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Can We Do Better than Crop Insurance? The Case for Farmer Owned Crop Insurance Savings Accounts

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For many decades, the federal government has recognized the extreme and uncontrollable revenue risks associated with agricultural production systems and the need to provide a financial safety net that keeps farmers afloat after catastrophic events and ensures a stable food supply. Beginning with a few select crops in the early 1980s, the U.S. crop insurance program has become a major tool to help producers deal with severe yield shortfalls due to natural disasters such as drought, flood, hail, pests, or extraordinary declines in agricultural commodity prices. In fact, it appears that the next farm bill will rely heavily on an expanded crop insurance program as the primary, and in many cases only, source of income support for U.S. farmers. While this expansion of crop insurance has strong supporters, there are others who argue the program alone may not provide an effective and equitable safety net for all agricultural producers.

In addition, the incremental cost to taxpayers is likely to be substantial. During 2003-2012, the government subsidized about 54% of the indemnities paid to farmers at a cost of \$33.7 billion. In other words, the premiums collected from producers have only been enough to cover half of the program's claims. Furthermore, the government reimbursed nearly \$12 billion on administrative and operation expenses to the private companies in charge of implementing the program. In 2012, the indemnity subsidy was over \$13 billion.

Given the escalating costs of crop insurance to taxpayers and the lingering doubts of whether it can provide an effective and equitable safety net for all producers, the natural question emerges: Is there an alternative safety net

scheme that could be broadly applicable at a lower cost to taxpayers? One possibility, which has been debated off and on during farm bill discussions since the mid-1990s, is a system based on individually owned savings accounts that would serve as a backstop in times of negative revenue shocks. This concept of farmer-owned crop insurance savings accounts (CISA) has recently been analyzed (Colson, Ramirez, and Fu, 2013). In this review, we discuss the shortcomings of the current crop insurance program and how a CISA-based alternative could potentially alleviate some of those problems and deliver a risk management tool for producers at a lower cost to taxpayers.

Crop Insurance Savings Accounts

The proposed CISA system is similar to programs already used in the United States and internationally for health and unemployment insurance, but is designed to mimic the current crop revenue insurance programs with which farmers are now so familiar. Under CISA, producers would be eligible to annually deposit a pre-determined percentage of their before-tax income in an interest-bearing personal savings account. Farmers could then withdraw money from the account when their revenue in a particular year falls below a pre-specified threshold. For example, akin to traditional crop insurance, if a producer's revenue is just 65% of his or her past five-year average and the pre-selected revenue guarantee was 75%, then he or she would be able to withdraw an indemnity equal to the 10% difference. If the farmer, at some point, does not have a sufficient CISA balance to cover a justified withdrawal, the required funds are lent to the account by the overseeing government agency at the same interest rate earned on savings.

To prevent farmers from building up CISA reserves in excess of what is needed to cover even remote catastrophic losses, CISA balances would be capped at some maximum level. For example, the cap could be equal to the selected revenue guarantee—such as 75% of the farmer's past five-year revenue average—which would be sufficient to cover one year of total loss. The benefit of the cap feature is to limit the overall lifetime annual average contributions of producers who are subject to below-average revenue risks. As well, the system would require catch-up contributions for farmers who have a negative account balance. Such contributions would only be made in years when farm revenue exceeds the previous five-year average to avoid burdening producers who recently suffered losses. The benefit of the catch-up contributions is that they help to more rapidly replenish accounts that are in deficit and compel farmers who reveal to be subject to higher risk, on average, to contribute more than those who are not. Just as with Individual Retirement Accounts (IRAs), farmers who permanently cease operations with positive account balances would be able to withdraw their funds without penalty. For producers who have a negative terminal balance and thus still owe money to the overseeing agency, two alternative policy designs are possible, each with its own advantages and disadvantages. One possibility is that the government forgives the debt and suffers a loss on the unpaid funds. Alternatively, repayment could be required via an added tax on earnings, assets, or farmland when it is sold, leased, or transferred to heirs.

