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Department of Agricultural and Consumer Economics, University of Illinois Urbana-Champaign

Premium Subsidy and Insured U.S. Acres

Carl Zulauf

Department of Agricultural, Environmental and Development Economics
Ohio State University

Gary Schnitkey, Jonathan Coppess, Nick Paulson

Department of Agricultural and Consumer Economics
University of Illinois

March 15, 2018

***farmdoc daily* (8):46**

Gardner Policy Series

Recommended citation format: Zulauf, C., G. Schnitkey, J. Coppess, and N. Paulson. "Premium Subsidy and Insured U.S. Acres." *farmdoc daily* (8):46, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, March 15, 2018.

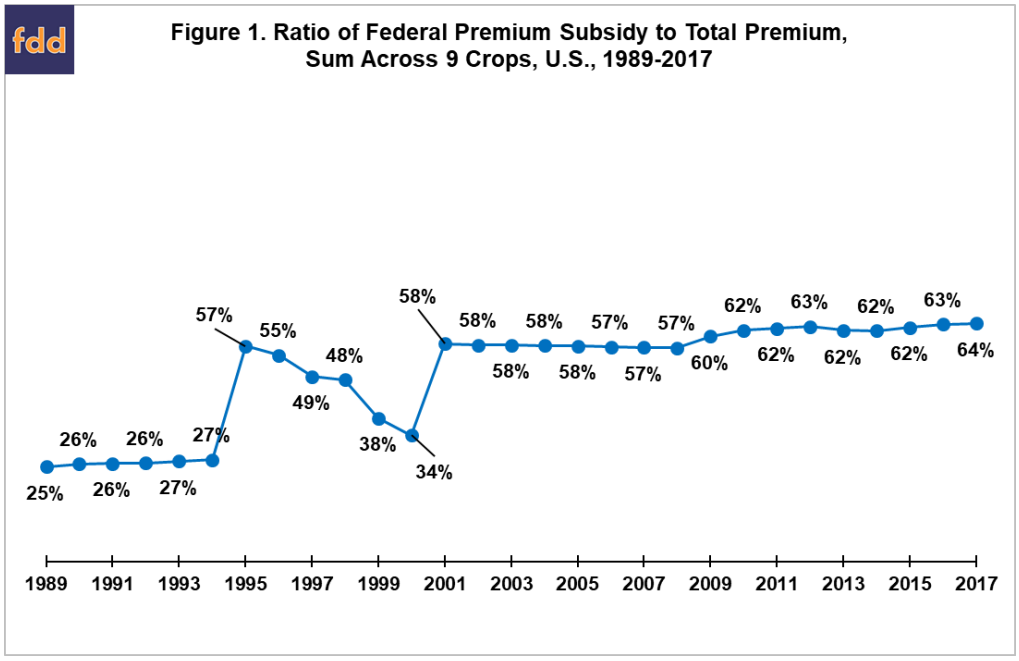
Permalink: http://farmdocdaily.illinois.edu/2018/03/premium-subsidy-and-insured-us-acres.html

Cost of Federal Crop Insurance is an on-going farm policy issue. President Trump proposed several changes to reduce its cost in his Fiscal Year 2019 budget. The changes include reducing the all insurance program subsidy from the 62% rate of recent years to 48%. A long standing goal of crop insurance is to insure a large share of acres to reduce demand for *ad hoc* disaster assistance. Reducing the subsidy rate may reduce share of acres insured and thus conflict with this policy goal. To provide one perspective, historical trends are examined for insured acres and premium subsidy aggregated across barley, corn, cotton, oats, peanuts, rice, sorghum, soybeans, and wheat. Insurance contracts have existed for these crops since 1989, the first year electronic data are available from the U.S. Department of Agriculture (USDA), Risk Management Agency. A strong relationship exists. The premium subsidy rate explains 88% of the annual variation in share of acres insured for the 9 crops. Based on the estimated equation, the President's proposed 14 percentage point reduction in premium subsidy rate is associated with a 17 percentage point decline in insured share of acres planted to the 9 crops, from the 86% current share to 69%.

