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Abstracts

Selected Papers

NATURAL RESOURCE USE ISSUES (James Hite, Clemson University)

"The Use of Spectral Analysis in Incorporating Unobserved Cyclical Stock Movements in Fishery Catch Equations," T. G. Taylor and F. J. Prochaska, University of Florida.

Frequently, continuous time series data of fishery population levels are nonexistent. The omission of this information leads to biased parameter estimates in fishery-catch equations. Spectral analysis and subset autoregression techniques are utilized to incorporate information contained in regression residuals reflecting unobserved stock movements into an aggregate catch equation for the Florida West Coast Blue Crab Fishery.

"Validation of Empirical Measures of Welfare Change: A Comparison of Non-Market Techniques," Christine Sellar, J. R. Stoll, and Jean-Paul Chavas, Texas A&M University.

Methods of estimating welfare change for nonmarket commodities are discussed and the need for comparative validation of estimates derived from these methods is identified. Previous attempts to comparatively validate estimates from these methods are briefly examined. A study of recreational boaters was designed to compare the regional travel cost method (TCM) with two forms of the contingent valuation method (CVM). Demand functions are estimated using the travel cost method, a CVM close-ended format using a logistic approach and a CVM open-ended format. Consumer's surplus estimates for recreational boating are derived from each method and compared. The close-ended format and travel cost estimates were comparable, but the open-ended format yielded consistently lower estimates of consumers' surplus.

"Environmental Amenity Benefits of Prime Agricultural Land in Greenville County, South Carolina," J. C. Bergstrom and B. L. Dillman, Clemson University.

The protection of environmental amenities is cited as a major benefit of prime agricultural land protection. Controversy, however, surrounds this claim because the value of environmental amenities provided by prime agricultural land is difficult to quantify. A study of willingness to pay for environmental amenities provided by prime agricultural land in Greenville County, South Carolina, was conducted. Contingent valuation using iterative bidding was employed in a mail questionnaire. The figures collected indicated that the annual aggregate value of the environmental amenities provided by prime agricultural land in Greenville County is approximately 1.00, 1.12, 1.24, and 1.37 million dollars for 18,000, 36,000, 54,000, and 72,000 acres protected, respectively.

"Replacement Cost Measures of Economic Value in Wetlands Management," S. S. Batie and L. A. Shabman, Virginia Polytechnic Institute and State University.

The use of replacement cost to measure environmental damages to coastal wetlands and to set wetlands conversion fees is defended for its conceptual validity and its utility in court proceedings. Costs for an action to replace coastal wetlands in Louisiana provides an illustration of how wetlands damages can be computed.

"An Analysis of Factors That Influence Rezoning Decisions for Agricultural Land," N. W. Bliven, B. V. Lessley and Tim Phipps, University of Maryland.

This paper develops a methodology to be used to predict the probability that a given farmland rezoning proposal would be approved. Several models are estimated for a typical rural county concerned with the loss of farmland. It is found that the probability that a given parcel will be rezoned is positively related to whether it is in conformity with the county comprehensive plan, whether the request involves rezoning to an industrial district, and whether the recommendation of the planning commission staff is affirmative. The decision is negatively related to the size of the parcel and whether the request involves rezoning to a commercial district.

The methodology presented can be employed by land-use economists, policy makers, landowners, and developers to evaluate the implications of rezoning programs in other jurisdictions.

INTERNATIONAL TRADE (James Stallings, Auburn University)

"The MTN Subsidies Code: Legal and Economic Implications of European Community Poultry Export Subsidies," G. C. W. Ames, J. W. McClelland and T. J. Centner, University of Georgia.

The 1979 Tokyo Round of Multilateral Trade Negotiations produced a Subsidies Code, adopted by most western nations, governing the permissible use of subsidies in international trade. Despite the adoption of this code, the European Economic Community has continued to subsidize its poultry exports, thereby imparting to EC producers an unfair advantage over U.S. poultry producers. Economic data support a finding that the EC subsidies violate the Subsidies Code and that U.S. poultry producers should seek judicial redress under section 301 of the Trade Agreements Act of 1979.

HOUSEHOLD CONSUMPTION AND EXPENDITURES FOR FOOD (Kary Mathis, Texas Technological University).

"Household Fluid Milk Consumption Patterns in the Southern Region," C. L. Huang and Robert Raunika, University of Georgia.

This study utilizes Tobit regression and the 1977-78 USDA Nationwide Food Consumption Survey to

identify household fluid milk consumption patterns in the South.

Results suggest that distinct consumption patterns existed between whole milk and lowfat milk, as well as between households in the southern region and in the U.S. Estimated elasticities suggest that consumption of whole milk was more responsive to change in household size than to change in household income. The opposite holds for consumption of lowfat milk. Consumption patterns by stage of family life cycle were most evident for households that consumed whole milk.

“Determinants of Household Expenditure on Fresh Vegetables,” J. M. Love and Oral Capps, Jr., Virginia Polytechnic Institute and State University.

Fresh vegetable expenditure patterns in U.S. households were examined using data from the 1972–74 Bureau of Labor Statistics Consumer Expenditure Diary Survey. Tobit analysis was employed to determine changes in the probability of fresh vegetable purchases and changes in the magnitude of fresh vegetable purchases as affected by household socioeconomic characteristics. Fresh vegetable expenditures were found to be affected by household income, the number of male and female adults (ages 20 to 64) in the household, region, population density, and unemployment of either the spouse or both household heads. Race of the household head, education of the household manager, and household food stamp participation were not statistically significant factors. A change in any socioeconomic characteristics had a greater effect on the change in probability of purchase than on the change in the magnitude of purchase.

“The Effect of Employed Wives on Aggregate Away-From-Home Food Expenditures,” S. M. Fletcher and C. L. Huang, University of Georgia.

The influence of employed wives on away-from-home food expenditures was investigated using the 1977–78 USDA Nationwide Food Consumption Survey. An equation representing a household’s decision to participate in the away-from-home food market was derived. The probit procedure was used to empirically estimate the participation equation. Probabilities were derived from the equation. Results indicate that an employed wife has a positive effect on her household’s decision to purchase away-from-home food. Furthermore, the effect of employed wives on aggregate away-from-home expenditures is significant.

“Impacts of Household Composition on Convenience and Nonconvenience Food Expenditures in the South,” J. R. Tedford, Clarkson College of Technology, Oral Capps, Jr., Virginia Polytechnic Institute and State University, and Joseph Havlicek, Jr., University of Maryland.

