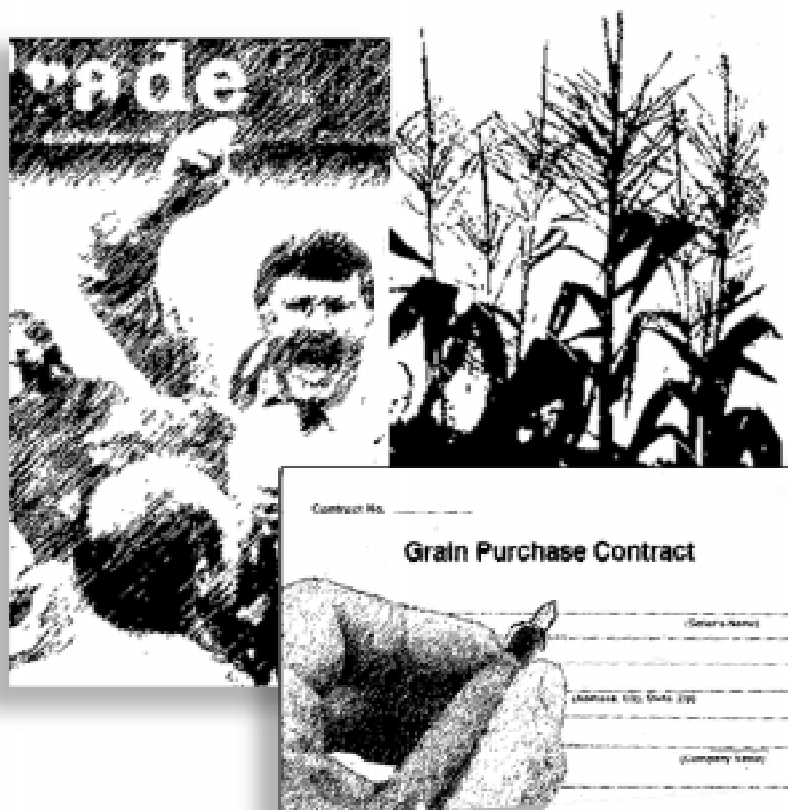


Optimal Grain Marketing: Balancing Risks and Revenue

Producer's Booklet



National Grain and Feed Foundation



Optimal Grain Marketing: Balancing Risks and Revenue -- Producer's Booklet

National Grain and Feed Foundation
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I. Purpose

This booklet is intended to introduce farmers of grains and oilseeds to a number of risk management topics and tools. Subjects covered include:

- ◆ major crop insurance products
- ◆ common cash contracts (not all of which may be offered by local elevators)
- ◆ exchange futures and options

The information presented here is not intended as a comprehensive coverage of risk topics. The intent is to highlight the importance of risk management to businesses involved in growing crops, and present sample information on how tools like crop insurance, cash contracts and futures can be used effectively. Using this information as a starting point, the farmer should be better equipped to sit down with their local elevator, crop insurance agent, or marketing professional and evaluate the “optimal” approach for their financial circumstances, operational requirements, and individual preferences to absorb or limit risk exposure.

The overall goal is to assist farmers in managing production risk and price risk within acceptable ranges (determined by each farming operation), resulting in more predictable revenue outcomes that will sustain and achieve the goals of the farming enterprise.



II. The Risks

Farmers face many risks, including financial, legal, production, price, counter-party and other risks. Farmers also tend to have large differences in tolerance for risk and risk-bearing capacity. A highly diversified farmer growing many crops may be willing to accept more price and production risk. The farmer that owns land debt-free and has substantial resources may be willing to self-insure some risks. The highly leveraged farmer that is rapidly expanding a business has a greater need to manage cash flow and market outcomes with greater certainty.

As indicated above, the focus of this booklet is on managing production and price risk. However, some related marketing risk issues also discussed include: counter-party risk and human behavioral risks, i.e., the risk that human behavioral factors may interfere with objective decision-making. Also discussed is farm program risk—i.e., the risk that marketing strategies could affect “beneficial interest” as defined in USDA farm programs, and adversely impact rights to receive payments on such programs as Loan Deficiency Payments (LDPs).

A. Production (yield) risk is a reality for all farmers, but the risks vary widely. The San Joaquin Valley in California, where weather is highly predictable and all crops are irrigated, is a very low risk production area. Dryland wheat or grain sorghum grown in the rolling plains of Texas is a whole different situation. In those conditions, rainfall is most critical to producing, but even if timely rains arrive, the crop might get blown away by windstorm or hailed out. Risky indeed!

Part of production risk—weather—cannot be controlled. Other factors contributing to production risk, including management skills, technology, soil types, fertilization and pest control, etc. may be subject to varying degrees of control. Producers are in the best position to judge production risk, based upon personal experience. Good records on historical yield are important in both proving yields for crop insurance purposes, and in making judgments on trends in expected yields for individual fields. If there is production and yield risk that needs to be managed, a wide range of crop insurance tools are available (discussed in Section IV).

