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

Comparison and Assessment: Payments on Base vs. Planted Acres, 2014-2016 Crops

Carl Zulauf

Department of Agricultural, Environmental and Development Economics
Ohio State University

Gary Schnitkey

Department of Agricultural and Consumer Economics
University of Illinois

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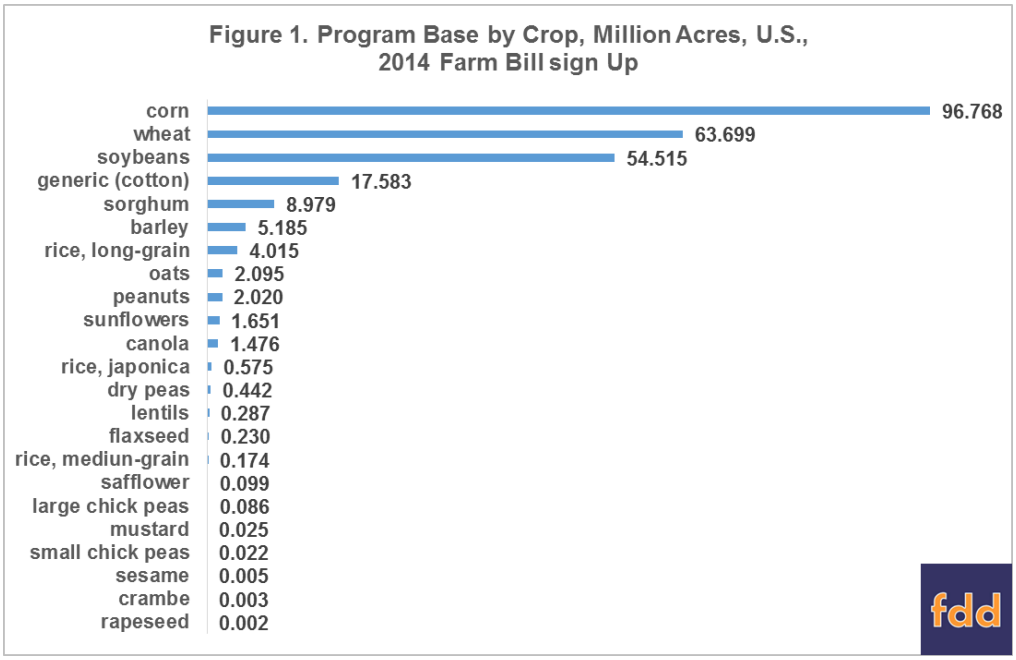
An on-going issue in U.S. crop policy is whether payments should be made on historical base acres, as generally done under recent U.S. farm bills, or on current planted acres. Sizable differences can occur between these measures of acres due to changes in cropping patterns, combined with Congressional and Executive decisions to allow farmers to choose whether they update base acres when such a choice is permitted. This article contains a short term comparison of payments made on base vs. planted acres within the context of the 2014 farm bill and 2014-16 crop years. Payments are estimated to be approximately 10%, or between $0.5 and $1.1 billion per year, smaller if made on planted than base acres. Longer term and World Trade Organization (WTO) considerations also apply. Tying payments to planted acres raise the issue that expected program payment differences across crops will cause farmers to plant crops with the highest expected payments, potentially causing government cost to grow larger over time. Tying payments to planted acres is also likely to result in the U.S. notifying crop commodity program payments as product specific to the WTO, increasing the likelihood the U.S. will violate limits on its crop programs. A third policy option exists that can generate cost savings yet limit the undesirable effects of using planted acres. Specifically, base acres could be rebased by mandating that farmers must update base acres to planted acres during a recent historical period. Like all base update provisions, impact of this third policy option will vary by farm, crop, and region.