Parameters for adult equivalence scales using the Buse-Salathe approach were estimated for expenditures on total foods, nonconvenience foods, and three classes of convenience foods in the South and the United States. Statistical tests conducted on the adult equivalence scale parameters indicated that size and

age-sex composition were important in accounting for household expenditure behavior both in the South and nationwide. The age and sex characteristics of individual household members and household size had different impacts on the various food expenditure patterns. The usual preparer of foods as well as race, urbanization, and income of households were also statistically significant factors in explaining expenditure patterns.

“The Effect of Price, Season and Trend on At-Home Meat Purchases,” Keith Keplinger, Robert Rau-nikar and C. L. Huang, University of Georgia.

The effect of price, season, and trend on at-home purchases of meat is investigated using data generated by a consumer panel operating in Griffin, Georgia, from 1975 through 1980. Market conditions present in the Griffin market and consumer panel response are shown to be representative of the market conditions and consumer response prevalent in the nation. Regressions run on quarterly and weekly time-series data sets indicate a dynamic price-quantity relationship. A dynamic flow adjustment model is run on weekly data to test for the presence of inventory effects in meat purchases.

TRANSPORTATION AND ROUTING (Marc Johnson, North Carolina State University).

“A Simultaneous Equation Model of the Grain Transportation System,” R. K. Rudel, Francis McCamley, University of Missouri-Columbia, and J. A. Musick, Mississippi State University.

During the 1970s, there were substantial increases in grain exports. These increases in exports placed greater demands on the grain production, transportation, and distribution systems. This paper examines the portion of the domestic grain transportation system that delivers grain to Gulf ports. A nine-equation model was developed to examine the response of the barge and rail modes to increases in exports. Its parameters were simultaneously estimated using two-stage least squares.

“The Effects of Increased Transportation Cost on the Interregional Flows of Selected Fresh Produce in Late Spring,” J. E. Epperson and H. L. Tyan, University of Georgia.

The purpose of this inquiry is to determine the impact of higher real transportation cost, due to increasing energy costs, on the national distribution of fresh produce, with focus on simulated shipments from Georgia. The analysis employs a spatial equilibrium model that encompasses 13 U.S. produce markets or regions. Activity analysis involving a measure of risk is contained in the Georgia region. With significantly higher real energy costs, allocations of produce to markets adjacent to or within supply areas are expected to increase substantially at the expense of other consuming markets in the nation. Of special significance is the finding of an overall reduction of supplies of fresh produce and reduced opportunities for shipping from the Southeast.

"Use of Input-Output to Forecast Rail Traffic on Branch Lines," J. L. Jordan, University of Georgia, and S. R. Thompson, Michigan State University.

This paper tested and illustrated a procedure to estimate future rail demand that explicitly considers the relationship between the economic structure of the economy and transportation flow data. Rail traffic forecasts were obtained by linking a two-region input-output model of Michigan to expanded one-percent railway bills. The model forecasted 1980 rail traffic to within 1.2 percent of actual traffic for the entire state, 6.7 percent of traffic in one region in Michigan, and 5 percent on one branch line. The method proved useful in operationalizing the theoretical understanding of rail demand for use by rail planners.

"A Cost Effective Approach for Solving Large Variable Demand Vehicle Routing and Scheduling Problems," W. E. Hardy, Jr., Auburn University.

This paper gives the results of a case study designed to compare the quality and cost of vehicle routing and scheduling analyses using actual customer locations and three different grid scales. The costs of running a route analysis system could possibly be excessive if the customer file is highly dynamic. With each change in the customer list, a new distance matrix would be required.

Results indicate that significant savings in the costs of the routing analysis, with little loss in routing efficiency, are possible when a grid is used and that these costs decrease further as the size of the map grid is increased.

MARKETING STRATEGIES (Ewen Wilson, American Meat Institute).

"Profit Margin Hedging for Hog Producers," David Kenyon and John Clay, Virginia Polytechnic Institute and State University.

Expected net profit margins per cwt (ENPM) using corn, soybean meal, and hog futures were calculated daily from 1975 through 1980. Minimum profit variance occurred when ENPM equalled \$7, reducing variance by 59 percent and average profit by 13 percent compared to the cash market. Maximum profit occurred at an ENPM of \$15, where average profit increased 19 percent and variance was unchanged compared to the cash market. The futures market consistently underestimated cash profits when prices were increasing and overestimated cash margins when prices were falling. Overall, the mean ENPMs had a downward bias of \$2.20 cwt.

"Price Forecasting and Marketing Strategies for Feeder Cattle in the Southeastern United States," G. M. Sullivan, Auburn University, and H. Y. Lee, Merrill Lynch, Atlanta.

Raising feeder cattle has become an important enterprise in the southeastern United States. Producers experience volatility in market prices and need to make timely marketing decisions. Ten years of the Chicago

futures prices and the Montgomery, Alabama, cash price are disaggregated to test forecast performance and evaluate market strategies. Hedging is an important strategy for the high price season contract months of March and April in the falling or turning phases of the price cycle. However, in the rising phase of the cattle price cycle, a no-hedge strategy results in higher income with minimum risk than the other strategies.

"Marketing Strategies for Cross Hedging Hay Using Corn Futures: An Empirical Example," Lowell Catlett, M. J. Blake and Tom Clevenger, New Mexico State University.

This study examines the use of corn futures contracts to cross hedge both U.S. hay and New Mexico alfalfa hay. Correlations between monthly spot U.S. hay prices and corn futures prices ranged from 0.833 to 0.964 and were all significant at the $\alpha = .0001$ level. Multiple regression was used to determine the optimal corn futures contract month to cross-hedge each spot monthly hay price. Regressions were used to determine the ratio of coverage of tons of hay per corn futures contracts.

"A Marketing Model for South Carolina Sweet Potato Producers," G. J. Well, L. L. Bauer and P. J. Rathwell, Clemson University.

A linear programming model is constructed to consider marketing strategies available to South Carolina sweet potato producers. Specific objectives of this study are to analyze:

1. when to harvest sweet potatoes
2. whether to sell at harvest or cure and store
3. when cured sweet potatoes should be sold

Results indicate that harvest is generally delayed to season's end (that is, the first two weeks of September). Price and cost patterns after harvest suggest selling as many sweet potatoes green as possible. Because reported prices do not reflect all sweet potato sales, prices necessary to profitably store sweet potatoes were also presented.

