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The Impact of Crop Insurance on the Iowa Economy

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The Impact of Crop Insurance on the Iowa Economy

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During the last several years, federally subsidized crop insurance has become a major issue in both farm risk management and government farm policy. In previous articles for this publication, various aspects of crop insurance, the effects on Iowa farmers, and the costs to both farmers and the government have been examined. This article takes a step back to look at the impacts of crop insurance on the Iowa economy.

Iowa is in a unique position in that the state's economy can benefit from crop insurance not only through its use by agricultural producers, but also through the employment of people and services by the insurance companies that service federal crop insurance. This article outlines the trends in industry concentration, and the revenues and reimbursements that flow from the crop insurance program. Also examined are the historical – and projected – producer participation in crop insurance, along with the costs and benefits of the program.

CROP INSURANCE FROM THE PRODUCER PERSPECTIVE

Since the early 1980s, the use of federal crop insurance by Iowa producers has increased dramatically. Figure 1 shows the number of acres insured since 1981. Crop insurance participation has risen from an average of around 4 million

acres in the first half of the 1980s to nearly 19 million acres in 1999. Two years, 1989 and 1995, had quite significant increases in crop insurance enrollment. The 1989 increase was in part a reaction to the drought of 1988. The 1995 increase was partially due to the requirement that farm program participants carry crop insurance. Although this requirement was rescinded the next year, subsequent larger premium subsidies and new insurance products have helped to maintain enrollment in the crop insurance program. Projections for the 2000 crop year show Iowa producers again insuring nearly 19 million acres in the federal crop

insurance program. The vast majority of this acreage will be devoted to corn (roughly 9.5 million acres) and soybeans (roughly 9 million acres).

The total premiums for Iowa crop insurance have also grown significantly. Figure 2 displays the total and producer-paid premiums for Iowa crop insurance during the last two decades. The patterns are very similar to the growth in insured acreage. The government provides premium subsidies and premium-free catastrophic coverage to help boost participation in crop insurance, and these subsidies have also grown over time. The premium paid by producers fell from an average of \$6.38 per

Figure 1. Iowa Insured Acres

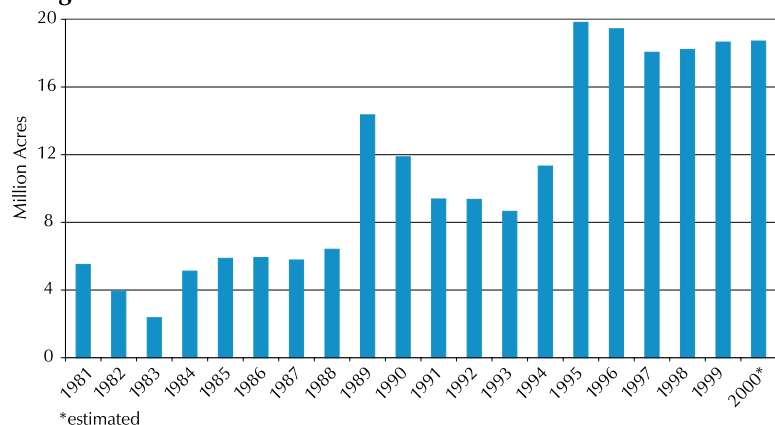
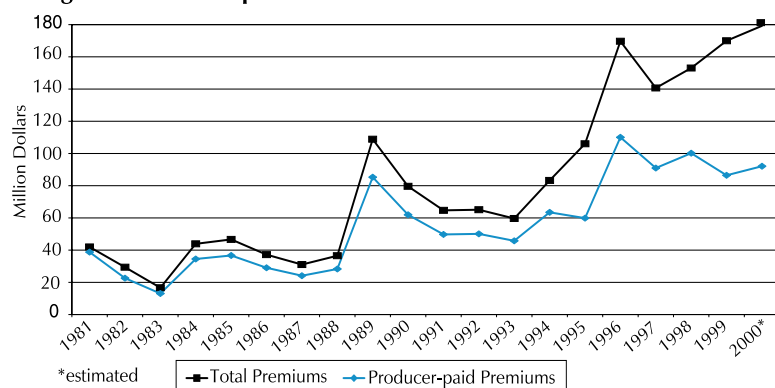


Figure 2. Iowa Crop Insurance Premiums



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acre in the early 1980s to \$4.75 per acre in the late 1990s.

In 1981, Iowa producers paid 92 percent of the total premium for their policies. By 1998, this percentage fell to 65 percent. With the disaster assistance packages in 1998 and 1999, additional subsidies for crop insurance were put in place for the 1999 and 2000 crop years. In 1999, Iowa producers paid 51 percent of the total premium for their policies. Projections for 2000 indicate that Iowa producers will again pay roughly half of the total premium for their coverage.

Table 1 shows the recent performance of crop insurance in Iowa. Protection in force is the amount of liability in the crop insurance policies. This is equal to the amount that would be paid out in indemnities if all of the policies experienced a complete yield loss.

