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

Declining Cost of Production and Farm Policy

Carl Zulauf

Department of Agricultural, Environmental and Development Economics
Ohio State University

Nick Paulson, Jonathan Coppess, Gary Schnitkey

Department of Agricultural and Consumer Economics
University of Illinois

December 14, 2017

***farmdoc daily* (7):229**

Gardner Policy Series

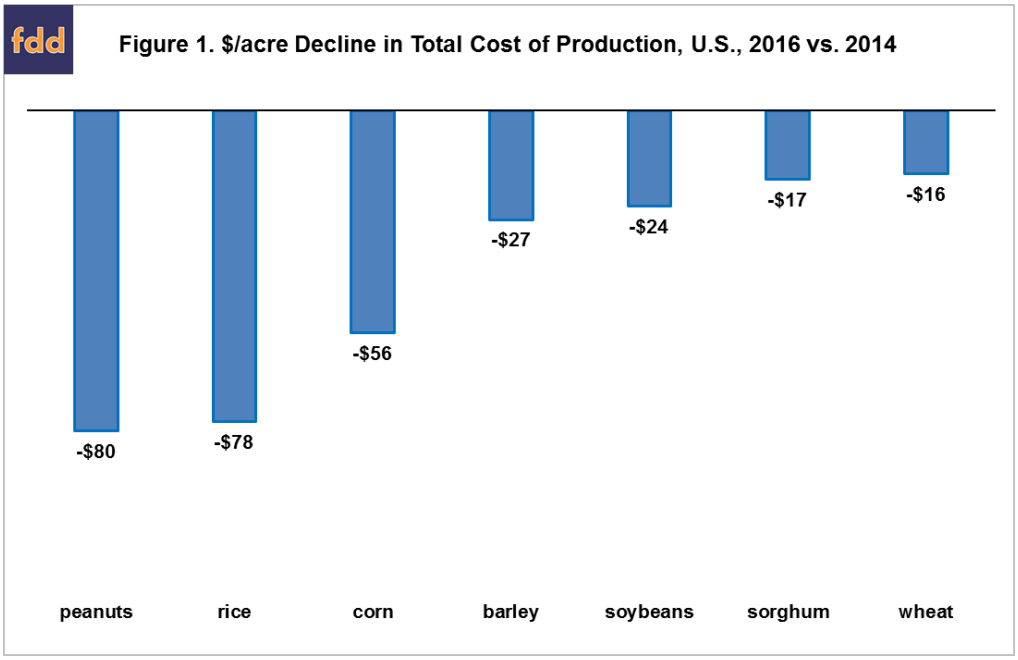
Recommended citation format: Zulauf, C., N. Paulson, J. Coppess, and G. Schnitkey. "Declining Cost of Production and Farm Policy." *farmdoc daily* (7):229, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, December 14, 2017.

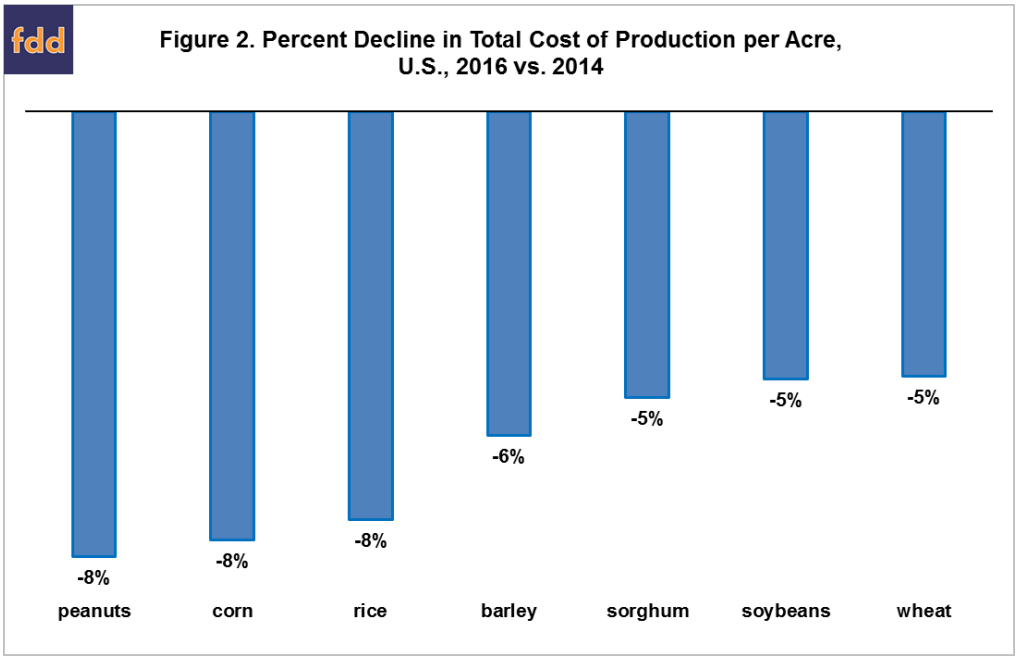
Permalink: http://farmdocdaily.illinois.edu/2017/12/declining-cost-of-production-and-farm-policy.html