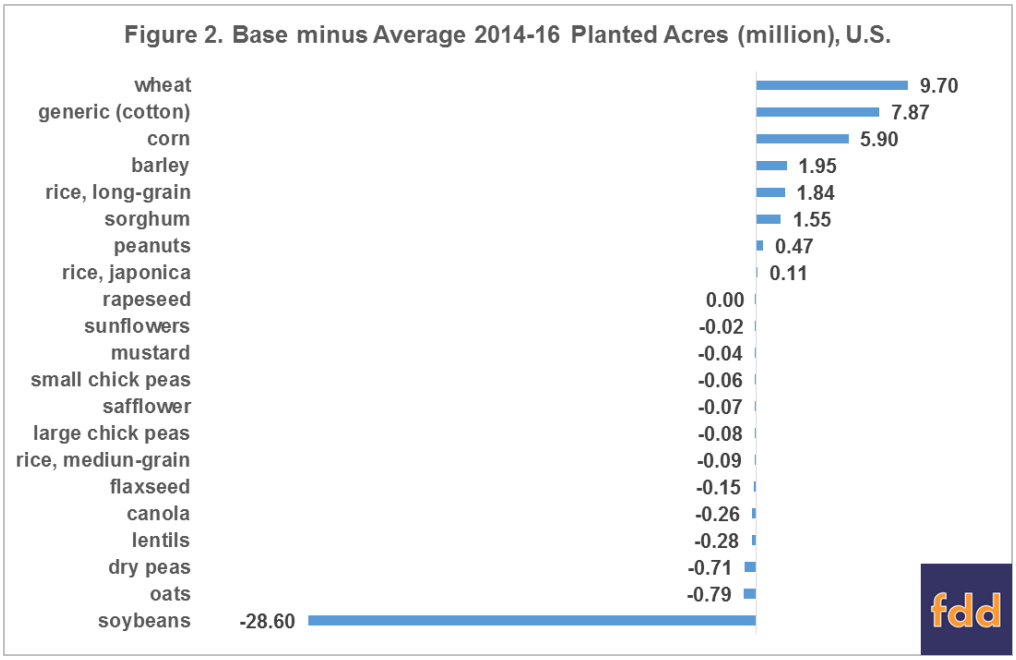
Background: Depending on past base acre update decisions, a farm's current crop program base acres may largely reflect acres planted in 2009-12, acres planted in 1998-2001, or base acres in place at the end of the 1996 farm bill which largely reflect acres planted in 1991-95. The *Farm Security Act of 2002* allowed farms to choose between the 2 earlier periods. Young, et al. has an extensive discussion of this decision. The *Agricultural Act of 2014* did not allow farms to change the number of base acres but did allow the distribution of base acres across crops to be updated to reflect the share planted to crops during the 2009-12 crop years. Zulauf, et al. contains an extensive discussion of this decision. For those interested, procedures and data are discussed below in an addendum. It is widely believed and

consistent with results from most analyses that farmers will update base acres only if they expect the update to increase program payments.

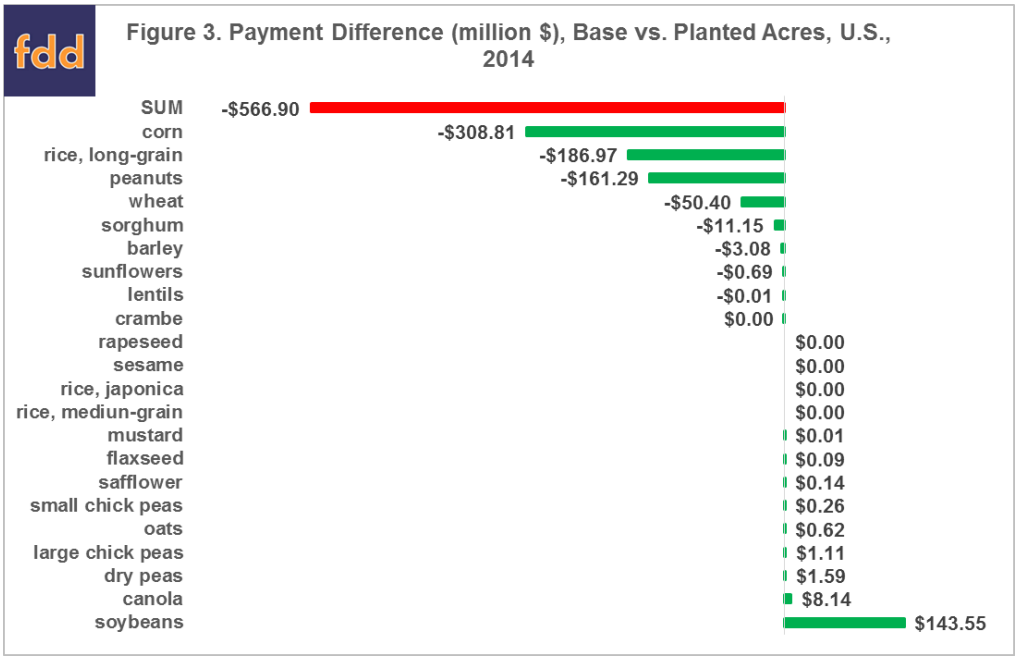
Base Acres: Base crop acres total 260 million after the 2014 farm bill sign up (see Figure 1). Corn, soybeans, and wheat account for 83% of base acres. Barley, cotton (generic base), oats, rice, peanuts, and sorghum account for 16%. The remaining 12 program crops account for less than 2% of base acres. In total, 23 base acre categories exist, including generic base. Generic base totals 17.6 million acres. It was created by Congress in the 2014 farm bill as part of its compromise to resolve Brazil's successful case against the U.S. cotton program at the World Trade Organization. Generic base is the home for former cotton base acres. Payments on generic acres are determined by the crop planted on the generic base acres.



