Crop Insurance: Inside or Outside the Farm Bill?

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Crop Insurance: Inside or Outside the Farm Bill?

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U.S. farm programs are once again under scrutiny as Congress gears up to determine what to do with the 2007 farm bill. The new chair of the House Committee on Agriculture, Collin Peterson from Minnesota, has added a new dimension to the discussion with his call for adoption of a standing disaster payment program as a permanent part of the farm bill. His proposal expands this year’s farm bill debate because consideration of the merits of a standing disaster program will inevitably draw in a discussion about what to do with the crop insurance program. After all, as former USDA under secretary J.B. Penn pointed out in 2006 testimony before the House Subcommittee on Agriculture, “One of the overarching goals of the crop insurance program has been the reduction or elimination of ad hoc disaster assistance.” If Congress moves in the opposite direction and passes a permanent disaster program, then a major policy rationale for a subsidized crop insurance program is called into question.

In the past, when ad hoc disaster payments have been authorized, farmers who suffer a yield decline of greater than 35 percent qualify for the payments. The similarity of this disaster coverage to current crop insurance coverage is readily apparent because the most popular crop insurance coverage triggers payments when yield or revenue declines by 30 percent (see the graph above). This similarity raises a number of policy questions. Should Congress continue to subsidize crop insurance coverage if it is going to give every farmer 65 percent disaster assistance coverage? Is taxpayer support for disaster payments more beneficial to farmers than taxpayer support for crop insurance? Would farmers still buy crop insurance if Congress provided free disaster coverage as part of the farm bill? Is the 35 percent loss threshold too high to provide meaningful disaster assistance? If so, could current commodity programs be changed to work with disaster-type assistance that could provide more meaningful coverage?

Disaster Assistance versus Crop Insurance

Although a standing disaster assistance program has the potential to duplicate much of the coverage offered by the crop insurance program, there are some important differences. Many farmers purchase revenue insurance policies rather than yield insurance policies. Thus, crop insurance provides coverage against price changes and yield losses whereas disaster programs typically cover yield declines. In addition, crop insurance programs allow producers to choose their own deductible, whereas past disaster programs have a fixed percent deductible. And most producers buy crop insurance at a price level of 100 percent, which means that losses are compensated at 100 percent of the crop price rather than at 65 percent of price, the level used to calculate disaster payments.

But despite these differences, 65 percent disaster coverage would duplicate a significant portion of the coverage provided by a 70 percent crop insurance policy. That the two programs provide duplicate coverage is well recognized by Congress; consider, for instance, that in years
when a farmer qualifies for both a crop insurance payment and a disaster payment, the disaster payment is capped so that the farmer does not receive compensation that exceeds the value of a normal crop. The fact that producers receive double payments for crop losses is sometimes cited as one of the benefits of having both disaster payments and crop insurance because the combination substantially increases total payments when a loss is severe.

For most farmers, availability of free or subsidized base insurance coverage at a 65 or 70 percent coverage level provides assurance that assistance will be provided when a true disaster strikes their crop. But does it really make sense to use scarce farm bill funding to duplicate coverage that is already available to farmers? An alternative use of funds would be to design a program that would complement rather than duplicate crop insurance coverage. Two examples of complementary programs have been developed by the National Corn Growers Association (NCGA) and American Farmland Trust. Before examining these programs, a basic question that should be addressed is whether the current public/private provision of insurance coverage through the crop insurance program best serves the interests of farmers and taxpayers. A recent study of the distribution of benefits from crop insurance provides some insights.

**Farmer Benefits versus Industry Benefits**

In a previous *Iowa Ag Review* article (Summer 2006), we reported that since 2001, taxpayers have spent $15.1 billion supporting the crop insurance program. Farmers received $8.8 billion of this amount, with the $6.3 billion balance being paid to crop insurance companies and agents to administer the program. We pointed out that large underwriting gains were a major source of industry gains. Proponents of the program criticized our analysis by claiming that the industry takes on a portion of possible losses from crop insurance policies and that the gains they have obtained over the last five years is just compensation for the risk they divert from taxpayers.

