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## TWO CHANGES TO CROP INSURANCE TO IMPROVE EQUITY AND EFFICIENCY

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### INTRODUCTION

The federal crop insurance program is ripe for reform: its program objectives can be met at much lower cost; its subsidies flow without limit to high-income farmers and it distorts farmers' insurance decisions. These program attributes are increasingly well-known to economists, other policy analysts and members of Congress. However, advocates of reform have had limited success because the program has strong political support from farm groups and the insurance industry.

Farm groups support the program because farmers obtain valuable insurance coverage at a small fraction of what it costs to deliver. For example, in 2017, Iowa and Illinois corn and soybean farmers paid insurance premiums that covered only 35 percent of expected program costs.<sup>1</sup> The insurance industry supports the program because of the large subsidies it receives from taxpayers. Over the last ten years, payments

1. Expected program costs equal expected insurance claims paid to farmers, plus program delivery costs.

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to the insurance industry have totaled about \$28 billion, which amounts to 34 percent of insurance claims paid out to farmers over the same time period. In contrast, crop insurers receive cost reimbursement equal to about 10 percent of insurance claims for crop insurance to Canadian farmers.

Over the years, Congress has analyzed, debated and voted on numerous reform proposals, but very few have passed. In 2015, for example, Congress voted down two proposals by Sen. Jeff Flake (R-Ariz.): one that would have reduced premium subsidies to farmers who have an adjusted gross income (AGI) of more than \$750,000 and another that would have eliminated the extra premium subsidies that producers obtain by choosing crop insurance with the so-called "Harvest Price Option" (HPO). Another proposal by Sen. Jeanne Shaheen (D-N.H.) would have placed a \$50,000 cap on subsidies that a farmer can receive in a given year, but it was also voted down. The one recent reform to the program that actually passed Congress on Oct. 28, 2015, was a small reduction in payments to insurance companies. But the reductions never took effect, because Congress reversed itself less than two months later.

As Congress debates the next farm bill, two proposals for crop insurance reform seem to be gaining traction. The first is to eliminate the additional premium subsidies that flow to farmers when they choose to insure their crops with HPO revenue insurance. The second is to reduce premium subsidies to wealthy farmers by means-testing crop insurance subsidies. An understanding of the impact of these two proposals sheds light on how the complicated crop insurance program works and why the economic arguments used by crop insurance advocates do not stand up to scrutiny.

### MEANS-TESTING CROP INSURANCE SUBSIDIES

A means test is designed to determine whether an individual or family has the financial means to do without assistance from a government program. Most, but not all, government support programs have them, including federal nutrition,

Medicaid and housing programs. Financial support programs that do not have means tests include Medicare and Social Security, although Social Security contributions and payments are capped.

Congress first applied a means test to farm program payments in 2002. In addition, payment limitations have been in place since 1970.<sup>2</sup> The 2002 means test limited eligibility for farm payments to producers with a three-year average AGI of less than \$2.5 million (\$833,333 per-year) unless 75 percent of their income was earned from farming. Current AGI limits for commodity payments are \$900,000 annually over a three-year average. However, producers who file joint tax returns can allocate joint income as if separate returns were filed, which significantly reduces the number of producers who are ineligible. In contrast, crop insurance subsidies face no means tests at all.

The argument in favor of means-testing farm subsidies is straightforward. Farmers receive subsidies not because they solve a social or economic problem, but rather because farmers have sufficient political influence to lobby for them. The main policy objective served by farm subsidies is to redistribute wealth from taxpayers to farmers. Thus, the least Congress could do in the service of fairness would be to cut off subsidies to high-income farmers. Indeed, there are currently AGI limits for most farm program payments, which suggests that such an argument has resonated with many members of Congress. To date, however, attempts to means-test crop insurance subsidies have not been successful. Before examining industry arguments against the practice, it is important to understand how means-testing crop insurance subsidies would affect farmers.

