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Price Loss Coverage and Agricultural Risk Coverage

University of Arkansas System Division of Agriculture
Cooperative Extension Service
January 2016
I. 2014 Farm Bill

Quick Summary

- Contains **target** prices or **insured** revenues for covered commodities
  1) Price Loss Coverage: PLC, reference price (fixed)
  2) Agricultural Risk Coverage: ARC, revenue guarantee floats with national price & county yield
  Potential payments are based on 85% of base acres
- Retains marketing loan rates
- Increased availability of subsidized crop insurance (Supplemental Coverage Option – SCO)
- Cotton is not a covered commodity - has a separate area crop insurance program (STAX) available in 2015
- PLC and ARC selection are relevant to cotton base acreage
PLC and ARC Concepts

• PLC – Countercyclical Payments

• ARC – Revenue insurance (with no premiums to pay)
  1) ARC-County is similar to area revenue insurance on a crop by crop basis.
  2) ARC-Farm is similar to revenue insurance by FSA farm number. **All crop revenue on a farm is covered jointly, not crop by crop. Pays on 65% of base acres.**

\[
\text{\uparrow\downarrow \text{Revenue Guarantee}} = (5 - \text{Year}) \ \text{\uparrow\downarrow \text{Price and \uparrow\downarrow \text{Yield}}}
\]

• Program selection covers 2014-2018 ....? Make a selection that fits your risk preferences and risk perceptions.

• With generic base, enroll all crops on the FSA list, even crops you have never planted. The default program is PLC.
II. Programs

• Price Loss Coverage (PLC) - covers losses in actual revenue due to commodity price declines below established reference prices. (target price)

• Agricultural Risk Coverage (ARC-County) - covers losses in actual revenue for a covered commodity relative to a revenue guarantee. (insured revenue)

FSA will calculate the revenue guarantee each year, and it will be identical for every farm in the county.
Price Loss Coverage (PLC)

• PLC payments are made for any crop year if the **effective price** is less than the **reference price**.

• Effective Price is the higher of:
  - The national average market price received during the 12 month marketing year.
  - The national average loan rate for the crop.

• Reference Price is established in the Farm Bill for each covered commodity.
## PLC Reference Prices

<table>
<thead>
<tr>
<th>Crop</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>$3.70 /bu.</td>
</tr>
<tr>
<td>Rice (Delta)</td>
<td>$6.30/bu.</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$8.40/bu.</td>
</tr>
<tr>
<td>Wheat</td>
<td>$5.50/bu.</td>
</tr>
<tr>
<td>Sorghum</td>
<td>$3.95/bu.</td>
</tr>
<tr>
<td>Peanuts</td>
<td>$535/ton</td>
</tr>
</tbody>
</table>
PLC Example for Rice

• The national average market price at the end of the 2014 production year is $6.14/bu. This becomes the effective price.
• The payment rate is calculated as $6.30 - $6.14 = $0.16/bu.
• The payment yield on record with USDA is 139.6 bu./acre.
• Base rice acres on record with USDA are 100 acres.
• The payment amount is
  $0.16 \times 139.6 \times (100 \times 0.85) = $1,868.36
Agricultural Risk Coverage (ARC)

• ARC (County) is based on revenue (yield \times price).
• County yields and national prices are applied to determine the **benchmark revenue** and the **actual crop revenue**.
• Applied price is the higher of:
  ➢ The national average market price received during the 12 month marketing year.
  ➢ The national average loan rate for the crop.
• ARC (County) allows separate irrigated and non-irrigated ARC benchmark revenues.
ARC (County) Soybean Example

• Olympic average county yield for 2009-2013 is 46.33 bu./acre
• Olympic average national price for 2009-2013 is $11.77
✓ Benchmark revenue is 46.33 x $11.77 = $545.19/acre
• Revenue guarantee is $468.86/acre ($545.19 x 0.86)

• As an example situation, actual crop revenue for 2014 is $450.00/acre (45 bu./acre county yield, $10.00/bu. national price). A farm has 100 base acres.

➢ Actual crop revenue is less than the revenue guarantee.

• Payment rate is $468.86 - $450.00 = $18.86.

• Payment amount is $18.86 x 100 x 0.85 = $1,603.10
PLC and ARC Summary

• PLC
  - Fixed reference prices are compared to current national prices for each crop
  - Payments are determined by payment yields established with USDA
  - Payments are on 85% of base acres for a crop

• ARC (County)
  - Benchmark revenue is a moving measure for the 5 most recent years
  - Actual revenue is determined by current county yields and national prices for each crop
  - Payments are on 85% of base acres for a crop
PLC and ARC in Risk Management

• **PLC**
  - How likely is the national price to be less than the reference price?

• **ARC (County)**
  - How likely is the national price to be less than 86% of the moving Olympic average national price?
  - How likely is the county yield to be less than 86% of the moving Olympic average county yield?

• Are you mostly concerned with price protection, yield protection, or a combination of both?
ARC Price Characteristics, Soybeans

Year


$/bu.

