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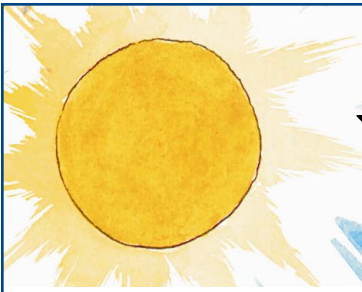
RISK

MANAGEMENT

PLAN

Risk-Reducing Ideas That Work

TIM HARMAN 1997



# Weighing Farm Bill Impact

## THE WORLD ACCORDING TO FLINCHBAUGH

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**T**he 1996 Farm Bill will soon come under official scrutiny. Not only by a multitude of farmers, bureaucrats and ag advisors, but by the Commission on 21st Century Production Agriculture. The Commission was mandated by the Federal Agricultural Improvement and Reform Act (FAIR) to review the impacts of the legislation and to make recommendations for future agriculture policy.

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*“A \$4 billion ag budget won’t buy a large farm program. Producers must come to grips with this reality, and acquire the skills needed to manage risk.”*

According to Barry Flinchbaugh, a Kansas State Research and Extension economist, “the commission will assess the ways in which production flexibility contracts have served American farmers; the economic risks that small, medium and large farm operators face; the security of the nation’s food supply; farmland values and farm income; the success of ag regulatory relief and tax relief for farmers; and federal interference in ag export markets.

“Our first analysis will set the stage for our second mission,” said Flinchbaugh. “That mission is to review the past, present and future of U.S. production agriculture and assess and determine the proper role for the federal government.”

Initially, the Commission will consider five options:

- (1) continuing Freedom to Farm beyond 2002 with a \$4 billion baseline budget,
- (2) ending federal farm programs altogether,
- (3) reverting to a 1990 style farm bill,
- (4) installing a completely new farm program that likely would be based on revenue based insurance plans, and
- (5) reverting to the 1949 Agricultural Act.

“We won’t really know how to judge Freedom to Farm until 2000, when program payments decline significantly,” Flinchbaugh said. “This Commission isn’t going to focus strictly on Freedom to Farm. We are going to conduct an analysis of all available farm policy options. This isn’t going to be a political road show.

“A \$4 billion ag budget won’t buy a large farm program. Producers must come to grips with this reality, and acquire the skills needed to manage risk.”



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# Stuck

CHANGE IS GOOD...YOU GO FIRST

**F**arm Futures magazine recently published a list of the top ten reasons why farmers don't actively manage agricultural risk. Do any of these strike a chord with you?

As much as farmers have heard about the need to do a better job of analyzing their risks, developing a business plan, and honing marketing skills, the number of farmers who have taken the first step is very small. In a survey of 960 readers conducted by Farm Futures, only about 5 percent are using available tools to manage production and financial risks.

So, why haven't the other 95 percent signed on? At least four reasons come to mind right away, which may help explain why producers are "stuck."

**1. Resistance to change.** In what may be the ultimate irony, learning about risk management seems risky itself. It involves changing the way you approach decisions and the way you do business. If you believe that change is unnecessary, the risk management advice you've received in the past probably stung for a moment then blew past you like an arctic chill.

**2. Too many decisions, not enough time.** The variety of risk management tools can be a curse as well as a blessing. Good tools incorrectly used or poorly understood can ruin an opera-

tion. Ongoing risk management and education will be necessary to stay competitive.

**3. Old fears die hard.** Despite the fact that thousands of people use futures and options everyday to protect themselves from price risk, distrust of the futures industry still runs deep in the hearts of many farmers. The crop insurance industry has also struggled to gain farmer confidence. Both industries are working with educators and farm organizations to increase trust and understanding.

**4. The check is in the mail.** Last but not least, up until now the Federal farm program absorbed some of the harsh realities associated with farming. The Federal Government assumed part of the production risk by making annual disaster payments. For the most part, those have been replaced with subsidized crop insurance. In the past, part of the marketing risk was reduced by annual price support payments. The safety net was held by Uncle Sam. Now, private sector alternatives to government programs *must* be understood and used.

In today's marketplace, individual members of the financial, futures and crop insurance industries offer producers many complementary risk management tools. For producers, the reward for adopting risk management strategies may well be survival.

## TOP TEN REASONS WHY FARMERS DON'T MANAGE RISK

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>10. There's no free cap or jacket</li> <li>9. I'm waiting for my neighbors to try it</li> <li>8. The media created El Niño</li> <li>7. Crop failures build character</li> <li>6. It's more fun to keep my lender guessing about my ability to repay</li> <li>5. I probably deserve a total crop loss</li> </ul> | <ul style="list-style-type: none"> <li>4. Sleeping too soundly would make my spouse wonder . . .</li> <li>3. The IRS would take the profits anyway</li> <li>2. My children would just fight over the estate</li> <li>1. Life would be dull without daily doses of fear</li> </ul> |
|--|---|

SOURCE: FARM FUTURES



# Taking Stock of Your Options

## THINGS TO DO WHEN YOU'RE NOT IN THE FIELD

**R**EGARDLESS OF THE ENTERPRISE, whether it is crop production, livestock feeding, or commodity storage, good management requires that contracting and forward pricing decisions be coordinated closely with production and borrowing decisions (see next page). These suggested steps provide a general guide, as no single approach is best for every farmer. The choice depends on the individual farmer's resources and objectives.

### Identify Production, Borrowing, and Marketing Alternatives

The first step is to identify alternatives, which depend on the resources the farmer controls and the amount that the farmer can borrow. A crop farmer, for example, could grow different crops on the available land, lease more land, lease land to someone else, or even leave land idle. Similarly, the livestock feeder can place different types and weights of livestock on feed, feed to different weights, or leave the feedlot empty. Different levels of cultural practices, fertilizer application, pest control, feeding rates, and so forth, may be possible.

The farmer's borrowing alternatives depend on the amount of collateral owned and on lenders' policies. Alternatives include the amount to borrow and whether to use long-term or short-term loans.