## HOW CROP INSURANCE IS SUBSIDIZED

There are two types of subsidies that reduce the cost farmers would otherwise pay to obtain crop insurance coverage. The first is the government subsidy paid to crop insurance companies to cover the cost of providing the insurance. In unsubsidized insurance markets, the insured pays a premium that covers both the administrative costs to deliver the insurance (including commissions to insurance agents and profit for the insurance company) and the anticipated cost of future claims. In contrast, the federal government reimburses crop insurers for their administrative costs so that these costs are not reflected in the premiums. The second subsidy is that U.S. farmers pay less than half of what is needed to cover future insurance claims. It is this second portion of the premium that would be limited by means-testing.

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2. See, e.g., Randy Schnepf and Megan Stubbs, *U.S. Farm Program Eligibility and Payment Limits*, Congressional Research Service, Jan. 17, 2017. <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R44739.pdf>.

As an example, in Sumner County, Kansas, about 300,000 acres of wheat were insured in 2017.<sup>3</sup> The U.S. Department of Agriculture (USDA) estimates that the total cost to insure this crop is \$23 per-acre, which includes both administrative costs (\$5 per-acre) and anticipated insurance claims (\$18 per-acre).<sup>4</sup> On average, farmers in Sumner County paid about \$7 per-acre for their insurance, or about 30 percent of total costs and 39 percent of the amount they should get back from the program in insurance claims.

In 2013, the U.S. Senate passed an amendment to the farm bill that would have reduced premium subsidies by 15 percentage points for farmers with an average AGI that exceeds \$750,000.<sup>5</sup> According to USDA researchers Ron L. Durst and Robert Williams, less than 1 percent of farmers would be affected by this limit.<sup>6</sup> A reduction of 15 percentage points would mean that a high-income Sumner County wheat farmer would pay \$8.28 instead of \$7 per-acre for crop insurance that pays out an average of \$18 per-acre.

In 2017, there were 1,370 wheat policies sold in Sumner County.<sup>7</sup> If 0.5 percent of these policies were purchased by producers with AGIs in excess of \$750,000, then seven Sumner County farmers would have been asked to pay \$1.28 per-acre more for crop insurance if Congress had limited crop insurance subsidies in the 2014 farm bill. If these 0.5 percent grew an average of 1,000 acres of wheat (the average policy in Sumner County covered 223 acres), then adoption of the AGI limit would have required these seven farmers to pay \$8,128 each for their coverage, rather than \$7,000.

Lower-than-\$750,000 AGI limits also have been proposed for both farm payments and crop insurance subsidies. Some proposals would eliminate crop insurance subsidies completely if the recipient's income is too high.<sup>8</sup> If premium subsidies were eliminated completely for high-income Sumner County farmers, they would be charged \$18 per-acre for crop insurance that would pay them, on average, \$18 per-acre.

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3. Risk Management Agency, "Summary of Business database," U.S. Dept. of Agriculture, 2018. <https://prodwebnlb.rma.usda.gov/apps/SummaryOfBusiness>.

4. This average per-acre cost reflects the insurance type and amount of insurance that Sumner County wheat farmers chose in 2017 and a 28% total administrative cost.

5. Amendment 953 to "Agricultural Reform, Food, and Jobs Act of 2013" passed on a vote of 59 -33. <https://www.congress.gov/amendment/113th-congress/senate-amendment/953/text>.

6. Ron R. Durst and Robert Williams, "Farm Bill Income Cap for Program Payment Eligibility Affects Few Farms," U.S. Dept. of Agriculture Economic Research Service, Aug. 1, 2016.

7. "Summary of Business database." <https://prodwebnlb.rma.usda.gov/apps/SummaryOfBusiness>.

8. For example, in November 2017, Senators Flake and Shaheen proposed to eliminate premium subsidies for farmers with average AGIs that exceed \$250,000.

## THE CROP INSURANCE INDUSTRY'S POSITION

The crop insurance industry is adamantly opposed to limiting premium subsidies. They argue that high-income farmers are high-acreage farmers, and high-acreage farmers are low-risk farmers.<sup>9</sup> According to them, to limit premium subsidies to high-income farmers would cause them to drop out of the program. The remaining farmers in the crop insurance pool, then, would be higher-risk farmers who would need to be charged relatively higher premiums.