Whether taxpayers would be better served taking on this risk themselves is an important question. The answer depends in part on the price that taxpayers pay the industry to take on risk. If the price is too high, then taxpayers would be better served by adopting a standing disaster program or by reforming commodity programs so that payments are triggered by revenue declines rather than yield declines.

Calculating the “price” that taxpayers pay for transferring risk to the crop insurance industry is not a straightforward exercise because all possible risk scenarios must be considered. In an effort to understand how much risk is being absorbed by the industry and the price that taxpayers are paying to lower their exposure, we conducted an analysis of Group Risk Income Protection (GRIP) in Iowa, Illinois, and Indiana for corn and soybeans (see CARD Working Paper 07-WP 440 by Paulson and Babcock, available at www.card.iastate.edu/pubs). In 2006, GRIP was the most popular crop insurance product purchased by Illinois corn farmers. Because GRIP provides coverage against either national price declines or yield declines at the county level, it offers an alternative to current commodity programs that provide coverage only against price declines.

The table on the next page summarizes some results. The average insurance payout if every corn and soybean producer in Iowa, Illinois, and Indiana purchased GRIP would be $47.05/acre. This number assumes that each farmer bought the
maximum coverage (most do), that they bought the Harvest Revenue Option (most do), and that insurance prices are $3.75/bu for corn, $7.00/bu for soybeans, and price volatilities are 27 percent for corn and 20 percent for soybeans.

To obtain the expected payout of $47.05, farmers would have to pay $27.67, giving them an average net benefit of $19.38 per acre. As compensation for taking on risk, insurance companies will receive an expected payment of $11.50/acre. Adding in other administrative costs takes the total industry payment to $23.30/acre. Thus, under GRIP, 55 percent of taxpayer funding flows to the insurance industry, whereas 45 percent flows to farmers. It is also interesting to note that the per acre cost of GRIP exceeds the projected cost of any of the other commodity programs, making crop insurance the costliest farm program currently offered.

### The Price of Transferring Risk to Insurance Companies

Is $11.50 per acre a fair price for the risk that taxpayers “sell” to crop insurance companies? This is a difficult question, but we can gain some insight by thinking about the problem in terms of odds on a gamble and in terms of buying an insurance policy.

### What Are the Odds?

First, let’s look at the costs of risk in terms of a gamble. Note that the $11.50 “price” that taxpayers pay to crop insurance companies is an average, not a certain payment. This average includes years in which companies lose money, thereby absorbing some losses that taxpayers would otherwise cover, as well as years in which companies make money from the program. Possible company losses range from $0 to $61 per acre. The average loss across all years in which the companies lose money is approximately $23 per acre. The range of gains is $0 to $30 per acre, with an average gain in years that companies make money also equal to about $23 per acre. If the chance of a loss year were equal to the chance of a gain year, then this would be an even odds gamble, and over the long run taxpayers and companies would break even. If the odds were even then the average payment to crop insurance companies (that is, the price of risk) would be zero. However, we estimate that the chance of a gain year is three times larger than the chance of a loss year. Thus the odds are tilted in favor of the crop insurance companies. In exchange for taking on an average loss of $23 one year out of four, companies receive $23 three years out of four. That is, the fair value of this bet is $11.50 in favor of the crop insurance companies.

### A Taxpayer Insurance Policy

Another way to think about these gains and losses is that taxpayers buy an insurance policy from crop insurance companies. Each year taxpayers pay insurance companies a premium of $23 per acre. In three years out of four, taxpayers do not collect, so they lose their premium. In one year out of four, taxpayers pay their premium but receive an insurance payment of $46. Dividing the average payment received by the premium collected is called the “loss ratio.” In this case, the expected loss ratio is 0.5, meaning that taxpayers get back only $0.50 for each $1.00 of premium paid. From the company’s viewpoint, a $0.50 average risk brings a $1.00 expected return—a 100 percent rate of return.

To put this rate of return into perspective, an alternative approach would be for the U.S. government to borrow the amount of money needed to cover the losses taken on by the insurance industry and pay an interest rate of 5 percent. This loan could be paid off in years of underwriting gains. In the end, taxpayers could do much better than pay a price of $11.50 per acre.