The selling or contracting alternatives include the various outlets and types of cash, futures, and options contracts discussed in this report. Prices that potential buyers bid for cash contracts should be compared with futures prices where possible, using the appropriate basis. If direct use of futures or options is contemplated, then commission fees and margin requirements should be assessed, and lenders' policies in covering futures margin calls should be determined.

### Estimate Costs and Returns Using Forward Price Information

For farmers with fixed investments in land, equipment, or farming skills, a shortrun goal is to maximize expected returns above variable costs, subject to some restraint on risk. Expected gross returns can be based on futures or cash forward prices. Variable costs, such as purchased feed, fertilizer, and chemicals, for example, are directly tied to production and can be avoided by not producing. In the long run, the farmer wants returns to exceed total costs, both fixed and variable. But, profit is maximized or losses minimized in the short run by maximizing returns above variable costs.

Certain items that are fixed costs for one producer may be variable costs for another. For example, depreciation, interest, insurance, and taxes on a feedlot are fixed costs for the feedlot owner — they are realized whether the feedlot is used or not. However, the costs for these feedlot services are variable costs for the farmer who is hiring cattle custom fed in a feedlot.

### Evaluate Risk and Risk-Bearing Capacity

Among the risks that a farmer must weigh are price risks, output risks, and risks of contract default by opposite parties. In past years, Government nonrecourse loans and deficiency payments effectively limited downward price risks for growers of program-supported commodities. The farmer who was eligible for loans and deficiency payments often needed no other price protection. Price risk has become more important with lower loan rates and target prices, and other farm program changes.

All crop producers face output risk, but the risks are particularly great in nonirrigated areas that are subject to frequent droughts. Crop yield risk includes not only the possibility of low yields but also poor quality; for example, high-moisture corn, weak-fiber cotton, or undersized potatoes. Diversification among enterprises, crop insurance, and holding of reserve funds to carry the farm through one or more bad crop years are the primary ways to deal with crop yield risk. In many crop-growing situa-

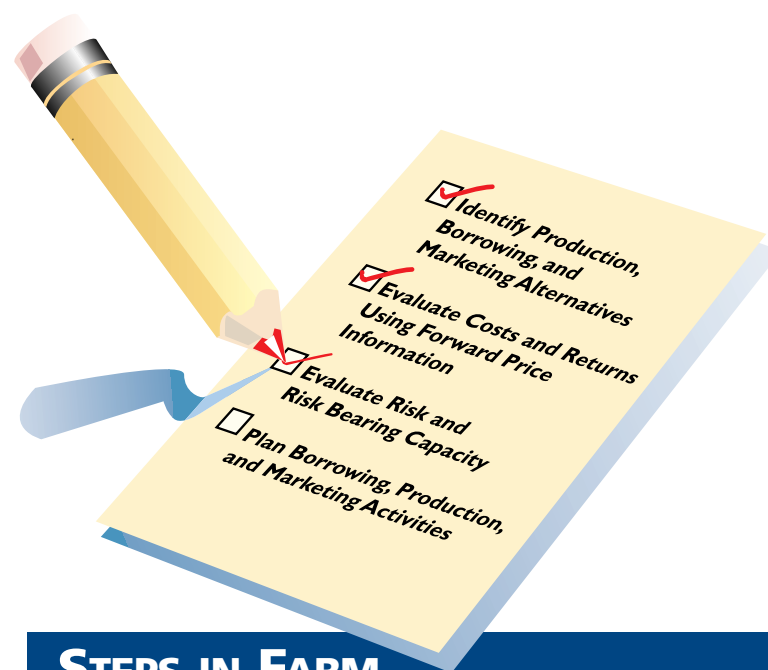
tions, forward selling no more than a third or half of the expected crop before yield is assured minimizes risk.

Farmers who enter cash contracts must also consider the possibility of default by buyers; farmers who use futures and options contracts must evaluate their basis risks, and farmers who hedge with futures must weigh the risks of margin calls. Dealing only with reputable buyers and sellers can limit default risk. Basis risk is relatively small for most producers, but may be substantial for farmers who are distant from futures delivery points or who produce commodities with special quality attributes. To be prepared for futures margin calls, the farmer must either hold cash reserves or make arrangements with a lender.

Farmers differ greatly in the amount of risk they can tolerate in an enterprise, depending on their overall debt-to-asset situation, their degree of diversification, and the riskiness of their other enterprises. One large loss, or two or three successive smaller losses, could throw into bankruptcy a specialized farmer with a high ratio of debts to assets. Such a farmer would want to make full use of forward sales, option contracts, yield insurance, and other precautions to assure some minimum level of return. In contrast, a farmer with substantial financial reserves or other sources of income may choose to carry greater risks on a particular enterprise in hopes of achieving higher average returns over time. However, even the more financially secure farmer can use forward contracts or options to expand profit opportunities while controlling risks.

### **Plan Borrowing, Production, and Marketing Activities**

Once alternatives have been identified, costs and returns have been estimated, and risks evaluated, a coordinated plan for borrowing, production, and marketing can be developed. The plan needs to allow for the possibility of unfavorable contingencies, such as lower than expected prices or yields. A sound plan can also help in obtaining loans.



## **STEPS IN FARM DECISION MAKING**

### **Planning stage**

1. Identify the production, borrowing, contracting, and spot-selling alternatives available.
2. Estimate costs and returns using forward price information.
3. Evaluate risks and risk-bearing capacity.

### **Implementation stage**

1. Arrange loans, purchase inputs, and contract outputs.
2. Initiate and carry out production or storage.
3. Adjust to new information about price and yield prospects as needed.
4. Deliver the product, close out any futures or option hedges, and repay loans.

### **Implementation**

Implementation involves arranging loans, obtaining insurance, buying inputs, and contracting for outputs, and then carrying out the physical processes of production and marketing. Changes in yield and price prospects after implementation begins may require modifying the plan. For example, the amount of a crop that is forward priced can be adjusted upward or downward as yield prospects improve or decline.



