Comparing Insurance Units for Corn and Soybeans

November 7, 2006

“Insuring Iowa’s Agriculture”
A Continuing Education Workshop
for Crop Insurance Providers
Iowa State University

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Shifts in Crop Insurance

The Agricultural Risk Protection Act (ARPA) of 2000 dramatically affected crop insurance incentives.

Premium subsidy percentages were raised.

Pre-ARPA, crop insurance subsidies were held at a constant $/acre for coverage levels at and above 65%.

Post-ARPA, $/acre insurance subsidies float with the coverage level.

The subsidy changes affect producer choices on coverage level, policy type, and insurance unit structure.
APH Premiums for McLean County, IL Corn

![Graph showing the relationship between coverage level and APH premiums for corn in McLean County, IL.](graph.png)

- **Unsubsidized Premium**
- **Pre-ARPA producer-paid premium**
- **Post-ARPA producer paid premium**
Shift in Insured Acres

Coverage Level

Share of acres

65%  70%  75%  80%  85%

1998  2004
Insurance Unit Choices

Farmers can choose between four insurance unit structures

- Whole-farm
  - (insurance across crops, fields, and land arrangements)

- Enterprise
  - (insurance across fields and land arrangements)

- Basic
  - (insurance across fields)

- Optional
Coverage vs. Cost

Insurance under all four unit structures can provide the same insurance guarantee.

So, in terms of maintaining a target level of revenue, all four unit structures can provide the same benefit.

However, the unit structure affects the indemnity stream from crop insurance and this, in turn, affects the premium charged.

If all premiums were actuarially fair and there were no subsidies, then whole-farm coverage would provide the same amount of protection as the other structures at the lowest cost.
Subsidies and Unit Choice

Examined per-acre premiums, subsidies, and expected crop insurance indemnities for four counties

- Lac Qui Parle County, Minnesota (corn, soybeans, wheat)
- McLean County, Illinois (corn and soybeans)
- Lamb County, Texas (corn and cotton)
- Butler County, Kansas (corn and sorghum)

Optional vs. Enterprise Subsidies

$/acre vs. Coverage Level

- Lac Qui Parle - ou
- Butler - ou
- Lac Qui Parle - eu
- Butler - eu
Corn Insurance by Coverage Level

- Coverage Level: 65%, 70%, 75%, 80%, 85%
- Insurance shares as a share of insured corn acres
- Lac Qui Parle, Butler, McLean
Rates of Returns from Coverage Switch

- Rates of Return for different coverage levels:
  - 65% to 70%
  - 70% to 75%
  - 75% to 80%

Comparing the rates for different models:
- Lac Qui Parle
- Butler
- McLean

Coverage Level:
- 80% to 85%
Rates of Returns from Unit Switch

Coverage Level

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<th>Rate of Return</th>
<th>65%</th>
<th>70%</th>
<th>75%</th>
<th>80%</th>
<th>85%</th>
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Returns from Unit Switch

The graph above holds for moving from:

- Whole-farm to enterprise
- Whole-farm to basic
- Whole-farm to optional
- Enterprise to basic
- Enterprise to optional
- Basic to optional

Assuming actuarially fair premiums across the board

The subsidies themselves provide economic incentive for producers to choose optional units
Distribution of Per-Acre Net Returns