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Department of Economics

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Theses & Papers By Master's Degree Students in the Department of Economics: 2004


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ECONOMICS COMMENTATOR

South Dakota State University

No. 458

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**THESES & PAPERS
BY MASTER'S DEGREE STUDENTS
IN THE DEPARTMENT OF ECONOMICS
2004**

Compiled and edited by
Matthew Diersen and Larry Janssen

Department of Economics faculty and graduate students conduct research activities to help solve economic and business problems, increase income, and improve the quality of life for the people of South Dakota and the global community. Graduate students are required to complete a thesis or research paper as a component of their Master of Science program. Fourteen of our graduate students completed their Master's degree from SDSU in 2004.

In the rest of this *Commentator*, a summary of each graduate student's thesis or research paper completed in 2004 is presented. Many contemporary issues in farm management and agricultural finance, agricultural marketing and policy, international trade and finance, and rural development are addressed. These topics are selected by the students under the direction of their faculty advisor. These research papers and theses are used to help prepare research reports, journal articles, Extension articles *Commentator* articles, and other reports for a variety of audiences. If you would like more information about a paper or thesis, please contact the advisor.

**A DESCRIPTIVE ANALYSIS OF THE ECONOMY
OF SOUTH DAKOTA**

Wendi Brugman

*Research Paper Advisor:
Matt Diersen*

The economy of South Dakota is diverse and made up of many important factors. The agriculture industry is the most commonly known component of the state's economy. However, other sectors have also flourished or changed in recent years. This paper examines South Dakota's economy and identifies important economic indicators that best describe the structure of the economy. Economic data from 1997-2001 is presented to create a snapshot of the

economy during a fixed period of time. A descriptive analysis of the data provides growth trends, suggests connections between different components of the economy, and offers reasonable bounds for describing future changes in the economy.

**RURAL ECONOMIC DEVELOPMENT IN
SOUTH DAKOTA: ENHANCING PER CAPITA
INCOMES THROUGH ENTREPRENEURSHIP**

Barbara Heller

*Research Paper Advisor:
Dick Shane*

Over the last several decades, many rural communities in the United States have experienced economic decline; South Dakota rural communities are no exception. The demographic trends in these rural communities include a decrease in population, increase in age, decrease in per capita income, and an increase in per capita transfer payments compared to those of their urban counterparts.

Providing entrepreneurial activities in counties experiencing a decrease in population and an increase in per capita transfer payments will help alleviate the severe impacts of economic decline in rural communities. By creating additional economic opportunities, the rural economies will have another source of investment in the community, providing a more secure economy that is more independent and diverse.

**THE EFFECT OF THE QUANTITY AND
QUALITY OF EDUCATION ON EARNINGS
ACROSS GENDER AND RACE**

Darja Montsenko

Thesis Advisor: Bill Adamson

Over the last twenty years, the return on investment to college education has increased dramatically. This study attempts to prove that recent increases in earnings, regardless of gender and race, cannot be attributed entirely to the growing amount of formal education individuals receive these days. The assumption is made that an increased quality of education is another important factor contributing to the recent hike in returns to educational investment. The Carnegie Classification of Institutions of Higher

Education, combined with the variables of institutional control (public vs. private), has been assumed to be a good indicator of college quality.

Using data from the National Survey of Youth for the years 1988 – 2000, it has been found that the quantity of education is still a major determinant of wage returns to schooling across gender and race. However, at least some portion of this return must be attributed to the positive influence of research and doctoral universities.

ECONOMIC INCENTIVES FOR SOUTH DAKOTA FARMERS TO PARTICIPATE IN THE CONSERVATION SECURITY PROGRAM

Nicholas Streff *Thesis Advisor: Thomas Dobbs*

The purpose of this thesis was to evaluate the new Conservation Security Program and its likely success in inducing farmers to develop longer, more sustainable crop rotations. A “representative” farm was developed for a six-county study region from interviews and National Agricultural Statistics Service and 1997 Census data. The “representative” farm was evaluated using baseline (corn-soybean), alternative, and organic farming systems. The CSP was applied to the rotations and analyzed with various contract and payment assumptions. The research showed that many of the alternative and organic rotations had equal or higher returns than the baseline corn-soybean rotations. However, the payment rates for the CSP might not be sufficient to cause farmers to change to longer crop rotations.

