Shack TRS-80 mini-computer for use in extension and teaching programs. The ability of the model to project animal performance observed in actual experiments is evaluated. Applications of the model are illustrated by an example using stockers on overseeded bermuda pasture. Economic results are very sensitive to forage quality, seasonal price variation, implants and additives.

"Towards a More Complete Information and Decision Model for the Farm Enterprise." Robert M. Finley, University of Missouri; and Noel R. Devisch, Agricultural Economics Institute, Brussels, Belgium.

A conceptual framework is described for the broadening decision models in farm management by incorporating four levels of information and expanding the use of models. The information relates to the farmer, to the farm, to the industry as well as to the theoretical concepts that underlie modern farm management. It is suggested that the model should not only be used in planning, but also in programming plan implementation and control of the business; interaction among these activities is stressed. It is argued that systems approach provides the most appropriate method for developing such a broad model.

"Optimizing the After-Tax Equity of Disinvesting Farm Owners: A Look at Combining Some Disinvestment Alternatives." Clair J. Nixon, Texas A&M University.

Recent changes in the tax law brought about by the 1978 Revenue Act combined with relatively little known tax saving features of the Internal Revenue Code may provide farm owners with a means of retaining greater after-tax equity after disinvestment. The impact on farm owner equity of both the new alternative minimum tax and the sale of unharvested crops with the farm land using the cash sale and the installment sale is demonstrated through the use of a case farm example. The tax liability for each type of sale is also computed under three different sales prices to show the effect of increasing farm owner equity on the optimal combination of alternative disinvestment strategies.

"Tax Bracket, Equity Production Level and Interest Rate Impacts on After-Tax Cash Flows for a Feeder Pig Factory." James B. Kliebenstein, University of Missouri.

This study evaluates how tax brackets, equity levels, pig production levels per sow, and interest rates effect feeder pig factory cash flows. Annual after tax cash flows are compared over a ten-year period for selected levels of the above items. Impacts are evaluated through a case study approach with a capital intensive production system. When combining impacts of tax brackets, equity levels, production levels, and interest rates after tax cash flows are affected rather dramatically. The difference in after-tax cash flows between the zero and fifty percent tax bracket was approximately equivalent to two pigs per sow per year. Tax bracket impacts can have a very real impact on the competitive structure of American agriculture.

"A Method for Assessing the Probability of Profit for Different Cropping Alternatives." Martin J. Blake, New Mexico State University.

Yield data for several cropping alternatives were tested for normality using the Shapiro-Wilk test. The yield data examined were accepted as normally distributed at the $\alpha=.05$ level. The probability of profit was assessed using normal curve techniques for twelve different cost-price alternatives.

SYMPOSIUM ON SMALL FARMS AND THE ALLEVIATION OF RURAL POVERTY (Jerry G. West, University of Missouri)

"Factors Associated with Economic Poverty." Ewell P. Roy, Steve Kelly and Nancy Keith, Louisiana State University.

Analysis of factors related to the dependent variable levels of poverty in all parishes, or counties in Louisiana based on 1970 Census data led to development of two three-variable models for predictive and explanatory purposes. The selected variables may be classified into the following categories: (1) rural farm population, (2) level of education, (3) children living with both parents, (4) elderly population, and (5) black population. Research results in other areas related to the Louisiana study are discussed. Suggestion is made that the Louisiana model may be duplicated for other states as well as rerun for the 1980 Census data when they become available.

"Rural Poverty, Small Farms and Efforts of the 1890 Institutions." Leroy Davis, Southern University.

The incidence of rural poverty is shown to be statistically associated with the concentration of farm size categories at the county (parish) level. Correlation coefficients are computed between the proportion of persons in poverty and the size of farms measured by acres and by gross sales. Poverty is more prevalent in areas where the

percentage of farms in large size categories is greater. Some correlation coefficients are statistically significant for high levels of farm size and poverty. Preliminary results suggest more study is necessary to draw concrete conclusions and implications. The 1890 institutions have initiated research projects in this area, including a regional project for the South.

"The Role of Small Farm Development In Alleviation of Rural Poverty." Joe Free, Tennessee Valley Authority.

The mission of agricultural programs of the Tennessee Valley Authority (TVA) is to stimulate development of the region's agriculture and related businesses. Programs are traditionally conducted with Land-Grant Universities. Most programs are oriented toward strengthening production and marketing options of small farmers because 90 percent of Valley farmers gross less than $20,000. Rapid adjustment and resource management farms demonstrate how small farms can be competitive and profitable by reorganizing resources. Ag-marketing helps small Valley farmers through assistance in marketing, wholesale and retail, business management for firms that service small producers, and feasibility studies. Home garden demonstrations and cash crops for youth are for rural residents not in commercial agriculture. All TVA's agricultural programs are demonstrations, and results are available to agricultural interests throughout the United States.

LIVESTOCK PRICE ANALYSIS (Bob Davis, Texas Tech University)

"A Transfer Function Analysis of the U.S. Hog Market." J. Scott Shonkwiler and Thomas H. Spreen, University of Florida.

Historical patterns of hog slaughterings are analyzed and related to a hog-corn price ratio series using the transfer function or dynamic regression technique. This technique permits explicit tests of causal relationships and provides a systematic means for specifying distributed lag forms. It is determined that the hog-corn price ratio series leads hog slaughterings and that there is no feedback. The estimated transfer function is analyzed in terms of its implications for the supply of hogs and its implications for the length of the hog cycle.

