Farmer Costs of Insuring Individual Revenue

Background

The Risk Management Agency (RMA) of the U.S. Department of Agriculture regulates and subsidizes crop insurance in the U.S. Private insurance companies sell and service the policies.

To obtain insurance a farmer must decide whether to insure yield or revenue and whether to insure with an individual policy or group policy.

> Policies to insure individual revenue accounted for 45.5 percent of all policies for corn, cotton, peanuts, soybeans, and wheat in Alabama, Florida, Georgia, and the Carolinas between 2008 and 2012.

A farmer who insures her revenue rather than the average revenue in her county must do numerous things that affect the cost of her individual revenue policy.

The farmer must provide records for the last 4 to 10 years of her yields on the crop land to be insured. The average of these yields is called the farmer's actual production history (APH). If the farmer has records that cover less than four consecutive years of yields, county transitional yields are used for missing years to calculate the APH.

The farmer must choose a coverage level, which determines her insured revenue.

> The farmer must choose to cover 50, 55, 60, 65, 70, or 75 percent of her target revenue. In some cases, the farmer can ensure that her actual revenue plus any covered loss are at least 80 or 85 percent of her target revenue.
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> > Target revenue is the product of the farmer's APH and either RMA's projected price or its harvest price for a crop. Insured revenue, or target revenue guarantee, is the product of target revenue and coverage level.
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> > > RMA's projected price is an average of futures prices from the Chicago Board of Trade during the crop's *planting* season.
> > >
> > > RMA's harvest price is an average of futures prices from the Chicago Board of Trade during the crop's *harvest* season.
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> > A covered revenue loss occurs if the farmer's revenue falls below her insured revenue, or target revenue guarantee.

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The farmer must choose whether to have a revenue protection policy with a harvest price option (RP) or harvest price exclusion (RP-HPE).

If RMA's harvest price exceeds its projected price, the target revenue and farmer's insured revenue will increase for a policy with the harvest price option (RP) but will not increase for a policy without the option (RP-HPE).

The farmer must also choose a type of unit in which to insure her crop in a county.

A unit is an independently insurable tract of land or a combination of tracts within a county.

A farmer with an individual revenue policy must choose an optional, basic, enterprise, or whole farm unit and must insure her crop within, typically, one type of unit.

Types of Units

An optional unit allows the farmer to separately insure land that she owns or rents for cash in various townships throughout a county. An optional unit also allows the farmer to insure a crop grown under a particular seed type or production practice separately from the same crop grown under a different seed type or production practice, if there is a clear break in the areas where the crops are grown.

A basic unit comprises all tracts of land that the farmer owns or rents for cash in a county and on which she grows a single crop. A different basic unit comprises all tracts of land in a county on which a farmer grows a single crop under a crop-share lease with a single owner.

An enterprise unit comprises all of the areas of a single crop that the farmer grows within a county regardless of whether the areas are owned, rented, or share leased by the farmer. An enterprise unit must combine at least two basic units, the crop must be grown in at least two township sections of a county, and each of at least two sections must account for no less than 20 acres or 20 percent of the total area insured in the unit.

A whole farm unit comprises all of the areas of multiple crops grown within a county. The farmer must include in the unit all crops for which whole farm units are available.

Determination of Farmer's Premium

A farmer with a policy to insure his revenue pays a premium. The farmer's out-of-pocket cost is the product of the insurer's liability, the premium rate, and the farmer's share of the rate:

farmer's premium = (insurer's liability) x (premium rate) x (farmer's share)

Insurer's Liability

The liability that the farmer's revenue policy creates for an insurer is the product of the target revenue guarantee and the insured area. In other words,

insurer's liability = (coverage level) x (RMA's projected price) x (APH) x (insured area)

The insured area is the farmer's financial interest in the area of a crop insured within a unit. For example, the insured area for a farmer growing a crop on 100 acres under a 50-50 crop-share lease would be 50 acres, while the insured area for a farmer who owned the 100 acres would be 100 acres.

A policy's liability increases with RMA's projected price, coverage level, APH, and insured area.

Premium Rate

The RMA-determined premium rate is the percent by which insurer's liability is multiplied so that the sum of the farmer's and government's premium for a policy equals the expected indemnity of it.

An indemnity is a reimbursement for a covered revenue loss.

The premium rate increases with the coverage level. The degree to which a particular coverage level raises the premium rate varies by county, crop, and year.