# Painting the Risk Management Landscape

## ASSESS YOUR MANAGEMENT SKILLS AND FINANCIAL STRENGTH

**R**ECENT SURVEYS by *Farm Futures* questioned farmers on a number of topics ranging from their knowledge of pricing tools to their farm's financial strength. The survey produced some illuminating findings, several of which are summarized below in Table 1. Almost 70 percent of those surveyed manage risks through farm program payments, which will end in the year 2002.

According to *Farm Futures*, few farmers appear to be putting it all together and actively trying to control the risks on their farms through a coordinated plan. Though the number of producers with written marketing plans has increased, this practice has been adopted by just one in seven farmers, according to *Farm Futures* research. And, as Table 2 shows, few farmers appear to be using analytical tools like ratios and accrual accounting although many of which are now computerized.

The advent of many new risk management tools has made farming even more challenging. Moreover, many different private sector companies offer a piece of the risk management puzzle, but there is no one-stop shopping outlet available when it comes to risk management.

### Marketing Skills

A *Farm Futures* marketing skills test confirmed the assumption that farmers who scored higher were also more likely to have achieved above-average profitability, as measured by return on equity, over the last five years. It was also encouraging to see that between 85 percent and 95 percent correctly answered questions relating to essential topics such as basis.

Moreover, between 68 percent and 83 percent correctly defined options terms such as a put, a call, a strike price, and a premium (see Table 3). When similar questions were asked in

1989, 45 percent answered correctly. And, while only about a quarter use options, this figure has doubled since 1989.

**TABLE 1**  
**Risk Management Practices**  
(% using technique a lot)

69%	Used government farm program
39%	Diversified operation by raising crops and livestock
39%	Varied maturity dates of seeds
35%	Used contract inputs to lock in a good price
30%	Bought crop insurance
25%	Used crop-share land rents
20%	Kept a credit line open to take advantage of attractive prices on inputs
16%	Used multi-year leases
13%	Irrigated
10%	Shared expenses with landlord
8%	Refinanced loans to take advantage of lower interest rates
6%	Hired custom operators to improve timeliness of crop operations
6%	Hired custom operator to reduce machinery expense
3%	Diversified by raising crops not normally grown in the area
3%	Leased equipment rather than bought
2%	Rented equipment rather than bought

SOURCE: FARM FUTURES



*“One of the most troubling aspects of this survey research was that some 20 percent of today’s full-time farmers are vulnerable, burdened by debt and without adequate cash flow and profitability”*

.....

As encouraging as these findings are, research also shows that for many farmers the educational process is only beginning. Only 6 percent of those surveyed scored an A on the marketing test, answering 18 or more of the 20 questions correctly. And 60 percent of the respondents received a score of 70 percent or less.

In addition, another recent survey demonstrated that risk management means more than managing price risk. When farmers were surveyed on other practices, few (just 5 percent or so) qualified as first-rate risk managers, using a wide spectrum of financial, production and marketing tools to control their overall level of risk while achieving outstanding returns.

One of the most troubling aspects of this survey research was that some 20 percent of today’s full-time farmers are vulnerable, burdened by debt and without adequate cash-flow and profitability. Indeed, a majority, some 55 percent, had substantial levels of debt but had not yet adopted the risk management skills needed to ensure their farm’s survival.

**TABLE 2**  
**Financial Risk Management Tools**  
(% using tool)

55%	Cash-flow statements
46%	Computerized financial records
24%	Financial ratios
19%	Accrual accounting

SOURCE: FARM FUTURES

**TABLE 3**  
**Knowledge of Options Terms**  
(% correctly identifying a term)

	Aug. 1989	Sept. 1996	% Increase
Strike price	44%	79%	+35%
Put	41%	68%	+27%
Call	42%	68%	+26%
Premium	45%	83%	+38%

SOURCE: FARM FUTURES

Research indicates that educational efforts need to extend beyond one-dimensional approaches to risk management, which address strictly marketing fundamentals or crop insurance. Instead, farmers need to understand all components of risk and be able to put together comprehensive risk management plans. By using this knowledge, farmers can indeed improve their profitability and prosper in this new era of free-market agriculture.

How does your farm rate? We’ve included two short quizzes to help you gain some perspective. First, measure your knowledge and use of risk management tools. Then, rate your farm’s financial strength. You may be surprised.



## Risk Management Skills Assessment

**1. Mark if you've done the following "a lot," "some," or "not much." Give yourself 1 point for each time you answer a lot, 2 points for each some, and 3 points for each not much.**

- Diversified production by raising both crops and livestock.
- Diversified production by raising a crop not widely grown in your area.
- Planted varieties with different maturity dates.
- Hired fieldwork done rather than purchase a piece of equipment.
- Hired fieldwork done to improve timeliness of crop operations.
- Used irrigation to reduce losses from drought.
- Contracted inputs ahead of when you needed them to lock in a good price or made sure you'd have access to them.
- Bought crop insurance.
- Maintained a larger open line of credit than you need just in case.
- Participated in the government farm program.
- Leased equipment rather than purchased it.
- Rented equipment rather than purchased it.
- Shared production expenses or work with landlord.

- Negotiated multi-year leases of farmland.
- Used crop share leases.
- Refinanced debt to take advantage of lower interest rates.