"Adaptive Planning Under Price Uncertainty in Pork Production." Ronald L. Plain and Joseph E. Williams, Oklahoma State University.

This paper presents a swine simulation model which is used to compute income and compare management strategies for pasture and confinement farrow-to-finish swine systems. Strategies

examined are varying sow herd size and/or marketing feeder pigs. Five price prediction methods are used to estimate prices for making production-marketing decisions. A comparison is made of the impact of the price predictors and production-marketing strategies on accumulated profits over a ten-year historical simulation period. In general, the better the price predictor, the more profitable production and marketing flexibility becomes.

"Adaptive Planning Over the Cattle Price Cycle." Ernest Bentley, Virginia Polytechnic Institute and State University and C. Richard Shumway, Texas A&M University.

Adaptive controls over a rolling planning horizon are used to examine the long-run profit maximizing behavior of a firm facing uncertain prices. The results are compared with those obtained using a fixed length planning horizon.

The optimal plan from the fixed planning horizon model over-estimates the profitability of the firm as it adjusts to new price information. More of the firm's assets are held as productive assets, and less in cash, using adaptive controls. Slow and sustained growth is a profitable alternative to the strategy of adjusting the firm's resources periodically in reaction to changes in expected cattle prices.

"Cross Hedging Wholesale Beef Prices: An Application of Varying Parameter Regression." Dawson Luke and Steve Miller, Clemson University.

This paper reports an application of varying parameter regression to estimation of minimum risk cross hedging levels for wholesale beef prices. Motivation for this application is provided by previous evidence of cyclical differences between wholesale and live beef prices.

The results from varying parameter and ordinary least squares regression indicate that the former technique offers no advantage over the latter technique. A possible shortcoming of the varying parameter technique is cited.

METHODS: NEW APPLICATIONS (Wesley N. Musser, University of Georgia)

"A Covariance Analysis of Acreage Response in Kentucky." Michael R. Reed and Steven K. Riggins, University of Kentucky.

Acreage response functions were fitted for corn and soybeans using data disaggregated beyond the state level. Covariance analysis was used to determine if the sub-state breakdowns added significantly to the explanatory power of the model. In addition a state-wide acreage function was fitted for both corn and soybeans in order to investigate possible distortions which emanate from more aggregated models. The results indicate that a sub-state breakdown contributes significantly to the explanatory power for corn acreage response in Kentucky.

"An Econometric Study of Farm Mechanization in Kentucky." Abdessalem Aoun, David L. Debertin, and Angelos Pagoulatos, University of Kentucky.

Kentucky counties vary widely with respect to mechanization levels. This study identifies determinants of agricultural mechanization across Kentucky counties. Findings reveal that farm size, farm income, farmers educational level and energy use are positively related to mechanization levels, while hired labor levels and farmers age are negatively related. The regression equation is able to explain 87 percent of the variation in mechanization levels across counties.

"A Recursive Adaptive Analysis of the National and Interregional Impact of Three Alternative Agricultural Situations for 1981–83." James A. Langley and Earl O. Heady, Iowa State University.

A Recursive Adaptive Hybrid Model is formulated to analyze the national and regional impacts upon seven major crops of three alternative situations over 1981–83 with respect to exports, acreage and production, costs, and farm prices and income. The model is a hybrid of an econometric recursive model and an interregional programming model. The alternatives are I (free markets-trend exports), II (free markets-high exports) and III (government programs-exports reduced from trend by Soviet embargo). Farm prices and income are found to be positively related to export levels. Maintenance of the embargo would require either higher support payments and/or possibly an acreage set-aside to return prices and income to pre-embargo levels.

"The Existence of Short Run Economic Base Multipliers: Some New Empirical Evidence." Mark S. Henry and J. C. O. Nyankori, Clemson University.

Recent research concerning the existence of a short run relationship between changes in a region's basic economic activity and subsequent change in nonbasic activity have used polynomial distributed lags and other time series techniques. Generally, these recent studies find little statistical significance to attribute to the short-run economic base multiplier.

The research reported here uses a spline function to test for the existence of the short-run economic base multiplier and its lag structure. For a SMSA case study, a strong statistical relationship is found between short-run basic and nonbasic employment.

"An Application of Goal Programming To Nonpoint Source Pollution Control." Ivery D. Clifton and Stan Spurlock, University of Georgia.

Multiple goal models may simultaneously incorporate information relevant to farm level income and environmental trade-offs. This paper demonstrates the usefulness of multiple objective goal programming as an aid in developing cost effective Best Management Practices for reducing nonpoint source pollutants from agriculture. Explicitly treated is the trade-off between selected environmental parameters, (sediment, nitrogen and herbicide) and firm profits. Since goals are treated as objectives and not strict requirements or constraints, goal programming results are satisficing and not necessarily efficient. The methods presented are particularly useful when multiple conflicting goals are simultaneously infeasible and minimizing goal deviation becomes the second best solution.

FRUIT AND VEGETABLE MARKETING
(Veronica Vitelli, Tennessee Valley Authority)

"Selection of Optimum Crop and Planting Date Combinations for Small Scale Fresh Market Vegetable Producers in North Florida." W. Arden Colette and Amy Margoluis, University of Florida.

