THE FARM BILL AND THE WESTERN HAY INDUSTRY

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Three reasons hay should pay attention to the Farm Bill

Leaders of Agriculture Committees in Congress say the new farm bill is coming in early 2018 (They seldom do what they say, but maybe this time.)

Commodity focus on higher subsidy rates and new subsidies for cotton and dairy

Crop insurance and insurance-style programs have emerged as central

But hay gets none of this! So why does it matter to a western hay and forage crowd?

1. Subsidies for other crops allows them to compete for land and water and reduce hay and forage acreage and supply
2. Crop insurance subsidy makes eligible crops (almost all except hay and silage) attractive to your bankers
3. By increasing supply of feed crops, insurance and other subsidy causes a bit more use in feeding rations
4. Dairy does have a subsidy program that may encourage more cows, but more for small farms in the east than big farms in the west.
Major US farm Subsidies
(Not including import protection)

• Crop insurance  Annual Outlay ~ $9 billion. But highly variable
• Price and income support programs (PLC & ARC)
  Annual budget ~$6 billion. But highly variable
• Dairy Margin protection ~$200 million
• Conservation ~$5 billion

Hay gets none of this subsidy.

*** There is no evidence that commodity subsidies have helped industries prosper and significant evidence that they have stifled innovation in products and markets.

*** Evidence shows research and extension funding has stimulated innovations

There are lots of smaller programs for export promotions, rural development and dozens of other pet projects.
Price Loss Coverage (PLC) and Agriculture Risk Coverage (ARC)

Two forms of subsidy
• PLC has price triggered payments; ARC has revenue triggered payments
• Farms can choose between these options:
• Most corn and soybeans have chosen ARC; most rice and wheat have chosen PLC.

PLC
• PLC reference prices for covered crops were set in the 2014 Farm Bill.
• Payments per unit equal average prices minus the reference prices.
• Payments are made on 85% of historical plantings, known as “base” acres.

ARC
• ARC payments cover revenue “shortfalls”
• Payments per acre equal actual revenue minus 86% of benchmark revenue
• Payments made on 85% of base acreage
Trends in US Domestic Support

Percent support tied to output
Total support as percent of gross farm receipts

Source: OECD, PSE database
Quick Summary of US crop Insurance

1. Congress mandates broad features and program expansion
2. Government acts as regulator and reinsurer
3. Government sets premium rates and insurance product features and funds development of new insurance products for new crops and regions
4. Private insurance companies sell and service policies
5. Companies compete primarily on service and technology offered to agents and producers
6. Farmer participation is voluntary
Scope of US crop insurance program

- Crops -- available for approximately 130 crops
  - Major commodities and specialty crops
  - Livestock (very limited)
  - Most coverage more than 70% of liability
  - Combinations of crops and coverage available
    - Yield
    - Revenue
    - Area or individual farm
    - Asset, e.g., fruit trees, nursery
    - Whole farm
Crop Insurance Program: Total Liabilities, Subsidy, and Indemnity, U.S. Total, 1996-2016 ($ Billions)

Note: Left axis is for subsidy and indemnity, and right axis is for liabilities. Source: Risk Management Agency, USDA
Corn, Soybeans, Wheat and Cotton Dominate Crop Insurance

<table>
<thead>
<tr>
<th>Crop</th>
<th>Coverage Amount</th>
<th>Percent of Total</th>
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<tbody>
<tr>
<td>Corn</td>
<td>$43.6 Billion</td>
<td>40.1%</td>
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<tr>
<td>Soybeans</td>
<td>$27.2 Billion</td>
<td>25.2%</td>
</tr>
<tr>
<td>Wheat</td>
<td>$9.2 Billion</td>
<td>8.5%</td>
</tr>
<tr>
<td>Cotton</td>
<td>$4.3 Billion</td>
<td>3.9%</td>
</tr>
<tr>
<td>Nursery (FG&amp;C)</td>
<td>$1.3 Billion</td>
<td>1.2%</td>
</tr>
<tr>
<td>Rice</td>
<td>$1.7 Billion</td>
<td>1.6%</td>
</tr>
<tr>
<td>Potatoes</td>
<td>$1.2 Billion</td>
<td>1.1%</td>
</tr>
<tr>
<td>Citrus (incl. trees)</td>
<td>$2.6 Billion</td>
<td>2.4%</td>
</tr>
<tr>
<td>All Others</td>
<td>$18.6 Billion</td>
<td>16.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$109.7 Billion</strong></td>
<td><strong>100.0%</strong></td>
</tr>
<tr>
<td>County</td>
<td>Enrolled Base Acres</td>
<td>Base Production (Million cwt)</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Colusa</td>
<td>167,185</td>
<td>13.1</td>
</tr>
<tr>
<td>Sutter</td>
<td>129,458</td>
<td>9.8</td>
</tr>
<tr>
<td>Butte</td>
<td>110,479</td>
<td>8.8</td>
</tr>
<tr>
<td>Glenn</td>
<td>93,001</td>
<td>7.4</td>
</tr>
<tr>
<td>Yolo</td>
<td>50,149</td>
<td>3.5</td>
</tr>
</tbody>
</table>
Does all this crop insurance subsidy affect what is grown, where and by how much? Yes.