B. Price risks confronting producers of grains and oilseeds include:

1) futures price; 2) basis; and 3) spreads.

- 1. Futures price risk:** Futures prices quoted at the Chicago Board of Trade, Kansas City Board of Trade or Minneapolis Grain Exchange reflect the general price level of grains and oilseeds as shaped by economic and political factors both domestically and globally. Most local cash prices for grains are in some way linked to the futures prices of these exchanges, as the central futures markets are a highly visible and transparent means of establishing value. Local prices are also impacted by transportation, local demand and other factors.

While there can be exceptions, futures prices tend to be the most volatile part of prices. For this reason, there is incentive for all farmers to consider how to manage futures price risk. Some tools that can be used to “fix” futures price and eliminate futures risk include:

- ◆ Selling futures on an exchange;
- ◆ Selling grain through a fixed price contract;
- ◆ Selling grain through a hedge to arrive contract;
- ◆ Selling grain through a minimum price contract; or
- ◆ Buying a put option on an exchange.



2. **Basis risk:** The difference between the futures price and local cash price of grain is the basis. If futures price is \$2.70 and the local cash bid is \$2.40, the basis is $-\$.30$. What affects the basis? Local supply and demand conditions, availability of warehouse space, transportation cost and availability, quality issues, interest/storage costs, and other factors. Basis tends to have patterns and be more predictable than futures prices, but there are exceptions. Extreme situations can develop in local markets that can increase volatility in basis. In particular, just before and during harvest basis patterns can become erratic as the market tries to ration supplies and adjust to new crop availability.

Some tools that can be used to “fix” basis levels and eliminate basis risk include:

- ▶ Selling grain through a fixed price contract;
- ▶ Selling grain through a minimum price contract; or
- ▶ Selling grain through a basis contract.

3. **Spread risk (futures):** Spread risk is defined as the difference between two futures prices. A “carry” spread is when the deferred value is higher than the nearby. An “inverse” is when the deferred value is lower than the nearby. (See chart 1.)

Chart 1. Futures Spreads: Inverse and Carry

Inverse Market			Carry Market	
Corn 1996		\$ Price		Corn 1998/99
<u>\$4.35</u> May 96				<u>\$2.61</u> ¼ Dec 99
<u>\$4.21</u> July 96				<u>\$2.38</u> ¾ Mar 99
<u>\$3.39</u> Dec 96				<u>\$2.27</u> ¼ Dec 98

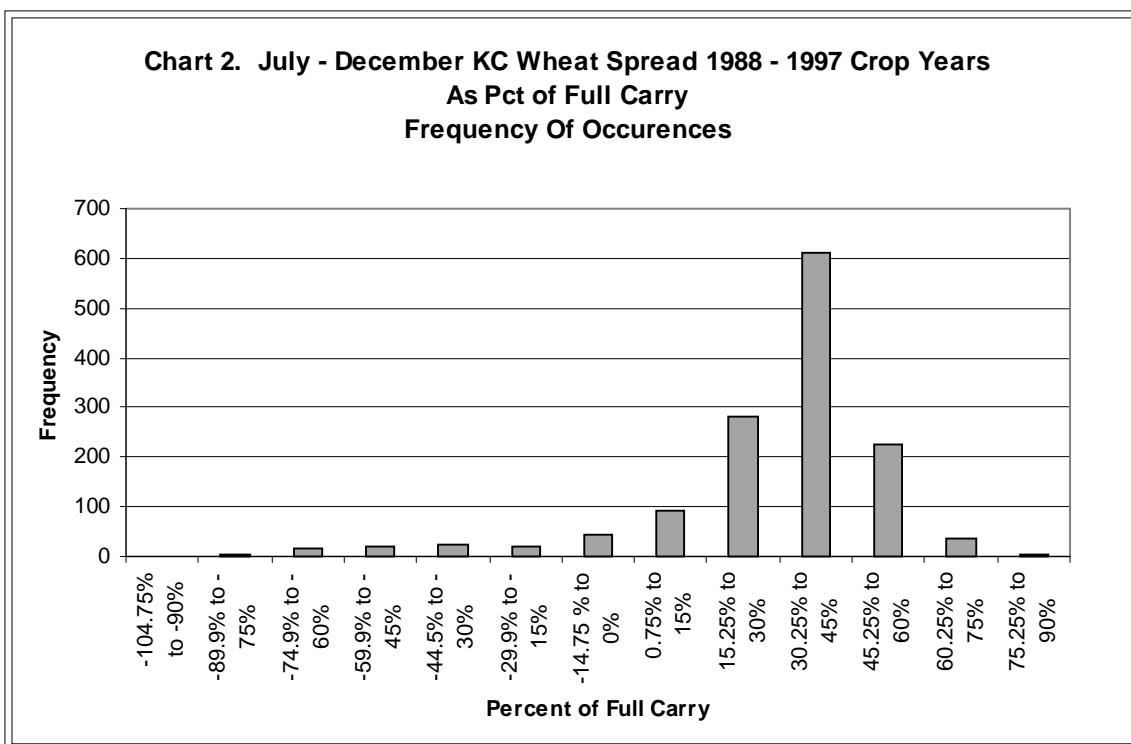
Spreads are affected by: Supplies of grain available for delivery against futures; nearby demand for product; price level; interest rates; availability of storage; availability of transportation; and cost of insurance.