A linear programming model is used to determine the optimal combination of crop and planting date for small scale fresh market vegetable producers in North Florida. Results indicate that restrictions on the availability of operating capital have a greater effect on resource use and enterprise mix than changes in input prices.

"The Effect of Higher Energy Prices on Interregional Competition: The Case of Peaches." James W. Dunn and Stanley M. Beard, Jr., Pennsylvania State University.

A spatial equilibrium model is used to examine the impact on the U.S. peach industry of higher energy prices. The study found that as energy prices increase total peach production falls, but no major change occurs in regional production patterns. Exporting regions have larger relative decreases in production than importing regions but all regions decrease production.

"Market Access Considerations of Small Quantity Producers of Fruits and Vegetables." John Adrian, Auburn University; John Brooker, University of Tennessee; and Joe Free, Tennessee Valley Authority.

The fruit and vegetable production and marketing system in the Chattanooga, Tennessee area is described and analyzed and the potential for expanded sales of locally grown produce to wholesalers, retailers, and through direct market outlets is evaluated. Results indicate much potential for expanded sales. Indications were that direct markets were viable in the area and had not been sufficiently developed. The greatest potential, however, seemed to be in developing wholesale and to a lesser extent retail markets. Both wholesalers and retailers indicated willingness to purchase locally grown produce. However, the inability of producers to provide a stable supply of quality product for approximately two months limited such purchases.

"Acreage Response for Selected Florida and California Vegetables." R. Allen Morris, A. Duda & Sons, Inc., Ovieda, Florida.

This study measured the quantitative relationships between planted acreage and lagged economic information, for Florida tomatoes and lettuce, and California celery and lettuce. It was found that vegetable planting decisions are made based on expectations formed from the previous year's prices, costs, planted acreage, yield per harvested acre, and (for tomatoes) Mexican tomato imports. These findings provide a tool for managers to use in planning vegetable production.

FARM MANAGEMENT/PRODUCTION ECONOMICS (Brent W. Spaulding, University of Arkansas)

"Improved Labor, Land and Biological Capital Productivities, Efficiencies and Inefficiencies of Southern Large-Scale Dairy Farming." John W. Wysong, University of Maryland.

The trend toward fewer but larger commercial dairy farms is still in process. However, significant cost reductions for forage and concentrate feeds, milk and cull dairy beef and veal can be attained using modern technologies on small labor force farms (3 to 4 full-time workers) with as few as 200 cows in Maryland and other Southern dairying areas. Increases beyond the 200 cow herd size with accompanying crop and pasture acreages are primarily to increase net managerial returns per manager. Considerable cost variability exists for specified sizes and volumes of output. Large herd sizes beyond the 200 cow level from Maryland and Florida to California do not in and of themselves assure low costs per unit of output of dollar of sales. Overspecialization of labor and management resource use on large farms can lower net income. Lower cost is an advantage from integration of feed production with milk production and marketing on moderately large farms in Maryland and the South.

"A Recursive Model of the U.S. Flue-Cured Tobacco Industry at the Farm Level." Roger Mann,

Virginia Polytechnic Institute and State University.

A recursive model of the U.S. flue-cured tobacco industry is developed. Production is considered to be a function of acreage allotment, a yield trend and a structural change due to poundage quotas imposed in 1965. Price formation under manufacturing and export demand is considered a function of carryover stocks, production and the support price. Quantity entering government stocks is a function of the difference support price and farm price, and production.

"Innovations in Sheep Production and the Profitability of Adopting Them." Virden L. Harrison, NED, ESS, USDA, stationed at USMRC, Clay Center, Nebraska.

Innovations in sheep production make possible a six-fold increase in yearly lamb sales per ewe. Using intensive confinement-type systems to enable the adoption of new technologies and associated management practices can generate profits at lamb prices above $60. Innovations and special management practices are discussed and four production systems are compared for investment cost, productivity, and net returns. The most intensive management system had the greatest profits and the greatest losses, depending on lamb price and managerial skill.

"Capital Budgeting Analysis of A Swine Anaerobic Digester." Donald D. Osburn and J. R. Fischer, University of Missouri.

The profitability of a swine manure anaerobic digester-internal combustion engine-electric generator system which supplies the electric and thermal energy for a farm marketing 3200 hogs/year was evaluated. The system is profitable with a $62,375 investment ($530 per m³ for digester and $11,000 for engine-generator) at a price of electricity at $.08 per kwh and the price of propane at $.29 per liter. With energy prices at $.04/kwh for electricity and $.15/liter for propane, the breakeven investment would be $21,380.

BEEF INDUSTRY ECONOMICS (Fred H. Tyner, Mississippi State University)

"Economics of Vertical Integration and Beef Genotype." Kenneth W. Stokes, Clemson University; Donald E. Farris and Thomas C. Cartwright, Texas A&M University.

The profitability of a Central Texas cow-calf producer integrating into the growing and finishing stages, while giving consideration to the optimal beef cattle type (potential mature size and milk production) was evaluated over the 1972–1979 period. The Texas A&M Cattle Production

Systems Model was used to simulate both pre- and postweaning production/marketing alternatives. Beef producers may be able to increase returns to their fixed resources by increasing the mature size and decreasing the milking potential of their breeding herds. Criteria to evaluate alternative production and marketing systems were developed and tested. Net returns were increased by using recognized price forecasts to evaluate the profitability of different postweaning production systems.