DEVELOPMENT AND IMPACTS OF FOOD AND AGRICULTURAL PROGRAMS (Bobby Robinson, Clemson University).

"Welfare Effects of Alternative Price Support Levels," G. D. Whipple and M. D. Gray, University of Tennessee.

A reactive programming simulation model was used to estimate the impacts on the economic surplus of milk producers and consumers from \$0.50 and \$1.00 reductions in the support level. The model solutions indicate that these support-level reductions would have reduced the net cost and transfer effects of dairy market regulations in 1981. Milk producers would incur large economic surplus losses while milk consumers would receive substantial surplus gains. A support-level reduction of \$1.00 would have alleviated the need for price support acquisitions in 1981 under long-run equilibrium conditions.

"Traditional Values and Development of Commercial Agriculture in South Carolina: A Logit Analysis of Pre-New Deal Agricultural Credit Reform," B. J. Peacock, J. C. Hite and B. H. Robinson, Clemson University.

Noneconomic factors have historically played a major role in agricultural development. Political power and the characteristics of those who hold that power are major noneconomic factors influencing agricultural development. Since agricultural credit is a critical variable in development, the purpose of the study was to test the hypothesis that favorable agricultural credit legislation offered in the South Carolina General Assembly was not sponsored by the politically dominant planter class. Logit was used to test the hypothesis that during the period 1918-33, a time of credit scarcity and agricultural distress in South Carolina, most bills proposed in the State Assembly favorable to easing the credit situation for farmers were proposed by non-planters.

"The Food Stamp Program's Impact on Food Expenditure Behavior in Puerto Rico," Laura Blanciforti, USDA.

Food expenditure relationships were estimated for participating and eligible nonparticipating households in the Food Stamp Program (FSP) in Puerto Rico. Types of food purchased, socioeconomic factors, other subsidized food sources, and household characteristics, as well as income, were considered. Participants spent on the average 12 percent more on at-home food and 48 percent less on away-from-home food purchases than similar nonparticipants. Participation increased expenditures on meats other than beef, veal, and pork, and on processed fruits. In a simulated comparison, the FSP was found to be twice as effective as a cash transfer program in providing food purchases for home use.

"On Extending the Conceptual Basis for Estimating the Information Value of USDA Production and Price Reports," Boubaker Thabet, D. E. Ray, Oklahoma State University, and J. B. Bullock, University of Missouri.

Previous research evaluated the impacts of USDA production and price reports on a commodity basis and in a timeless fashion. A model is developed to illustrate how extensions could be made to allow a simultaneous production and inventory adjustment in the case where cross-commodity and dynamic effects take place. In this context 'forecast error' becomes a difficult variable to measure so long as the reaction to the initial USDA prediction takes place. However, the extent of the adjustment the market can make when a report is released is shown to be a primary determinant of the value of the report.

PROJECTIONS, EXPECTATIONS AND FORECASTS (Les Myers, Chase Econometrics).

"Projecting Feeder Calf Price Differentials," J. R. Simpson and Rom Alderman, University of Florida.

An equation is developed for projecting differentials between various classes and weights of Florida cattle as slaughter steer prices change. The work, or primary interest for long-term projections, demonstrates the impact of differentials from prices rising, falling, or remaining stable.

"Predicting Time Series Turning Points with ARIMA Models," S. E. Miller, Clemson University.

This paper reports an application to swine slaughter data of a proposed heuristic technique for use in conjunction with ARIMA models in predicting future turning points in time series. The technique involves the generation of empirical predictive distributions of future turning-point indicators. Results of the application indicate that the technique yields results only marginally superior to conventional ARIMA forecasts.

"Sales Forecasting in the Extension/Business Environment: An Application of Indicator Variables in Computing Predictions," D. S. Tilley and D. L. Gunter, University of Florida.

The indicator variable approach to generating forecasts and their standard errors is shown. The approach is applied to A. C. Nielsen data on processed orange juice products. The approach has been found to be useful and provides a method of rapidly generating forecasts and standard errors. The approach is especially useful in situations where data series are frequently reported and the new information needs to be used in generating new forecasts. Because of the graphics capability of SAS, the results can be readily adapted to extension/business presentations.

"The Predictability of the Hogs and Pigs Intentions Series," E. W. Elam, University of Arkansas.

The *Hogs and Pigs* intentions series were found to deviate systematically from actual farrowings. Using the methodology of Box and Jenkins, autoregressive moving average models were fitted to the nonrandom deviations series. Although a substantial improvement in prediction accuracy was suggested by the models, little to none was realized in a thirteen quarter post-fit prediction test.

"An Analysis of Virginia Farmer Price Forecasts," Steve Turner and David Kenyon, Virginia Tech, Blacksburg, VA.

Data from surveys of Virginia corn and hog producers in 1980 and 1981 were used to analyze the accuracy of six-month price expectations. Statistical analysis indicates that, on the average, hog producers were more accurate in their forecasts. Farmers did as well or better than the futures market and USDA economists in forecasting prices. Interfarmer agreement on corn price expectations in a year preceded by normal weather conditions was significantly different from the price expectations in a year preceded by adverse weather conditions.

MODELS AND ANALYSIS OF NATIONAL AND REGIONAL MARKETS (Dan McLemore, University of Tennessee).

"Food Prices During the 1970s: Some Inconsistencies in the Conventional Wisdom," M. T. Belongia, USDA.

The fallacy of "food price inflation" is discussed. Historical data indicate that *relative* food prices actually decreased, on average, during the 1970s. Therefore, some studies have attempted to explain declining relative prices with models of "inflation." Studies that relate ongoing changes in food prices to union activity, increasing concentration ratios and price-support programs also are shown to be inconsistent with observed data. Changes in nominal price levels are attributed to past rates of growth of the money stock.

"Price Impacts of a Structural Change in Pork Processing—A Case Study in Oklahoma," C. E. Ward, Oklahoma State University.

The largest hog-slaughtering plant in Oklahoma closed in August 1981. Its share of total hog slaughter in the state was 80–83 percent from 1978–80. Prices at the nearby Oklahoma City terminal market increased less than prices at three comparison markets (Omaha, Kansas City, and Iowa-Minnesota direct trades) after the plant closed. Results of a price difference regression model showed prices declined significantly at Oklahoma City relative to other markets immediately after the plant closed. Price differences between Oklahoma City and two of the three comparison markets returned to levels observed before the plant closing within one year following the structural change.

