FAPRI-MU farm bill analysis

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Bradford Research Farm, Columbia, MO
March 11, 2015
Agenda

- FAPRI-MU’s role in the farm policy process
- 2014 farm bill analysis
  - The ARC-PLC decision
  - Some results and lessons
Our role in the process

- Cooperative agreement with USDA’s Office of the Chief Economist to do farm policy work

- Address questions raised by Hill staff and others
  - What’s the outlook for farm commodity markets, farm income, farm program outlays, consumer food costs?
  - What difference will a proposal make for producers, consumers, taxpayers?

- Educate, not advocate
  - We don’t make recommendations
  - But try to provide objective analysis that can be used by policy makers and the public
### Table 12. Farm income, billion dollars, 2014-18 average

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>House Change vs. Baseline</th>
<th>Senate Change vs. Baseline</th>
<th>Senate Change vs. House</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop receipts</td>
<td>211.17</td>
<td>210.96 -0.21</td>
<td>210.85 -0.31</td>
<td>-0.11</td>
</tr>
<tr>
<td>Livestock receipts</td>
<td>179.79</td>
<td>179.73 -0.06</td>
<td>179.65 -0.14</td>
<td>-0.08</td>
</tr>
<tr>
<td>Government payments</td>
<td>11.10</td>
<td>8.25 -2.85</td>
<td>8.39 -2.70</td>
<td>0.15</td>
</tr>
<tr>
<td>Crop insurance indemnities</td>
<td>9.87</td>
<td>11.66 1.79</td>
<td>11.03 1.16</td>
<td>-0.63</td>
</tr>
<tr>
<td>Rental payments to nonoperators</td>
<td>16.15</td>
<td>15.97 -0.17</td>
<td>15.94 -0.20</td>
<td>-0.03</td>
</tr>
<tr>
<td>Feed costs</td>
<td>52.88</td>
<td>52.79 -0.10</td>
<td>52.71 -0.17</td>
<td>-0.08</td>
</tr>
<tr>
<td>Crop insurance premiums*</td>
<td>3.98</td>
<td>4.58 0.59</td>
<td>4.35 0.37</td>
<td>-0.23</td>
</tr>
<tr>
<td>Other production costs</td>
<td>278.37</td>
<td>278.89 0.52</td>
<td>278.45 0.08</td>
<td>-0.44</td>
</tr>
<tr>
<td>Other net farm income</td>
<td>47.57</td>
<td>47.90 0.34</td>
<td>47.53 -0.03</td>
<td>-0.37</td>
</tr>
<tr>
<td>Net farm income</td>
<td>108.10</td>
<td>106.27 -1.84</td>
<td>106.00 -2.10</td>
<td>-0.27</td>
</tr>
</tbody>
</table>

*Producer-paid premiums

The 2014 farm bill: Policy changes for crop producers

- No more direct, countercyclical or ACRE program payments
- Must choose between
  - Price loss coverage (PLC), payments when prices fall below a trigger
  - Agriculture risk coverage (ARC), payments when per-acre revenues fall below a trigger
- A new crop insurance option (SCO) for PLC participants
- A new crop insurance option (STAX) for cotton producers
  - No ARC or PLC program for cotton
  - But cotton producers get transition payment in 2014 and can get ARC/PLC for other crops grown on the farm
Producers on each farm can choose
- An individual farm version of ARC for all crops on the farm OR
- For each crop on a farm, they can choose between the county version of ARC or PLC

Choice is made once for the life of the farm bill: by March 31, 2015

If producers on a farm do not agree on a choice
- No ARC or PLC benefits are available in 2014
- PLC is only remaining option for 2015 and beyond
Price loss coverage (PLC)

- Like countercyclical payments in some respects
  - Makes payments when prices fall below a trigger
  - Payments tied to base acreage and program yields
  - These generally do NOT depend on current production choices
    - Except for those with cotton base or with fruits and vegetables, planting more or less of a given crop will have NO effect on payments

- But different in many ways, including
  - Formula is simpler—payment rate is just the difference between reference price and the higher of the season-average farm price and the loan rate
  - New “reference prices” are far higher than old target prices
## Reference and target prices