ANALYSIS OF FARM PROGRAMS PAYMENTS IN SOUTH DAKOTA: 1990-2001

Yonas Hamda *Thesis Advisor: Larry Janssen*

Governments get involved in agriculture to ensure adequate food supplies, protect and preserve small-scale farms, reduce price instability, minimize dependence on imports and protect the environment. In this thesis, the dependency of South Dakota on different forms of federal payments is examined. In addition, the distribution of farm program payments to recipients is analyzed.

South Dakota’s dependency on federal payments has increased during the 1990-2001 time period. Moreover, the level of dependency on farm program payments for farm income increased enormously from the 1990-95 period to the 1996-01 time period. Dependency on federal payments was similar across regions; however, farm income dependency on farm program payments varies throughout South Dakota.

The distribution of farm program payments was highly unequal in South Dakota, regardless of region and specific year examined.

PROFITABILITY AND MANAGEMENT IN A BLACK HILLS COW/CALF OPERATION: A CASE STUDY

Jill Pravatiner

*Research Paper Advisor:
Carol Cumber*

In-depth case study research was conducted on a South Dakota producer with a long-term record of running a highly profitable beef cow-calf enterprise. The purpose of this research was to assess the producer’s management of the operation in relation to best business practices for profitability, and to determine whether he possessed some of the characteristics of peak performing agricultural executives.

The research showed that this profitable producer uses best business practices such as goal setting, using preventive maintenance on his equipment, using a herd health plan, and being actively involved in conserving the natural resources on his property. In addition, he possesses characteristics of peak performing agricultural executives in that he actively seeks outside advice, has a clear understanding of the strengths and weaknesses of his operation, is a risk manager instead of a risk taker, and incorporates components of a business plan in his operation.

FINANCING OPPORTUNITIES FOR THE NEXT GENERATION OF FARMERS

Susan Robbins

*Research Paper Advisor:
Burton Pflueger*

The purpose of this research paper was to investigate financing opportunities for beginning agriculturalists in South Dakota. The objectives were to:

1. Determine what specific programs are available to beginning agriculturalists in South Dakota at the present time. Specific programs available to beginning farmers in South Dakota include: (a) Direct Farm Service Agency Down Payment, (b) Direct Farm Service Agency Farm Ownership Beginning Farmer, (c) Farm Credit Services, and (d) South Dakota Department of Agriculture Beginning Farmer Bond Program.
2. Compare and contrast these program qualifications and terms and their historical use. A descriptive

analysis of each program's qualifications and terms were detailed with a summary table completed for comparison. Data regarding historical use of each program over the last several fiscal years was analyzed.

3. Analyze these program benefits and restrictions to determine the impacts of success. The analysis of these program's terms and qualifications was shown to inhibit success for a typical cash grain farmer in east central South Dakota.

IMPACT OF DIFFERING LEVELS OF CASH RENT ON THE FINANCIAL PERFORMANCE OF FARM OPERATIONS

Matthew Pearson *Thesis Advisor: Burton Pflueger*

Rising rental rates require producers to make sound, well educated management decisions when considering leasing arrangements. When facing a rental decision, producers need to take into consideration the level of rental payments in regard to the level of commodity prices, the quality of the land being rented, machinery requirements, in addition to the opportunity costs of capital and energy associated with farming additional acres. Most importantly, producers need to be able to identify how the rental decision will affect the overall financial condition of the operation.

This research is designed to analyze how leasing additional acreage with differing productive quality and cash rent levels affects the overall financial condition of the operation. A model farm was developed representing a typical farm in East Central South Dakota and four rental scenarios were examined: a baseline scenario, a scenario of renting average productivity land, a scenario of renting high productivity land and a scenario of renting low productivity land.

Research results showed that, over a five year period, renting average productivity cropland improved the Net Worth of the operation less than \$3000 and improved more than \$32,500 by renting highly productive cropland. The net worth of the scenario renting low productivity cropland averaged \$14,000 a year less over the study period than the base scenario. Renting high productivity ground instead of low productivity ground showed the operation could have made over \$12,000 a year more in net farm income improving net worth more than \$60,000 over the period.