Since 1993, Iowa producers have more than doubled their protection. From 1993 to 1999, Iowa farmers paid \$557 million for crop insurance. During that time, they received \$571 million in indemnity payments. Thus, Iowa farmers have received a net direct benefit from crop insurance of \$14 million. Most of this benefit came in response to the floods of 1993. In that year, Iowa crop insurance participants received more than \$6 of indemnity payments for each dollar of paid premium. Since that time, Iowa crop yields

have been fairly strong, except for the 1995 corn crop, and insurance payouts have been limited.

The projections for 2000 are based on the assumption that insurance performance is actuarially fair (total premiums equal total indemnities) for Iowa. This implies that producers will receive a net benefit from crop insurance equal to the amount of the premium subsidy. Iowa farmers are projected to purchase more than \$3.25 billion of protection with crop insurance. Producer-paid premiums are projected to be \$92 million. The premium subsidy (and the net benefit, total indemnities less producer-paid premiums) is projected to be more than \$87 million. However, a crop disaster, such as drought or floods, would raise this benefit, while good crop weather would lower it or possibly make the direct benefit negative (i.e., a cost).

In addition to the direct cash benefits, crop insurance can provide other benefits. Crop insurance helps producers manage financial risks in several ways. Insurance indemnities can offset financial losses that would reduce the producer's equity and help maintain his or her cash flow requirements in low yield or low revenue years. Farmers can obtain operating loans easier since they have the ability to assign indemnity payments to

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Table 1. Iowa crop insurance figures, 1993-1999

Year	Protection in force	Total premiums	Premium subsidies	Producer-paid premiums	Total indemnities	Net producer payment*
(Million Dollars)						
1993	1,521.45	59.65	13.89	45.76	277.39	231.63
1994	2,060.17	83.26	19.80	63.46	6.14	-57.32
1995	2,626.63	106.03	46.18	59.85	84.95	25.10
1996	3,570.28	169.68	59.62	110.06	51.95	-58.11
1997	3,125.43	140.67	49.70	90.97	14.28	-76.69
1998	3,385.91	153.04	52.85	100.19	84.10	-16.09
1999	3,178.60	169.96	83.52	86.44	52.58	-33.86

*Net producer payment is equal to total indemnities minus producer-paid premiums.

Source: Risk Management Agency's Summary of Business reports

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lenders. These additional benefits, which are operator and farm specific, are difficult to quantify and there is no attempt to do so here.

CROP INSURANCE FROM THE INDUSTRY PERSPECTIVE

Iowa's participation in the crop insurance program is not limited to the farmers who purchase insurance. Private insurance companies participate in the federal crop insurance program by selling and servicing the policies. The federal government then serves as a reinsurer for these companies. Of the 18 companies authorized to provide federally-subsidized crop insurance, five have headquarters in Iowa.

American Agrisure, Inc., is located in Council Bluffs. Rain and Hail L.L.C. (Agri General Insurance Company) and Farm Bureau Mutual Insurance Company (Iowa) have their main offices in West Des Moines, and the city of Des Moines is home to the corporate headquarters of IGF Insurance Company and Farmers Mutual Hail Insurance Company of Iowa. These companies represent a substantial portion of the crop insurance industry, and they employ many Iowans to service the crop insurance policies sold in Iowa and the rest of the nation.

Within the federal crop insurance program, Rain and Hail is the largest crop insurer. American Agrisure is the third largest and IGF is the fourth largest. For Farmers Mutual Hail, the 1999 crop year was the first year they offered federally subsidized crop insurance, but the company has been in the crop hail insurance business for more than a century.

To ascertain the financial impacts from the crop insurance companies, projections of national crop insurance participation, premiums, etc., for the 2000 crop

year have been constructed. The Risk Management Agency, the government agency that oversees crop insurance, does not release individual company data on crop insurance. Therefore, the calculations in this analysis are based on assumptions about the percentage of the crop insurance market controlled by these companies. It is assumed that the five Iowa crop insurance companies capture 45 percent of the crop insurance market (as measured in premium dollars) and the same percentage of the total underwriting gains/losses. The two main areas where

Crop insurance projections for the 2000 crop year indicate that the five Iowa crop insurance companies will sell just over \$1 billion worth of insurance covering nearly \$14 billion of crop value.

the crop insurance companies receive money within the system are reimbursement for administrative and operating expenses, and underwriting costs.

For a company to provide federal crop insurance coverage, it must agree to a standard reinsurance agreement with the federal government. This agreement outlines the provisions for the sale and service of the crop insurance policies and sets the guidelines for company reimbursement.

Crop insurance premiums are targeted to be actuarially fair and, thus, do not contain any charges for the administration or service of the policy. The federal government has set reimbursement rates (to the companies) for administrative and operating expenses and loss adjustment expenses based

on the total premiums of the crop insurance policies sold by each company. The rate varies by the type of policy. For catastrophic coverage (CAT) policies, the private companies receive 11 percent of the total premium that would have been charged (CAT policies are fully subsidized, except for a small fee.).