<table>
<thead>
<tr>
<th>Crop Type</th>
<th>2008 Farm Bill Target Prices</th>
<th>2014 Farm Bill Reference Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat/bu.</td>
<td>$4.17</td>
<td>$5.50</td>
</tr>
<tr>
<td>Corn/bu</td>
<td>$2.63</td>
<td>$3.70</td>
</tr>
<tr>
<td>Soybeans/bu.</td>
<td>$6.00</td>
<td>$8.40</td>
</tr>
<tr>
<td>Sorghum/bu.</td>
<td>$2.63</td>
<td>$3.95</td>
</tr>
<tr>
<td>Upland cotton/lb.</td>
<td>71.25 cents</td>
<td>None*</td>
</tr>
<tr>
<td>Long-grain rice/cwt</td>
<td>$10.50</td>
<td>$14.00</td>
</tr>
<tr>
<td>Japonica rice/cwt</td>
<td>$10.50</td>
<td>$16.10</td>
</tr>
</tbody>
</table>

*Upland cotton is not eligible for PLC (or ARC) benefits under the 2014 farm bill. Instead, it has a special crop insurance program: STAX.

Under PLC, payments are made in the October of the year after the crop is harvested (e.g., payments for the 2014 crop would be made in October 2015 or later).
Price-based option for farm support

- **Price Loss Coverage**
  - Payment if annual average farm price is less than reference price
    - Wheat: $5.50/bu.
    - Corn: $3.70/bu.
    - Soybeans: $8.40/bu.
    - Sorghum: $3.95/bu.
    - Long-grain rice: $14.00/cwt.

- Paid on 85% of base acres (tied to historical plantings)

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Sources: Agricultural Act of 2014; FAPRI-MU 2015 baseline; USDA baseline, Dec. 2014
U.S. farm prices for corn

Source: FAPRI-MU stochastic baseline, March 2015
2017 yield in #495: 159 bu./a., 11 bu./a below avg.

Source: FAPRI-MU stochastic baseline, March 2015
U.S. farm prices for corn

Source: FAPRI-MU stochastic baseline, March 2015
U.S. farm prices for corn

Source: FAPRI-MU stochastic baseline, March 2015
U.S. farm and futures prices for corn

U.S. farm prices for soybeans

Source: FAPRI-MU stochastic baseline, March 2015
U.S. farm and futures prices for soybeans

U.S. farm prices for wheat

Source: FAPRI-MU stochastic baseline, March 2015
U.S. farm prices for sorghum

Source: FAPRI-MU stochastic baseline, March 2015
U.S. farm prices for long-grain rice

Source: FAPRI-MU stochastic baseline, March 2015
Reversion-based option for farm support

- Agriculture Risk Coverage (ARC)
  - Payment if per-acre revenues fall below trigger
  - For this example, using national yields, but actual program uses county- or farm-level yields
  - Paid on share of base acreage
    - 85% if choose county option
    - 65% if choose farm option (all crops on farm)

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**Corn revenues per acre**

- Actual/FAPRI
- 86% of benchmark

Sources: Agricultural Act of 2014, FAPRI-MU 2015 stochastic baseline
## ARC-CO calculation example
**Boone Co., MO corn**

<table>
<thead>
<tr>
<th>Year</th>
<th>Max of (national avg. farm price, reference price)</th>
<th>County yield</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009/10</td>
<td>$3.70/bu.</td>
<td>141 bu./a.</td>
<td></td>
</tr>
<tr>
<td>2010/11</td>
<td>$5.18</td>
<td>113</td>
<td></td>
</tr>
<tr>
<td>2011/12</td>
<td>$6.22</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>2012/13</td>
<td>$6.89</td>
<td>83*</td>
<td></td>
</tr>
<tr>
<td>2013/14</td>
<td>$4.46</td>
<td>129</td>
<td></td>
</tr>
<tr>
<td>Olympic average</td>
<td>$5.29</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>2014/15 benchmark revenue</td>
<td>$5.29</td>
<td>112</td>
<td>$592</td>
</tr>
<tr>
<td>86% of benchmark</td>
<td>$5.29</td>
<td>112</td>
<td>$510</td>
</tr>
<tr>
<td>1\textsuperscript{st} option triggering payments</td>
<td>$3.65</td>
<td>&lt;140</td>
<td>&lt;$510</td>
</tr>
<tr>
<td>2\textsuperscript{nd} option triggering payments</td>
<td>&lt;$2.75</td>
<td>185</td>
<td>&lt;$510</td>
</tr>
</tbody>
</table>