**2. Subtract one point for each of the following techniques you use.**

- Sensitivity analysis
- Accrual accounting
- Cash flow plan
- Accountant
- Computerized financial records
- Financial ratios
- Financial consultant or farm business association

**3. How many individual sales of your major crop will you make in a year?**

*Subtract the number of points indicated.*

Points	Individual sales
1	= One
2	= Two to five
3	= Six to 10
4	= 11 to 15
5	= More than 15

**4. What percentage of your crops are forward priced before harvest or before reaching market weight?**

*Subtract the number of points indicated for both crops and livestock, giving yourself two separate scores.*

- Crops
- Livestock

Points    % forward priced

- 1 = None
- 2 = 1% to 24%
- 3 = 25% to 49%
- 4 = 50% to 75%
- 5 = More than 75%

**5. If you raise livestock, what percent are raised or sold through a contract or marketing arrangement with a packer or other company?**

*Subtract the number of points indicated for both hogs and cattle, giving yourself two separate scores.*

- Hogs
- Cattle

Points    % using contract

- 1 = None
- 2 = 1% to 24%
- 3 = 25% to 49%
- 4 = 50% to 75%
- 5 = More than 75%

**6. Which of the following best describes your approach to planning?**

*Add the number of points indicated.*

Points	Approach
1	= Have a detailed, written plan for the next five years
2	= Put a few ideas on paper, but nothing comprehensive
3	= Have a general idea, but nothing in writing
4	= Have not doing any planning that far into future

### TOTAL POINTS

#### SCORING SYSTEM

35 or more	★
25 to 34	★★
19 to 24	★★★
18 or less	★★★★

## Financial Strength Quiz

**What letter grade (A, B, C, D, or F) would you give to judge the financial strength of your farm?**

*Put the number of points indicated below, 'A' being the best.*

A = 5    B = 4    C = 3    D = 2    F = 1

**How likely is it that your farm could survive a year of bad yields or bad prices — "very likely," "somewhat likely," or "very unlikely?"**

*Put -1 point if you answered "very unlikely." Otherwise put zero.*

**How much would the following affect your farm? Answer "a lot," "some," or "not much."**

- a 3 percentage point rise in interest rates
- a 5% drop in revenues
- a 5% increase in expenses

*Put -1 point for each time you answer "a lot." Otherwise put zero.*

**Do you worry about whether you'll be able to pay back the debt you own?**

*If yes, put -1 point. Otherwise put zero.*

**Do you always pay off the balance on your credit cards on time to avoid paying a finance charge on the outstanding balance?**

*If no, put minus -1. Otherwise put zero.*

**Compared to other farms, is your farm successful?**

*If no, put minus -1 point. Otherwise put zero.*

**Over the next five years, do you expect your earnings to increase?**

*If no, put minus -1 point. Otherwise put zero.*

**What were your farm's total profits after expenses last year?**

*Put the number of points indicated below.*

- 1 = Lost money
- 2 = Less than \$10,000
- 3 = \$10,000 to \$24,999
- 4 = \$25,000 to \$49,999
- 5 = \$50,000 to \$99,999
- 6 = \$100,000 or more

**What is your farm's debt-to-asset ratio? That is, your total debt divided by your total assets? \_\_\_%**

*Subtract the number of points indicated below.*

- 1 = Zero (no debt)
- 2 = 1 to 10%
- 3 = 11 to 40%
- 4 = 40 to 60%
- 5 = More than 60%

#### SCORING SYSTEM

Zero or less	★
One to three	★★
Four to six	★★★
Seven or more	★★★★



# A New Crop of Insurance

## NEW WAYS TO PROTECT YOUR BOTTOM LINE

**B**ECAUSE CROP INSURANCE MUST be purchased well before planting, making an informed decision is crucial to executing a risk management strategy. The choices producers make or don't make will affect their ability to confidently price a percentage of their crop before harvest. With crop insurance, producers can market the insured portion of their crop with confidence. They know that they will have either the crops to deliver or insurance indemnities to purchase the commodities necessary to meet delivery obligations.

For most producers, guaranteeing revenue is the bottom line of all risk management strategies. To that end, the U.S. Department of Agriculture's Risk Management Agency (RMA) has made available three forms of revenue insurance that extend the coverage to include fluctuations in price. Each type combines yield and price risk protection into a single crop insurance plan to protect crop revenue. While revenue insurance is not a substitute for a marketing plan and other risk-reducing farming techniques, the increased protection is a welcomed change for many producers.

### 1. Income Protection

Income Protection (IP) policies protect producers against reductions in gross income when either a crop's price or yield declines from early-season expectations. Using corn as an example, a *projected price*, using the February average of the December Chicago Board of Trade (CBOT) corn contract, is used to establish guaranteed revenue. (The revenue guarantee equals the product of the producer's historical yield, the projected price, and the coverage level selected by the producer.)

Revenue shortfall is determined by using a *harvest price*, which is the November average of the same December contract.

The price at which the crop actually sells is not used to calculate a loss payment. A producer is paid for a loss when the actual and appraised yield multiplied by the harvest price falls below the revenue guarantee. Other crops use similar pricing periods as specified in the crop insurance policy.

**For example**, suppose that a corn producer has an average historical yield of 115 bushels per acre, the projected price is \$2.50 per bushel, and the producer selects 75 percent coverage. The producer's revenue guarantee is \$215.63 per acre (115 bu. x \$2.50 x .75). Using the

information above, the following two scenarios illustrate conditions under which IP would pay producers:

#### *Low yields/High prices*

The producer harvests only 55 bushels per acre, but the harvest price is \$2.60 per bushel. The producer's calculated revenue is \$143 per acre (55 bushels x \$2.60 per bushel).

**So**, the producer is paid the difference of \$72.63 per acre (\$215.63 - \$143).

#### *Normal yields/Low prices*

The producer harvests 115 bushels per acre, but the actual harvest price falls to \$1.80 per bushel. The producer's calculated revenue is \$207 per acre (115 bushels x \$1.80 per bushel).

**So**, the producer is paid the difference of \$8.63 per acre (\$215.63 - \$207).


The premium for IP coverage reflects the historic yield variation and the variation in gross income due to yield and price movements during the crop year.

### 2. Crop Revenue Coverage

Like the Income Protection plan, Crop Revenue Coverage (CRC) provides revenue protection based on price and yield expectations. CRC, however, pays for losses below the yield guarantee at the higher of an early-season price or the harvest price. For most corn, the *early-season price* is 95 or 100 percent of the February average daily settlement price of the CBOT December corn futures contract. The *harvest price* is 95 or 100 percent of the November average daily settlement for the same December contract. The price at which the crop actually sells is not used to calculate a loss payment. Commodity exchanges, measurement periods, and contract months may vary for other crops.

The CRC revenue guarantee equals the product of the producer's historical yield, the coverage level, and the higher of the early-season price or the harvest price.

