FUTURE RESEARCH NEEDS IN CROP INSURANCE: DISCUSSION

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Although I have used different aspects of federal crop insurance in
previous research efforts, I have never taken the time to look more closely
at the program and analyze its strengths and weaknesses. Therefore, I come
to the task of discussing this paper as somewhat of an outsider to the
subject area. Hopefully this is an advantage, as it allows me to approach
the task without any preconceived notions, although it may also result in an
obvious display of ignorance on some issues.

The first thing that struck me when reading Skees' paper is the enormous
task the federal government has undertaken with the crop insurance program.
Not only must they develop an insurance program that is was actuarily sound
and appealing in Corydon, Iowa as in Condon, Oregon and Cut and Shoot, Texas,
but they must deal with how individuals modify production practices once they
have taken out an insurance policy (i.e., the moral hazard problem). The
moral hazard problem, in particular, seems to be a "black hole" that neither
researchers nor policy makers will ever be able to deal with effectively. If
individuals are willing and able to stage fatal "accidents" to avoid suicide
clauses in life insurance policies, farmers should have no trouble coming up
with less drastic means to increase the probability of collecting on their
crop insurance policy. Besides, how can anyone correctly identify changes in
management that occurred because a crop insurance policy was in effect?
Skees' suggestion that crop growth models be used to prevent this type of
behavior is impractical and almost impossible to defend should its results be
challenged in court. Nevertheless, some research in the area may help in
reducing the seriousness of the moral hazard problem.

One suggestion is that cross-sectional analyses be conducted in counties
across the country to determine how yields vary from farm to farm within a
given year. From this data could be developed "rules of thumb" to guide
administrators in making and carrying out crop insurance policies. For
example, an analysis may reveal a standard deviation for crop yields that is
25 percent of the mean. The insurance underwriters could use this informa-
tion to write a policy that would not pay (or would pay at reduced levels) if
the farm's yield was 50 percent below county average that year.

My observation is that FCIC faces another serious problem created by the
U.S. Congress. All-hazard crop insurance was upgraded and expanded in cover-
age from previous government-sponsored insurance programs as a replacement
for disaster programs. Farmers were told that they would not be protected
from future yield disasters unless they purchased crop insurance. Yet, when
a major disaster (such as a drought) strikes farmers in some part of the
country, Congress has at times appropriated a "special" disaster program to
alleviate the effects of the disaster. This behavior sends a clear signal to
farmers; despite official policy, the government will still rescue them from
a bad disaster whether they buy crop insurance or not. This perception can
only reduce participation in FCI.

I am in agreement with Skees about the positive effects of the govern-
ment's movement toward premiums and yield guarantees based on individual
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farmer's actual historical yields. I, too, feel that this approach will never be entirely adequate because of technological change. About two years ago I was involved in a research effort in which the FLIPSIM simulation model was used to analyze over 200 different situations for a Texas rice and soybean farm. At the time we began the analysis, a new semi-dwarf rice variety (Lemont) had just been released which increased yields by 20 percent over older varieties. Assuming our representative farm adopted this variety, we found that buying crop insurance lowered the farm's probability of survival. The premiums were simply greater than expected returns. Insuring soybeans did increase survival, however. I would expect the government farm program to have a similar effect. As the government increases the percent of acreage to be placed in non-productive use, yield on remaining acreage will probably increase because of more intensive management and because the farmer will tend to include his poorer land in non-productive use (i.e., slippage will occur). The inability of historical yield to account for these impacts will tend to make crop insurance less appealing than it otherwise would be.

Skees argues that raising rates over time has caused an adverse selection process in which only the highest risk farmers have remained in the insurance program. To counter this trend, the government, according to him, should lower rates, thereby attracting the better insurance risks. Further, he declares his belief that demand for crop insurance is elastic. The drop in price, therefore, would be more than offset by increased premium payments.