*The actual 2012 yield was much lower, but a plug yield is used. Regardless, it is dropped from the Olympic average as the lowest of the five years.*
## ARC-CO calculation example
### Pemiscot Co., MO corn

<table>
<thead>
<tr>
<th>Year</th>
<th>Max of (national avg. farm price, reference price)</th>
<th>County yield</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009/10</td>
<td>$3.70/bu.</td>
<td>135 bu./a.</td>
<td></td>
</tr>
<tr>
<td>2010/11</td>
<td>$5.18</td>
<td>139</td>
<td></td>
</tr>
<tr>
<td>2011/12</td>
<td>$6.22</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>2012/13</td>
<td>$6.89</td>
<td>159</td>
<td></td>
</tr>
<tr>
<td>2013/14</td>
<td>$4.46</td>
<td>169</td>
<td></td>
</tr>
<tr>
<td>Olympic average</td>
<td>$5.29</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>2014/15 benchmark revenue</td>
<td>$5.29</td>
<td>$765</td>
<td></td>
</tr>
</tbody>
</table>

86% of benchmark: $658

1\textsuperscript{st} option triggering payments: $3.65 < 180 < $658

2\textsuperscript{nd} option triggering payments: < $3.72 < $658
Agriculture Risk Coverage (ARC)
- Payment if per-acre revenues fall below trigger
- For this example, using national yields, but actual program uses county- or farm-level yields
- Paid on share of base acreage
  - 85% if choose county option
  - 65% if choose farm option (all crops on farm)

Soy revenues per acre

Sources: Agricultural Act of 2014, FAPRI-MU 2015 stochastic baseline
Projected national average ARC and PLC payments for corn

Reminder:
These will be different in every county. In Missouri, many counties will have no ARC payment in 2014/15, which can affect the ARC/PLC choice.

Page 9 of the U.S. Baseline Briefing Book
Projected national average ARC and PLC payments for soybeans

Reminder: These will be different in every county, and this is an average across 500 possible futures. In many of those 500 futures, payments in any given year under either program will be zero.
Projected national average ARC and PLC payment rates, 2014-18 avg.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>ARC</th>
<th>PLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>$26.83</td>
<td>$19.92</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$16.91</td>
<td>$9.57</td>
</tr>
<tr>
<td>Wheat</td>
<td>$11.16</td>
<td>$13.66</td>
</tr>
<tr>
<td>Upland cotton</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Sorghum</td>
<td>$11.00</td>
<td>$20.82</td>
</tr>
<tr>
<td>Barley</td>
<td>$10.09</td>
<td>$21.70</td>
</tr>
<tr>
<td>Oats</td>
<td>$1.96</td>
<td>$1.38</td>
</tr>
<tr>
<td>Rice</td>
<td>$4.19</td>
<td>$66.02</td>
</tr>
<tr>
<td>Peanuts</td>
<td>$44.91</td>
<td>$138.38</td>
</tr>
</tbody>
</table>
Projected average total crop payments

[Bar chart showing projected average total crop payments for different years, with categories DCP and ACRE, PLC, and ARC.]
Some lessons

- ARC-PLC choice appears easier for some crops than others
  - For rice, our projected PLC payments exceed expected ARC payments by quite a bit
  - But for corn, soybeans and wheat, it’s a closer call
  - The “right” choice depends on your county, your program yields, and what keeps you up at night

- We’ve developed a tool to help understand the implications of the choice
  - But it’s just a tool—you still have to decide!
FAPRI at the Univ. of Missouri and AFPC at Texas A&M have partnered to develop web based tools for:

- Yield update
- Base reallocation and PLC/ARC decision
- Crop insurance
- Generic base allocation

- Incorporates risk (yield and price variability)
- Initial version released September 25, 2014
- Link on FAPRI and AFPC home pages
  - [http://www.fapri.missouri.edu/2014farmbill](http://www.fapri.missouri.edu/2014farmbill)
  - [https://decisionaid.afpc.tamu.edu/](https://decisionaid.afpc.tamu.edu/)
Thanks!

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  - Peter Zimmel
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And, of course, a special thanks to our founding director, Abner Womack!