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Crop Insurance: A Good Deal for Taxpayers?

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Last year farmers received $746 million in net crop insurance payments. But the program cost taxpayers approximately $2.5 billion, or $3.31 for each dollar paid out. Since 2001, when the provisions of the Agricultural Risk Protection Act (ARPA) fully came into force, taxpayers have paid $15.1 billion to deliver $8.82 billion to farmers. This imbalance between taxpayer costs and producer benefits has led some to question whether money allocated to crop insurance might be more efficiently used elsewhere in USDA's budget. For example, producers would have received all $15.1 billion if the funds had been sent out in the form of direct payments. Or, this $15.1 billion could support the Conservation Reserve Program for nine years. Or, of course, our national debt would be $15.1 billion smaller now without the program.

A Public-Private Partnership
The U.S. crop insurance program is funded by taxpayers, regulated by USDA's Risk Management Agency (RMA), but sold and serviced by private business. There are economic and historical reasons why the program is neither all public nor all private.

The private sector is good at developing insurance markets when the insured risks have the attribute that the premiums from the many will cover the losses of the few every year. Examples include fire losses, loss of life, and crop damage from hail. In any year, total insurance losses are fairly predictable, so premiums can be set to allow insurance companies to make a predictable rate of return.

The private sector is reluctant to offer insurance when insurance claims vary dramatically from year to year. Examples include floods, hurricanes, and crop losses due to droughts. When these events occur, annual premiums cannot cover losses, and bankruptcy for the insuring company is a real possibility. Most researchers have concluded that a purely private crop insurance market would not exist because the risks are too large. Thus, if we want to have a crop insurance program, then we must have some degree of public sector involvement in providing backstop protection in large-loss years.

From Congress's perspective, the purpose of the crop insurance program is to reduce the need for annual declarations of agricultural disasters, with subsequent emergency spending bills. This objective will only be met if crop insurance is widely available and widely purchased. Beginning in 1980, Congress has passed a series of crop insurance reform packages designed to expand the program, primarily by giving large incentives to the private sector to make insurance widely available and to farmers to buy the product. With ARPA, crop insurance is available to nearly all crops, and the proportion of crop acreage that is insured is approximately 80 percent. But now that Congress has accomplished its objective, are the benefits from the program worth the costs? The last three columns of Table 1 (p. 3) show the three categories of taxpayer costs during the ARPA period. The first three columns show how the program has grown under ARPA.

Producer Premium Subsidies
Farmers must pay for crop insurance, but they pay only a portion of the amount needed to cover insured
losses. Throughout the 1980s and 1990s, farmers were reluctant to buy enough crop insurance to satisfy Congress. So to get farmers to buy more insurance, ARPA dramatically decreased the portion that farmers must pay. Currently, farmers pay about 41 percent of the amount needed to cover insured losses. This large subsidy means that most farmers will get substantially more back from the program than they pay into it.

It is somewhat of a paradox why farmers require such large subsidies to buy a product that substantially reduces their financial risk. But farmers routinely reduce financial risk in a number of other ways. Growing more than a single crop, raising livestock, working off-farm, employing marketing tools, and adopting risk-reducing management practices—all work to reduce financial vulnerability. In addition, for the lowest-risk farmers, the price of crop insurance may not adequately reflect their risk. So one explanation for this paradox is that for many farmers, the amount of remaining financial risk they face may simply be too small to insure unless the price of insurance is low enough. The current 59 percent average subsidy seems to have reduced the price of insurance to the point where most farmers now consider it worthwhile to purchase. This premium subsidy is now so large that the average farmer in the program can expect a rate of return on the producer paid premium of 143 percent.

Administrative and Operating Subsidies

It costs money to deliver crop insurance. Company salaries must be paid. Agent commissions must be paid. Loss claims must be verified and paid. And regulatory requirements must be met. In 1980, Congress decided that delivery of the crop insurance program should be given to the private sector so that the program could be expanded as rapidly as possible. Companies had an incentive to expand sales because they were essentially paid a sales commission. For each dollar of premium they brought in, companies were given a percentage. Currently companies are paid A&O (administrative and operating) subsidies equal to about 21.5 percent of the premium. With $4 billion in premiums, this amounts to approximately $840 million in subsidies.

The A&O percent subsidy has fallen steadily over the last 10 years from 31 percent in 1997. But this does not mean that companies are getting by on less total reimbursement. In 1997, total premiums were $1.7 billion. By 2005, total premiums were $3.95 billion. So A&O subsidies have increased by 60 percent since 1997 even though insured acreage has increased by only 35 percent.

The largest expense covered by A&O is agent commissions. Commissions vary dramatically across regions and states. In years when premiums exceed insurance claims, companies get to keep a portion of the difference, which is known and the premium subsidies received by agents. It is somewhat of a paradox why farmers still need to be convinced by commission-based subsidies that they need to buy crop insurance. The program is now so well known and the premium subsidies are so large that perhaps Congress will finally declare success at meeting its 1980 expansion objective and begin to change the program.

Net Underwriting Gains

Crop insurance companies do not live on A&O subsidies alone. In years in which premiums exceed insurance claims, companies get to keep a portion of the difference, which is known as an underwriting gain. For example, in 2004, premiums exceeded claims by $979 million. Companies were allowed to keep $848 million of this difference. In years in which premiums are less than insurance claims, companies may have to pay a portion of the difference, an underwriting loss. In 2002, for example, claims exceeded premiums by $1.15 billion. Compa-
nies had to pay the government $52 million of this amount.

The 2002 and 2004 examples nicely illustrate why, on average, crop insurance companies generate additional funding for their activities. In years in which underwriting gains are positive, companies get to keep a larger proportion of the gain than they have to pay the government in years in which there are underwriting losses. The mechanism by which net gains and losses are determined is the Standard Reinsurance Agreement (SRA).