Historical Perspective – Federal Premium Subsidy

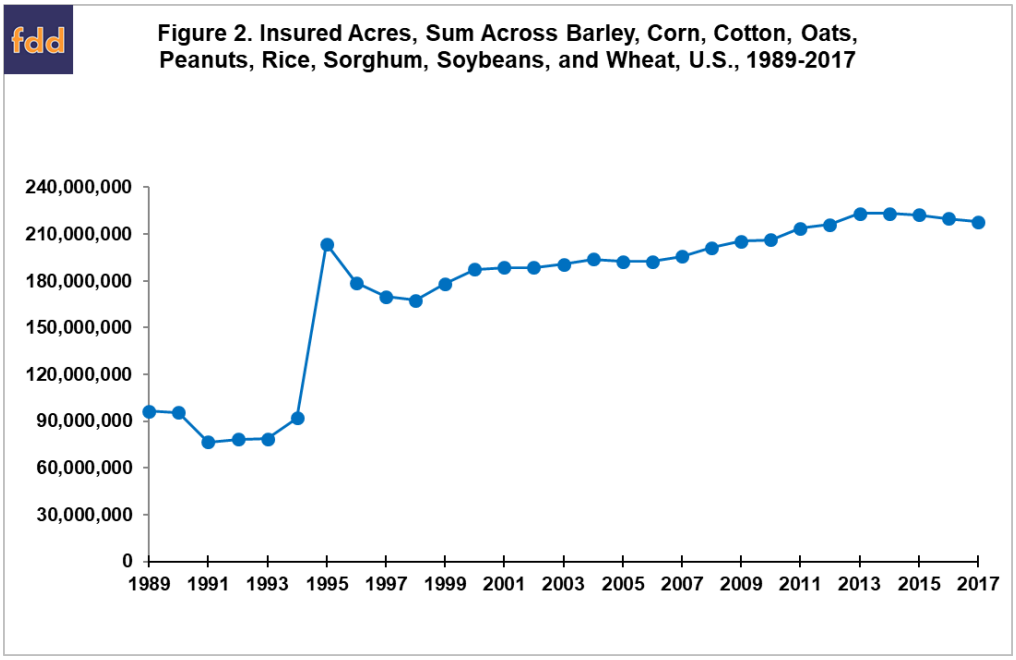
The federal premium subsidy rate for the 9 crops was 25% in 1989 (see Figure 1). After jumping to 57% in 1995 following passage of the *Federal Crop Insurance Reform Act of 1994*, the rate declined to 34% by 2000. It then jumped to 58% in 2001 after the *Agricultural Risk Protection Act of 2000* authorized a substantial increase in the subsidy rate. Since 2001, the subsidy rate for the 9 crops as a group has slowly increased by an average of one-third of a percentage point per year, reaching 64% in 2017. During this period, the 2008 farm bill authorized enterprise insurance for all acres of a crop in a county. Its subsidy rate is as high as 80% at coverage levels from 50% to 70%. The increase in subsidy rate since the 2008 farm bill likely reflects farms buying the more subsidized enterprise insurance. Farms

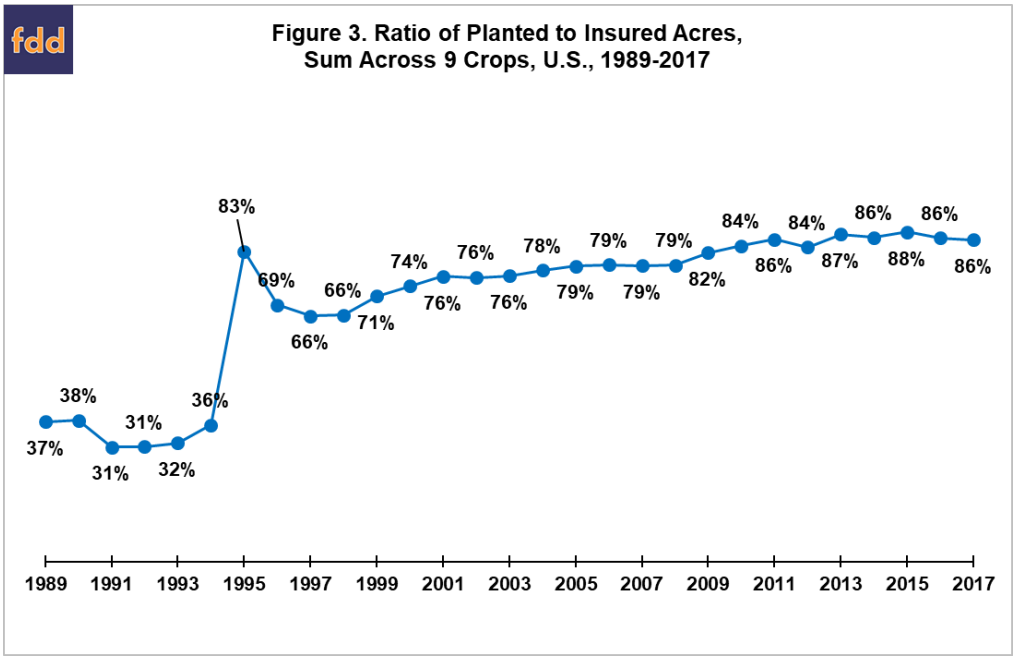
could also be buying more subsidized lower coverage levels, but average coverage level bought for the 9 crops has generally increased slightly or remained stable over the last few years.



