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## Choosing Between Base Acre Allocation Alternatives

Gary Schnitkey, Nick Paulson, and Jonathan Coppess

Department of Agricultural and Consumer Economics  
University of Illinois

Carl Zulauf

Department of Agricultural, Environmental and Development Economics  
Ohio State University

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The 2014 Farm Bill gives landowners a choice between two alternatives for determining the allocation of base acres across program crops (see [here](#) for an overview of the three decisions). Land owners will either 1) retain current base acres or 2) reallocate base acres based on plantings to program crops from 2009 through 2012. For most Midwest situations, the allocation with the highest corn acres, thereby having fewer soybean acres, likely will be the alternative that maximizes expected program payments.

### The Alternatives

Each Farm Service Agency (FSA) farm has a current allocation of base acres in program crops. FSA sent this information to land owners and producers in a letter received in August 2014 (see Step 2 of the [ARC/PLC decision steps](#)). Summing up these acres gives total base acres on the FSA farm. As an example, suppose a farm has 75 acres in corn and 20 acres in soybeans, and 5 acres in wheat. This farm then has 100 total base acres (75 acre in corn plus 20 in soybeans plus 5 acre in wheat).

Land owners can retain this "current" allocation of base acres or reallocate base acres according to the proportion of plantings to program crops from 2009 through 2012. Suppose that 60% of the acres were planted in corn and 40% were planted in soybeans from 2009 to 2012. The farm with 100 total base acres will have reallocated base acres of 60 acres in corn (100 total base acres times 60%) and 40 acres in soybeans (100 total base acres times 40%).

Several notes about the base acre allocation choice:

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1. Total base acres do not change between the alternatives. If a farm has 100 total base acres in the current allocation, there will be 100 total base acres if acres are reallocated.
2. The land owner cannot influence the base acres in each crop in the two alternatives. The current base acres have been set. Reallocated base will be determined by the proportion of plantings from 2009 through 2012. The one exception to this is if “subsequent” acres exist in any of the years between 2009 through 2012. Subsequent acres follow either prevented planted or failed acres. In these cases, there are choices associated with subsequent acres

## Impacts of this Decision

The 2014 Farm Bill is scheduled for the 2014 through 2018 crop years. In each of these years, Price Loss Coverage (PLC) and Agricultural Risk Coverage at the county level (ARC-CO) payments will be made by crop according to base acres. Suppose a farm has 60 base acres in corn. This farm will receive payments on 60 base acres if ARC-CO or PLC makes payments in 2014 through 2018. Plantings do not matter. There could be no corn planted in the year of payments and the farm would still receive payments on 60 base acres of corn. Therefore, this decision is determining the number of which PLC and ARC-CO payments will be received for the life of the 2014 Farm Bill.

Another program alternative for receiving commodity program payments is Agricultural Risk Coverage with Individual Coverage (ARC-IC). If the choice is made, the base acre reallocation decision will not impact payments from ARC-IC. Payments are made on total base acres not on the base acres in individual crops

## Tools for Determining Reallocated Base Acres

The University of Illinois has been involved in making two tools available for calculating base acre alternatives. One is available on the web at the Agricultural Policy Analysis System (APAS) website (click [here](#)). This site has a “Base Acre Reallocation Quick Calculator” tool that will directly calculate reallocated base acres.

An alternative is a “Base Acre and Yield Updating” tool, a Microsoft Excel spreadsheet that is available from the [FAST section of farmdoc](#). This Excel spreadsheet is further described [here](#).

Figure 1 shows an example of the section used for entering information from FSA for calculating the acre reallocation alternatives. This section has the same format as the August 2014 letter from FSA. Users of the spreadsheet enter current base acres. In the example in Figure 1, current base acres are 75 base acres in corn, 20 base acres in soybeans, and 5 acres in wheat. Users also enter planted, prevented planted, double crop, and subsequent acres for each year from 2008 through 2012. This information was provided by FSA in the August 2014 letter. In the example, 60 acres are planted in corn each year and 40 acres are planted in soybeans.

**Figure 1. Example of Base Acre Reallocation Screen in Base Acre and Yield Updating Tool.**

The following information comes from Farm Service Agency and was sent in a letter received in August 2014. This information gives current base acres, current program yields, and plantings from 2008 through 2012.