**For example**, suppose that a corn producer has an average historical yield of 115 bushels per acre, the early-season price is \$2.50 per



**“Because crop insurance must be purchased well before planting, making an informed decision is crucial to executing a risk management strategy. The choices producers make—or don’t make—will affect their ability to confidently price a percentage of their crop before harvest”**

.....

bushel (\$2.63 x .95), and the producer selects 75 percent coverage. Using this information, the following two scenarios illustrate the conditions under which CRC would pay producers:

*Low yields/Harvest-time price is higher than the early-season price*

The producer harvests 55 bushels per acre, and the harvest-time price (November) increases to \$3.00 per bushel. So, the producer’s dollar amount of protection is \$245.81 per acre (115 bu. x .75 x \$2.85 [.95 x \$3.00]). The calculated revenue is \$156.75 (55 bu. x the harvest price of \$2.85). So, the loss payment to the producer is \$89.06 per acre (\$245.81 - \$156.75).

*Low yields/Harvest-time price is less than the early-season price*

The producer harvests 55 bushels per acre, and the harvest price falls to \$1.80 per bushel (.95 x \$1.89). The producer’s minimum amount of protection is \$215.63 per acre (115 bu. x .75 x the higher of \$2.50 or \$1.80) and the calculated revenue is \$99. (55 bu. x \$1.80 harvest price). So, the loss payment to the producer is \$116.63 per acre (\$215.63 - \$99).

On average, CRC premiums are significantly higher than IP premiums. The higher cost is due in part to the higher price used to pay losses. In addition, IP coverage is based on all of a producer’s acreage in a county, while CRC allows producers to subdivide their acreage into smaller “units,” as defined in their policies.

### 3. Revenue Assurance

Revenue Assurance (RA) is dollar-denominated coverage. That is, a producer selects a dollar amount of target revenue from a range defined by 65 to 75 percent of expected revenue:

**(approved APH yield x coverage level  
x projected county price)**

The *projected county price* is used to calculate the revenue guarantee and premium. The county harvest price is used only to determine the value of production to subtract from the revenue guarantee. The difference is the indemnity.

The projected county price for corn is a simple average of the final closing daily settlement prices in February on the December futures contract for the current crop year, minus the county-specific adjustment factor. The county-specific adjustment factor is the historical difference between county harvest price and the simple average of the final daily settlement price in November on the CBOT December futures contract.

For soybeans, the projected county price is the simple average of the final closing daily settlement prices in February on the CBOT November futures contract for the current crop year, minus the county-specific adjustment factor. The county-specific adjustment factor is the historical difference between county harvest prices and the simple average of the final daily settlement prices in October on the November futures contract. The projected county prices will be calculated before March 5 of the current crop year.

The *county harvest price* for corn is the average of the November daily corn posted county price for the applicable crop year published by USDA. For soybeans, it is the average of the October daily soybean-posted county price. The county harvest prices will be calculated by November 5 of the current crop year for soybeans and by December 5 for corn.

### 4. Energizing Multiple Peril Crop Insurance Protection

Federal crop insurance products are commonly called Multiple Peril Crop Insurance (MPCI). Two MPCI insurance plans are the Actual Production History plan (APH) and the Group Risk Plan (GRP). *Both standard insurance plans can be combined with various pricing tools to provide coverage that approximates revenue insurance protection.*

For example, one cost-effective strategy might be to combine a GRP policy with maximum coverage and a put option. GRP coverage is a departure from traditional approaches to crop insurance because it uses an index the expected county yield as the basis for protection. When the *county yield* for the insured crop falls below the yield level chosen by the producer, the producer receives a loss payment. GRP buyers can insure up to 90 percent of the expected county yield at up to 150 percent of the expected price at rates generally lower than traditional APH protection.

GRP might be a good risk management tool for producers who (1) can’t or don’t want to furnish individual yield records to establish APH guarantees, (2) have individual farm yields that vary with county yields, or (3) determine that the cost of insuring crops with APH exceeds the perceived risks.

Using this strategy, a 1997 soybean loss triggered by low county yields may be paid at a high value per bushel (1997 county soybean losses could be paid in excess of \$10 per bushel). This policy provides a high level of price protection in case of county crop loss. The put option purchased before planting is likely to have increased in value if there was a large national soybean crop, thus giving the producer downside price protection.



# Price

## It's What You Make It

### PROVEN WAYS TO PROTECT YOUR PRICE

**A**SK MOST FARMERS about risk and one word probably comes to mind: debt. The 1980s farm financial crisis vividly illustrated what happens when you can't pay off the money you've borrowed to buy land, machinery, and crop inputs. Even 10 years later, bankruptcy, foreclosure, and the loss of the family farm remain powerful warnings of the risks of leverage. Yet producers face another big threat to their business income and stability: price risk.

Whether it's stored grain or the crop you'll plant in the spring, not having price protection puts you at risk. If prices fall, your revenues also fall.

Some farmers can afford to take a lot of price risk. Farmers with little debt and strong earnings can wait until prices rally to sell their production. And if prices fall—well, they've got more than enough money to put in another crop and do it again. By taking a lot of price risk they may increase the ultimate rewards they coax from the market.

But most farmers don't have the luxury of waiting for the market. The risk from weather and debt is just about all the risk they can afford to take. Fortunately, there are plenty of ways to reduce price risk. Here's a rundown of the most popular risk-reducing tools farmers are using.

#### Forward cash contract

With this agreement, sometimes called fixed or flat price contract, you lock in a final price for a commodity you're either storing or expect to raise. You can forward contract the commodity that's growing in the field to lock in a good price from a summertime weather scare rally. You can also forward contract stored inventory, using a post-harvest rally to price the crop you'll store until the river system opens, for example.

A risk minimizing approach is to fix both the futures and basis portions of your price at the same time, with a forward cash contract when a portion of your production is known. Basis is the amount your cash price differs from the futures price.