"A Monthly Econometric Model of the U.S. Sheep Industry," D. L. Debertin, A. L. Myers, J. T. Davis and L. D. Jones, University of Kentucky.

This paper develops a model of the U.S. sheep industry with monthly data for 1964–80. Consumption of lamb had decreased rapidly since 1970. Findings suggest that consumers are highly sensitive to changes in lamb prices relative to prices for beef and pork.

"The Product Cycle and Shifts in the Location of Manufacturing," C. R. Ersenkal and B. L. Dillman, Clemson University.

Empirical results support the hypothesis that manufacturing industry locating in South Carolina has larger proportions of production workers and higher capital labor ratios. This supports the "product-cycle" theory, which asserts that different stages in the life of a product are characterized by changes in combinations of inputs and locational shifts. Variables associated with the product-cycle theory contributed substantially more to an explanation of change in value added in South Carolina relative to the United States, over three time periods, than five more traditional industrial location variables.

"Interregional Competition in the U.S. Swine-Pork Industry: An Analysis of the Southern States Ex-

pansion Potential," J. E. Williams and S. R. Meyer, Oklahoma State University.

An integrated mathematical programming model consisting of sequential employment of reactive and linear programs was used to identify conditions necessary for expansion of the swine production and processing industries in the South. Information is provided by the solution concerning spatial-equilibrium final-product demands, prices, and interregional trade flows and cost-minimizing production, and processing patterns. In addition, the solution provides marginal and range values for additional units of production and marketing activities from which expansion potential can be determined.

RISK MANAGEMENT AND METHODOLOGY (Bruce Bullock, University of Missouri-Columbia).

"Maximizing Probability of Return as a Method to Consider Risk in Farm Planning Models," E. H. Kaiser and B. H. Robinson, Clemson University.

Quadratic Programming and Minimization of Total Absolute Deviation models generate portfolios of efficient return-risk farm plans. Often there are many farm plans on the efficient frontier for the farmer to consider. If the probability distribution of returns for each farm plan is used to determine an efficient return-probability frontier, the number of farm plans to be considered may be reduced drastically. This paper presents a linear programming model that generates an efficient return-probability frontier. Information of the type developed here can permit a farmer to choose a farm plan on return and its probability, rather than on return and an absolute measure of its variability.

"Identification of the Inflation Component of Risk in Agriculture," H. L. Tyan, University of Georgia.

Risk measures are often estimated from historical data for use in agricultural economics research. Recently, several studies have adjusted the historical data for inflation before estimating risk measures. This procedure is inconsistent with theoretical views that unexpected inflation would be a component of risk. This study examines the consequences of deflating the data. Variances of gross income of enterprises in Georgia and Washington for two lengths of time series were estimated with two detrending models for both real and nominal data. Three different methods were used to create the real time series, including an index of expected inflation. The variances from nominal data tended to be lower than for two of the real time series, including the one which used inflationary expectations. Thus, the results support use of real time series in estimating risk measures.

"Effective Learning in Large Classes Through Risk Management," J. M. Broder, University of Georgia.

Undergraduate agricultural economics programs have faced rapid increases in enrollment and class size.

Risk management strategies for maintaining student performance in large classes are discussed. Risk management theory is discussed and used to describe student behavior. The results of a risk management experiment in which students are exposed to levels of chance grading are reported, along with other factors which influence student behavior. The study found that student performance does not decline under a system where there is only a 50-percent chance that assignments will be graded. Finally, procedures for implementing chance grading systems in large classes are discussed.

"Use of Psychological Scales for Risk Analysis in Agricultural Economics," S. Y. Reece, W. N. Musser, P. E. Varca, M. E. Wetzstein and F. W. Williams, University of Georgia.

Use of expected utility theory in research often requires elicitation of utility functions of decision-makers. Recently, problems in the elicitation procedure have led some agricultural economists to recommend alternative procedures to represent risk preferences in empirical analysis. This paper presents a pilot study of the use of the Choice Dilemmas Scale, which was developed by psychologists. The scale, along with two other personality scales, was administered to students in a commodity markets class. Some significant relationships were found with behavior on a commodity-trading exercise. These results suggest that the scale has potential in some agricultural economics research situations.

"Mean Variance Efficiency as an Approach to Evaluate Farmer Adoption of Crop Technology," Margaret Flood, Francis McCamley and Kenneth Schneeberger, University of Missouri-Columbia.

To evaluate the economic rationality of farmer variety choices, a mean-variance efficiency criterion was applied to selected wheat and soybean variety yields for the period 1972 to 1980. The yield data were obtained from variety trials conducted at five regional experiment stations in Missouri. The sets of mean-variance efficient varieties were compared with the percentages of total acreage planted to named wheat and soybean varieties in the crop-reporting districts where the experiment stations are located. Results indicate that producers tend to plant mean-variance efficient varieties.

AGRICULTURAL FINANCE (Lonnie Vandever, Louisiana State University).

"Factors Affecting the Demand and Supply of Agricultural Mortgage Credit: A Disequilibrium Model," D. B. Dallas, F. C. White, University of Georgia, and R. F. Ziemer, Texas A&M University.

Within the agricultural credit market, there is evidence of institutional rigidities, limited accessibility, and imperfect knowledge, which all tend to limit applicability of the competitive equilibrium norm to this market. Disequilibrium theory and estimation procedures

are applied to the agricultural credit market, and supply and demand functions are estimated. The calculated speeds of adjustment after a disturbance indicate disequilibrium behavior in the determination of interest rates and volume of loans. Although disequilibrium estimates were not markedly different from those under equilibrium assumptions, the significance of the disequilibrium results indicates that this market can be better modeled within a disequilibrium framework.

"An Analysis of Banker and Farmer Credit Rationing in Cattle Stocking Decisions," T. L. Cross, Fort Hays State University, and O. L. Walker, Oklahoma State University.

The current farm environment has stimulated both farmer and banker interest in farm credit and liquidity management. Previous research emphasized the importance of coordinating liquidity management, production, and marketing decisions, and suggested several models and data that could be used in analysis. This study provides needed data relating to bank credit supply relationships. A farm-level model using this data and incorporating liquidity management considerations is reviewed and used to estimate a liquidity cost curve for the case farm.

"An Analysis of Financial Leverage in the Agricultural Sector," S. J. Lyu, University of Georgia and Fred C. White, University of Georgia.