### Combining Individual Insurance Coverage with Commodity Programs

With the current high commodity prices, the crop insurance program now costs more than any other program, with most of the costs going to provide insurance to the crops that also receive commodity payments: corn, soybeans, wheat, cotton, rice, and grain sorghum. Farm groups in major producing states are asking themselves whether their interests are best served by a program in which more than 50 percent of program costs are siphoned off to pay agents for selling the insurance and to companies for taking on a portion of risk.

Adoption of a standing disaster program or either of two major proposals that farm groups are considering would dramatically change the distribution of benefits from one that favors the crop insurance industry to one that favors farmers. A standing disaster program would
directly transfer a large portion of the risk currently taken on by the crop insurance industry directly to U.S. taxpayers, thereby lowering both underwriting gains and other costs of running the program. A proposal being considered by the NCGA would replace marketing loans and countercyclical payments with a target revenue program at the county level that would also transfer a significant amount of risk away from the crop insurance program. Most of the remaining risk would be transferred with the second part of the NCGA program, which would provide coverage against individual losses. The American Farmland Trust has proposed something similar. Its proposal would create a target revenue program at the national level that would take a significant amount of risk away from the crop insurance program, especially in major production regions. The remaining residual risk would be covered by a modified crop insurance program that would deduct payments made by the national program from individual losses before an insurance claim is settled.

Any of these modifications of current farm policy would significantly shift tax support away from the crop insurance industry to direct support of farm income. If Congress ultimately concludes that

most surplus corn, at 1.4 billion bushels, but Iowa, Minnesota, Indiana, and Nebraska all had over 500 million bushels of surplus corn each.

Corn Utilization and Surpluses for Projected 2008
For 2008, we have assumed that the U.S. produces 12.6 billion bushels, based on trend yields and an increase in U.S. corn planting to around 89 million acres. We held state-level livestock feeding and other corn processing constant at 2004 levels but allowed state-level corn usage for ethanol to shift, reflecting the ongoing construction in the ethanol industry. We assumed that all of the plants listed on the CARD ethanol plants Web page (http://www.card.iastate.edu/research/bio/tools/ethanol.aspx) would be in production during the 2008/09 crop year. Because the plants under construction are concentrated in a few regions of the country, ethanol’s expansion will shift the location of domestic surplus and how much is available. Given our assumptions, nationwide there would be a total of just over 800 million bushels of domestic surplus corn available for export to other countries or to place in stocks. The acreage increase is not enough to offset completely the combination of a return to trend yields and the expansion of ethanol. Fifteen states produce more corn than they use. Wisconsin changes from a net exporter of corn to a net importer. Illinois holds firm at 1.4 billion bushels of surplus corn, but other midwestern states experience sizable drops in surplus corn. Iowa falls from second to third in surplus corn, as the state will have only 400 million bushels left after accounting for in-state uses. Nebraska and Indiana also have significant drops in surplus corn. Nebraska’s domestic surplus corn falls 400 million bushels from 2004 levels; Indiana’s drops 200 million. Corn importing states, such as Kansas and Texas, increase their use of corn to fuel their new ethanol plants as well. The expansion of the ethanol industry could have dramatic effects on the U.S. corn sector and on the other uses for U.S. corn. If sizable declines in surplus corn in Iowa, Nebraska, and Indiana occur, it should translate into higher corn prices within those states. Illinois and Minnesota, with their relatively stable supplies of surplus corn, stand to be the targets for states and countries looking for sources of cheaper corn.◆

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Any of these modifications of current farm policy would significantly shift tax support away from the crop insurance industry to direct support of farm income. If Congress ultimately concludes that its efforts to wean agriculture away from disaster assistance programs through an expanded crop insurance program have failed, then some combination of these three proposed new approaches would seem to offer a viable, cost-effective alternative. Combining bottom-up base coverage at the individual farmer level with top-down coverage of a target revenue program is one alternative. The bottom-up coverage could be in the form of the so-called wrap coverage proposed by American Farmland Trust, a standing disaster program, as proposed by Congressman Peterson, or the NCGA’s individual revenue insurance program.◆