This argument rests upon a number of assumptions, starting with the assertion that high-income farmers are high-acreage farmers. To the extent that high-income farmers earn most of their income from crops and not from livestock or nonfarm activities, this is true. Further, the assertion that high-acreage farms are low-risk farms is true if farmed acres are spread across one or more counties and all acres within each county are insured in a single insurance unit. However, the assumption that these high-acreage farmers will leave the program if their premium subsidies are reduced is only true if the USDA's Risk Management Agency (RMA) significantly overestimates insurance claims that will be paid to high-income farmers.<sup>10</sup>

Suppose, for example, that the RMA uses a risk model that incorrectly estimates that a high-income wheat farmer in Sumner County will be paid insurance losses that average \$18 per-acre. Further suppose that the high-income farmer knows that he or she will only submit future insurance claims that average \$8 per-acre. With existing premium subsidies, this farmer will buy insurance because it costs only \$7 per-acre. That is, the farmer buys insurance because it costs less than the expected return from the program. Now suppose that AGI limits reduce this high-income farmer's premium subsidy by 15 percentage points, so that crop insurance now costs \$8.28. If the only consideration of farmers is getting paid more in claims than what they pay in premiums, then this farmer will drop out of the program, because paying \$8.28 to get back \$8 is a losing proposition.

Supporters of crop insurance will not explicitly argue that farmers only buy crop insurance if they can make money from the program. But this assumption is implicit in their argument that farmers will drop out of the program if premium subsidies are limited.

The final assertion that premiums will inevitably increase if high-income farmers leave the crop insurance program also relies on the assumption that the RMA sets high-income farmer premiums too high. If the premiums were not set too

high, then high-income farmers in the program would not be subsidizing the rest of farmers who buy crop insurance. With no cross-subsidization, the departure of high-income farmers from the program would have no impact on farmers who continue to buy crop insurance.

## IMPACTS OF LIMITING PREMIUM SUBSIDIES

Most economists who study the crop insurance program would agree with the industry's assertion that high-income farmers would leave the program if premium subsidies were eliminated completely. The only reason most farmers—high and low-income—are even in the program is that they expect to be paid more in insurance claims than they pay in insurance premiums. This view of the program as an income-generating program—rather than a risk-management program—is why high program participation rates can only be accomplished with high premium subsidies. Elimination of premium subsidies for high-income farmers would cause them to drop out of the program, just as elimination of premium subsidies to low-income or medium-income farmers would cause them to drop out.

A reduction, rather than elimination of premium subsidies for high-income farmers would cause a relatively small number of farmers to drop out of the program. These would be farmers who believe their future insurance claims are far lower than estimated by the RMA's risk models.

The industry argument that high-income farmers dropping out of the program would cause crop insurance premiums to increase has credibility only if one believes that the premium models used by the RMA systematically and dramatically overestimate risk to high-income farmers in all parts of the country. Given the scrutiny that crop insurance premiums have been under for the last 20 years by top actuaries and agricultural economists, such an assertion has little empirical basis. If it were true, then perhaps the crop insurance industry could share their knowledge with the RMA to adjust premiums downward for high-income farmers and increase them for all others.

Congress can decide whether means-testing crop insurance premium subsidies is good public policy without worrying about the impact that an exodus of high-income farmers would have on premiums paid by farmers who remain in the program. The real impact of high-income farmers leaving the program would be a reduction in program costs, in part because of a reduction in payments to crop insurance companies, which is a more straightforward reason why the industry is so opposed to means-testing.

In any case, it is interesting that the crop insurance industry agrees with economists who argue that participation in the crop insurance program is primarily motivated by premium

9. See, for example, "What would means testing do to America's crop insurance system?", National Crop Insurance Services, 2018. <https://cropinsuranceinamerica.org/what-would-means-testing-do-to-americas-crop-insurance-system>.