These results show how land quality and its associated rent levels can affect the overall financial condition of the operation in a rental situation.

FACTORS INFLUENCING MARKETING DECISIONS IN THE CASH MARKET FOR SLAUGHTER CATTLE

Rozhyer Aware *Research Paper Advisor: Scott Fausti*

The three main objectives of this research paper are: 1) To develop a producer profile for participants in the South Dakota State Calf Value Discovery (CVD) project, 2) To empirically evaluate the relationship between producer profile attributes and producer behavior towards risk, as measured by the relative risk aversion index approach, and 3) Compare the relative risk aversion index (RRAI) approach to a simple von Neumann-Morgenstern approach.

A questionnaire was mailed to 100 participants of the South Dakota State Calf Value Discovery (CVD) project to gather data. Standard statistical results was used to determine which factors significantly influenced individuals in becoming more risk averse or preferring in their investment decisions. The four variables found to be significant were: 1) net-income, 2) age, 3) marital status, and 4) level of education.

This study provides empirical evidence that supports previous literature findings in what social, economic, and behavioral attributes influence relative risk aversion (RRA) and what attributes relative risk aversion (RRA) influences. Results from this study show that the relative risk aversion index (RRAI) was the best method in measuring risk preference.

THE EFFECT OF MANDATORY PRICE REPORTING ON THE STRUCTURE OF WEEKLY REPORTED GRID PREMIUM AND DISCOUNT PRICES FOR FED CATTLE

Joe Priebe *Thesis Advisor: Scott Fausti*

Mandatory price reporting systems was implemented in April 2001 to help improve price discovery in the livestock markets. Prior to April 2001, meat packers were not required by law to report transactions and pricing of livestock purchased. Collected data on the National Weekly Grid Premium and Discount Report was analyzed from before the implementation of mandatory price reporting until December 2003 to determine if there was a structural change in the informational content the meat packers were releasing to the Agricultural Marketing News Service (AMS).

Analysis of the data included time series plots, two-sample hypothesis testing, unit root testing, a test for ARCH disturbances, and a time series component model. The tests examined whether the variability in reported grid premium and discount values changed after the implementation of mandatory price reporting. If premium and discount variability changed as a result of mandatory price reporting, then it was hypothesized that there was a structural shift in the information content meat packers were releasing to the AMS.

The empirical evidence suggests that mandatory price reporting did affect the information content of grid premium and discount reports provided to the AMS by meat packers. That is, packer price reporting behavior did change as a result of MPR. Therefore, mandatory price reporting seemed to positively affect the price discovery process.

BEEF PROSPECTS IN KOREA

Morgan Haas

*Research Paper Advisor:
Larry Janssen*

This purpose of this research paper was to synthesize information from the international community to assess export opportunities for beef-related products in the Republic of Korea (South Korea). This paper identifies past (1998 – 2003) and prospective (2004 – 2012) Korean consumption patterns of beef-related products that are supplied by domestic and foreign producers. Therefore, analysis within the paper focuses on how South Korea has approached filling the widening gap between domestic consumption and production trends. International suppliers are further examined to reveal their presence in beef-related product markets and livestock feed markets with special emphasis on the role of the United States.

Three key results from this study are:

1. Evolving consumption trends has featured a movement away from cereal-based diets and a growing demand for food convenience.
2. Beef self-sufficiency of 31-33% from 2004-12 will require Korea to remain heavily dependent on imported beef.
3. Imported feed dependency of 99% will continue to cause Korea to rely almost fully on imported feed inputs for domestic livestock production.

THE FUTURE OF SOYBEAN PRODUCTION: THE MAJOR FOREIGN PRODUCERS & VALUE-ADDED SOYBEAN PRODUCTS

Michael Sutton

*Research Paper Advisors:
Nicole Klein & Gary Taylor*

The purpose of this paper is to make an informed analysis of the future of soybean production from both a supply and a demand perspective. It is intended that these findings will support soybean producers in South Dakota, as well as other interested parties by providing some insight as to the probable direction of the soybean market.