"Model for Determining Optimal Procurement, Processing, and Sales Activities for Beef Slaughter and Boning Firms." Edward H. Easterling, Rayford E. Wilbanks, J. Richard Conner, Robert W. Rogers, and W. C. Couvillion, Mississippi State University.

The continued variability in supply of nonfed beef has narrowed the profit margin for southeastern slaughter firms, which increases the importance of improving management decisions concerning cattle procurement, plant processing, and product sales. To aid management in these decisions, this paper presents a linear programming model that can analyze alternatives encountered by a representative slaughter firm specializing in the slaughter of nonfed beef. This model can be modified to any slaughter operation, and can be run on a microcomputer system. Many of these firms have microcomputer capabilities, and use of this model can increase economic efficiencies.

"Short-Period Pricing Models for Fed Cattle and Impacts on Wholesale Carcass Beef and Live Cattle Futures Market Prices." Clement E. Ward, Oklahoma State University.

Cattlemen allege that reported carcass beef prices and live cattle futures prices adversely affect fed cattle prices. Regression results using primary data from feedlots for July, 1979, found that carcass and futures prices significantly affected fed cattle prices. Sale prices were more closely correlated with futures prices than with carcass prices. Other factors affecting sale prices included cattle characteristics, sale terms, supply-demand position of buyers, and competition among buyers. Geographic price differences also exist. Results varied among region-sex equations, supporting the view that modeling short-period prices is difficult. Further price discovery research is needed.

"An Economic Analysis of the Effect of Increasing Transportation Costs on Florida's Cattle Feeding Industry." James R. Simpson and Forrest E. Stegelin, University of Florida.

Rapid fuel price increases in 1979 and early

1980, along with concern about further disproportionate rises have led to speculation that Florida's cattle feeding comparative advantage will improve. Results of the analysis, based on a proportionate value concept, indicate that value ratio changes in transportation cost of cattle and feed will not be of sufficient magnitude to be a major determinant in any decision to expand cattle feeding.

"The Projection of Cost Savings Accruing From the Adoption of the Hot-Boning Processing Technique." Shwu-Eng Hwang Webb, NRED, ESS, USDA; Robert L. Oehrtman and John R. Franzmann, Oklahoma State University.

The study applies two linear programming models to examine the effect of the adoption of the hot-boning processing technique on the distribution and the cost of processing beef for the United States. The hot-boning technique is shown to yield an energy saving of about 4.3 trillion BTUs valued at about $153 million in 1980. About 91 percent of the dollar cost savings and 75 percent of energy savings for the hot-boning technique arose from distribution as opposed to processing. The optimum U.S. beef distribution pattern was not affected by the adoption of the hot-boning technique.

MACRO ISSUES IN AGRICULTURAL ECONOMICS (Gerald A. Doeksen, Oklahoma State University)

"The Distribution of the Benefits of Tobacco Harvest Technology." Pradeep Ganguly and C. Stassen Thompson, Clemson University.

Most studies on the economic impact of technological change have focused only on estimating the rates of return to society for investment in the new technology. This paper discusses the equity aspect of technological change in tobacco production, i.e., the distribution of the benefits of flue-cured tobacco harvest technology.

It is generally argued that since mechanical harvesters and other innovations can only be used on relatively large-sized operations, benefits of technological change are highly concentrated in large farms. Such was not found to be true in the case of flue-cured tobacco. Due to the nature of the flue-cured tobacco program, the benefits of harvester adoption are distributed to all allotment owners, regardless of their acreage allotment, as well as harvester adopters.

"Public Support of Research Funding—Some Poll Results for Tobacco." Barry W. Bobst, University of Kentucky.

A question concerning public attitudes towards an increase in Kentucky cigarette taxes to support tobacco research was included in the University of Kentucky Survey Research Center's Spring, 1980 public opinion poll. Sixty-four percent of the poll respondents favored such a tax. These results are analyzed in the context of other questions in the poll concerning attitudes towards taxation, the role of universities in providing technical assistance to society and knowledge about current assistance programs. The adequacy of revenues from the additional tax to replace threatened federal funding of tobacco production and marketing research is analyzed.

"Macroeconomics of the Virginia Beef and Pork Sectors." Ali N. Safyurtlu, Univeristy of Missouri and Harry S. Baumes, Jr., Virginia Polytechnic Institute and State University.

Macroeconomic issues and their influence on agriculture often receive a great deal of attention from policy makers at the national level. However, very little thought is given to the regional or state effects resulting from national policy. This paper explores the effects of continued high inflation rates, restrictive monetary policy, and increases in energy prices on the Virginia livestock sector. Some interesting patterns of action, reaction, and allocation emerged as an impact multiplier was used to examine aggregate producer behavior over time.

An increase in interest rates resulted in higher livestock prices, a decrease in the Virginia-livestock slaughter and an increase in the livestock inventory. Inflation decreases Virginia-livestock slaughter and increases the inventory over the first three years. As the inventories expand, the Virginia-livestock slaughter increased. Higher energy costs result in liquidation of the livestock herd in the current period and the process of inventory build-up begins three years later.

