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THE HEDGING EFFECTIVENESS OF WINNIPEG COMMODITY EXCHANGE RAPESEED FUTURES MARKET FOR SUNFLOWERS

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Sunflower production in Manitoba has declined, but it remains an important alternative crop for farmers. Manitoba farms have three primary markets for cash sunflowers: (1) delivery to CSP Foods Ltd. in Altona, Manitoba (Western Canada's only sunflower crusher); (2) shipment to Duluth, Minnesota; (3) sale to the food and feed industry for human consumption or birdseed. Many of the remaining Manitoba sunflower producers may want an effective risk management too, for the protection against adverse price movements.

Sunflower contracts are not traded on the Winnipeg Commodity Exchange, but farmers may be able to cross-hedge on another oilseed contract. The main objective ot this paper is to evaluate cross-hedging efficiency of Manitoba sunflowers utilizing the Winnipeg Commodity Exchange September and November futures contracts.

The results of this study indicated that the Winnipeg Commodity Exchange rapeseed contracts can be used to cross-hedge cash sunflowers. Using data for the 1985-89 time period, risk could be used using the September and November contracts. Hedging effectiveness does vary from year to year; however, from the results one can conclude that rapeseed futures were an adequate hedge for cash sunflowers in most of the years analyzed. Cross-hedging of sunflower cash to rapeseed futures was found to be an effective risk-management tool for Manitoba farmers.

ANALYSIS OF BASIS VARIATION OF CANOLA IN CANADA

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A primary function of futures markets is to transfer risk from those who are risk adverse, such as hedgers to those who are less risk adverse, such as speculators. The hedger exchanges the risk of price variation for risk of basis variation. This study examines weekly cash and nearby futures Canola prices for the 1988-1989 crop year, monthly cash and monthly futures Canola prices for the 1985-1986 crop year to the 1988-1989 crop year inclusively, and the weekly basis pattern for the June 1989 crop year. The results showed that basis does indeed follow consistent patterns the majority of the time, and when basis does not follow these patterns the reason for the variation may be known and predictable. Therefore, the exchange of price risk for basis risk does in fact reduce the level of risk burden taken on by the hedger. The primary function of commodity markets is then fulfilled.

THE POSSIBLE IMPACT TRIPARTITE INCOME STABILIZATION WILL HAVE ON THE CANADIAN APPLE INDUSTRY

Douglas H. Harris, *University of Guelph*

An econometric model was estimated to assess how adequate tripartite income stabilization was in actually stabilizing apple farm incomes compared with an ad-hoc farm income stabilization policy. Premium payments, input costs, apple prices lagged five years and price of substitutes were all satisfactory explanatory variables. Tripartite premiums are paid equally by the three parties and it will reduce farm prices received by the farmer in years where stabilization is not required and will increase the price received in years where stabilization is required. Under Ad-hoc policies, farm revenues were subject to wide variations from year to year which tripartite reduced. Ad-hoc payments are not known in advance and Tripartite payments are considered to be known in advance. Farmers respond differently to one dollar of income stabilization as compared to one dollar in stabilization towards the price. To stabilize incomes the taxpayer must be willing to spend a lot of money. Tripartite income stabilization increased the dependency on stabilization with larger fluctuations in farm prices compensated for by stabilization payments. Farm revenue was increased and the cost to the taxpayer increased at the same time. Tripartite has reduced the fluctuation in the farm price but the costs are high.

WHY ARE MILK QUOTA PRICES SO HIGH IN ONTARIO

Harry Gardiner, *University of Guelph*

This paper analyzes the question of milk quota prices in Ontario and why they are so high. First background information is given which places this question in the context of a changing agricultural world and explains the details of how quota exchanges hands. A model is developed which explains that individual farmers will buy quota at a price equal to the present value of the economic rents from the quota and the present value of its salvage plus some for a more stable milk price. Empirical analysis shows that farmers rely heavily upon past quota prices and the level of interest rates when making a quota purchasing decision.

FLOOD CONTROL AT THE LOCAL LEVEL; A BENEFIT COST PERSPECTIVE

Paul J. Gremillion, *Louisiana State University*

Although the Flood Control Act of 1936 has been interpreted as a justification for Federal involvement in flood control projects, localities are increasingly bearing the burden of flood control projects. This paper reviews flood control policy, reviews relevant flood control theory, and identified costs and potential benefits of a local Louisiana flood control project. This is especially relevant to the case study of False River which has a proposed locally funded flood control plan.

AN URBANIZING STATE: AFFECTS ON AGRICULTURAL LAND USE

Bradley Mark Levine, *University of Florida*

Over the past decade Florida's population has averaged over 300,000 people per year. This rapid growth has exerted intense pressure on Florida's limited land resources. The increased demand for those resources has created concern over the competition for lands between agriculture and other competing uses. As a result of the freezes in 1983 and 1985 approximately 200,000 acres of citrus were lost in Central Florida. (Fl. Citrus Sum.) This encouraged citrus producers to relocate in the southern regions of the state to reduce the risk of future freezes. With the population increasing and shifts in land use occurring, some areas of the state are facing increased competition for land and water resources. Moreover, the increased competition for scarce land and water resources make the utilization and management of these resources extremely important.