10. All crop insurance companies charge the same premiums that are approved and often determined by the RMA.

subsidies. Congress should build on this point of agreement to redesign the subsidy structure so that it meets congressional program participation goals at minimum cost.

## ELIMINATING SUBSIDIES FOR HPO

In November 2017, Sens. Flake and Shaheen and Rep. John Duncan (R-Tenn.) proposed to eliminate the additional premium subsidies that flow to farmers when they choose “HPO” revenue insurance. The Congressional Budget Office (CBO) estimated that this one change would reduce the ten-year cost of the crop insurance program from \$80 billion to about \$61 billion.<sup>11</sup> That such a simple step could lead to an almost 25 percent reduction in program costs is either evidence of large program inefficiencies or that the proposal would significantly jeopardize the program’s viability. However, in order to assess whether the proposal should be adopted by Congress, a bit of history about HPO is necessary.

### History of HPO

Before the mid-1990s, the only type of insurance available under the federal crop insurance program was yield insurance. Under yield insurance, if harvested yields fall below a producer’s yield guarantee, the farmer receives compensation with lost bushels valued at a crop insurance price determined prior to planting. In the early 1980s, a crop insurance industry innovator, Steve Griffin, came up with an add-on to basic yield insurance that valued lost bushels at the higher of the crop insurance price or the harvest-time market price. This add-on was called replacement-cost coverage, in recognition that farmers who needed to replace lost bushels after harvest would have to pay market price for them.

Farmers who need to buy lost bushels at harvest are those who normally use their own production to feed their livestock or those who forward-contract more bushels than they ultimately produce. Farmers who forward-contract their production lock in a price. If their production falls short of what they have forward-contracted, they will need to enter the market to buy enough bushels to fulfill their delivery obligation. If the harvest price is higher than the locked-in forward price, then farmers must buy bushels at the high harvest price and deliver them at the lower locked-in price. Replacement-cost coverage provides these two types of producers with extra compensation to cover the additional cost to acquire bushels at the higher market price at harvest.

This replacement-cost coverage was offered by a private crop insurance company as an add-on to federal yield insurance. Producers who purchased it paid a premium that covered administrative costs, plus the anticipated cost of any extra insurance claims. As with any private-sector insurance product, producers paid more for the add-on coverage than they anticipated getting back in insurance claims. The only producers who would purchase this replacement-cost coverage are those who are highly motivated to cover the extra financial risk that occurs when the harvest price increases above the crop insurance price. Farmers who did not forward-contract or feed their own production had no motivation to buy replacement-cost coverage because they were sellers rather than buyers at harvest time.

Fast-forward to the mid-1990s when revenue insurance products were first introduced.<sup>12</sup> One of the available products was Revenue Assurance (RA). Under RA, farmers chose a revenue guarantee rather than a yield guarantee. The revenue guarantee was based on a farmer’s anticipated yield and the expected harvest-time price before planting. If harvest-time revenue (yield times harvest price) fell below the revenue guarantee, then the dollar shortfall was paid out as an insurance claim. The innovation of RA was that it recognized that farmers paid their bills in dollars, not bushels. If harvest revenue was low—whether it was caused by a low harvest price, a low yield or both—then an insurance claim was paid.

At the same time that RA was developed, a competing product called Crop Revenue Coverage (CRC) emerged. CRC offered the same revenue insurance coverage as RA if harvest prices fell below springtime projected levels. However, if harvest prices increased above the projected harvest-time price, then CRC provided replacement-cost coverage. In essence, CRC coverage changed from revenue insurance to yield insurance, where lost bushels are compensated at the harvest price.

When the Risk Management Agency approved RA and CRC for sale, it capped the amount of premium subsidy that farmers could receive to the same level as if they had purchased yield insurance. In most situations, CRC was much more expensive than RA and yield insurance because it offered additional coverage. Farmers who purchased CRC therefore had to pay the full additional cost of the extra coverage (other than administrative costs) because of the capped premium subsidies. It is highly likely that most CRC buyers were those who faced additional financial risk when harvest prices increased, because they were not likely to get back more from the additional coverage than they paid for it.