Recent fluctuations in the availability and cost of credit raise the issue of how do farmers adjust their debt and equity positions, as reflected in financial leverage, to changing economic conditions. This study analyzes the agricultural sector's process of adjusting financial leverage over the last 25 years. The problem is analyzed within the framework of the partial adjustment-adaptive expectations model. Results from a variable-adjustment coefficient model were compared to those from the traditional constant-adjustment coefficient model, with the variable-coefficient model outperforming the more traditional approach. Results from the variable-adjustment coefficient model indicate that the agricultural sector has not been able to adjust its financial leverage to the desired level as quickly in recent years as in earlier periods.

"A Comparative Financial Analysis of the Georgia and U.S. Farm Sectors, 1971-1980," L. F. Gunter and Marcia Mani, University of Georgia.

In this paper we present balance-sheet and income-statement data, and financial ratios for the U.S. and Georgia farm sectors in the 1970s. Differences in changes in assets, claims, income, and expenses occurring in the two areas over the decade are identified. The analysis shows the deterioration of most financial ratios for both the U.S. and Georgia over the decade. Gross income, total assets, and equity grew more slowly in Georgia than the U.S., while debt grew more rapidly in Georgia. Expenses grew at about the same rate for both areas.

IMPACTS OF TAXATION (Gene Mathia, NED, ERS, USDA).

"Southern Farmland Protection Through Taxation Programs in the 1980s," F. C. White, University of Georgia, R. F. Ziemer and J. R. Stoll, Texas A&M University.

Most states have implemented tax relief programs for farmers on the basis that they paid more taxes relative to income, on the average, than other taxpayers. Popular support for the programs also came from the concern for preservation of agricultural land and open space. In the South, these tax relief programs involve differential assessment schemes that are reduced in effectiveness by inflation and have been found to be largely unsuccessful in many states. In this paper, current programs are reviewed and alternatives to differential assessment are discussed in light of the effects of high inflation rates and depressed farm product prices on farm firm survival.

"A Test of Negatively Taxed Farm Expansion Investments," G. D. Hanson, Auburn University.

This issue of a negative tax on combined land and machinery investments is explored in a sample of 76 Minnesota farms. The expansion investments resulted in lower tax liabilities and higher tax-shielded income for 7 of the 10 cases satisfying test criteria. Preliminary results suggest that this may be critical structure issue.

"Depreciation of Capital Equipment Under the Economic Recovery Act of 1981," Archie Flanders, B. V. Tew and F. C. White, W. N. Musser, Univ. of Georgia.

Previous studies that have analyzed investment decisions have assumed a constant marginal tax rate, which might be appropriate for corporations but not necessarily for farms. Marginal tax rates for farmers can vary with the level of depreciation and hence taxable income. The conceptual framework developed in this paper to analyze alternative depreciation methods assumes that tax rates are functionally related to taxable income. To account for variable marginal income tax rates, the analysis is applied to a total farm situation. Results indicated that this relationship is important in analyzing investment decisions for farmers.

"Effects of Alternative Economic Scenarios and Commodity Policies on Regional Representative Farm," Kenneth Baum and D. H. Harrington, USDA.

Several southeastern and other regional representative farm situations were simulated from 1980 to 1986 to show likely effects of alternative agricultural policy and economic environments on the microeconomic well-being of the farm sector. Farms with a higher initial degree of asset ownership and percent equity had greater survivability, net cash income, and ability to maintain or increase net worth. Macroeconomic policy (i.e., control of inflation) increases the performance of farms for these same variables. Suspension

of direct commodity programs would severely reduce net cash incomes and ability to maintain net worths, but survivability would still remain high.

"Analyzing the Opportunities Provided to Different Size Illinois Corn/Soybean Farms as a Result of the Economic Recovery Tax Act of 1981," J. R. Skees, University of Kentucky.

This research makes use of a multiple-farm simulation model to analyze the probable impact of the Economic Recovery Tax Act of 1981 on different size corn/soybean farms. The results suggest that commercial farmers will generate more wealth due to the tax change. They also show that larger farmers should have relatively greater opportunities to generate more wealth than smaller farmers. The research also demonstrates how federal tax policy provides incentives for farm expansion.

ECONOMICS OF PEST MANAGEMENT (David Parvin, Mississippi State University).

"Estimating the Effects of Pesticide Use on Burley and Flue-Cured Tobacco," George W. Norton and G. Andrew Bernat, Jr.

This paper summarizes the economic impacts of Ridomil[®] use on tobacco with an econometric model of the burley and flue-cured tobacco markets. Impacts on tobacco and cigarette prices, costs, producer revenue, consumer expenditures, and employment and income at the nonfarm level are shown.

"An Economic Evaluation of Alternative Policies to Combat the Spread of the Gypsy Moth: A Stochastic Simulation," H. S. Foster, Jr. and Michael Duffy, USDA.

The paper presents a computer simulation model for estimating the economic impact of isolated infestations of gypsy moth throughout the United States. The model uses expert opinion to estimate parameters governing the spread of the pest and is useful for estimating the economic impact of the pest under a wide variety of policy alternatives and many different assumptions. Three possible policy alternatives are presented, and we find that the net benefits of several programs are such that it is economically feasible to actively combat the spread of this pest.

ENERGY DEVELOPMENT, PRODUCTION AND USE (Thomas Foster, Tennessee Valley Authority).

"Gasahol Production Powered by Low Cost Steam: An Economic and Financial Analysis," N. R. Martin, Jr. and G. D. Hanson, Auburn University.

Cogeneration of steam for electricity and biomass conversion to ethanol results in increased efficiency compared to several alternative processes. Financial analysis of an ethanol cogeneration plant indicates a rapid payback of investment and a high rate of return. Supply and price analysis suggest that the procurement of locally produced feedstock is feasible. Economic

policy analysis provides support for reconsideration of gasohol as a strategy to improve farm incomes and reduce excessive farm program costs.

"A Financial and Sizing Analysis of Solar Heating on Dairies," W. M. Smathers, Jr. and L. F. Gunter, University of Georgia.

In this paper we analyze the economic feasibility of a solar hot-water preheater on a Georgia dairy. Primary data from a closely monitored solar unit installed on a Georgia dairy is used in the analysis. A financial analysis of the experimental unit is presented. We also develop an optimal sizing model for solar equipment and present solutions of the sizing model under different assumptions about future propane price increases. The paper demonstrates the need for optimal sizing of the solar unit in the financial analysis of solar investment decisions.

