

Fall 2014

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Recommended Citation

Plastina, Alejandro and Hart, Chad (2014) "Crop Insurance in Iowa," *Agricultural Policy Review*: Vol. 2014 : Iss. 3 , Article 3.
Available at: <http://lib.dr.iastate.edu/agpolicyreview/vol2014/iss3/3>

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Crop Insurance in Iowa

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FARMERS ACROSS the nation rely heavily on crop insurance as a risk management tool—in Iowa alone over 93 percent of corn and soybean planted area was insured in 2014, but that participation rate hasn't always been the case. Participation in crop insurance declined substantially in the early 1990s after the mandate that required producers to purchase crop insurance in 1989 and 1990 to collect drought assistance in 1988 dissipated.

The fast recovery in 1994–1995 reflects the impact of higher effective subsidies rates and the requirement to obtain coverage in order to receive federal benefits instituted by the Federal Crop Insurance Reform Act of 1994. The 1996 Farm Bill repealed mandatory enrollment to receive federal benefits, but tied enrollment in crop insurance programs to disaster assistance instead. This resulted in a substantial drop in crop insurance participation between 1995 and 1997.

Despite another dip in effective subsidy rates between 1998 and 2000 as a result of changes in selected coverage levels, the percentage of planted acres participating in crop insurance has been trending upward since 1997 for both corn and soybeans.



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The Agricultural Risk Protection Act of 2000 codified into law previously introduced ad hoc premium reductions (offered late in the signup period for 1998 and 1999) with a heavy focus on subsidizing more insurance plans with higher levels of coverage (O'Donoghue 2014).

Dominance of Revenue Products

Over the years, the menu of crop insurance policies expanded substantially by incorporating revenue

and area based products as well as more coverage levels. In order to simplify the analysis of participation decisions, we have classified all crop insurance programs into one of the following categories: farm catastrophic plans, farm yield buy-up plans, farm revenue buy-up plans, and county plans. Farm catastrophic (CAT) plans include the catastrophic options of Actual Production History (APH) and Yield Protection (YP) (the Group Risk Plan catastrophic plan is included under area plans in this analysis). Farm yield buy-up plans include those policies above the minimal, fully subsidized catastrophic coverage available to farmers from APH and YP. Farm revenue buy-up plans include Crop Revenue Coverage, Income Protection, Revenue Assurance, Revenue Protection, and Revenue Protection with Harvest Price Exclusion. County plans include both catastrophic and buy-up plans for yield and revenue coverage plans based on county data: Group Risk Income Protection, Group Risk Income Protection with Harvest Revenue Option, Group Risk Plan, Area Risk Protection, Area Risk Protection with Harvest Price Exclusion, and Area Yield Protection.

The evolution of the four insurance categories between 1989 and 2014

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Weather Adjusted Yield Trends for Corn:

A Look at Iowa

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Again, there was no statistically valid relationship. Our results indicate that there is some support for a higher yield growth rate in the northwest part of the state. This is the driest area in the state and therefore the corn rootworm trait may have been particularly beneficial.

The variable measuring the impact of extreme temperatures was not significant for CRDs 1, 2, and 4. However, critical temperature did emerge for other areas of the state. The critical temperature was 94 degrees for CRD 5, 95 degrees for CRD 6, 92 degrees for CRD 3, 93 degrees for CRD 9 and 90 degrees for CRDs 7 and 8. These results indicate

that the parts of the state with the highest CSR are best able to handle heat stress. One intuitive explanation is that corn growing on high quality soils may be able to resist high temperatures because the corn root system can source more water than in less productive soils. ■

for corn and soybeans in Iowa have shared similar overall trends: (a) farm yield buy-up insurance was increasingly replaced by farm revenue buy-up insurance; (b) farm CAT insurance accounted for a significant share of planted area while it was a prerequisite to obtain federal benefits, but declined steadily to account for less than one percent of planted area for both crops since 2011; (c) participation in county plans peaked in 2006 at roughly 7–8 percent of planted area and declined to about one percent of planted area in 2012.

Under the Federal Crop Insurance Act of 1980 (valid until 1994), the federal government offered subsidies covering up to 30 percent of the total premium. However, the effective subsidy rate between 1989 and 1993 averaged 22.6 percent for soybeans and 22.7 percent for corn. The Federal Crop Insurance Reform Act of 1994 increased subsidies significantly and introduced the fully subsidized Catastrophic Risk Protection Endorsement, county plans, and farm revenue buy-up plans. The Agricultural Risk Protection Act (ARPA) of 2000 increased effective subsidies again but the ranking of effective subsidies by broad categories remained unchanged until 2008.

Comparing average effective subsidy rates and insured area across different time periods, the following conclusions emerge:

- Total area under all crop insurance plans for corn and soybeans is responsive to increases in the effective subsidy rate, and it becomes more responsive at higher subsidy levels: an increase of 15.1 percentage points in the average subsidy rate for corn between 1994–99 and 2000–07 is associated with an increase of 6.2 percent in the insured area; but the same percent increase in area is associated with a 6.1 percentage point increase in subsidy rates in the following period.
- Area under farm revenue buy-up plans experienced the highest increases across periods among all insurance categories due at least partly to the fact that their associated effective subsidy rates also increased the most among all insurance categories.
- The increase in subsidy rates for farm yield buy-up plans across periods was insufficient to maintain area under these plans, losing acres to farm revenue buy-up plans.
- Area under county plans is responsive to increases and reductions in effective subsidy rates (and proportionally more responsive to declines than to increases), but participation rates are low.
- Although fully subsidized, participation in farm catastrophic plans has declined considerably through time.

Higher coverage levels

Between 1996 and 1999, farm revenue buy-up plans with a 65 percent coverage level were the most prevalent for corn and soybeans. In 2000, nominal subsidies were increased for all coverage levels, but proportionally more for higher coverage levels. As a result, a coverage level of 75 percent became the most prevalent between 2000 and 2009. In 2008, enterprise unit (the unit division encompassing all the insured acreage in a county) premium subsidies were increased and farm revenue buy-up policies with a coverage level of 80 percent became the most prevalent between 2010 and 2012 for corn, and between 2010 and 2013 for soybeans. Starting in 2013 for corn and 2014 for soybeans, the 85 percent coverage level has become the most prevalent plan among farm revenue buy-up plans.

For additional resources on this topic, please see the online version at www.card.iastate.edu/ag_policy_review/.

References

O'Donoghue, Erik. "The Effects of Premium Subsidies on Demand on Crop Insurance." USDA ERS Report 169. July 2014. ■