For the standard buy-up yield insurance policies (APH or MPC), the reimbursement rate is 24.5 percent of total premiums. For the other crop insurance policies (including CRC, RA, GRP, IP, and GRIP), reimbursement rates range from 21 to 24.5 percent of total premiums. These reimbursements are meant to pay the salaries of the employees of the crop insurance companies and the other expenses that accompany servicing the insurance policies. An average reimbursement rate of roughly 20 percent of total premiums across all policies is used in this analysis.

The underwriting gains or losses are the result of the risk-sharing relationship between the insurance companies and the federal government. (The rules governing the calculation of these gains or losses are too detailed to be explored here.) In comparison to the expense reimbursements, underwriting gains or losses can fluctuate tremendously. Factors influencing the underwriting costs include the distribution of losses across insurance companies and the allocation of crop insurance policies (by the companies) across various risk sharing funds with the government.

The historical relationship between the loss ratio (the ratio of indemnities to premiums) and the ratio of overall underwriting gains/losses to premiums for estimating underwriting costs indicate that at a loss ratio of one, underwriting gains are projected to equal nearly 10 percent of total premiums.

Insurance companies can use these gains in a variety of ways: the development of new products, covering additional business expenses, expanding their businesses, reserve for future losses, etc. Also, part of any underwriting gains made by the insurance companies is held in reserve by the government for a period of time to cover possible future underwriting losses.

Crop insurance projections for the 2000 crop year indicate that the five Iowa crop insurance companies will sell just over \$1 billion worth of insurance covering nearly \$14 billion of crop value. They are projected to receive reimbursements of \$200 million for administrative, operating, and loss-adjustment expenses. The

companies are also projected to earn roughly \$100 million in underwriting gains. These figures imply that the Iowa crop insurance companies will receive \$300 million to conduct their business, pay their employees, etc. Not all of this money will reach the Iowa economy since all of the companies have agents, employees, and/or regional offices in other states. And, in addition part of the underwriting gains will be held in reserve. However, assuming 25 percent of these funds are used to pay the salaries of Iowa employees and the services required to conduct business here, an additional \$75 million is added to the Iowa economy through crop insurance.

Thus, (conditional on the assumptions used) crop insurance is

projected to add more than \$160 million to the Iowa economy in the year 2000. More than half of the impact is in the form of direct benefits (insurance payments) to Iowa farmers. The other portion originates from the employment of people and services by the crop insurance companies. Other unquantified impacts on the Iowa economy due to crop insurance would arise from the additional benefits crop insurance can provide producers, such as stronger borrowing power and additional forward contracting capabilities. ♦

Heartland Environmental and Resource Economics Workshop

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The first Heartland Environmental and Resource Economics (HERE) workshop took place September 19-21, 1999, in Ames, Iowa. The purpose was to bring economists working on environmental and resource problems in the Midwest together in an informal setting. The pleasant setting provided an ideal environment for researchers, students, and other professional environmental economists to exchange research ideas, critically assess each other's work, and to encourage collaborative efforts.

Additional goals of the workshop were to identify important public policy issues relevant to environmental and resource economics in the Midwest and provide a forum for graduate students to obtain feedback on their research, while becoming acquainted with the most current work in the field. Funding was provided by a grant from the U.S. Environmental Protection Agency, as well as support from the Center for

Agricultural and Rural Development (CARD) and the Department of Economics at Iowa State University.

V. Kerry Smith, university distinguished professor and director of the Center for Environmental and Resource Economics Policy (CENREP) at North Carolina State University, delivered the keynote address to formally kick off the workshop at a luncheon on Sunday, September 19. Professor Smith's presentation was entitled "Valuation Vignettes," in which he described some of the most interesting theoretical challenges facing environmental economists in the literature on valuing environmental goods.

The Sunday afternoon session topics included valuing outdoor recreation goods, and innovation and economic growth as it affects the environment. A wide variety of research papers were presented on Monday, covering topics related to fisheries, forestry, wetlands, water quality and quantity, and market-based incentives for the control of environmental pollution. Special luncheon speaker, Joseph Herriges, professor of economics at ISU,

presented his research paper, "Controlling for Correlation Across Choice Occasions and Sites in a Repeated Mixed Logit Model of Recreation Demand." A reception at the Brunnier Art Gallery with special music by the Iowa Collegiate Brass Ensemble brought the day to an end.

The workshop concluded with two sessions on Tuesday morning. The first session focused on international and transboundary pollution issues, and the second session looked at environmental issues related to domestic agricultural production.

More than 40 researchers attended the conference and many indicated an enthusiasm for a return visit to next year's workshop. Funding for at least two more workshops is secured, and several conference attendees indicated a possible interest in having their institutions host the workshop in future years. For more information about the HERE workshop, workshop proceedings, the schedule, and pictures of the event, visit the Web site at <http://www.card.iastate.edu/about/heartlandconf/klingconference.html>. ♦