"Private and Public Sector Economies of Lignite-Energy Resource Development in Rural Central Texas," D. R. Andrews, Southern University, L. L. Jones and S. H. Murdock, Texas A&M University.

Demand for lignite energy resources in electrical-power generation has increased in Texas and other areas of the South. Economic and fiscal effects of lignite developments in a four-county area in Texas are estimated by use of an economic-demographic impact model. Lignite development is projected to be beneficial for both private and public sectors in terms of regional employment, personal income, and aggregate net public revenue. However, governmental entities impacted by immigration, but receiving no revenue from lignite mines or electrical plants, suffer negative net fiscal balances, since public service costs exceed revenues. A need for legal mechanisms for redistributing funds within the impact area is identified.

"Planning Solar Heating for Poultry-A Linear Programming Approach," J. M. Clark, W. E. Hardy and Morris White, Auburn University.

The high cost of traditional energy sources has forced farmers to seek alternative means for supplying heat necessary for operations. One option is the use of solar energy; however, the initial investment required for solar equipment has hindered its acceptance. The linear programming model presented in this paper permits a determination of the minimum size system necessary to provide heating needs. Establishment of this minimum size would reduce initial investment costs. Results from implementation of the linear programming are given so that the costs of various solar heating systems for a broiler house may be compared with conventional LP gas systems.

"Using Shadow Prices to Measure Impacts of Diesel Fuel Allocations on the Value of Diesel Fuel For Risk Averse Crop Producers," Francis McCamley and J. B. Kliebenstein, University of Missouri-Columbia.

This paper considers the effect of diesel fuel allo-

cation on risk-averse crop producers. A quadratic programming model was developed. Optimal solutions were obtained for many combinations of energy input prices, crop prices, fuel allocation levels, and degrees of risk aversion. The response of the shadow price of the diesel fuel allocation to energy and crop prices, fuel allocation level, and measures of risk aversion was approximated by a cubic function. At prices prevailing in the recent past, an allocation level 20 percent less than unrestricted diesel fuel use implied shadow prices of about \$20 per gallon.

**PRODUCTION AND SUPPLY ANALYSIS
(Henry Gilliam, NED, ERS, USDA).**

"Production Interrelationships in Texas Crop Agriculture," C. R. Shumway, Texas A&M University.

The extent to which commodity supplies and input demands are interrelated in Texas agricultural production is explored in this paper. Using a multiple-product dual model, a seemingly unrelated system of product supply and input demand equations is estimated for six field crops and two variable inputs. Restrictions based on competitive behavior and a twice-continuously-differentiable production function are maintained in the estimation. A large number of important interrelationships in individual product supplies and input demands are identified, further documenting the need to account for intercommodity production relationships in econometric and simulation studies.

"Evidence of Changes in Acreage Response Elasticities for Corn and Soybeans," S. R. Spurlock, Mississippi State University.

Relationships between economic variables may change over time due to changing conditions. Regression analyses that use time series data over long periods may not provide parameter estimates that reflect current interrelationships. Partial adjustment models with pooled time series and cross-sectional data were used to estimate the parameters of acreage response functions for corn and soybeans in three Midwestern states for two time periods. Also, these models included either futures prices or lagged cash prices as proxies for price expectations. Some of the own-price, cross-price, and adjustment elasticities were found to change from the 1962-72 period to the 1973-80 period. Lagged prices appeared to perform better than futures prices except for the soybean response function in the 1973-80 period.

"An Analysis of the Role of Futures Prices, Cash Prices and Government Programs in Acreage Response," Jean-Paul Chavas, R. D. Pope and R. S. Kao, Texas A&M University.

An integrated investigation of futures price, cash price, and government programs is presented in the context of an econometric model of acreage supply response for U.S. corn and soybeans. The analysis refines the role of different sources of price information in the farmers' acreage decision. It is found that the

government corn support price program plays a major role in corn and soybean production decisions. Also, the results indicate that futures prices are not good proxies for expected future cash prices in the presence of government programs. This raises questions about the informational efficiency of futures prices when government intervenes in the marketplace.

“Supply Response to Technological Change and Regulation: The Case of Mechanically Deboned Poultry,” D. W. McNiel, University of Central Florida, C. R. Burbee and H. R. Wetzel, II, USDA.

With widespread adoption of the mechanical deboning technique, millions of additional pounds of meat may be recovered and reallocated from lower-valued inedible byproduct uses to higher-valued edible uses. The supply response to the technology by poultry processors is analyzed. Using data not previously available, parameters of a two-equation supply response model are estimated. Key variables in the model include own price, the prices of substitutes in production, the availability of poultry inputs, and the rate of adoption of the technology. Relevant supply elasticities are calculated, and the model is used to analyze the possible impact of additional regulations affecting the production and use of mechanically deboned poultry.

RURAL DEVELOPMENT AND LOCAL GOVERNMENT SERVICES (Carlton Davis, University of Florida).

“Fiscal Impact of Out-Migration on Rural Municipal Governments,” Gerlad Marousek and Stephen M. Smith, University of Idaho.

Urban out-migration has contributed to rapid population growth in rural communities, which strains local governments in providing demanded services. This paper reports on a study of the fiscal impacts of developments on rural municipal governments in Idaho. Only three of nine developments had negative net fiscal impacts in the initial year. Over a 10-year period, only one project showed a negative fiscal impact. The results indicate that rural municipal governments in Idaho are covering the public costs of developments. But these case studies do not measure the total cost of continued growth as facilities, equipment, and personnel utilization reach capacity.

“A Community Level Simulation Model for Rural Development Planners,” M. D. Woods, Texas A&M University, G. A. Doeksen, and J. R. Nelson, Oklahoma State University.

A simulation model developed for rural Oklahoma communities is presented. Methodology and previous work is summarized. The model is recursive, written in Fortran, and provides annual projections. Variables projected include employment and income by sector, and population by age-sex cohort. Community service requirements such as hospital-bed days, physician visits, water, sewer, fire, and solid waste are projected. Also, annual local community revenue by source is es-

timated. The paper presents a detailed application of the model for an Oklahoma community.

“Rural Development and Commercial Agriculture—A Reconnaissance,” Alan R. Bird, USDA.