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11. For ten-year program costs, see “Options to Reduce the Budgetary Costs of the Federal Crop Insurance Program,” Congressional Budget Office, December 2017. <https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/53375-federal-cropinsuranceprogram.pdf>. The CBO score can be found at [https://www.flake.senate.gov/public/\\_cache/files/b59b04b9-642d-4180-8617-1b8004f968f9/harvest-price-subsidy-prohibition-cbo-score.pdf](https://www.flake.senate.gov/public/_cache/files/b59b04b9-642d-4180-8617-1b8004f968f9/harvest-price-subsidy-prohibition-cbo-score.pdf).

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12. Point of disclosure: the author developed some of the first revenue insurance products and continues to be involved in product development, including some that offer HPO coverage.

In 2000, Congress passed the Agricultural Risk Protection Act (ARPA), which eliminated the cap on premium subsidies. Suddenly, farmers found that what used to cost them \$10 for \$10 of replacement-cost coverage now only cost \$5. As a result, sales of CRC and RA-HPO skyrocketed.<sup>13</sup>

As of 2017, 195 million acres were insured with revenue insurance with HPO, 25 million acres were insured with yield insurance and only 1.3 million acres were insured with revenue insurance without HPO.<sup>14</sup> The three insurance products are now called Revenue Protection (RP), Yield Protection (YP) and Revenue Protection with the Harvest Price Exclusion (RP-HPE), respectively. The fact that replacement coverage is now the default form of revenue insurance reflects the ARPA extension of premium subsidies to replacement-cost coverage.

### Impact on Cost Savings

The proposal to eliminate the extra premium subsidies that producers receive when they choose RP instead of RP-HPE would mean that only those producers who highly value the additional coverage would buy it. These are those who routinely forward-contract or feed their own grain production to their livestock. All other producers would likely purchase RP-HPE or YP.

The RMA estimates that insurance claims from RP are approximately 25 to 30 percent higher than with RP-HPE.<sup>15</sup> If premium subsidies were capped at levels that would be available for RP-HPE, and most farmers responded by moving from RP to RP-HPE, then premiums would drop by between 25 and 30 percent. RP premium makes up fully 75 percent of total premium in the crop insurance program, so capping subsidies would likely result in total crop insurance premiums dropping by up to 22.5 percent.<sup>16</sup> The cost of the crop insurance program is largely proportionate to premium. This explains why the CBO estimates that eliminating the subsidy for replacement-cost coverage would save so much money.

In the aggregate, a cutback in premium and premium subsidies would reduce the amount redistributed from taxpayers to farmers. For example, a 22.5 percent reduction in premium would reduce CBO's estimate of the cost of premium subsi-

dies to farmers by \$13.9 billion over 10 years.<sup>17</sup> But this one change of eliminating subsidies for replacement-cost coverage would not cause farmers to leave the program because they could still buy highly subsidized revenue insurance, yield insurance or replacement-cost coverage—albeit with their own money. They merely would not be able to buy replacement-cost coverage with taxpayer funds. Participation rates in the program would not be affected.

The remaining savings would come from reduced payments to crop insurance companies. Such payments are proportionate to premium: when premium drops, so too will the payments. Given their history of opposing any cut in payments, there is no doubt that the crop insurance industry and their supporters in Congress will oppose this proposal by arguing that private crop insurers will drop out of the program because of inadequate payments.

Over the ten-year period from 2008 to 2017, the average, per-policy, inflation-adjusted payment to crop insurers was \$206.<sup>18</sup> In the two years before the 2007 run-up in crop prices, which increased both premiums and payments to crop insurers, the average per-policy payment was \$147.<sup>19</sup> If 30 percent had been cut from the 2008 to 2017 payments, the companies would have received \$144 per policy, which is almost exactly equal to what they were receiving to deliver crop insurance (in real dollars) in 2005 and 2006.<sup>20</sup> If \$147 per policy was adequate compensation to deliver crop insurance in 2005, then \$144 per policy would seem adequate today, particularly in light of all the advances we have seen in information technology.<sup>21</sup>

### CONCLUSION

The primary stated objective of the U.S. crop insurance program is to push participation rates sufficiently high that Congress does not need to make ad hoc disaster payments to agriculture. The only way to induce enough farmers to buy crop insurance to meet this objective is to subsidize it. Given such a clear objective, the key policy decision should be how to most efficiently subsidize crop insurance so that program costs are minimized.