Criticism #1 of Crop Insurance - It May Cause Moral Hazard

An open question surrounding crop insurance is whether it leads to moral hazard. That is, farmers with insurance may take on added risks or fail

to take costly actions to reduce risks such as adopting riskier crops, cultivation practices, or cropping patterns. As with all insurance products, moral hazard can lead to higher costs for insurers or, in the case of crop insurance, the taxpayer. The current crop insurance program has two features that should help mitigate moral hazard: (1) available insurance coverage levels are less than 100%, thus farmers must incur losses before making a claim, and (2) when producers suffer a loss, future premium rates increase. The proposed CISA system goes one step further in reducing potential moral hazard problems: if a farmer chooses to take on higher risks, he or she is risking his or her own money, not the insurer's money. By internalizing the full cost of risky choices, CISA may reduce distortionary effects on risk-taking activities. However, as with crop insurance, the CISA program could be subject to abuse through deceptive revenue reporting by farmers. Thus, just as with IRAs and 401(k)s, CISA would require monitoring by an overseeing agency and potential audits, a feature that would incur program costs and might not be popular with farmers.

Criticism #2 of Crop Insurance - It is Difficult to Determine Fair Farmer Premiums

Agricultural yields and prices are highly volatile and the correlation between historic and future outcomes is limited due to weather variability, unforeseen pest problems, frequent changes in technology, and unpredictably shifting commodity markets. As a consequence, it is difficult for both the insurer and the producer to accurately assess the level of risk associated with a particular farm operation. For example, yield insurance premium estimation errors of 40% to 60% might not be unlikely at the farm level (Ramirez, Carpio, and Rejesus, 2011).

Under CISA, the overseeing agency would establish revenue guarantee levels and associated periodical contribution rates with the objective that only a small fraction of producers potentially end their farming careers with a negative account balance. Once a reasonable set of rates is established, the design of the CISA system automatically adjusts individual farmers' required contributions based on their actual farm revenue realizations. For "riskier" farmers, the CISA system automatically adjusts the long-term average contributions to their accounts through the requirement of catch-up payments. Hence, if a farm reveals that it suffers losses of such frequency and severity that the regularly required annual contributions are insufficient, the catch-up provision kicks in and, in effect, raises the producer's required contribution. In the converse case, if a farm reveals through its revenue stream that, in fact, it is a low-risk operation, the CISA balance cap kicks in and, in effect, reduces the farmer's required contribution. However, it is important to note that if the overseeing agency were to mistakenly set CISA contribution rates substantially below what is required to achieve a low percentage of negative terminal account balances, many retiring farmers could face sizable negative residuals that would have to be settled. Furthermore, this potential for a small subset of producers to build significant negative account balances despite the catch-up contributions raises the thorny question of whether a loan limit should be implemented. This would further reduce any potential liability of the U.S. government, but might drive some growers into bankruptcy and put the program in a difficult light politically.

Criticism #3 of Crop Insurance - It Requires Massive Subsidies to Get Farmers to Buy It

It remains a fiscal dilemma that massive premium studies are still required to achieve high participation rates in the program. The relevant question is why must the government subsidize in excess of 50% of the annual premiums to get a large percentage of producers to purchase crop insurance? While the answer is inconclusive, there is evidence that farmers feel crop insurance premiums are too expensive and would not purchase it without substantial subsidies. If a producer only purchases coverage when he or she thinks that the premium quoted by the insurer is fair or better, substantial subsidies are needed to achieve high participation rates.

The proposed CISA system eliminates the need for annual premium subsidies to induce farmers to purchase a mispriced insurance plan. Given the tax-free nature of the CISA contributions—crop insurance payments may also be tax-deductible—and that farmers keep any positive balances upon retirement, they have a financial incentive to participate in the program. Compared to the alternative of no insurance, farmers could be better off by participating in CISA. Under CISA, however, producers must cover losses out of their account balance which can cause their total wealth to be more volatile than with crop insurance. Some farmers, particularly those with smaller operations, could prefer the certainty of crop insurance to the potentially higher terminal wealth but greater volatility of CISA. As well, beginning farmers who are not well-capitalized and are renting cropland may have cash-flow difficulties under CISA, particularly if they suffer major losses early in their farming careers. Additional support for them to build up CISA balances may be required at an additional expense to taxpayers.

Criticism #4 of Crop Insurance - It May Systematically Favor Certain Crops and Regions

An unresolved issue that has affected the U.S. crop insurance program for many years has been complaints from farmers, producer organizations, and legislators about the rating structure not being fair across crops, cropping systems, and geographical regions. Research has shown that the geographic and systematic differences in loss patterns observed are predictable to a degree, and there are significant aspects of the rating methodologies used historically that bring about those patterns (Woodard et al., 2012). As a result, there has been a lot of discontent about the program delivering substantial benefits to some participating producers while being ineffective in providing a safety net for others. This debate was exacerbated during the recent farm bill negotiations where direct payments were proposed to be replaced by expanding the role and breadth of crop insurance and commodity title risk management programs.