**Base acre and yield information**

	2014 Base Acres	2014 CC Yield	Unit of Yield	<< 2014 base acres will be used unless reallocated. << 2014 CC yields will be program yield unless updated.
Corn	75.00	135	bushels	
Soybeans	20.00	41	bushels	
Wheat	5.00	47	bushels	
	100.00	<< total base acres for allocation choices		

**Acres from 2008 to 2012 (as recorded by FSA)**

	Year					
	2008	2009	2010	2011	2012	<< 2008 acres only used to determine if 2008 yield is needed in updating.
<b>Corn</b>						
Planted	60	60	60	60	60	
Prevented						
Double						
Subsequent						(Subsequent crop not in total. See FSA for options.)
Total for updating	60	60	60	60	60	

	Year					
	2008	2009	2010	2011	2012	
<b>Soybeans</b>						
Planted	40	40	40	40	40	
Prevented						
Double						
Subsequent						(Subsequent crop not in total. See FSA for options for these acres.)
Total for updating	40	40	40	40	40	

	Year					
	2008	2009	2010	2011	2012	
<b>Wheat</b>						
Planted						
Prevented						
Double						
Subsequent						(Subsequent crop not in total. See FSA for options for these acres.)
Total for updating	0	0	0	0	0	

**Retain and Reallocate Acres**

[Help](#)

The reallocation decision has two alternatives: 1) "retain" current base acres or 2) "reallocate" base acre. The two alternatives are given below. Total base acres do not differ between the alternatives. See the "expected payment" section from payment comparisons between the two alternatives.

Program Crop	Retain Acres <sup>1</sup>	Reallocated Acres <sup>2</sup>	Crop Proportion of 2009 through 2012 Plantings
Corn	75.00	60.00	60%
Soybeans	20.00	40.00	40%
Wheat	5.00	0.00	0%
Total base acres	100.00	100.00	100%

<sup>1</sup> Current acres are "2014 base acres" on record with FSA.

<sup>2</sup> Based on proportion of plantings from 2009 through 2012.

Given the input, the “Base Acre and Yield Updating” tool then states the two allocation alternatives (see bottom of the screen). For the example shown in Figure 1, the alternatives are:

1. Current allocation of 75 acres in corn, 20 acres in soybeans, and 5 acres in wheat.
2. Reallocation alternative of 60 acres in corn and 40 acres in soybeans.

### **Choosing Between the Alternatives**

Many land owners will want to choose the allocation that has the highest expected payments. To aid in these comparisons, expected payments have been calculated and are available in the “sample farms” section of APAS and also are given in the Base Acre and Yield Updating spreadsheet.

These expected payments have been calculated for program crops in all major producing counties in the United States. Expected payments give an estimate of what the programs could average over the next five years. For example, an estimate of ARC-CO payments on corn in DeKalb County, Illinois using FAPRI prices is \$41 per acre. If the years 2014 through 2018 could be repeated many times, the average payment per base acre would average \$41 per acres. Some years would be higher and some years would be lower.

Expected payments are given for three sets of prices:

1. Congressional Budget Office (CBO) prices. These are generally the highest of the three sets of prices. CBO prices for corn are \$3.90 per bushel for 2014, \$4.00 for 2015, \$4.19 for 2016, \$4.34 for 2017, and \$4.45 for 2018.
2. FAPRI prices. These are generally the middle of the three sets of prices. Price expectations for corn are \$3.50 for 2014, \$3.80 for 2015, \$4.02 for 2016, \$4.10 for 2017, and \$4.10 for 2018.
3. USDA prices. These are generally the lowest set of prices. Price expectations for corn are \$3.50 for 2014, \$3.68 for 2015, \$3.38 for 2016, \$3.47 for 2017, and \$3.53 for 2018.

Figure 2 shows expected per acre payments for PLC and ARC-CO under the FAPRI set of prices for DeKalb County, Illinois. This is a screen shoot from the Base Acre and Yield Updating tool. For PLC, expected per acre payments are \$27 for corn, \$6 for soybeans, and \$11 for wheat. For ARC-CO, expected payments are \$52 per acre for corn, \$36 per acre for soybeans, and \$28 per acre for wheat.

Several observations from these expected payments:

1. Corn has the highest expected payments. Corn often has higher expected payments than soybeans and wheat. As a result, selecting the allocation that has more corn acres, implying fewer soybean acres, will usually result in the highest expected payments. This often occurs regardless of the price series chosen.
2. ARC-CO usually has the highest expected payments for all three crops for the three price forecast. For example, for DeKalb County, ARC-CO gives the highest expected payments for all three price series, except for wheat at USDA prices. PLC has higher expected payment for wheat given price expectations at USDA levels. Using lower price expectations may change this result and make PLC more attractive.

**Figure 2 Expected Payments for DeKalb County, Base Acre and Yield Updating Tool.**

Price Series	FAPRI (Medium Price)			Update Expected Payments				
	Expected Payment <sup>1</sup>			Date of estimate 12/1/2014				
	PLC <sup>2</sup>	ARC-CO <sup>3</sup>	Max	Expected Prices by Year				
	\$/acre	\$/acre	Choice <sup>4</sup>	2014	2015	2016	2017	2018
Corn	27	41	ARC-CO	3.50	3.89	4.02	4.10	4.10
Soybeans	6	30	ARC-CO	10.00	9.10	9.78	10.08	10.23
Wheat	11	18	ARC-CO	5.90	5.36	5.50	5.70	5.90

<sup>1</sup> These are expected payments. Actual payments will be zero in some years. In other years, payments will be above those shown. If the next five years could be repeated many times, payments would be close to the above values.