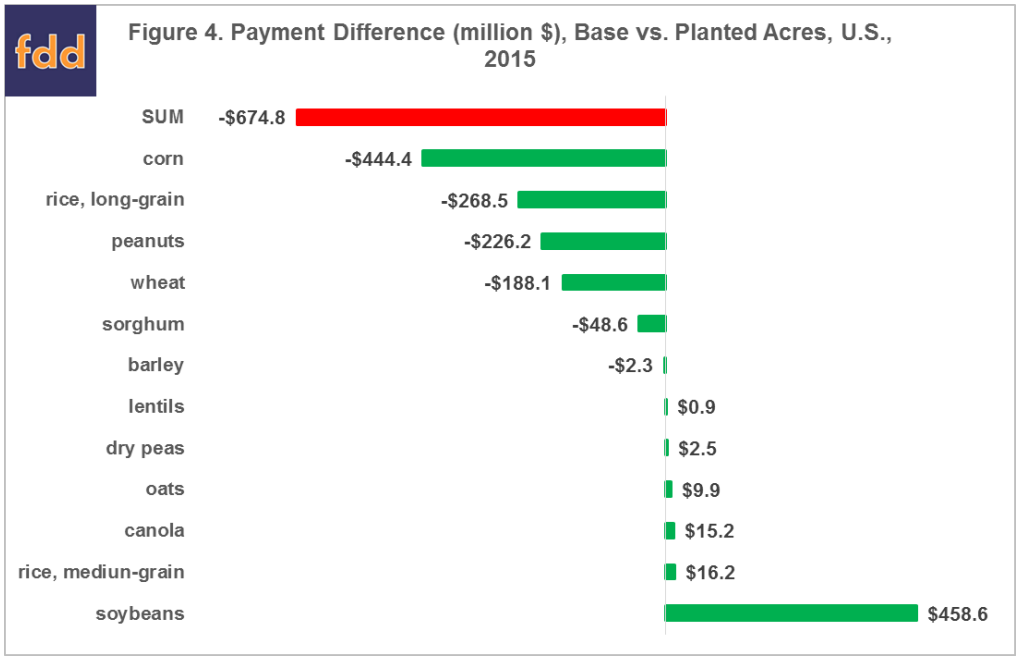
Base vs. Planted Acres: Acres planted to the 22 program crops plus cotton average 262 million for the 2014-16 crop years, or only about 2 million more than total base acres. However, the difference is often larger for individual crops. Wheat, cotton, and corn base acres exceed average planted acres by 9.7, 7.9, and 5.9 million, respectively (see Figure 2). In contrast, soybean base is 28.6 million below average planted acres. Compared with average planted acres, long-grain rice, cotton, and barley have 84%, 81%, and 60%, respectively, more base acres while small chickpeas, dry peas, and mustard have 74%, 62%, and 59% fewer base acres.