"Protection of Florida Tomato Growers Using Tariffs: A Quantitative Assessment Through Industry Simulation." Michael D. Hammig, Clemson University and Ronald C. Mittlehammer, Washington State University.

The effectiveness of the U.S. tariff in protecting the Florida tomato producer from Mexican competition in the winter market is quantitatively examined using an econometric simulation model of the industry. It was found that the tariff during the 1960s substantially protected the Florida producer from foreign competition, but that in recent times the effectiveness to the tariff has been significantly reduced. The results of the simulation model indicate that Mexican competition in the winter tomato market is formidable but effectively manipulated through the tariff policy instrument.

"Patenting Life Forms: Issues Surrounding the Plant Variety Protection Act." Barbara Claffey, NED, ESS, USDA.

The Plant Variety Protection Act (PVPA) provides an interesting illustration of the effect of patents on the structure of the seed industry, and resource allocation. This paper examines the issues surrounding the patenting of life forms, specifically the social and private costs and benefits of the PVPA. The PVPA is a current issue, encompassing all the elements of the economic, social, and moral controversy aroused by the broader issue of patenting life forms generally.

ISSUES IN PUBLIC POLICY (Robert Raunikar, University of Georgia)

"Graduated Target Prices by Size of Farm Operation." John R. Groenewegen and James Johnson, NED, ESS, USDA.

A characteristic common to all agricultural commodity programs since their inception in the 1920s has been the provision of benefits based on volume of production. It has long been alleged that such programs provide relatively greater assistance to large producers. The increasing concentration of production among a small number of large producers has renewed this concern over the structure of commodity programs. This paper examines a fundamental change in the programs—benefits inversely provided to volume of production—through variable target schemes and payment limitations. The structure of such a program is discussed, with particular emphasis on the important issues that emerge with this target price scheme.

"Concentration of 1978 Deficiency Payments." Sara D. Short, NED, ESS, USDA.

A farmer's access to benefits of commodity programs was, and still is, directly related to the capacity and efficiency of his operation. This paper deals with a portion of total benefits accrued by participants, namely deficiency payments for the 1978 farm programs. The analysis shows that these payments are distributed unevenly across production regions in the United States. More than a proportionate share of the payments went to large producers. Corn deficiency payments are the least concentrated while rice deficiency payments are the most concentrated.

"Demand Oriented Policy Alternatives: A Comparison and Application." Harry S. Baumes, Jr., Virginia Polytechnic Institute & State University; Abner W. Womack and Maury E. Bredahl, University of Missouri.

This paper examines the effects of policy instruments affecting the agricultural demand sector directly. Government owned stocks, farmer owned reserves, and government controlled exports of corn and wheat are specific policy instruments evaluated. It was found that for equal levels of the policy instruments examined, government sponsored exports have the largest price impacts. An analysis of the grain embargo against the Soviet Union is then discussed.

"Part-Time Farming: Productivity and Some Policy Implications." Surendra P. Singh, Tennessee State University.

The major objective of this paper is to determine if there were differences between production functions on part-time and full-time farms and determine differences in productivity levels as means to appraise resource allocative efficiency. The statistical analysis is based on the data collected from 193 randomly selected farm families in two counties of Tennessee. The results show that part-time and full-time farm groups are represented by the factor-biased production functions. In addition, results suggest that part-time farming is consistent with an efficient allocation of resources and the efficient production of food. The part-time farmer is potentially a unique factor in farming and rural development. Public policies for assisting small farmers and rural development must recognize the potential return a farmer and community may reap from allocating his resources to off-farm work. It is useful to begin thinking about the possible strategies that public policy could embody with respect to part-time farming.

"Extension Programming for Reality." Michael L. Wise, Clemson University.

This paper discusses the evolution of agriculture through three sectors (production, intermediate, and institutional) and the Cooperative Extension Service's (CES) response to constraints in each sector. It argues that CES programming efforts and clientele have evolved in response to the sector constraints and that CES program success has differed by sector.

CES efforts in the institutional sector have been generally confined to national agricultural policy (price and income issues). Local policy making groups (county councils, planning commissions, development boards, etc.) also affect the wealth and income positions of producers—and do so to an increasing degree. This paper develops a series of interactions which demonstrates the effects upon producers of local policy decisions. The need and the opportunity for CES programming efforts aimed at local policy makers is discussed. Recommendations for CES program emphasis and clientele development are included.

ISSUES IN RESOURCE/PRODUCTION ECONOMICS (Mack C. Nelson, Fort Valley State College)

"An Impact of Quality Changes in Reclaimed Coal Lands." Christopher O. Obiechina and Daniel D. Badger, Oklahoma State University.

A linear programming framework was used to project the economic returns to coal land owners from owning and using two qualities of reclaimed land. Differences in objective function values between low quality reclaimed land and high quality reclaimed land were used to estimate costs associated with unsuccessful reclamation. The results indicate that productivity losses from coal lands leased, mined and reclaimed before 1978 lowered net cash returns and land values.

"Farm Structure in Mississippi: Two Areas Compared." Priscilla Salant, EDD, ESS, USDA, located at Mississippi State University.

Two agricultural regions in Mississippi were studied for the purpose of identifying farm level structural changes between 1964 and 1978. County level data from the U.S. Census of Agriculture were used to measure farm size, labor allocation and capital ownership.