The purpose of this paper is to identify and discuss the factors affecting shifts or changes in agricultural land use in Florida. Specific issues addressed in the paper include: Agricultural land use change over time; Physical, economic, and institutional factors that have contributed to land use change; Types of agricultural use (citrus, vegetable, pasture & woodland) that have been impacted; Effects of urbanization on some areas; and the impact current land use policies and planning efforts have on agricultural land use.

THE EFFECTS OF THE FREE TRADE AGREEMENT ON THE PROCESSING TOMATO FARM SECTOR IN ONTARIO.

Scott Lougheed, *University of Guelph*

The purpose of this paper is to determine the possible effect on the processing tomato farm sector in Ontario resulting from the implementation of the Canada-United States Free Trade Agreement. This agreement allows for the removal of the 13.6 percent import tariffs on tomato paste and ketchup, respectively.

It is determined from the analysis that if the tariffs had never been put into place in 1989, the price of processing tomatoes in Ontario would be almost 21 percent higher and the farmers would be producing some 11 percent less processing tomatoes on 11 percent less acres (given current crop yields). The industry gross revenues (to the farmers) would be 7.87 percent more than at the current level. Given current production levels the per acre revenues would increase by 20 percent.

Paste imports would be 6.21 percent lower than they are the present because of an estimated increase of 77 percent in the retail paste price. Estimating production levels and import levels of ketchup were beyond the scope of this report because of the lack of data for that particular commodity.

PERFECT OR IMPERFECT SUBSTITUTION BETWEEN CANADIAN AND U.S. PORK IN THE U.S. MARKET: THE CASE OF U.S. COUNTERVAILING DUTY ON CANADIAN PORK

Arlie McFaul, *University of Guelph*

In 1984 Canadian pork exports to the U.S. have been under much scrutiny due to Canada's federal and provincial stabilization programs. Recently on August 28 1989, the U.S. International Trade Commission (USITC) gave its final ruling of a C0.036/lb countervail duty on Canadian fresh, chilled, and frozen pork (Garfinkel 1989).

The purpose of the paper is first, to determine the elasticity of substitution for Canadian pork in the U.S. to ascertain if canadian pork is perfectly substitutable with U.S. pork. The second objective is to compare the effect of a C$0.036lb and forecasted C$0.11/lb tariff on Canadian pork along with a forecasted C$23.00/live hog tariff assuming perfect substitutes and then imperfect substitutes between Canadian and U.S. pork in the U.S. The final objective is to examine the policy implications of the two scenarios for countervailing disputes in international trade.

A synthetic model for the Canadian pork sector, was used to determine slope and intercept coefficients for static demand and supply curves. In addition, Canada, Rest-of World and U.S. pork demand equations were estimated to determine the elasticity of substitution and to incorporate into the imperfect substitution model.

Under the assumption of perfect substitutes a larger effect on Canadian exports and a smaller effect on price in both countries results verses that of the imperfect substitute scenario. Therefore the USITC has overstated the countervail duty on Canadian pork exports.

ANALYSIS OF SELECTED PRICING ALTERNATIVES FOR EASTERN KANSAS WHEAT PRODUCERS

Mike Schmitt, *Kansas State University*

The risks and returns of seven marketing alternatives for wheat producers are studied over the period 1980-1989. Analysis of the results indicates over the period 1980-1989. Analysis of the results indicates none of the strategies are statistically different suggesting the wheat market is efficient. Hedging in October produced the highest mean of $3.14/bu but also had the highest ($4.46/bu) and the lowest ($1.89/bu) yearly price which resulted in it having the highest standard deviation of $0.79/bu. Storing until December 15 had a mean price of $2.98/bu and the lowest standard deviation of $0.51/bu while selling at harvest and buying calls had the lowest mean prices of $2.87/bu but a high standard deviation of $0.59/bu. A mean variance model indicated the risk neutral producer should be hedging in October 100%. A moderately risk averse producer should use the following combinations: hedging in October 45.7%, store and sell on December 15 12.8%, store and sell on October 15 5.5%, and sell at harvest 15.9%. The risk averse producer should be hedged in October 45.7% and storing and selling on December 15 54.5%. These alternatives should offer producers with varying risk/reward preferences a base from which to develop or enhance their marketing plans.

INDONESIA'S TRANSITION FROM LOG SUPPLIER TO LOG PROCESSOR AND ITS EFFECT ON THE U.S. MARKET

Benjamin Schall, *Cornell University*

This paper examines the effects that limiting the export of an oligopolisticly controlled raw material has on foreign industries that are dependent on the raw material, and the possible benefits to the restricting country. This paper uses the example of Indonesia's restriction on the export of hard wood saw and veneer logs, the raw material needed in the hard wood plywood and lumber industries. Specifically, this paper determines how detrimental the Indonesian limit on log exports and the entry into the plywood and lumber market was to the U.S.