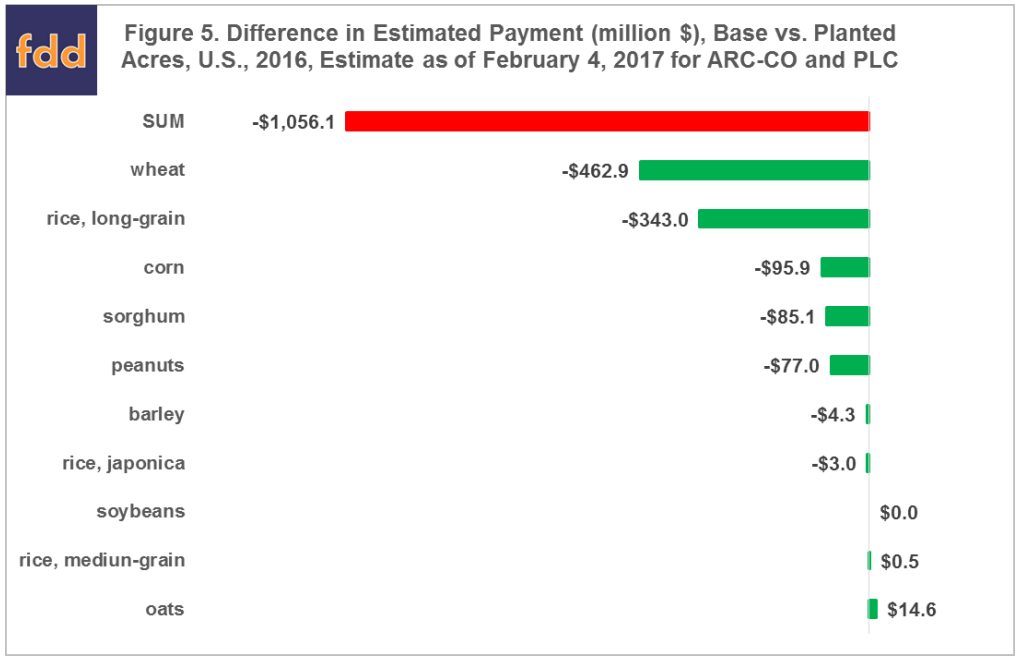
Base vs. Planted Acres - 2014 Payments: FSA reports payments of $5.3 billion for the 2014 crop year. If payment had been made on planted acres instead and assuming the same payment rate per acre for each crop and program, total payments would have been $567 million, or 11% lower (see Figure 3). Payments to corn acres would have been $309 million less while payments to long-grain rice and peanuts would have been over $150 million less. In contrast, payments to soybeans would have been $144 million more if payments had been made on planted instead of base acres. These changes reflect the combination of differences by crop between base and planted acres and the amount of 2014 payments by crop.



Base vs. Planted Acres - 2015 Payments: FSA reports 2015 crop year payments of $7.7 billion for 12 crops so far. If payment had been made on planted instead of base acres and assuming the same payment rate per acre for each of the 12 program crops, total payments would have been $675 million, or 9% less (see Figure 4). Payments to corn acres would have been $444 million less while payments to long-grain rice, peanuts, and wheat would have been over $150 million less. In contrast, payments to soybeans would have been $459 million more if payments had been made on planted instead of base acres. The increase in soybean payments slightly exceeds the decline in corn payments.



Base vs. Planted Acres - 2016 Payments: Payments of $8.0 billion are estimated for 10 crops for the 2016 crop year. Payments of $3.8, $2.4, $0.9, $0.4, and $0.3 billion are estimated for corn, wheat, long-grain rice, peanuts, and sorghum, respectively. If payment is made on planted instead of base acres and assuming the same estimated payment rate per acre for each of the 10 program crops by program, total payments are estimated to be $1,056 million, or 13% less (see Figure 5). Payments to wheat and long grain rice acres are estimated to be $463 and $343 million less, respectively. Estimated payments to corn are only around $100 million less due in part to farmers planting 94 million acres of corn. No payment is estimated for soybeans and thus payments are not affected if made on planted instead of base acres.



Summary Observations

- Meaningful cost savings are found if payments for the 2014-16 crop years had been made on planted rather than base acres, as is generally done under the 2014 farm bill. Total payments are estimated to be 10%, or $0.5 to $1.1 billion per year, less if made on planted acres.

- Thus, the increasing sentiment among farmers to be paid on planted acres that has been observed by the authors would have led to lower payments in the 2014-16 crop years, given the conditions of this analysis.

- The estimated payment reductions are consistent with farmers having moved base acres to crops most likely to have the highest payments during their opportunities to update base acres under the 2002 and 2014 farm bills. Thus, the estimated payment reductions provide some perspective on the cost to the government of having given farmers the choice on whether to update base acres or not.

- Using planted acres reduced cumulative 3 year estimated payments by $849, $798, $701, and $464 million for corn, long grain rice, wheat, and peanuts, respectively. These reduction were 7%, 45%, 18%, and 37%, respectively, of estimated payments. In contrast, estimated cumulative 3 year payments to soybeans would have been $602 million, or 43%, higher.