In the Clay Hills, where the economic base is both agricultural and industrial, structure was relatively stable. Off-farm employment appears to support the existence of marginally productive agriculture. In the agriculturally-based Delta, on the other hand, structure changed dramatically. Farm distribution became skewed in the direction of larger units as increased use was made of economies of size.

"An Economic Examination of an Integrated Pest Management Production System with a Contrast Between E-V and Stochastic Dominance Analysis." Bernard V. Tew, Wesley N. Musser, and James E. Epperson, University of Georgia.

A multiple-crop integrated pest management production system incorporating agronomic and horticultural crops is examined within an E-V and a stochastic dominance framework. The data were from a five-year experiment in Tifton, Georgia. Irrigation and chemigation for the system are provided by a center-pivot irrigation system. The study concludes that, within the range of pest thresholds examined, less intensive pesticide control would be preferred by risk-adverse producers and have lower pesticide usage.

"Economic Impact of Integrated Pest Management Strategies for Cotton Production in the Coastal Bend Region of Texas." Sharif M. Masud, Ronald D. Lacewell, C. Robert Taylor, John H. Benedict, and Lawrence A. Lippke, Texas A&M University.

A linear programming analysis for the Texas Coastal Bend Region indicates that the current annual benefit of short-season cotton production under integrated pest management strategies is $26.9 million and the potential is $37.1 million. The potential for further increase in producer net returns in the region is over $9.0 million by complete adoption with optimal management of a short-season production system. The resulting impact for the region and state would be an additional $45.2 and $67.7 million, respectively.

"Pest Information Markets and IPM." Michael E. Wetgstein, University of Georgia.

The market for pest information is investigated with regard to market failure. Considering uncertainty as well as jointness in producer's decision, with regard to purchasing pesticides and pest information, leads to the following results: As the degree of jointness and marginal risk tend toward zero generally no market intervention is necessary. As pest information becomes more of a joint-impact good, the problem of equity is encountered and the justification for government intervention is strengthened. Increased marginal risk deduction between nonparticipants and participants, however, further complicates the problem.

MARKETING: AGRIBUSINESS (Harold M. Harris, Clemson University)

"Selecting Alternative Federal Income Tax Structures for Farm Supply Cooperatives." Marion Faye Simon, Oklahoma State University and Lynn W. Robbins, University of Kentucky.

Farm supply cooperatives provide inputs that are used by both producers and nonproducers. Use of farm inputs by nonproducers has expanded the farm supply cooperatives' market potential while threatening to force them out of apparently preferred tax classifications. This paper compares three tax statuses: nontaxable cooperative, taxable cooperative, and corporate.

Apparently, the typical farm supply cooperative should change from the nontaxable to the taxable status if substantial nonmember-nonproducer business is available. Further, a member-patron's marginal personal tax rate does influence which tax status is optimal while the cooperatives size does not. Return on assets, dividends, and growth rates also affect tax status selection.

"Marketing Strategies of Farm Supply Stores, An Analysis of Factors Affecting Marketing Strategies of Feed, Fertilizer and General Farm Supplies in Selected Areas of the Southeast." William A. Thomas, University of Georgia and Larry A. Johnson, Gold Kist, Inc.

This study was concerned with determining the importance of factors affecting feed, fertilizer and general farm supply buying decisions in the Southeast.

The study revealed that farmers used different rationales for purchasing the three product lines studied; however, there was more consistency by size of farm. Medium acreage farmers placed more importance on services and less emphasis on price. Smaller farmers were price oriented. The largest farmers looked for a price and service mix.

The primary determinant of feed purchases was quality. Given a quality product, the next most important characteristic was a price in a competitive range but not necessarily the lowest. The purchase decision on feed was made on the number and types of services offered. Farmers assume that a brand name assures the high quality of general farm supplies; therefore, the purchase decision was based on price.

Farmers demand high quality fertilizers as a prerequisite, but purchase decisions are based on services included.

"A Risk-Adjustment Model For Evaluating Capital Investment Decisions At Port Grain Terminals." Louis A. LeBlanc and Bruce C. Payne, University of Southwestern Louisiana.

Previous studies have established the differential cash flows that would be expected to occur under various combinations of port facilities and equipment. However, prior research efforts have failed to address the problem of discounting those cash flows on a risk-adjusted basis. The incorporation of risk in capital expenditure analysis is essential to evaluate alternative investment strategies under conditions of uncertainty in the port industry and grain trade.

The purpose of this analysis is to consider the cash flows produced by various combinations of port elevator equipment for the Farmers Export Company at the Port of Galveston (Texas) and to discount those cash flows on a risk-adjusted basis. This analysis further demonstrates the adaptability of the Capital Asset Pricing Model (CAPM) to various capital expenditure decisions.

"Potental Hedging Relationships for Rice on an Organized Exchange." J. Dickie Hollier, James F. Hudson, and Harlon D. Traylor, Louisiana State University.

Several studies have analyzed the potential of futures trading and hedging strategies of various traded commodities. However, nothing has been done to evaluate the possibility of futures trading or hedging in commodities not presently traded on an organized exchange. A futures market to reduce price risk and disseminate pricing infor-

mation might be useful for these non-traded commodities.