#### Buy a put option

Since 1985, farmers have been able to trade options on commodity futures. Agriculture options convey the right to buy or sell a specific futures contract at a set "strike price." In exchange for that right, the buyer of an option pays the seller a fee or premium. Agriculture options don't last indefinitely; they usually expire a week or two before the beginning of the delivery month for the futures contract they involve.

A put option is the opposite of a call. It's the right to sell a specified futures contract at a specific strike price. If futures are higher than that price, the put is "out of the money" and not worth much. If futures are lower than the put's strike price, the put is "in the money" and worth more because it could be exercised and the resulting futures position closed out for an immediate profit.

An option to sell futures is a put option. For example, a farmer who pays a 10-cent premium and buys a December \$3 corn put owns the right to sell December futures for \$3 a bushel.

If prices are higher than \$3, that right obviously isn't worth very much. If prices are lower than \$2.90, the option could be exercised immediately for a profit.

#### Minimum price contract

Just as elevators have begun offering cash contracts based on futures, they have designed agreements using options.

Under a minimum price contract, you sell grain to the elevator for a fixed price, less the cost of a call option you select. If prices rise, you may be able to add to your selling price. If the market doesn't rise, you're guaranteed the minimum price.

These prices can be used both before and after harvest. Specific details vary: some elevators let you sell the option and fix your price at any time, while others require holding the option until expiration. Some of these contracts fix the basis; others combine the call with a hedge to arrive.



***The best marketing opportunities normally occur before harvest.***

Although most farmers still prefer to buy options through a broker, these option-derived cash contracts have carved out a niche.

## Hedge-to-arrive

These cash contracts fix the futures portion of your price, but let you spot the basis later. They contain the potential for a lot of flexibility. For example, you can close out a sale in one futures contract month and then sell again in another month. This “rolling” feature lets you seek additional basis gains; you can also profit on the spread, or difference, between futures contract months.

Of course, too much flexibility can be dangerous, as farmers and elevators found out in 1996. When the spreads between old and new crop futures soared twice as high as ever before, hedge-to-arrive contracts incurred huge losses for farmers who had priced 1996 and 1997 corn crop with 1995 crop futures.

Because of the problems, many elevators have instituted tighter controls over their hedge to arrive contracts. Rolls are limited to the same crop year as the original hedge, and you may have to pay the elevator the equivalent of margin money if futures prices rise.

## Sell futures

Fixing futures and basis at the same time has one drawback. The futures and cash markets are not always strong at the same time because basis changes. It reflects the cost of storing a commodity until the delivery period and transporting it to the delivery site set by the futures contract. Demand also figures in. The more customers need the crop, the more they're willing to pay for it, strengthening the cash market and the basis. By contrast, when a commodity is plentiful (for example, at harvest), storage and

transportation costs increase, and supply overwhelms the demand—all factors that weaken the basis.

As a result, fixing the futures and basis parts of your price at different times may help you realize a higher overall price. One way to do this is to sell exchange traded futures contracts directly through a broker. This is what your elevator does to hedge its risk after it forward contracts grain with you.

Futures contracts list a delivery month and a quantity. For example, 5,000 bushels at the Chicago Board of Trade and 1,000 bushels at the Mid-America Commodity Exchange. But, very few contracts are ever exercised. Instead, buyers and sellers of grain use the contracts as surrogates to lock in a price for the commodity. Then, they offset the position—a seller buys back the previous sale—and add or subtract any profits or losses from the price they negotiate in the cash market.

To trade futures, you must start an account with a futures broker and deposit margin money to guarantee each position you open. If your position shows a loss, you must deposit more funds on a dollar-for-dollar basis. You'll also incur commissions and exchange fees every time you open a position.

Financing a futures account can be a major obstacle, especially if you intend to stay with a hedge all the way until harvest, and prices rise significantly after you initiate the futures sale. Some banks provide funds for hedges; many don't.

Using futures directly, however, gives you greater flexibility than cash instruments. For example, if you want to store after harvest to wait for basis to strengthen, you could sell futures on spring and summer rallies, then buy back the positions later (at harvest), when prices are typically lower. You'd then be free to wait for a cash market rally or to hedge again in a contract month for later delivery.

Moreover, selling with a cash contract commits you to delivering the commodity. If it begins to look like your yields might come up short, you can't simply cancel the contract as easily as you can with a futures position.



*“Most farmers don’t have the luxury of waiting for the market (until prices are high). The risk from weather and debt is just about all the risk they can afford to take.”*

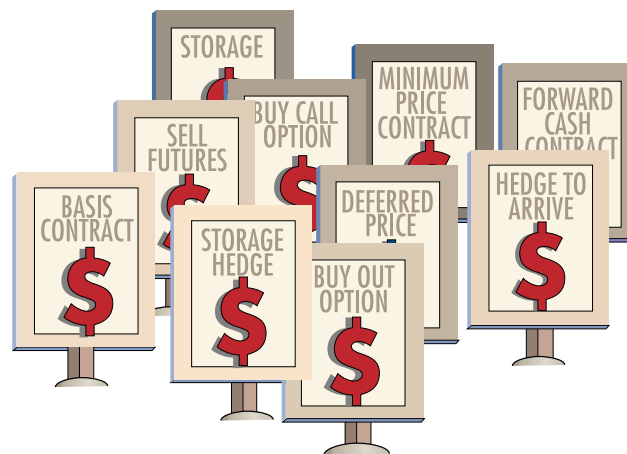
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Farmers often have opinions about prospective changes in prices of the commodities they produce or buy. For example, a farmer may expect the price of corn for December delivery to rise or fall as harvest approaches. If a price rise is confidently expected, then the farmer might want to wait and sell the crop after harvest. If the price is expected to fall, a larger than normal forward sale may be desirable.

Farmers have both advantages and disadvantages compared with other traders when it comes to anticipating price changes. Farmers are often the first to observe local weather and yield developments. However, few farmers have the time and expertise to perform thorough price analyses themselves, nor the funds to hire the best professional advice.