- Tying payment to planted acres will raise concern about the impact of expected program payments on planting decisions and government cost. In addition, use of fixed targets become more questionable. Not only can markets change over the course of a farm bill period but also Congress has historically established fixed targets at different relationships to market prices across crops. In short, sizable differences in program payments can emerge between crops, especially when targets are fixed. Government cost could grow increasingly larger as farmer plant more acres to crops expected to have the highest payments, which in turn will lead to lower prices and even larger payments.

- Tying payment to planted acres is also likely to raise concern with our commitments on farm support at the World Trade Organization (WTO). Specifically, making payments on planted acres will likely result in the U.S. notifying crop commodity program payments as product specific. In contrast, programs similar to ARC and PLC have been notified as non-product specific support in the past. A result of this shift is that the likelihood of the U.S. violating at least some of the limits on its crop program support at the WTO is higher, especially given that it has decided to notify crop insurance premium subsidies as product specific and given the large commodity program payments being made under the 2014 farm bill.

- A third policy option exists if cost savings are desired yet the consequences of using planted acres are determined to be undesirable. Specifically, base acres could be rebased by mandating that farmers must update base acres to planted acres during a recent historical period. These acres are then fixed as the base acres for the next farm bill period. Farmers are given no choice. Like all base update provisions, impact of this third policy option will vary by farm, crop, and region.

Reference and Data Source

U.S. Department of Agriculture, Farm Service Agency. January 2017. “ARC/PLC Program Data,” https://apps.fas.usda.gov/psdonline/

U.S. Department of Agriculture, National Agricultural Statistics Service. January 2017. *QuickStats*. http://quickstats.nass.usda.gov/.

U.S. Department of Agriculture, World Agricultural Outlook Board. *World Agricultural Supply and Demand Estimates*, WASDE-561, January 12, 2017. http://usda.mannlib.cornell.edu/usda/waob/wasde//2010s/2017/wasde-01-12-2017.pdf

Young, C. Edwin, David W. Skully, Paul C. Westcott, and Linwood Hoffman. “Economic Analysis of Base Acre and Payment Yield Designations Under the 2002 U.S. Farm Act.” Economic Research Report ERR-12, September 2005. http://webarchives.cdlib.org/sw15d8pg7m/http://ers.usda.gov/Publications/err12/

Zulauf, C., N. Paulson, J. Coppess, and G. Schnitkey. "2014 Farm Bill Decisions: Base Acre Reallocation Option." *farmdoc daily* (4):138, Department of Agricultural and Consumer Economics, University of Illinois, July 24, 2014.

Addendum

Procedures and Data: Payment data released by the U.S. Department of Agriculture (USDA), Farm Service Agency (FSA) are used for the 2014 and 2015 crop year comparisons. Payment data are available for all 2014 crops and 12 2015 crops. A simple comparison is undertaken. Payment per planted acre for a crop is assumed to equal payment per base acre for the crop. The only difference is whether payment is made on planted acres or base acres. This assumption implies that the distribution of base acres between ARC-CO and PLC is the same for planted as for base acres. Base acres for a crop equal the sum of base acres FSA reported for the crop after the 2014 farm bill sign up plus acres planted to the crop on generic base acres in the 2014 or 2015 crop year.

Payments are estimated for the Agriculture Risk Coverage (ARC-CO) and Price Loss Coverage (PLC) programs for the 2016 crop year for 11 crops using base acres and prices from UDSA, FSA and U.S. yields from USDA, National Agricultural Statistical Service. Yields are per planted acre and adjusted for corn and sorghum acres harvested for silage. Prices by crop year are from FSA. Payments are calculated on 85% of base acres by program; a 6.8% sequestration is used. Estimated ARC-CO payments are an indication of payments since they use U.S. average yields, not yields for individual counties. PLC payment yield is the yield reported by FSA for the 2014 farm bill for those who updated base yields. Calculations for Japonica rice uses California short and medium rice acres and yield reported in the January 12, 2017 *World Agricultural Supply and Demand Estimates*. The remaining short- and medium-grain rice is assumed to be medium-grain program rice. As with the analysis for 2014 and 2015, payment per planted acre is assumed to be the same as payment per base acre.