Companies generate net gains from the SRA in two ways. The first is by determining which of their customers are most likely to generate claims and then giving the premium from these customers and responsibility for any subsequent losses directly to the government. The average customer retained by a company therefore has a better risk profile than the average customer in the overall pool. Thus, average claims from the retained pool will be lower than the overall average, and the company will tend to make money.

However, the overall risk of loss from retained customers is still too large for companies to be willing to take on all losses. Hence the SRA is designed to have the government take on a portion of company losses when claims exceed premiums in exchange for companies giving the government some of their gains when premiums exceed claims. In essence, in exchange for companies taking on some of the risk of the crop insurance program, the government is allowing companies to generate some gains.

Table 2 summarizes estimates of the potential gains and losses to private crop insurance companies from operation of the current SRA. These estimates are based on loss experience from 1993 to 2005. The table presents four equally likely scenarios regarding crop insurance claims. As shown, we estimate that with $4 billion in premiums, companies should expect to make $435 million per year in net underwriting gains.

The first justification for these gains is to compensate companies for the risk that they retain. Note that in the high-loss scenario, we estimate that private companies would lose an average of $223 million. Companies routinely argue that they need compensation for taking this risk away from the government. The price to taxpayers for companies taking this loss 25 percent of the time is the average gain that the companies receive 75 percent of the time, which amounts to $654 million. Clearly, the price government pays to induce companies to share risk is quite high.

The second justification often given for these gains is to compensate companies for the USDA requirement that all eligible farmers must be offered crop insurance. This means that companies cannot easily choose to whom they can sell insurance. But, the SRA provision that allows companies to transfer premiums and losses from their high-risk customers directly to the government seems like adequate compensation for this requirement.

### Policy Choices

Since 1980 Congress has made expansion of crop insurance a consistent priority. To a large degree, ARPA has finally allowed Congress to achieve this objective. The cost is high, however. Program costs could be reduced if the mechanisms that Congress and USDA have implemented to succeed in this

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**Table 2. Potential gains and losses to crop insurance companies under the Standard Reinsurance Agreement**

<table>
<thead>
<tr>
<th>Insurance Claim Scenario</th>
<th>Loss Ratio on Commercial Fund</th>
<th>Ratio of Net Gain to Total Premium</th>
<th>Net Gain to Companies (million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low</td>
<td>0.53</td>
<td>0.238</td>
<td>953</td>
</tr>
<tr>
<td>Moderately Low</td>
<td>0.72</td>
<td>0.136</td>
<td>546</td>
</tr>
<tr>
<td>Moderately High</td>
<td>0.76</td>
<td>0.115</td>
<td>462</td>
</tr>
<tr>
<td>Very High</td>
<td>1.28</td>
<td>-0.055</td>
<td>-223</td>
</tr>
<tr>
<td>Average</td>
<td>0.82</td>
<td>0.108</td>
<td>435</td>
</tr>
</tbody>
</table>

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expansion are not the most cost-efficient means of maintaining the status quo.

All evidence suggests that high premium subsidies are needed to induce farmers to join the program. The overall cost of these subsidies could be reduced if the structure of premium subsidies was changed to decrease the incentive for farmers to buy the most expensive forms of crop insurance. We previously estimated that $300 million could be saved by such a move.

Significant savings could also be obtained by changing the way that A&O subsidies are determined. Most of these funds are captured by crop insurance agents. But given the growing familiarity of farmers with the program and the currently large market penetration of insurance, do we need to continue to pay large commissions simply to maintain farmers in the program? One alternative is to pay a commission directly to those farmers who sign up for crop insurance through the Internet or directly with RMA. Recent political battles between agents and innovative companies over premium reduction plans that allow farmers to capture a portion of agent commissions indicates how difficult it would be to wean the industry away from the status quo of high commissions.

Considerable savings could also be obtained by making underwriting gains and losses the sole responsibility of the federal government. As illustrated here, the compensation required to induce companies to take on a small amount of risk (relative to the gains that they obtain) is large. We estimate that taxpayers would benefit by an average of $435 million per year if USDA directly underwrote all risks from the crop insurance program. A potential downside from having the government underwrite all risk is that companies would lose the incentive they now have in their retained business to prevent fraud.

Dairy in Argentina and Chile
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ratings in Latin America. The presence of Nestlé and Fonterra in Chile may provide some of the financial resources needed to promote a general increase in production scale and accelerate the rate of technology adoption.

Our research suggests that the reduction of tariffs and elimination of subsidized dairy exports in a new WTO agreement will increase milk production in Argentina and Chile by 7 and 4 percent, respectively, over expected production under current policies. Argentine milk powder exports will increase by more than 20 percent, and cheese exports will rise more than 50 percent. Similar impacts are projected for Chilean whole milk powder and cheese exports. However, the expansion of Argentine dairy trade will be significantly lower if the government does not eliminate its taxes on dairy exports.

International Prospects for U.S. Dairy Industries

These two case studies shed light on U.S. dairy prospects in global markets. The U.S. dairy industry combines most of the sources of competitiveness characterizing its two South American competitors: availability of inexpensive feed and land in many regions suitable for dairy production, high human capital, access to modern technology, an efficient processing sector, excellent transportation and communication infrastructures, low capital cost and credit risk, and a tradition in dairy production. So it is puzzling that the United States does not export more dairy products. The current U.S. dairy program, with its price distortions and border impediments, obscures the international competitiveness of U.S. dairy and provides producers with incentives to cater to domestic rather than to foreign markets. Reducing these domestic incentives would force the U.S. dairy industry to turn outward, where it is well equipped to be internationally competitive in world markets, especially if all countries reform their own distorting policies.