A traditional model for measuring risk ratios was modified as a basis for the analysis. Because of its domestic and world importance, rice was evaluated as an example of a non-traded commodity. It was concluded that risk ratios were reduced substantially through a simulated hedging approach for a milled rice futures contract.

"Vertical Exchange Relationships and Performance in the Great Lakes Yellow Perch Industry." William Lesser, Cornell University.

Perch fishermen in the Great Lakes yellow perch industry were using informal vertical exchange relationships which bind together fishermen and buyers through "moral obligations." These exchange arrangements, while providing an assured outlet, also raise substantial entry and exit barriers to perch processing. Available empirical evidence supports the hypothesis that the market is performing poorly in terms of equity for fishermen. Remedies call for the ending of allegedly illegal conduct of the dominant firm and providing alternative outlets for fishermen, possibly through a publicly operated purchase and buy-back program.

INTERNATIONAL ISSUES (James C. Cato, University of Florida)

"Mexican Agricultural Import Requirements: An Analysis of the Impact of Petroleum Revenues." Maury E. Bredahl and Philip Warnken, University of Missouri.

The development of Mexico's oil potential is expected to spur economic development and income growth. The income growth coupled with very rapid population growth is expected to significantly increase food consumption. This research projects the levels of demand and supply for the 1980's of major foodstuffs. The major determinants of consumption are population and income; those of supply are producer prices, technology, and the land expansion program. From these projections, the implied level of import requirements are determined. Based on the results of the projection model, we conclude that Mexico's import requirements for coarse grains, wheat, and soybeans could be as significant during the 1980's as the imports of the Soviet Union were in the 1970's.

"Effects of Foreign Competition and Trade Policy on the Florida Lime Industry." Emilio Pagoulatos, Jr., Scott Shonkwiler, and Robert L. Degner, University of Florida.

The purpose of this paper is to estimate the effects of import competition and alternative

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trade policies on the Florida fresh lime industry. An econometric model of the Florida lime and U.S. trade sectors is specified and the estimated multipliers are used to measure the impact of four hypothetical U.S. trade policies. The free trade alternative would inverse imports and reduce Florida's output without affecting Florida prices. Increases in the U.S. specific tariff level would decrease imports and stimulate production in Florida, but would have only a very limited impact on prices. Finally, the imposition of a fixed import quota would provide a considerable stimulus for increasing Florida's output while, at the same time, raising Florida prices.

"The Economic Impact of National Beef Import Levels on the Virginia Beef and Pork Sectors." Kenneth Baum, NED, ESS, USDA; Ali N. Safyurtlu, University of Missouri; and Wayne Purcell, Virginia Polytechnic Institute and State University.

This study was concerned with developing a methodological framework for empirically estimating and then evaluating a yearly recursive simulation model of Virginia's beef and pork sectors. The Virginia model was intended for eventual use as an agricultural policy and planning tool to be integrated with the national aggregate crop-livestock model developed by the USDA/ESCS/NED. The economic effects of a 1.25 billion pound increase in national beef import levels were analyzed with interim and impact dynamic multipliers.

"Evaluating Agricultural Loan Repayment Capacity in the Kingdom of Saudi Arabia Using Discriminant Analysis." Mohamed H. Takroni, Saudi Arabian Agricultural Bank and Dean F. Schreiner, Oklahoma State University.

Improved methods for evaluation of agricultural loan applications are important to farmers and the government of Saudi Arabia. More farmer loans can be processed in a shorter time period and the Saudi Arabian Agricultural Bank is better able to evaluate loan repayment capacities. The latter result should help to reduce loan delinquency problems. Discriminant analysis has been used to construct a credit scoring index distinguishing two populations, those borrowers expected to be non-delinquent and those borrowers expected to be delinquent in loan repayment. Variables associated with delinquency and non-delinquency were identified in the model. For a sample of 42 farmers in two regions the model was able to discriminate between delinquent and non-delinquent borrowers.

"The Green Revolution and Social Revolution: An Ethiopian Case Study." Mesfin Bezuneh, Virginia

Polytechnic Institute & State University and Carl C. Mabbs-Zeno, NRED, ESS, USDA.

A model of the political goals motivating the U.S. financed development programs known as the Green Revolution is examined. The model recognizes stability as the operational goal which was to contribute to the maintenance and growth of U.S. capitalism in the Third World.

The model is found to be consistent with the Ethiopian experience with Green Revolution programs, but those programs did not succeed in enhancing stability. Rather, they aggrevated the contradictions already present in subsistance portions of the Ethiopian economy, thereby contributing to the social revolution in 1974.

FACTORS AFFECTING FOOD PURCHASES
(Oral Capps, Jr., Virginia Polytechnic Institute and State University)

"Modeling the Effects of the Food Stamp Program on Participating Household's Food Purchases: An Empirical Application." Chung L. Huang, Stanley M. Fletcher and Robert Raunikar, University of Georgia.

The study conceptualizes price and pure income effects on food purchases among the Food Stamp Program (FSP) households. Empirical models are estimated via Tobit procedure using the 1972–73 Consumer Expenditure Diary Survey data.

Results suggest that the FSP tends to affect food purchases of meat, dairy, and cereal and bakery products primarily by increasing the amount purchased. For fruits and vegetables, the effect of the FSP is reflected in an increasing probability to purchase by the recipients, rather than in the magnitude of purchases. Possible outcomes due to elimination of purchase requirement under the new legislation are also suggested.