To analyze the future of soybean production from a supply and demand perspective, the paper is organized into two main sections. The first section researches soybean production from a supply perspective. The study was conducted by analyzing a number of issues that affect Brazil and Argentina in the soybean industry: growth in the market, growth potential, setbacks, cost of production, and future direction. Similarly, demand was analyzed by conducting studies on products from the food, fuel, and industrial sectors of soybean production.

The findings in the first part of this paper show both Brazil and Argentina continuing to be major market players in the future of the soybean industry. Additionally, it is likely the US will continue to lose market share over time, due to the rapid expansion of Brazil, and to a lesser degree, Argentina. While both Argentina and Brazil share advantages in yield averages and lower costs of production over the US, the price of exported soybeans remains competitive for the US because of the country's superior infrastructure.

Results are mixed in the analysis of soybean products. Despite the large agricultural supplies of soybeans, a strong entry into the diesel fuel market does not seem feasible for biodiesel; this is due to the large cost advantage that petroleum has over soybeans. In the case of soy products from the food and industrial sectors, it seems that, while there are many different soy products available, there is little in the way of market analyses or scientific studies on these products.

INTRA-INDUSTRY TRADE BETWEEN THE UNITED STATES AND CANADA

Moore Simek

Thesis Advisor: Bashir Qasmi

In this thesis, US–Canada trade patterns were analyzed and the determinants of US–Canada Intra–Industry Trade (IIT) were empirically tested using newer trade theories.

Three hypotheses are empirically tested in this paper. The level of IIT is expected to be relatively high in industries: 1) with high levels of product differentiation, which is tested by proxies such as advertising expenses, value added and capital intensity, 2) typified by having economies of scale, which is tested by the average production cost; and 3) in which intense oligopolistic rivalry is common, tested by proxy such as the world market share of US exports. Data were collected from the Organization of Economic Cooperation and Development (OECD) and the US Economic Census and proxies were developed to test each hypothesis. Three regression procedures were run. Results of the final model specification yielded statistically significant results and provided empirical evidence in support of the three hypotheses.

The findings from this research include: First, the significant result of the product differentiation variable – advertisement expenses only significantly influenced the level of US–Canada IIT in the manufacturing sector. This is consistent with the observation that higher degrees of advertisement spending in manufacturing industries is associated with the higher degree of horizontal product differentiation. Second, the regression results suggest that in the agricultural sector economies of scale is more likely to lead to comparative advantage in production. The greater economies of scale in the agriculture sector result in a higher level of one-way trade, thus a lower level of IIT component of total trade. Third, industries with low capital intensity are more likely to be linked with early stages of the product cycle and a low level of product differentiation. Therefore, a low degree of IIT should be observed in these industries. Fourth, the larger the international market share of US industries, the more international oligopolistic market power US companies have over foreign companies, making it more difficult for Canadian products to enter US markets. This leads to a low level of IIT in these industries.

THE END OF DEUTSCHE MARK: THE BUNDESBANK, THE EURO, AND THE EVOLUTION OF CENTRAL BANKING

Zülbiye Jorgensen

Thesis Advisor: Joe Santos

This thesis examines the extent to which Germany’s decision to adopt the euro currency in 1999 was consistent with the evolution of its monetary policy to that point.

The author evaluates the political economics of monetary integration from the perspective of the Bundesbank and the West German government. She models a modified Taylor Rule to assess the evolution of the Bundesbank’s monetary policy between 1960 and 1998. And she tests for similarities in the de facto monetary policy objectives of the Bundesbank and the European Central Bank (ECB).

The author’s results demonstrate that German monetary policy during the Bretton Woods period differed, in degree but not in approach, from that of the post-Bretton Woods period, when the Deutsche Mark floated freely against the U.S. Dollar. In particular, throughout the period the Bundesbank targeted the real interest rate; however, its real rate target was 3.4% during Bretton Woods and 5.5 % after it. As for her comparison of Bundesbank and ECB monetary policies, the author finds that the ECB has pursued a similar real rate target of 6.0% percent (between 1999 and 2003).

Hence the author concludes that Germany’s adoptions of both the euro and a comprehensive European monetary policy are consistent with the evolution of Bundesbank policy prior to 1999.

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