What is the role of commercial agriculture in rural development in a modern, developed country such as the United States? Rural development is defined as an overall improvement in the economic and social well-being of rural residents and the institutional and physical environment in which they live. Data on population, income, and employment for the four Great Plains states of Kansas, Nebraska, North Dakota, and South Dakota are used to illustrate the possible need for rethinking the actual and preferred interrelationships of successful commercial agriculture and rural development. Characteristics of four resource subregions and eight constituent state parts are compared.

“Non-Compacting Refuse Trucks: An Overlooked Option for Rural Areas,” Steve Murray and Joe Schmidt, Mississippi State University.

Solid waste consultants usually advise use of trucks that compact garbage to densities of 600 to 1,200 pounds per cubic yard for residential garbage collection. In sparsely populated rural areas with low per capita garbage generation rates, trucks with open bodies (which do not compact the garbage) may be most economical for residential garbage collection. This paper examines the economics of two types of non-compacting vehicles and one compacting vehicle sometimes used in rural areas.

ECONOMICS OF SOIL CONSERVATION (Mack Gray, SCS, USDA).

“More on Cross Compliance for Soil Conservation,” D. E. Ervin, W. D. Heffernan and G. P. Green, University of Missouri-Columbia.

Despite increasing attention, the effects of using differential agricultural program benefits to achieve soil conservation are largely unexplored. Viewed in a conventional environmental economics framework, the popularly perceived cross-compliance program may fall short on efficiency and equity grounds. Results suggest that the greatest incentive to practice conservation may occur on land with little or no net social benefits forthcoming from erosion control. An unfortunate by-product of cross compliance is that those likely to benefit most from the program are the largest farm operators.

“Economic Evaluation of Alternative Crop and Soil Management Systems for Reducing Soil Erosion Losses on West Tennessee Farms,” D. L. Hunter and L. H. Keller, University of Tennessee.

This study evaluated farm firm behavior and adjustment that might be expected when certain key economic factors related to soil conservation were allowed to vary over time. Linear programming techniques were used to determine enterprise combinations and conservation practices that would maximize net returns to

land, labor, and management at varied soil-loss levels.

Through the use of no-till and double-cropping systems, soil loss could be held at the 10-tons/acre/year level with no effect upon net returns. Lowering the soil-loss constraint to five tons and below resulted in a 2–5 percent reduction in net returns.

“Evolutionary Processes in Soil Conservation Policy,” R. C. Griffin and J. R. Stoll, Texas A&M University.

The present direction of federal soil conservation policy can be reliably discerned through a historical examination and interpretation of factors contributing to past changes. The roles of SCS, ASCS, EPA, and various state organizations in these evolutionary processes offer important insights as to the current status of soil conservation policy. Policy makers are no longer relying on conservation subsidies as income supports and now see soil erosion as a problem that can be managed by producers having an incentive to do so. Action taken by state-level organizations has diffused the goals of conservation programs. These and other factors serve as important forces in the determination of future conservation policy.

“Temporal Impacts of Restricting Soil Erosion on the Farm Firm,” V. S. Eddings and D. D. Badger, Oklahoma State University.

This linear programming study analyzed the farm-level economic impacts of restricting soil erosion to SCS recommended limits. Cotton, wheat, grain sorghum, and alfalfa were being produced on the farm. Two sets of farm organizations were analyzed: one where soil erosion was restricted to the SCS-recommended T values for annual soil loss and the other for unrestricted soil loss. The analysis indicates that adopting soil conservation practices would increase annual production costs. The results indicate that restricting soil erosion may not be profitable for an individual farm firm over a 40-year planning horizon.

FARM MANAGEMENT CONSIDERATIONS (John Allison, University of Georgia).

“Micros: The Means for Establishing Decision-Making Leadership with Commercial Agriculture,” John Holt, University of Florida.

The evolving decision-making environment, our backlog of under-utilized decision-making aids, and the advent of microcomputers all interact to give agricultural economists a golden opportunity to establish decision-making leadership with commercial agriculture. Agricultural economists should pursue that goal; this paper suggests why, discusses how it might be done with micros, articulates an obstacle or two, and emphasizes the importance of starting soon.

“The Costs of On-Farm Storage for Wheat in Oklahoma,” C. D. Davis, Sperry-New Holland, and R. L. Oehrtman, Oklahoma State University.

This paper provides investment and cost information for 20 on-farm storage systems. The range of total

investment requirements (average annual total cost) per bushel for each of category one, two, and three storage systems is \$3.29 (80.9¢), to \$0.98 (28.8¢), \$1.49 (40.6¢) to \$0.96 (28.5¢), and \$1.88 (44.5¢) to \$1.28 (33.6¢), respectively.

“Fencing Strategies for Livestock Producers: A Comparative Cost Analysis of Traditional and High-Tensile Fences,” R. O. Burton and M. Rouhani-Iravan, West Virginia University.

This analysis measures the costs of alternative fencing methods on an example farm which produces both beef and sheep. Three fencing methods—high-tensile nonelectric, high-tensile electric, and woven wire—are compared in terms of construction costs, present values of maintenance costs, and equivalent-level annuities. The results indicate that high-tensile fences are considerably less costly than woven wire fences. High-tensile, nonelectric fences are more expensive than electric fences, but they last longer and have lower maintenance costs.

“Fertilization Rates and Yield Expectations: A Comparison of Farmers’ Perceptions and Practices with Recommendations of Land Specialists,” S. E. Kraft, Southern Illinois University.

While neoclassical models of economic decision-making are implicitly based on information being single valued, behavioral models of decision-making are based on an assumption that information is multivalued. Hence, decision-makers interpret the same bit of information differently. The result is that decision-makers with the same preferences and information make different decisions in the same situations.

Data collected from farmers on their evaluations of land resources are compared to information presented to them on the same resources by land specialists. Data on normal fertilization and yield expectations among four soil associations are compared using the Kruskal-Wallis, one-way analysis of variance. The results indicate that there is a lack of shared understanding between farmers and land specialists for the same land resources. The consequences of this lack of sharing are briefly explored.

TRANSPORTATION REGULATION AND AGRIBUSINESS ISSUES (John Nichols, Texas A&M University).

“Florida Motor Carrier Deregulation: Perspectives of Urban and Rural Shipper/Receivers,” Richard Beilock, University of Florida, and James Freeman, University of Kentucky.

It is commonly asserted that with release from economic regulations, motor carriers will eliminate or sharply reduce services to small and inconveniently located shipper/receivers. In this study, the experiences of shippers/receivers under Florida deregulation are examined. Shipper/receiver experiences are compared according to firm size, community size, and proximity to major metropolitan areas or highways. The results indicate that while firm size has little bearing on ser-

vice, locational factors are important. For all shipper/receiver subgroups, however, those indicating improvements greatly outnumber those reporting erosions in service.