In a July 25, 2017 *farmdoc daily* article, Schnitkey discussed declining cost of production for Illinois corn and soybeans. This article extends the discussion to the U.S. and to barley, peanuts, rice, sorghum, and wheat. Total cost per acre declined between 2014 and 2016 for all 7 crops. Cost declines also appear to be continuing. Assuming nothing else changes, declining costs stimulate production, decreasing prices and potentially increasing payments by fixed reference prices. To manage this scenario, fixed reference prices need to decline when crop sector cost declines.

Data: This analysis uses the cost and return data published by the U.S. Department of Agriculture (see data note). As compiled by USDA, total cost consists of operating costs (seed, fertilizer, chemicals, etc.) and allocated overhead (hired labor, unpaid labor opportunity cost, capital recovery cost, land rent, etc.). Total cost per acre peaked in 2014 for 6 of the 7 crops. Rice is the exception, but its total cost was only $2/acre higher in 2013 than in 2014. The latest year for which cost is not a forecast is 2016. Change in cost thus equals total cost for 2016 minus total cost for 2014. Like any financial variable, it is important to examine declining cost from different perspectives. Two are used in this article: $/acre decline and % decline.

$/acre and % decline: The decline in total cost ranged from $16/acre for wheat to $80/acre for peanuts (see Figure 1). As a share of 2014 total cost, the decline ranged from 5% (sorghum, soybeans, wheat) to 8% (peanuts, corn, rice) (see Figure 2). Percent decline is fairly similar across the crops. Thus, a major reason for different $/acre declines is the variation in $/acre to produce a crop. For 2016, total cost ranged from $300/acre for wheat and $303/acre for sorghum to $875/acre for peanuts and $936/acre for rice.





Summary Observations

- Although peanuts, corn, and rice have benefited the most from declines in production cost between 2014 and 2016, declining cost was a common feature of the 7 crops in this study.
- Schnitkey suggests input price declines will continue at least through 2018. This is consistent with historical evidence that cost changes lag crop price changes (see Zulauf and Rettig).
- Besides tempering the much-discussed decline in crop revenue, declining costs can impact spending on farm programs.
- ARC (Agriculture Risk Coverage) and PLC (Price Loss Coverage) make payments on historic base acres except for cotton generic base. However, almost all base acres are planted to some crop. Therefore, assuming nothing else changes, cost declines that occur across all crops stimulate production of crops in general, decreasing crop prices in general and thus increasing government spending when market prices are below the fixed reference price.

- Moreover, declines in U.S. crop input prices often mean input prices are declining for producers in other countries, thus stimulating their production and reducing prices.

- In conclusion, on-going declines in the cost of production held in common across crops needs to be built into the design of fixed support prices. An option is to index current fixed reference prices so they decline when cost of production declines.

- When payments are made on historic, not current, planted acres, such as by ARC and PLC; cost held in common should be used. One way to implement this feature is to use the smallest cost decline for an individual crop (not costs for the crop with the largest decline).

- Cost of-production indexing has been used before but only when cost were increasing. Specifically, during the last half of the 1970s, increases in target prices for some crops were tied to increases in cost. This policy was abandoned in the 1981 farm bill due to concerns that it increased government spending on farm programs (see USDA, December 1984).

Data Note

Cost of production data is also published for cotton and oats. It is not used in this analysis because the base year used to determine their costs changed with the 2015 crop. This change in procedures can affect cost in several ways. Thus, costs may not be comparable before and after a change in base year, especially when the period of analysis is short, as in this analysis.

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