Price forecasting methods fall into two categories: fundamental analysis and technical analysis. Fundamental analysis involves identifying and evaluating the factors that affect the supply and demand for a commodity and assessing their effects on price. Fundamental analysis ranges from informal assessment of the effects of the latest news on prices to the use of elaborate statistical models. The information needed for fundamental analysis of agricultural prices includes planting, weather, numbers of livestock raised or on feed, production, stock, exports, and general economic conditions. The U.S. Department of Agriculture collects and disseminates much of this information in its crop and livestock production reports.

Technical analysis involves searching for patterns in price movements that repeat over time. The objective is to recognize a pattern as it begins to develop, and to trade accordingly. The traditional method is to plot the price series on a chart and watch



for patterns. Another common approach is to search for trends by comparing the latest price with a moving average of past prices. Computers greatly facilitate the use of technical price forecasting methods. A number of firms sell charts of daily commodity futures prices, and many books on technical analysis are available. However, the usefulness of technical analysis for commodity price forecasting is a subject of continuing debate. Because many technical price forecasting meth-

ods rely on the application of individual judgment, their performance is difficult to evaluate. The wide use of technical analysis by traders may itself introduce patterns in price movements.

Any proposed price forecasting method or trading rule should be examined critically before it is used. Even the best price forecasting methods are likely to be wrong or useless much of the time.

## Storage

Your grain bins are one of the most basic risk management tools on your farm. By holding grain at harvest, you avoid selling right off the combine, when prices typically are weakest. Many farmers store at least half their crops, selling them in increments. Selling a little at a time over the year also increases the odds you’ll get an average price—another risk management strategy.

The downside to storage, of course, is that it costs money, whether you use farm bins or the elevator in town. Some years prices don’t rally after harvest, and often the best prices of the year come during the growing season.



# The Write Stuff

## Extension Service Materials

### **Managing Change/Managing Risk:**

#### **A Primer for Agriculture**

13 articles by ISU staff

Send \$4 to Iowa State University

c/o C. Phillip Baumel

Department of Economics

460 Heady Hall

Iowa State University

Ames, IA 50011

Check with your local extension office or contact the state Extension service listed for the following publications.

### **Charting the Markets** G91-1051-A to G91-1059-A

University of Nebraska-Lincoln

Distribution Services

105 Ag. Comm. Bldg.

Lincoln, NE 68583-0918

Phone: (402) 472-3023

E-mail: agcm017@unlvm.unl.edu

Also available electronically at:

<http://www.ianr.unl.edu/pubs/>

### **Deferred Pricing Alternatives for Grain** NCR217-2 (\$2.00)

University of Illinois

1401 S. Maryland Dr.

Urbana, IL 61801

Phone: (217) 333-2007

E-mail: oacepubs@uiuc.edu

### **Use of Crop Futures and Options by the Nontrader** NCR217-18

North Dakota State University

Extension Communication

Box 5655, Morrill Hall

Fargo, ND 58105

Phone: (701) 237-7882

E-mail: slane@NDSUext.NoDak.edu

### **An Introduction to Commodity Futures**

**Markets and Contracts** MF-982

### **Developing A Crop Marketing Plan**

— **An Integrated Approach** C-688

### **The Cash/Futures Price Relationship** MF-1003

### **Cross Hedging Agricultural Commodities** NCR217-12

Kansas State University 1989

Production Svcs., Distr. Ctr

16 Umberger Hall

Manhattan, KS 66506-3402

Phone: (913) 532-5830

E-mail: orderpub@oz.oznet.ksu.edu

### **Wheat Marketing Strategies** EXEX 5022

South Dakota State University

Ag. Communications Center

Box 2231, SDSU

Brookings, SD 57007-0892

Phone: (605) 688-5628

E-mail: am02@sdsu.sdsu.edu

### **Seasonal Cash Price Patterns for Selling**

**Corn/Soybeans/Wheat** NCR217-03

### **Marketing Strategies & Recordkeeping**

**on Corn/Soybeans/Wheat** NCR217-04

### **Cost of Grain Storage Producer**

**Marketing Management** NCR217-19

### **Technical Analysis Producer**

**Marketing Management** NCR217-20

Michigan State University

Bulletin Office

10-B Ag. Hall

East Lansing, MI 48824-1039

Phone: (517) 355-0240

E-mail: anrcs@msue.msu.edu

### **Cash-Futures Price Relationships:**

**Guides to Corn Marketing** P93-1

University of Minnesota

MES Distribution Center

1420 Eckles Ave.

St. Paul, MN 55108-6069

(612) 625-8173

E-mail: orders@mes.umn.edu

**Do You Need a Market Advisory Service** NCR217-14  
**Primer on Agricultural Options** NCR217-1  
University of Wisconsin  
630 W. Mifflin St.  
Room 170  
Madison, WI 53703  
Phone: (608) 262-3346  
E-mail: carol.pollock@mail.admin.wisc.edu

**Introduction to Agricultural Marketing and  
Plan Your Marketing: Enhance Profits and  
Reduce Risk** from PM-1284 (\$27.00 + \$6.20 S&H)  
A publications catalog is available free of charge by sending  
a mailing address to:  
Iowa State University  
Publications Distribution  
Printing & Publishing Bldg.  
Ames, IA 50011-3171  
Phone: (515) 294-5247  
E-mail: pubdist@exnet.iastate.edu

**Managing Risk in Agriculture** NCR 406  
Cooperative Extension Service  
Purdue University  
Ag Comm Svc, Media Dist Ctr  
301 S. Second Street  
Lafayette, IN 47901-1232  
Phone: (317) 494-6794  
E-mail: juanita@ecn.purdue.edu

## Multimedia

**Audio/Visual for Rent**  
VH-3513-GO Business Management in Agriculture:  
Managing Risk

**Audio/Visual for Sale**  
VH-5592R-GO Business Management in Agriculture:  
Understanding Basis \$15.00 + \$4.00 S&H  
VH-5591R-GO Business Management in Agriculture:  
Using Agricultural Options \$15.00 + \$4.00 S&H  
VH-5590R-GO Business Management in Agriculture:  
Using Futures Market \$15.00 + \$4.00 S&H  
Minnesota Extension Service  
MES Distribution Center  
20 Coffey Hall, 1420 Eckles Ave.  
Saint Paul, MN, 55108-6069  
(612) 625-8173  
E-mail: orders@mes.umn.edu