“Motor Carrier Regulation and Its Impact on Service: An Analysis of Texas Fruit and Vegetable Shippers,” Larry Makus and Stephen Fuller, Texas A&M University.

A survey of Texas fresh fruit and vegetable shippers is used to measure perceptions concerning regulated intrastate and exempt interstate motor carriage. Respondents rate each carrier group regarding service characteristics and indicate whether deregulation would have a favorable or adverse impact. Results are analyzed to assess shipper perceptions as a group, and small versus large shipper responses are statistically compared to identify between-group differences. Results indicate that shippers tend to favor deregulated motor carriage, and size of shipper does not impact on this perception.

“Southern Cooperatives: Risking Legal Proceedings Under the Federal Securities Act,” T. J. Centner and F. C. White, University of Georgia.

The limited market channels for a number of southern crops means that agricultural marketing cooperatives are vital to the economic well-being of the South. A recent court decision suggests that the equity redemption practices of cooperatives involve risks of legal proceedings under the federal Security Acts. Cooperatives should analyze various policy options concerning risks and costs to best provide for their future profitability.

“An Application of Break-Even Analysis in Analysis of Volume of Sales for a Livestock Auction Barn,” W. K. Farr and W. N. Musser, University of Georgia.

The volume of sales is a crucial variable in the profitability of agribusiness firms. Break-even analysis is a standard method of analysis of the problem. This paper presents a case study of a livestock auction barn, illustrating the use of break-even analysis. The case study was completed after three months of operating during which the firm had shown losses. Cattle sales were demonstrated to be the cause of the loss and a break-even value determined. Several changes in expenses, which would allow the firm to make a profit with current value of operations, were also analyzed.

ISSUES IN MARKET COORDINATION AND STRUCTURE (Robert Beck, University of Kentucky).

“An Assessment of the Conditions for Optimal Minimum Quality Standards for Fruits and Vegetables,” T. T. Vo., University of Maryland.

Some theoretical and empirical issues regarding the profitability of minimum-quality standards for fruits and vegetables are examined in this paper. It is shown that producers can profit from the imposition of the

standards if certain market characteristics exist that shift the demand function outwards. The paper makes clear the implications for these marketing orders if demand shifts do not occur and provides empirical tests of this popular contention.

“Farmer Propensity Toward Organizing Cooperatively,” L. W. Robbins and L. L. Nsimpati, University of Kentucky.

A sample of a southeastern states' farmers, bankers, and county agents were surveyed to determine attitudes toward cooperative organizations. Results were evaluated using statistical, quantitative, and descriptive analyses. A linear probability function was used to determine the influence of demographic and other quantifiable variables.

Farmers' attitudes toward cooperatives were not found to be positive. Younger farmers and those with low profits were the most negative. Where new firms were needed, locally owned organizations were preferred over cooperatives, even though many said they would finance, and even more, join a cooperative that, “provided a needed service at a competitive price.”

“Agribusiness Surveys and Nonresponse Bias: The Case of Financial Performance and Equity Redemption Practices of Kansas Cooperatives,” M. D. Newman, and B. A. Stephens, Kansas State University.

Sample survey data are often used to evaluate impacts of policy alternatives on agribusiness financial conditions without explicitly considering potential bias caused by nonresponse. This paper examines differences between respondents and nonrespondents to a mail survey concerning financial performance and equity redemption practices of cooperatives. Nonrespondents were found significantly smaller in total sales, assets, and membership. They had similar operating results, fewer equity retirement programs, and less member and board pressure to consider equity retirement. The results raise questions about conclusions drawn in previous studies and reinforce the importance of evaluating and reporting nonrespondent characteristics.

“Conceptual Relations Between Information and Market Structure: Implications for Private Market Decisions and Public Use,” R. D. Christy, Louisiana State University.

This paper provides a conceptual basis which describes the relationship between market structure and information. As market concentration increases, private benefits to firm investments in market information increase greatly, providing a major incentive for the firm to invest in market information and to deny access to any public agent or other firms. For the public agent, as concentration increases, the social benefits to public investments in information to facilitate market coordination (private market decisions) decline rapidly, while those to information for public policy (market competition) and regulatory decisions grow.

FARM STRUCTURE, GROWTH AND INCOME (Brady Deaton, Virginia Polytechnic Institute and State University).

“Price and Income Support and the Distribution of Farm-Related Incomes: Observations from Southern Grain and Cotton Farms,” James Johnston and S. D. Short, USDA.

Transfer payments are made from taxpayers and consumers to farmers through a variety of farm commodity programs. Characteristics of program participants remain largely unexamined, though programs have been in operation for five decades. This paper identifies the characteristics of southern participants and nonparticipants in the 1978 grain and cotton programs and uses this information to estimate which farmers' incomes are enhanced and which farmers bear program-adjustment costs.

“Expected Regional Impacts on Agriculture of Natural Gas Price Deregulation,” G. S. Collins, P. W. Teague, R. D. Lacewell and G. C. Cornforth, Texas A&M University.

A regional field crop and national livestock econometric model (TECHSIM) was used to examine the impacts to agriculture of decontrolling the price of new and old natural gas. Results show that regional pro-

ducers shift into field crops that are less energy intensive. Nationally, planted acreages and prices showed little change. However, there are dramatic regional shifts in the disposition of field-crop planted acres and in regional producer rents. The analysis suggests that the most vulnerable regions to deregulation of natural gas prices immediately after deregulation are the Southeast, Mid-Atlantic, Texas, Northwest, and Mountain states. The annual reduction in welfare was estimated at over \$600 million by 1990.

“Factors Influencing Farm and Off-Farm Work Decisions of Florida Farm Wives,” Christina Gladwin, University of Florida.

Recent studies on the changing structure of U.S. agriculture show that the full-time male farmer on the small family farm is almost a thing of the past. If the small- to medium-sized family farm is to survive in today's economic environment, then the time and management constraints facing the part-time farmer must be addressed and alleviated. One way to do this is to recognize the growing role and contribution of the farm wife as agricultural producer on the small family farm. Evidence of the farm wife's growing role on and off the Florida small farm is provided in this paper. A model of how farm women decide to be full- or part-time farmers vs. off-farm workers is also presented.