15.00 14.00 13.00 12.00 11.00 10.00 9.00 8.00 7.00 6.00 5.00 4.00 3.00 2.00 1.00

Price
Average
<table>
<thead>
<tr>
<th>Crop</th>
<th>Probability of Price &lt; 86% of Olympic Average</th>
<th>Average % of Olympic Average, if Triggered</th>
<th>Triggered in 2014?, % of Olympic Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean</td>
<td>10/63=16%</td>
<td>80%</td>
<td>Yes, 83%</td>
</tr>
<tr>
<td>Corn</td>
<td>12/63=19%</td>
<td>77%</td>
<td>Yes, 69%</td>
</tr>
<tr>
<td>Sorghum</td>
<td>11/63=17%</td>
<td>76%</td>
<td>Yes, 75%</td>
</tr>
<tr>
<td>Wheat</td>
<td>11/63=17%</td>
<td>76%</td>
<td>No, 92%</td>
</tr>
<tr>
<td>LG Rice</td>
<td>7/31=23%</td>
<td>61%</td>
<td>No, 90%</td>
</tr>
<tr>
<td>MG Rice</td>
<td>6/31=19%</td>
<td>68%</td>
<td>No, 102%</td>
</tr>
</tbody>
</table>
Soybean: ARC with Declining Prices

Year


$/bu.

Olympic Average Price

Annual Price

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Soybean: ARC with Steady Prices

![Graph showing the price of soybeans from 2010 to 2018 with the years 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, and 2018 on the x-axis and prices in dollars per bushel on the y-axis. The graph includes two lines: one for Annual Price and another for Olympic Average Price. The Annual Price line shows fluctuations, peaking at around $14.00 in 2012 and stabilizing around $9.00 from 2013 onwards. The Olympic Average Price line starts lower, peaks at around $12.00 in 2014, and then stabilizes around $10.00 from 2015 onwards.]
In 2017, the price component of a triggered ARC revenue guarantee would be $9.89/bu. ($11.50 * 0.86). PLC Reference Price is $8.40/bu.
PLC: Characteristics of National Prices for Covered Commodities

• Historical price deviations and trends support comparing PLC reference prices to annual prices for 2007 – 2014.

• Historical durations of periodic price deviations and trends imply similar relationships for the duration of the 2014 Farm Bill.

• The methodology is applicable for evaluating price risk reduction.

• The methodology is not applicable for predicting prices.
Peanut, < $535 Reference Price, 6 Years (75%)
LG Rice, < $6.30 Reference Price, 5 Years (63%)
Sorghum, < $3.95 Reference Price, 3 Years (38%)
Corn, < $3.70 Reference Price, 2 Years (25%)

![Bar chart showing corn prices from 2007 to 2014](chart.png)
Wheat, < $5.50 Reference Price, 1 Year (13%)
Soybean, < $8.40 Reference Price, 0 Years (0%)
Delta MG Rice, < $6.30 Reference Price, 0 Years
## Price Expectations

<table>
<thead>
<tr>
<th>Crop</th>
<th>Equilibrium Outlook</th>
<th>Reference Price</th>
<th>Reference/Equilibrium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peanut</td>
<td>475</td>
<td>535</td>
<td>113%</td>
</tr>
<tr>
<td>LG Rice</td>
<td>5.80</td>
<td>6.30</td>
<td>109%</td>
</tr>
<tr>
<td>Sorghum</td>
<td>4.30</td>
<td>3.95</td>
<td>92%</td>
</tr>
<tr>
<td>Corn</td>
<td>4.60</td>
<td>3.70</td>
<td>80%</td>
</tr>
<tr>
<td>Wheat</td>
<td>6.20</td>
<td>5.50</td>
<td>89%</td>
</tr>
<tr>
<td>Soybean</td>
<td>10.80</td>
<td>8.40</td>
<td>78%</td>
</tr>
<tr>
<td>MG Rice</td>
<td>7.00</td>
<td>6.30</td>
<td>90%</td>
</tr>
<tr>
<td>Crop</td>
<td>Reference Price</td>
<td>2014 Price Forecast</td>
<td>ARC Triggered in 2014?, % of Olympic Average</td>
</tr>
<tr>
<td>---------</td>
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<td>---------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Soybean</td>
<td>8.40</td>
<td>10.20</td>
<td>Yes, 83%</td>
</tr>
<tr>
<td>Corn</td>
<td>3.70</td>
<td>3.65</td>
<td>Yes, 69%</td>
</tr>
<tr>
<td>Sorghum</td>
<td>3.95</td>
<td>3.80</td>
<td>Yes, 75%</td>
</tr>
<tr>
<td>Wheat</td>
<td>5.50</td>
<td>6.00</td>
<td>No, 91%</td>
</tr>
<tr>
<td>LG Rice</td>
<td>6.30</td>
<td>5.49</td>
<td>No, 90%</td>
</tr>
<tr>
<td>MG Rice</td>
<td>6.30</td>
<td>6.80</td>
<td>No, 102%</td>
</tr>
</tbody>
</table>
Corn: ARC with Declining Prices

The graph shows the annual price of corn from 2010 to 2018, with a decline observed in the later years. The Olympic Average Price is also depicted, showing a consistent trend.
Sorghum: ARC with Declining Prices

[Graph showing the annual price and Olympic average price of sorghum from 2010 to 2018. The price trends indicate a decline over the years.]
Wheat: ARC with Declining Prices

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Price</th>
<th>Olympic Average Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
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<tr>
<td>2012</td>
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<td>2013</td>
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<td>2014</td>
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<td>2016</td>
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<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How do I evaluate risk reduction?

• In general, ARC is a good risk management program for a range of annual price levels.

• PLC will likely give greater payments than ARC
  1) for specific crops (LG Rice and Peanuts) and
  2) under specific price conditions (persistent low prices at levels below reference prices).
Conclusion

• Questions?
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• Comments?