The premium rate increases with production risk of a crop and, thus, varies with the seed types and production practices for the crop, called type/practice in RMA's Cost Estimator, its premium calculator.

For example, the premium rate for a crop grown with irrigation, which reduces yield variability, is lower than the premium rate for the crop grown without irrigation.

The list of approved seed types and production practices for a crop grown in a specific county can be found in RMA's Actuarial Information Browser.

The premium rate also depends on the relationship between the county's reference yield and the farmer's actual production history (APH). Historical yields above the county reference yield are considered by RMA to be less risky than historical yields below the county reference yield.

The higher a farmer's APH is above the reference yield, the lower is his premium rate. The lower a farmer's APH is below the reference yield, the higher is his premium rate.

The county reference yield is the county's historical average yield. RMA uses a county reference yield for each approved seed type and production practice.

The type of unit selected by the farmer also influences the premium rate.

A farmer who chooses an optional unit has the highest premium rate because the unit has more risk than any other type of unit.

A farmer who chooses a basic unit receives a 10 percent discount on the premium rate.

A farmer who chooses an enterprise unit receives an additional discount on the premium rate.

A farmer who chooses a whole farm unit also receives an additional discount on the premium rate, a discount that depends on the proportion of the total acres planted to each crop insured within the unit.

The premium rate for a revenue policy is equal to the premium rate for the corresponding yield policy plus a capped revenue add-on factor. The capped revenue add-on factor will vary from farmer to farmer.

The capped revenue add-on factor is based on the increased probability that an indemnity is paid for a revenue policy due to the inclusion of price risk.

The capped revenue add-on factor for a policy with the harvest price option (RP) will be greater than the factor for a policy with the harvest price exclusion (RP-HPE) because the target revenue guarantee may increase for the policy with the harvest price option after the premium has been paid.

Farmer's Share of Premium Rate

Farmers in Alabama, Florida, Georgia, and the Carolinas paid, on average, 36 percent of the premium rates to insure individual revenues from corn, cotton, peanut, soybean, and wheat production in 2008 – 2012.

The percent of the premium rate that a farmer pays is the farmer's share. The farmer's share increases with the coverage level and varies by type of unit (Table 1).

Table 1: Farmer's Share by Coverage Level and Type of Unit

	Coverage Level (%)							
Type of Unit Insured	50	55	60	65	70	75	80	85
Optional or Basic Unit	0.33	0.36	0.36	0.41	0.41	0.45	0.52	0.64
Enterprise Unit	0.20	0.20	0.20	0.20	0.20	0.23	0.32	0.47
Whole Farm Unit	0.20	0.20	0.20	0.20	0.20	0.20	0.29	0.44

Conclusion

To insure individual revenues, farmers must make numerous choices that affect premia for their policies. A local crop insurance agent and RMA's online information can help a farmer make these choices. In general, the higher is the premium, the higher is the expected indemnity.

A farmer with an individual revenue policy will also, beginning in 2015, be able to choose the Supplemental Coverage Option (SCO). SCO is a group policy. The farmer with SCO insures against a band of losses in the county's revenue. A covered loss occurs if the county's actual revenue falls below 86 percent of the county's reference revenue. The covered loss is bounded, however. In particular, the covered loss cannot exceed the county's reference revenue multiplied by the difference between 86 percent and the coverage level of the farmer's individual revenue policy. Farmers will pay 35 percent of the premium for SCO. SCO will only be available to farmers who also select a price-support program called Price Loss Coverage.

Additional Resources

Edwards, William. "Proven Yields and Insurance Units for Crop Insurance." Iowa State University Extension and Outreach. http://www.extension.iastate.edu/agdm/crops/html/a1-55.html.

Hooper, Alan and Scott Templeton. *Overview of Insurance for Row Crop Farmers in Five Southeastern States,* unpublished report available upon request from second author at stemple@clemson.edu.

Paulson, Nick and Jonathan Coppess. "2014 Farm Bill: The Supplementary Coverage Option" Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, Feb. 27, 2014.

Risk Management Agency, USDA. "Actuarial Information Browser", http://webapp.rma.usda.gov/apps/actuarialinformationbrowser/.

Risk Management Agency, USDA. "Agent Locator", http://www3.rma.usda.gov/apps/agents/index.cfm.

Risk Management Agency, USDA. "Cost Estimator", http://ewebapp.rma.usda.gov/apps/costestimator/.

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