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13. In 2002, replacement-cost coverage was added as an option to RA policies and given the HPO acronym, which stands for Harvest Price Option.

14. "Summary of Business database." <https://prodwebnlb.rma.usda.gov/apps/SummaryOfBusiness>.

15. Calculated by author using examples from the Risk Management Agency's premium calculator at <https://ewebapp.rma.usda.gov/apps/costestimator>.

16. RP premium calculated from data obtained from "Summary of Business database." <https://prodwebnlb.rma.usda.gov/apps/SummaryOfBusiness>. The estimate of 22.5 percent is 75 percent multiplied by 30 percent.

17. Calculated from the CBO's ten-year cost projections, which are available at <https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/53375-federalcropinsuranceprogram.pdf>.

18. Calculated by the author using data from the Risk Management Agency's Reinsurance Reports available at <https://www.rma.usda.gov/tools/reinsurance.html> and inflation data obtained from the St. Louis Federal Reserve at <https://fred.stlouisfed.org/tags/series?t=inflation>.

19. Ibid.

20. Ibid.

21. In current dollars, a 30% cut in average compensation would mean that companies would receive an average of about \$181 per policy.



A starting point for this discussion should be to acknowledge that, while the current system of subsidies does induce enough farmers into the program, it does so at too high a cost. This is because the current system of making subsidies proportionate to premium induces farmers to buy RP, which is the most expensive kind of insurance. However, to meet the program enrollment objective does not require farmers to buy the most expensive kind of insurance. Indeed, it could be equally met if farmers purchased YP or RP-HPE—both of which provide farmers with adequate tools to manage their annual crop risk at much lower cost than the current system.

A simple way to improve program efficiency would be to cap premium subsidies at the level a farmer can receive if they buy YP or RP-HPE, while still giving farmers the flexibility to spend their own dollars on the extra coverage offered by RP. Few, if any, farmers would leave the program under this scheme. Most farmers would respond by buying YP or RP-HPE and program costs would fall dramatically.

Limiting the subsidies that flow to high-income farmers is a matter of equity. There are numerous options to make the program more equitable. Congress could make high-income farmers ineligible for crop insurance subsidies. This would drive high-income farmers out of the program. If the resulting reduction in program acreage was too severe, then a mere reduction in the subsidy percentage for high-income farmers would keep them in the program and lead to modest savings in costs.

Another option is to place a cap on the total amount any one farmer could receive in premium subsidies. This would make the crop insurance program similar to other farm subsidy programs. This would not cause farmers to leave the program, but it would cause them to buy less expensive insurance.

The biggest hurdle to making the crop insurance program more efficient and equitable is opposition from the crop insurance industry. Any reduction in program acreage or a move by farmers away from RP would reduce industry subsidies. Under the guise of fighting to protect American farmers and the U.S. food supply, crop insurers, agents and their supporters in Congress have successfully fought cuts to their subsidies. Reform advocates may achieve more success in this year's farm bill by showing that proposals to reform premium subsidies by means-testing them and not extending them to HPO insurance will not impact program participation rates. Adoption of these two proposals would cut taxpayer costs and increase equity without sacrificing program objectives.

## ABOUT THE AUTHOR

**Bruce Babcock** is an agricultural economist and a professor in the School of Public Policy at the University of California at Riverside. Professor Babcock has published extensively on agricultural policy issues including analysis of crop insurance, commodity programs, trade and biofuels. His research has been used extensively by industry groups, Congressional committees, Federal and State agencies, nongovernmental organizations and by other academics. In 2013, he was named a Fellow of the Agricultural and Applied Economics Association.