Although his argument is valid, it ignores a major point; lowering rates may well increase government costs. This is shown graphically in figure 1.
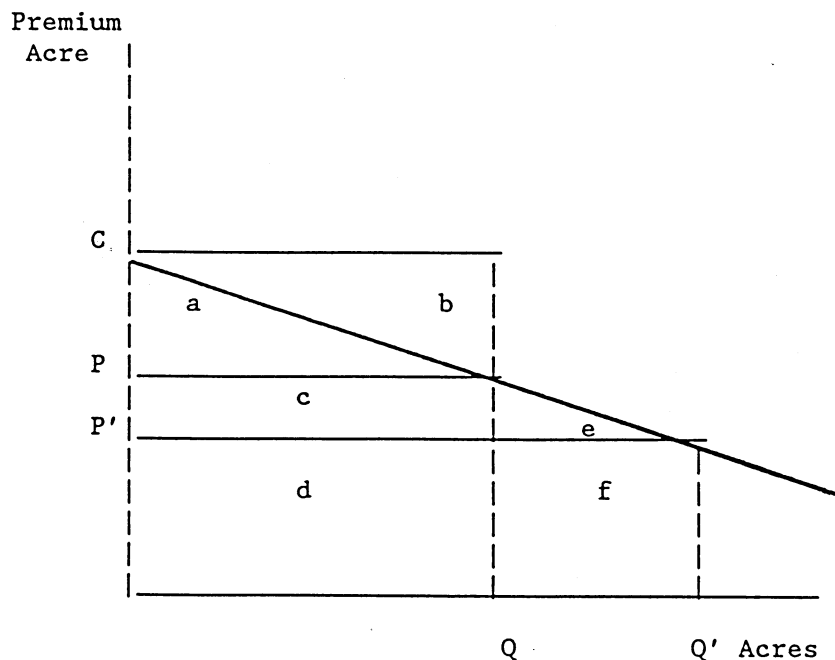

Figure 1. Effect of Lower Premiums on Subsidy Payments.

Under the current scheme, the government charges per acre premium P and has Q acres enrolled. Premium revenues are c + d. The actual per acre cost to insure Q acres is C, resulting in a subsidy of a+b from the government. Lowering the premium to P' would cause an increase in acreage to Q'. An

increase in revenues (f-c) would result, yet indemnity costs on the first Q acres would remain unchanged. The risky farmers would still be in the program, would still file the same claims, and would in fact receive more subsidy from the government (c). The government's cost would increase (c+e). The only way overall government costs would decline is if the increase in profits (not revenues) raised in f more than offset the increased subsidy. This would, of course, be related to how average per acre indemnities change as acres change. Thus information on both the demand curve and the indemnities (or cost) curve is needed to evaluate the impact of reducing premiums.

Another related issue involves the nature of administrative costs as insured acreage increases. If these costs are largely fixed, adding additional acreage may not have much impact on total government outlays. If a significant portion of administrative costs are variable, however, additional acreage will further increase government outlays and increase OMB's demands that subsidies be reduced.

Despite these cost issues, it may be preferable to lower rates and increase participation. The real question I have which I have not seen addressed heretofore deals with the underlying goals of crop insurance. Exactly what is the government trying to accomplish? What participation level are they trying to achieve? What price will they be required to pay for this and lesser participation levels? It seems to me these questions must be addressed if our research in this area is to be useful. I would suggest that (if it hasn't been done already) some general research be conducted to identify costs of enticing farmers to buy crop insurance.

The farm level response discussed by Skees is the correct method to both reduce government costs and increase farmer participation. I agree with the emphasis he has placed on the importance of understanding farm level PDF's in order to better set rates. Those considering farm level research in the area of crop insurance would do well to read and apply the ideas about farm level loss ratios explained here and in Nutt and Skees. In fact, I would like to see the Pfleuger and Barry study redone for several different loss ratios. I believe some lenders, in attempting to protect their investment, may actually put it in greater jeopardy by requiring that the farmer purchase crop insurance.

In summary, I think the Skees paper was an aid to me in understanding the problems and some of the potential areas of research in the crop insurance area. Reading the paper, combined with some reflection on the issues raised within it, has left me with a much more pessimistic view of crop insurance than I had previously. I think the issues raised by Skees are and will continue to be a problem, and may prevent FCI from ever becoming a self-supporting program.

References

Nutt, Perry J. and Jerry R. Skees. "The Critical Nature of Crop Insurance Prices for Financially Stressed Farms." Paper presented at the Southern Meetings of Agricultural Economics, Nashville, Tennessee, February 1987.

Pfleuger, Burton W. and Peter J. Barry. "Crop Insurance and Credit: A Farm Level Simulation Analysis." Agricultural Finance Review 46(1986):1-14.