In its current form, crop insurance gives farmers the choice of coverage levels ranging from 50% to 85% of their recent historical averages, and the premiums corresponding to the lower coverage levels are more heavily subsidized than those for the higher levels. Nevertheless, while a low (60%) coverage level could provide plenty of net revenue risk protection for a particular cropping system, even the highest available coverage (85%) might not be enough to protect against what would be a severe financial loss in another one. In other words, a 40% gross revenue loss might not be unlikely and could be financially tolerable in one system, but a 15% decline could be rare and potentially devastating in another.

The proposed CISA would alleviate these “favoritism” complaints since there are no government

subsidies involved (except implicit tax subsidies) and the money producers are paying into their accounts actually belongs to them. However, while the cap on account balances would help ameliorate this problem, there could be potential disparities in terms of the tax-free saving benefits growers receive. Furthermore, because different contribution rates and revenue guarantee schedules would still have to be set for the various cropping systems and areas, there is the potential that the percentage of farmers ending with a negative CISA balance could differ across regions. This would be more of an issue if the government were to forgive any negative terminal balances.

Criticism #5 of Crop Insurance - It is Perceived by Many Farmers to be Unfairly Expensive

Although the cost of crop insurance is a recurring complaint among farmers, due to the high level of subsidization it is unlikely many farmers are paying more than their actuarially fair premium. However, premium estimation inaccuracy does result in an unequal distribution of subsidies across participating producers. Under moderate levels of uncertainty about actuarially fair premiums, it is probable that a producer could receive more than twice as much premium payment support from the government as another “identical” operator (Colson, Ramirez, and Fu, 2013). For example, assume that the actuarially fair premium is \$20/acre but the insurer estimates it at \$14/acre for one and \$26/acre for the other. At a 50% level of subsidization, these two farmers would be offered rates of \$7/acre and \$13/acre, respectively. Because of the high subsidization, both are likely to conclude that this is a good deal and participate in the program. However, although they have an identical risk profile, one would receive a subsidy that is nearly twice as high.

In short, even if crop insurance is conceived as an agricultural subsidy program, because of premium estimation inaccuracy, it is randomly, and, in some cases, systematically inequitable in the way it distributes the intended subsidies. Regardless of the merit of the criticism of crop insurance being too expensive for some, the proposed CISA system has a distinct advantage: farmers keep their own money. If it turns out the contribution is more than what was necessary to cover farm losses, then farmers actually benefit through the pre-tax nature and the interest earned on the CISA contributions.

CISA Advantages and Challenges

At first glance, it appears that the proposed CISA system could alleviate many of the commonly cited criticisms of crop insurance. In particular, CISA may be subject to less moral hazard and adverse selection problems and not require substantial external subsidies to induce broad participation. Also, because farm-level risk would not have to be accurately priced and sliding subsidy rates would not have to be set for increasing coverage levels, CISAs should be easier to generalize and apply to production systems for which designing widely appealing crop insurance programs has been a challenge. In addition, since there would be no major recurring subsidies involved, favoring certain crops and regions with higher subsidies would be less of an issue.

Finally, because of the tax savings on the contributions, the individual ownership of the accounts, the interest earned on the balances, and the cap feature, producers should be less likely to complain if they feel they are over-contributing during a certain time period.

However, a number of challenges would need to be addressed in order to implement CISA. The program would still require setting contribution rates and revenue guarantee schedules for different cropping regions and systems, and a credible monitoring agency would need to be established. To assist beginning farmers who might suffer losses early in their careers, it may be necessary to help them build up some CISA reserves at the taxpayers' expense via subsidized loans. Furthermore, there are two potentially unpopular design issues: (1) how negative CISA balances would be dealt with once a farmer retires, and (2) whether a limit should be placed on the dollar amount of loans available to farmers. Also it is unknown how those who currently participate in crop insurance would view an alternative program that could increase the volatility of their total asset/liability base through time. Finally, there is a reasonable concern about whether there would be political will to avoid reverting to ad hoc disaster payments if many CISA balances turn substantially negative during an extended period of time.

For More Information:

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