"An Application of a Monetarist Inflation Hypothesis to Food Price Behavior." Mike Belongia, NED, ESS, USDA located at North Carolina State University.

A theoretical model of food prices reveals that any observed change in the Consumer Price Index (CPI) for the food group is the combination of relative and nominal price changes. By controlling for changes in the relative price component and recognizing that a true neutral price inflation is a monetary phenomenon, Granger-Sims causality tests support the proposition that the rate of growth of the CPI for food will be directly related to the rate of growth of the money supply. The estimation of a distributed lag model suggests the full effect of a monetary pulse will be reflected in the food price index within one year.

"Substitution of Consumers' Income Between Food and Other Goods and Services." Roger Hinson, Louisiana State University and John Brooker, University of Tennessee.

Food is necessary, but expenditure on food is somewhat discretionary. Models have traditionally included income and various socio-economic variables. Food may also depend on the amount of income households have tied up in a group of "fixed" expenses, over which little control exists in the short run. Fixed expenses may reflect the influence of credit availability and inflation.

Income elasticities at different levels are estimated from Engel curves, using "residual" income, and compared to earlier elasticity estimates. A simultaneous system accounts for the hypothesized interrelationship. Some policy implications are drawn.

"Application of the Tobit Model for Decision Making—the Food Stamp Program." J. E. Epperson and C. L. Huang, University of Georgia; M. R. Holmes, Doanes, St. Louis, Missouri; and W. K. Scearce, Oklahoma State University.

This paper demonstrates the usefulness of estimating food stamp bonus from socioeconomic characteristics of the relevant population, given the regulations of the Food Stamp Program. Through application of the estimating model, 89 percent of those actually participating in the FSP were correctly classified. Bonus was found to be most responsive to family size and income. The greatest likelihood of change in program participation was shown to be associated with a change in source of income. The framework developed in this paper has wide application for other programs which are similar in purpose and design to the FSP.

RESOURCE ECONOMICS (Howard A. Clonts, Auburn University)

"The Impact of the Tennessee-Tombigbee Waterway on the Mississippi Grain Economy." Gerard E. D'Sousa, Albert J. Allen, W. Lanny Bateman, Travis D. Phillips, and Earl A. Stennis, Mississippi State University.

The main objective of this study was to estimate potential effects of the proposed Tennessee-Tombigbee Waterway on the transportation and marketing systems for soybeans and feed grains in an area of Mississippi presumed to be the one most affected by the Waterway. A large scale linear programming-transshipment model was the basic analytical tool. Projected impacts of the Waterway were as follows: 1.2 million dollars saved by direct usage of the Waterway versus non-usage of the Waterway; an increase in firm numbers, grain handling storage capacity; and the increased usage of barge relative to rail.

"Economic Impact of Recreation Businesses in Counties Along the Arkansas River." Sidney G. Cabbiness and Daniel D. Badger, Oklahoma State University.

The economic impact of waterway recreational businesses in the 28 counties along the McClellan-Kerr Arkansas River Navigation System was measured as the number of jobs and the amount of personal income created by the businesses. Sales to waterway recreationists comprised 42 percent, or $27.3 million, of the total sales of the businesses. When multiplier effects were included, the businesses generated 4,023 full-time jobs and $33.3 million in personal income for residents of the 28 waterway counties. Recreational use of water resource development projects can have a significant economic impact, particularly in sparsely populated areas where other types of development are lacking. Careful management on the part of both government officials and private individuals is needed to ensure long-term success of recreational facilities and enterprises.

"Soil Erosion Control on Owned and Rented Cropland: Economic Models and Evidence." David E. Ervin, University of Missouri.

Previous research has suggested reasons for differential control of erosion on owned and rented cropland but representative evidence has not been available. Short planning periods and lack of landlord-tenant conservation planning hamper soil conservation on rented lands. Random sample data indicate that erosion rates on rented cropland exceed those on owner-operator land. Statistical tests also show significantly lower levels of conservation practices on rented land. Landlord-tenant cost sharing provisions for erosion control were significantly related to lower erosion rates. Present soil conservation programs will have to be changed to treat rented land problems.

"Analysis of Variations in Farm Real Estate Price Over Homogeneous Land Markets in the Southeast." Stan Spurlock and Ivery D. Clifton, University of Georgia.

In many farm real estate price analysis, researchers segment a region or state into geographic land market areas on the basis of an agronomic or economic characteristic. In this study, a multivariable rather than univariable approach is used to classify the southeast region into a set of homogeneous land markets. Regression analysis is used to estimate the impacts of various farm and nonfarm factors on prices of individual tracts of land within each market. Eight homogeneous submarkets are delineated for the southeast. The differences in relationships between explanatory variables and land prices within these submarkets are observed.

"A Model of the Decision to Purchase Farmland."
Rod F. Ziemer and Fred C. White, University of Georgia.

This paper represents an attempt to investigate the process underlying the decision to purchase and own farmland. Factors affecting rural land values have been often studied but the causal factors explaining individual ownership of farmland are not well understood. Given theoretical considerations, the demand for farmland is specified as a function of purchase price of the land, farm size, previous farmland purchases, age of the landowner, and off-farm income. These variables were considered in an empirical model of 1970–1978 farmland purchases in Georgia.