<sup>2</sup> Price Loss Coverage (see ARC-PLC Decision Steps at [www.farmbilltoolbox.farmdoc.illinois.edu](http://www.farmbilltoolbox.farmdoc.illinois.edu)).

Expected payments do not include Supplement Coverage Option payments. SCO is only available without ARC.

<sup>3</sup> Agricultural Risk Coverage at county level (see ARC-PLC Decision Steps at [www.farmbilltoolbox.farmdoc.illinois.edu](http://www.farmbilltoolbox.farmdoc.illinois.edu)).

<sup>4</sup> Indicates whether PLC or ARC-CO has highest expected return. Highest expected return may vary with price series.

NA under ARC-CO indicates insufficient data to estimate these payments.

Below are shown yearly, expected FSA farm payments for the retain or reallocate alternatives. They are estimated given expected payments for the price series selected above (USDA/FAPRI/CBO). Payments will vary with choice of price series.

The Base Acre and Yield Updating spreadsheet also compares expected payments for the “retain” and “reallocate” alternatives. Figure 3 shows this information for the DeKalb county example with 100 base acres in the following two allocations:

1. Retain has 75 acres in corn, 20 acres in soybeans, and 5 acres in wheat
2. Reallocate has 60 acres in corn and 40 acres in soybeans.

Expected payments are given assuming that all program crops are enrolled in PLC, all program crops are in ARC-CO, and the program choice that maximizes expected payments for each program crop are made.. For the example in Figure 3, results are:

1. The retain alternative has the highest expected payments given than PLC is chosen for all program crops (\$2,200 for retain versus \$1,860 for reallocated).
2. The retain alternative has the highest expected payments given than ARC-CO is chosen for all program crops (\$3,765 for retain versus \$3,660 for reallocated).
3. The retain alternative has the highest expected payments given that the program maximizes expected payments is chosen. In this case, this is ARC-CO for all program crops.

For this farm, retain or keeping the current base acres allocation has the highest expected payments for all program choices. The retain alternative also has the highest payments for CBO and USDA price expectations.

**Figure 3. Allocation Expected Payment Screen in Base Acre and Yield Updating Tool.**

Below are shown yearly, expected FSA farm payments for the retain or reallocate alternatives. They are estimated given expected payments for the price series selected above (USDA/FAPRI/CBO). Payments will vary with choice of price series.

	Base Acre		
	Retain <sup>1</sup>	Reallocated <sup>2</sup>	
All PLC	\$1,229	\$1,100	All crops are enrolled in PLC.
All ARC-CO <sup>3</sup>	\$3,075	\$2,975	All crops are enrolled in ARC-CO.
Max choice	\$3,075	\$2,975	Uses ARC-CO/PLC choice for each crop with highest payment.

<sup>1</sup> Retain the current base acres

<sup>2</sup> Reallocate base acres using planting from 2009 through 2012.

<sup>3</sup> If a crop ARC-CO payment is "NA" a zero is placed in that crop's expected return.

Given the "price series" selected above, the choices that result in the highest expected payments are:

**Acre Reallocation:** Retain current base acres

**Program choice for:**

Corn: ARC-CO

Soybeans: ARC-CO

Wheat: ARC-CO

Check other price series to see if choices resulting in maximum payments differ.

## Rule of Thumb

Usually, expected payments are higher for corn than for soybeans. Thus, the allocation that usually maximizes base acres in corn, thereby minimizing base acres in soybeans, usually results in the highest expected payments.

Obviously, we are projecting the future when calculating expected payments. Soybeans could pay more over the next five years than corn. However, expectations are that corn will pay more than soybeans.

## Summary

Two alternatives exist for reallocating base acres. In the Midwest, the alternative with the most corn acres, and the fewest soybean acres, is expected to result in the highest payments levels. More detail on the 2014 Farm Bill decisions is available in the [Farm Bill Toolbox](#) on *farmdoc*.

## Reference

Schnitkey, G. "[Base Acre and Yield Updating Tool: A Release of Spreadsheet to Aid in Making Farm Bill Decisions](#)." *farmdoc daily* (4):235, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, December 9, 2014.

Schnitkey, G., C. Zulauf, J. Coppess, and N. Paulson. "[Overview of Commodity Program Decisions from the 2014 Farm Bill](#)." *farmdoc daily* (4):223, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, November 18, 2014.