Regression analysis is used to estimate the elasticities for the supply of logs and the consumption of the logs finished products for three markets, Indonesia, the U.S. and the rest of the world. Due to extremely inelastic price estimates for bothsupply and demand, a linear programming model is used to calculate the ideal quantities to be traded under different scenarios.

The results of the regression suggests that the supply of logs is not price responsive. This could be the result of biological and contractual factors. The transshipment model calculated that based on transportation costs, the world markets will be better off if Indonesia does process finished hard wood log products. The fact that Indonesia was successful in capturing large market share of the finished products was not because it restricted the flow of logs, but because the market was et up ideally for Indonesia to enter the markets.

Contrary to what may seem obvious from basic economics, the removal of the Indonesian logs from the world market did not keep the price of logs up. The logs were processed in Indonesia and shipped to the other markets. This resulted in less expensive logs for the other markets, due to the different shipping costs of logs and their final products, and more price competition for the processed goods. The restricting of the Indonesian logs was an unnecessary act, because the market was set up for the domestic production already.

A LINEAR PROGRAMMING ANALYSIS OF FARM COMMODITY PROGRAMS

Robert L. Price, *Cornell University*

Success of farm commodity program hinges on whether the agricultural sector will participate. These programs must therefore provide support that is competitive with expected market return. The economic benefit of participation in farm commodity programs for farmers is herein analyzed with linear programming. A hypothetical firm with characteristics of a 1988 New York field crop farm is subjected to the conditions of participation and non-participation in government support specific to its crops. Comparison of revenues for the optimal crop mix for each case indicates that farms with similar characteristics will prefer participation, assuming they are risk averse.

AN ANALYSIS OF CANADA -- U.S. TRADE OF HOGS AND PORK

Chris Van de Laar, *University of Guelph*

The Canadian hog and pork industry has established itself as a large exporter of its products to other countries, especially the United States. This has angered U.S. producers and processors and their government's response has been to lay tariffs on Canadian hog and pork exports. This paper examines the effects the recently announced $0.036/lb tariff on Canadian pork exports has on Canadian producers and processors.

An econometric model was formulated to analyze the effects the tariff has on both sides of the market. The results showed that the tariff would be damaging to both the Canadian producers and processors but much more damaging to the processors in the long run. The Canadian producers and processors have recently debated the effects of a $2.00 levy on Canadian hogs would have on their products to combat the pork tariff. This paper shows that such a levy would balance the effects the tariff had on the Canadian hog and pork industry.

DETERMINING THE PROFITABILITY AND FEASIBILITY OF BUYING DRYLAND WHEAT GROUND IN EASTERN COLORADO

Keith Wright, *Colorado State University*

The focus of this paper is to determine if buying acreage in eastern Colorado and growing wheat is feasible as well as profitable. The three types of financial statements that were examined were the enterprise budget, the balance sheet, and the cashflow statement. The analysis looked at well-drained wheatland that was well suited for non-irrigation and was considered prime farmland. The analysis indicated that over a five-year period there would be a decline in total asset value as well as in net worth which would lead to problems in the farmer's ability to obtain credit. By the end of the fifth year, the farmer would have depleted cash reserves. The only potential for a positive cashflow was for the farmer to use custom farming operations to augment cash flow and to reduce the amount of land purchased in order to reduce financing.

ECONOMIC IMPLICATIONS OF US-USSR LONG TERM GRAIN AGREEMENTS.

Gary Taylor, *Purdue University*

The United States and the Soviet Union are in the final year of the second bilateral grain trade agreement between the two countries. Negotiations are currently in progress to establish a third such agreement.

To examine the impacts of these previous agreements have had on world trade flows, a Generalized Transportation Problem (GTP) was used to simulate the world wheat market. Exogenous shocks were introduced into the market and their effects evaluated. These shocks include the elimination of the minimum purchase requirement and changes in an export subsidy administered through the Export Enhancement Program. For the policy analysis three years were selected: 1980, 1984 and 1988.

In 1980, the USSR embargo year, elimination of the embargo would have increased Soviet wheat purchases from the United States by 5.1 m.m.t., but would have had little effect on total U.S. wheat sales or total world wheat trade. Elimination of the minimum purchase requirement had no effect on trade flows or prices in the no embargo scenario. If an export subsidy of $25 per ton had been available in 1984, Soviet purchases from the United States would have increased 3.5 m.m.t. Elimination of the minimum purchase requirement would have resulted in no Soviet purchases from the United States with essentially no change in total U.S. sales or in world trade flows. In 1989, the elimination of the $32 per ton subsidy to the USSR (the average level for the year) would have resulted in no change in total Soviet purchases from the United States. Elimination of the minimum purchase requirement in 1988 would have resulted in lower total Soviet purchases, no purchases from the United States, but increased total U.S.sales.

The US/USSR Long Term Grain Agreement has helped stabilize the trade flow amounts between the two countries. However, no real increase in total U.S. sales can be observed.