## Commodity Exchanges

**How To Market Your Wheat  
Selecting a Commodity Broker  
Understanding and Using Basis for Grains  
The Minimum Price Contract  
— A New Marketing Alternative**  
Kansas City Board of Trade  
4800 Main St. Suite 303  
Kansas City, MO 64112

**Power of Options Workbook**  
Minneapolis Grain Exchange  
Suite 130, 400 S. 4th St.  
Minneapolis, MN 55415  
(800) 827-4746 or (612) 321-7101  
E-mail: mcarlson@mgex.com

**Crop Yield Insurance Futures and Options** EM15-7  
**Pricing Crop Yield Insurance Options Program** EM15-7A  
**Understanding Basis** EM12-4  
**The Flexible Choice: Hedging with CBOT  
Agricultural Options** EM13-8  
**The Flexible Choice: Trading with CBOT  
Agricultural Options** EM13-9  
**Grain Futures and Options** EM11-5  
**Soybean Complex Futures and Options** EM11-6  
**Introduction to Hedging with Futures and Options**  
EM15-5  
**Options on Agricultural Futures:  
A Home Study Course** EM11-3  
**Marketing Clubs: A Hands-on Approach  
to Marketing** EM11-10  
Chicago Board of Trade  
Publications Department  
141 W. Jackson St. Suite 2210  
Chicago, IL 60604-2994  
(312)435-3558 or (800)THE-CBOT

## Internet Sites

### **Extension market news and commentary**

<http://etcs.ext.missouri.edu:70/1/agebb/mkt>  
University of Missouri Agricultural Electronic Bulletin Board

<http://www.oznet.ksu.edu/dep/agec/pub.htm>  
Kansas State University

<http://www.ag.uiuc.edu/~stratsoy/weekly.html>  
Weekly Outlook Report Home Page

<http://ssu.agri.missouri.edu/ssu/fapri/fapri.htm>  
FAPRI Home Page

<http://www.exnet.iastate.edu/Information/market.html>  
Iowa State University





## The Write Stuff *(continued)*

### USDA/Government Internet sites

<http://www.usda.gov/rma/rme>  
Risk Management Education

<http://www.noaa.gov/>  
National Oceanic and Atmospheric Administrations

<http://www.usda.gov/nass/>  
National Agricultural Statistics Service

<http://www.usda.gov/>  
USDA's Home Page

<http://www.ams.usda.gov/marketnews.htm>  
Agricultural Marketing Service Market News reports

<http://www.fas.usda.gov>  
Foreign Agricultural Service

<http://usda.mannlib.cornell.edu/usda/usda.html>  
USDA Economics and Statistics System

<http://www.econ.ag.gov/>  
Economic Research Service

<http://www.esusda.gov/statepartners/usa.htm>  
Cooperative State Research, Education, and Extension Service

<http://www.cftc.gov/cftc/>  
Commodity Futures Trading Commission

### Commodity exchanges/marketing advisors

<http://www.cbot.com/mplex/>  
Chicago Board of Trade Market Plex

<http://www.cme.com/market/aglinks.html>  
Chicago Merchantile Exchange Resource Center

<http://www.mgex.com/why/didnt.htm>  
Minneapolis Grain Exchange tutorials

<http://www.kcbot.com/>  
Kansas City Board of Trade

<http://www.agribiz.com/>  
Market information from Frank Beurskens Consulting, Inc.

<http://www.steward.peterson.com/agednet.htm>  
AgEd Network lessons from Stewart-Peterson Advisory Service

## Books

Bernstein, Jake. *The Investor's Quotient: The Psychology of Successful Investing in Commodities & Stocks*. 2nd ed. John Wiley & Sons, 1980.

Bobin, Christopher A. *Agricultural Options: Trading, Risk Management, and Hedging*. John Wiley & Sons, 1990.

Caplan, David. *The Options Advantage*. Probus Publishing Company, 1991.

Chicago Board of Trade. *Commodity Trading Manual*. 1989.

Purcell, Wayne D. *Agricultural Futures and Options: Principles and Strategies*. MacMillan Publishing, 1991.

## Information Sources

*Government and private sources provide information needed for making contracting decisions.*

### Federal-State Market News Reports

The Federal-State Market News Service originates much of the available data on agricultural cash prices and marketings, covering all of the major commodities. Market news reporters collect price quotations by observing trades or talking with buyers and sellers face-to-face or by telephone. For many commodities, price quotations are released to news media daily or at regular times within the day, and printed reports are mailed weekly from market news offices throughout the country. Most of the quoted prices apply to spot or near-term delivery rather than contracts for deferred delivery, although some deferred delivery prices are reported. Radio, television, and newspapers as well as electronic quotation services widely carry the Market News prices. Some farmers may find it worthwhile to subscribe to the printed reports. Information about the Federal-State Market News Service is available from:

Agricultural Marketing Service  
U.S. Department of Agriculture  
Washington, DC 20250

### National Agricultural Statistics Service Reports

USDA's National Agricultural Statistic Service estimates acreage, production, stocks, inventories, and related data for most crops and livestock. Estimates are released throughout the year on prescheduled dates. The news media summarize the most significant statistics in each report. Commodity traders follow these releases closely, and markets often respond to actual or anticipated information in the reports. The summertime crop estimates are particularly important in the grain and soybean markets. The table on page 17 lists the reports and shows how to order them.

### Economic Research Service Situation and Outlook Reports

USDA's Economic Research Service produces situation and outlook reports in a dozen commodity areas, plus reports on exports, income and finance, inputs, trade, and an overall *Agricultural Outlook* report. These reports combine statistics from various sources with written interpretation to provide readers with background for making production and marketing decisions. The commodity reports are issued regularly, typically three to four times per year. *Agricultural Outlook* is published 10 times a year. A list of the situation and outlook reports is provided on page 18.