- The premium subsidy has two potential impacts on area planted to a specific crop:
  1. As with any subsidy if the farmers buy insurance the subsidy is money tied how to premium when means tied to area planted. Thus crop insurance subsidy first is just a production subsidy like a per unit payment. This production impact occurs even with risk neutral farmers.
  2. Also, a premium subsidy stimulates purchase of more insurance and thereby increases area planted of the crop with subsidized insurance. This effect adds to the pure production subsidy effect.

Econometrics using acreage and insurance data from Yu, Smith Sumner (2107)
Crop insurance subsidy affects cropping patterns

• Insurance subsidy causes significantly more acreage of the crop that has more subsidy.
• A 10% increase in premium subsidy increases acreage by 0.43%.
• Acreage effects are big relative to the small share of crop insurance subsidy in revenue (about 4% of revenue-equivalent of field crops is from crop insurance subsidy)
• Price elasticity: a 10% increase in price raises acreage by 2.1%
• The equivalent insurance revenue elasticity implies that if premium subsidy were removed for a crop, its acreage would fall by about 4%.

These results hold under many statistical tests and are strong and robust!
Acreage Response to Crop insurance subsidy

• The acreage response to crop insurance is substantial.
• A subsidy $ on crop insurance increases area planted to that crop by much more than the same $ spent on a price subsidy!
• Why?
• Maybe risk aversion, maybe bankers and other finance sources encourage acreage of insured crops
• The crop insurance premium subsidy brings additional subsidy to the whole crop insurance industry, and farmers gain from those too.
Milk subsidy

- The old price supports for milk have been irrelevant and are now gone
- The old payment program based on price is gone
- The complicated price regulations remain in the federal system and in a similar California system, but they do not apply in Idaho, for example
- The current subsidy the Margin Protection Program (MPP) that began with the 2014 farm bill, but has not been satisfying to the dairy industry
- MPP pays when the milk price minus feed cost margin falls below trigger values, using national average prices and a “standard” cow ration
- MPP requires farm signup and some payment of insurance-like premiums for margin protection rates above $4/cwt.
Figure 1. MPP-Dairy Milk Margin Above Feed Costs
Bi-Monthly Pay Period

Source: USDA FSA
Figure 2. Percent of Farms and Percent of Milk Enrolled at Catastrophic and Buy-Up MPP Coverage Levels

<table>
<thead>
<tr>
<th>Year</th>
<th>CAT Coverage</th>
<th>Buy-Up</th>
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<tbody>
<tr>
<td>2015</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>56%</td>
<td>23%</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td>56%</td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td>77%</td>
</tr>
</tbody>
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Source: USDA FSA
Figure 3. Average Volume of Milk Covered per Farm

U.S. Average: 5.7 Million Pounds

FARM BUREAU®
Source: USDA FSA and AFBF Calculations
Figure 4. Percent of Enrolled Milk With Buy-Up MPP Coverage (3 Billion Lbs)

U.S. Average: 2%

Source: USDA FSA and AFBF Calculations
Net Return and Income over Feed Cost for California, ($/hundredweight)
Final Remarks

• Hay growers, marketers and buyers should keep one eye on the farm bill as it unfolds and it may be worth weighing on important issues.

• The subsidies themselves are a mixed bag for subsidized industries ... No evidence of long run prosperity benefits because there are always strings and distortions attached

• Indirect impacts on hay are worth tracking

• Commodity price and income support and crop insurance affect farm acreage choices and market prices

• Dairy subsidies are small, but may still stimulated output especially in the East where farms are small and more highly subsidized
Thank you

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