Historical Perspective – Acres Insured

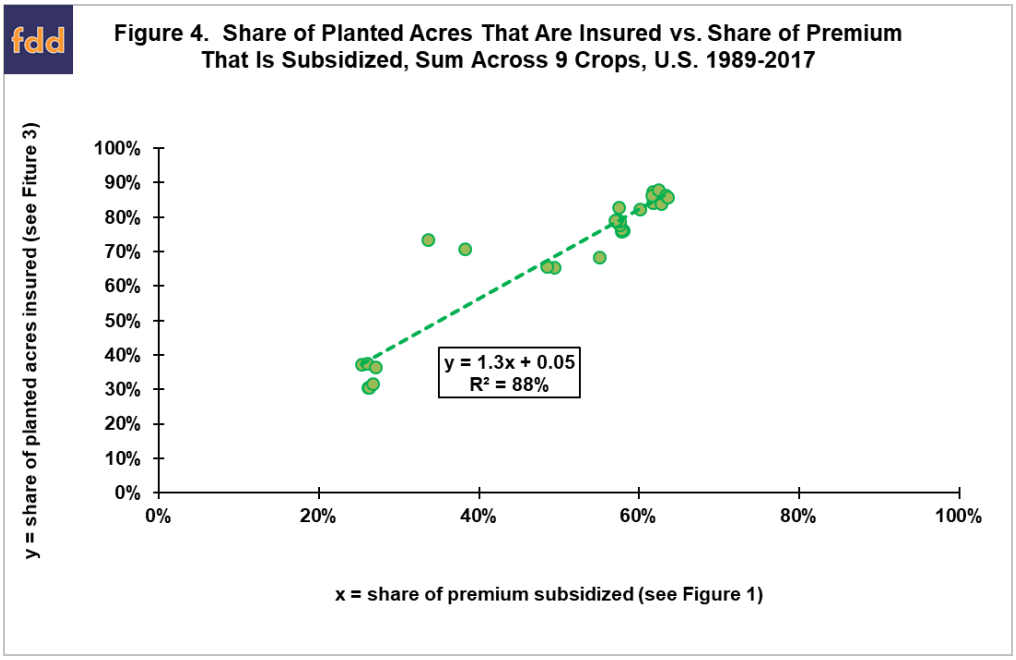
Acres insured grew from 96 to 188 million between 1989 and 2001 for the 9 crops (see Figure 2). Insured acres peaked at 223 million in 2013 and 2014, declining to 218 million in 2017 or about the same as in 2012. Share of planted acres insured rose from 37% in 1989 to 76% in 2001 to a peak of 88% in 2015 (see Figure 3). Share of insured acres appears to have plateaued in recent years with 12% to 16% of planted acres not insured. Source of the planted acres data is *QuickStats* (USDA, Economic Research Service).





Relationship between Insured Acres and Premium Subsidy

A linear regression line was estimated with share of acres insured regressed on share of premium subsidized by the federal government. A strong relationship exists (see Figure 4). The subsidy rate explained 88% of the variation in annual share of acres insured. A squared subsidy term was added to the linear regression to assess if a nonlinear relationship existed. R^2 did not increase significantly, implying a linear fit is likely best. The coefficient estimated for the premium subsidy rate was +1.3. It was significant with 99.9% statistical confidence. A +1.3 coefficient implies that each percentage point increase in the premium subsidy rate is associated with a 1.3 percentage point increase in the share of planted acres insured (see data note).



Summary Observations

- This analysis is simple and needs to be repeated using more sophisticated procedures, but it supports the argument that reducing the federal subsidy rate for crop insurance is likely to reduce

the share of acres insured, thus conflicting with a long-standing farm policy objective of insuring a large share of acres to reduce the incentive for *ad hoc* disaster assistance.

- Reducing the aggregate subsidy rate for the 9 crops examined in this study by 14 percentage points (comparable to President Trump proposal) would have reduced Federal spending on the crop insurance premium subsidy by around $1 billion in 2017. Based on the regression line estimated in this study, share of acres of the 9 crops insured is estimated to decline from 86% to 69%. The pressure for *ad hoc* disaster assistance may increase, potentially reducing the savings. Congress will need to disentangle these interconnected issues, including the role of *ad hoc* disaster assistance and its relationship to the role of crop insurance.

- Another potential issue is that reducing the federal premium subsidy rate may affect different crops differently. This issue will be examined in a future article.

- The current Federal subsidy rate for crop insurance is an outcome of the political market place, not an objective economic method. Given a non-trivial conflict with passionate advocates on both sides, a compromise approach may be to reduce the aggregate insurance program subsidy rate by a small amount per year over the life of the farm bill, then assess what has transpired before the next farm bill. For example, reducing the all program subsidy rate by ½ percentage point per year sums to a 2.5 percentage point reduction over a 5-year farm bill. This approach of small annual reductions would generate cost savings, allow farmers time to adjust gradually, and most importantly allow for research to assess its impact before deciding to make additional cuts, restore existing cuts, or make no further changes. A slow, measured research informed approach would allow untoward consequences to be minimized, but also not stand in the way of change should change be the choice of the political market place.

Data Note

The *Federal Crop Insurance Reform Act of 1994* required that crop insurance be purchased to qualify for commodity program payments and selected other federal programs. It was effective for the 1995 crop but subsequently rescinded for future years. A dummy variable that captured this policy change was not statistically significant and thus did not improve upon the subsidy rate's explanatory power of share of insured acres.

Data Sources

U.S. Department of Agriculture, National Agricultural Statistics Service. February 19, 2018. *QuickStats*. http://quickstats.nass.usda.gov/

U.S. Department of Agriculture, Risk Management Agency. *Summary of Business*. February 19, 2018. http://www.rma.usda.gov