

AN IMPLICATION OF NET INCOME INSURANCE RELATIVE TO GROSS INCOME INSURANCE

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The National Corn Growers Task Force proposed a two-tier farm revenue program. One tier is a county-level gross revenue assurance program. The other tier is an individual farm net income insurance program at a 70% coverage level and no cost to the farmer. [*Forging a New Direction for Farm Policy*, Public Policy Action Team of National Corn Growers Association, October 19, 2006]. Historically most individual farm insurance contracts for U.S. farmers were based on gross income, not net income. It is therefore useful to compare net income insurance and gross income insurance.

U.S.: 2001- 2005	Max. – Min. (\$/acre)	
	Gross Income	Operating Cost
Corn	\$95	\$53
Cotton	\$290	\$71
Rice	\$322	\$94
Sorghum	\$29	\$41
Soybean	\$86	\$17
Wheat	\$47	\$22

One consideration is that gross income is more variable than operating costs. The table at the left uses data from the annual cost of production report issued by the U.S. Department of Agriculture (USDA), Economic Research Service (ERS). The data are from the five most recent crop years for which data are available (2001 - 2005). Except for sorghum, the range or difference between the maximum and minimum gross income is larger, often much larger, than the range for operating cost. **This consideration implies that a variation in gross income is more likely to trigger a payout from net farm income insurance than is a variation in operating cost.**

A second consideration is that net income insurance results in a higher level of protection of gross income. This impact is recognized in the Corn Growers Task Force report on page 3. It is illustrated below for a coverage level of 70%.

Income Measure	Income Situation					
	1	2	3	4	5	6
Gross Income	\$400	\$400	\$400	\$400	\$400	\$400
Operating Cost	\$100	\$150	\$200	\$250	\$300	\$350
Net Income above Operating Cost	\$300	\$250	\$200	\$150	\$100	\$50
Operating Cost as Share of Gross Income	25%	38%	50%	63%	75%	88%
Gross Income Insurance at 70% Coverage						
Gross Income at 70% Coverage	\$280	\$280	\$280	\$280	\$280	\$280
Dollar Reduction in Gross Income	-\$120	-\$120	-\$120	-\$120	-\$120	-\$120
Percent Decline in Gross Income	-30%	-30%	-30%	-30%	-30%	-30%
Net Income Insurance at 70% Coverage						
Net Income at 70% Coverage	\$210	\$175	\$140	\$105	\$70	\$35
Dollar Reduction in Gross Income Needed to Trigger an Indemnity Payment	-\$90	-\$75	-\$60	-\$45	-\$30	-\$15
Percent Decline in Gross Income	-23%	-19%	-15%	-11%	-8%	-4%
Equivalent Gross Income Coverage Level	77%	81%	85%	89%	92%	96%

As operating costs increase from 25% to 50% to 75% of gross revenue, the 70% coverage level of net income translates into 77.5%, 85%, and 92.5% coverage levels for gross income, respectively. Thus, as operating costs increase as a share of gross income, the effective coverage level of gross income increases. These calculations imply that the following formula can be used to calculate the gross revenue coverage level associated with a 70% coverage level for net income: Gross Revenue Coverage Level = 70% + (30% X operating cost share of gross revenue).

A third consideration is that operating cost as a share of gross income varies by crop. Using USDA, ERS cost of production data for the 2001-2005 crop years, the Olympic average (removing high and low) of operating costs as a share of gross income

U.S.: 2001- 2005	Operating Cost as Share of Gross Income	Gross Income Coverage Level
Sorghum	89%	97%
Rice	79%	94%
Cotton	76%	93%
Wheat	59%	88%
Corn	51%	85%
Soybean	34%	80%

ranges from 89% for sorghum to 34% for soybean (see table at left). Using this share and the above formula, the effective coverage level for gross income, given a 70% coverage level of net income, range from 97% for sorghum to 80% for soybeans. **Thus, assuming everything else constant and that farmers are risk averse, moving from gross income insurance to net income insurance would favor some crops, specifically those crops for which operating cost is a higher share of gross income.** This implication needs to be considered and debated.