There is an upper limit on how large the “carry” in futures spread can reach. This maximum carry is defined by the investment returns on storage. If carry becomes too wide, savvy investors will sell deferred values and purchase nearby, locking in a high return on investment dollars. These market positions will push the spread to a more normal level, until the spread in prices no longer offers an exceptionally high return. (Note that this upper limit on the carry in futures spreads does not necessarily apply to cash market carry, which also includes a local basis. If a harvest is exceptionally large and grain supplies pressure the market to either purchase or find a storage location, cash market spreads can temporarily widen considerably to reward anyone offering grain a “home” — either through purchase or storage.)

In contrast to the maximum “carry” in futures spreads, there is no limit on how far a futures spread can invert. An inverse results from a shortage of grain to meet nearby demand and the users continue to bid up values until the grain is rationed.



The histogram shown below reflects the frequency of occurrences of the spread between July and December in the Kansas City Wheat contract for the 10 years 1988-1997. The charts for corn, soybeans, and the other wheats are very similar. The futures market spreads rarely pay “full (100%) carry”— the full costs of physical storage, insurance, and interest cost on money invested in physical commodities.



Question 1: Why don't futures markets spreads offer full carry?

Answer: The closer the futures markets get to “full carry,” the less commodity supplies will be available for current consumption. Users will bid up current price relative to deferred to assure grain flows meet processing, feeding and export requirements. The tendency for futures markets to not offer spreads close to full carry also reflects the willingness of cash market participants to hold stocks in anticipation of seasonal cash basis improvement (another way to profit from storage).

Question 2: I'm not a trader; I'm a farmer. Why do I need to understand spreads?

Answer: Even if you don't forward contract grain, understanding spreads can lead to greater market returns from selling grain out of farm bins or commercial storage (see section VIII-F). If a farmer uses hedge to arrive or basis contracts, understanding spreads and historical spread patterns can lead to improved strategies in choosing the best month for delivery. If the contracting strategy includes plans to consider rolling the contract delivery period, understanding the spread risk and how to evaluate market exposure can be extremely important.

Spreads, of course, tend to reflect the seasonal nature of grain and oilseed harvests, and the market's incentive to suppliers to distribute supplies across the crop/marketing year. How predictable are seasonal price patterns? Chart 3 on page 6 shows an 89-year history of the monthly high, low and average of corn prices. The pattern appears very predictable. As noted in the chart's notation, “In 78 of 89 years, the record shows that the farm price at harvest will not be exceeded later in the year by an enormous amount—just the 10 to 15 percent carrying charge.”



But before concluding that spreads are easily predictable, look at chart 4 on page 7 that shows the monthly corn price received by farmers, 1908-1997 for “exceptional” years. As noted, “In 11 of the years, the farm price at harvest could be dramatically exceeded later in the year by as much as 40 to 100 percent. These exceptional years are associated with war, politics (Russia), drought, and wetness—factors which must surely be deemed unpredictable.”

C. Counter-party risk is the risk that the party to a contract may fail to perform. As a practical matter, this risk is not a factor in crop insurance (which is backed by the government) or in futures exchange contracts (which are backed by the clearing corporation of the exchange and its members). Counter-party risk can, however, be a risk in cash contracting.

In cash contracts, the producer has to have faith that the buyer will be there to accept the grain and that payment will be forthcoming. (Likewise, the buyer has to have faith that the producer will deliver the commodity as called for in the contract.) In general, of course, these are reasonable risks and are taken every year by thousands of farmers and commercial buyers. Few elevators and other grain buyers fail, and in some states, there are government-managed indemnity funds to help insulate against loss. But the unthinkable can happen.

Some ways farmers can manage counter-party risk include:

- ◆ Be familiar with your buyer;
- ◆ Be skeptical about “deals” that are “too good”; there may be a good commercial reason why a buyer is paying more than competitors, but it also may be a sign of financial trouble; don’t be afraid to ask questions;
- ◆ Don’t enter into contracts that you don’t understand;
- ◆ Be sure you understand which types of cash contracts transfer title immediately; such contracts cause additional counter-party exposure in the event of insolvency or bankruptcy; and
- ◆ Some buyers’ contracts call for binding arbitration; learn what is involved in such arbitration processes; again, never be afraid to ask questions.

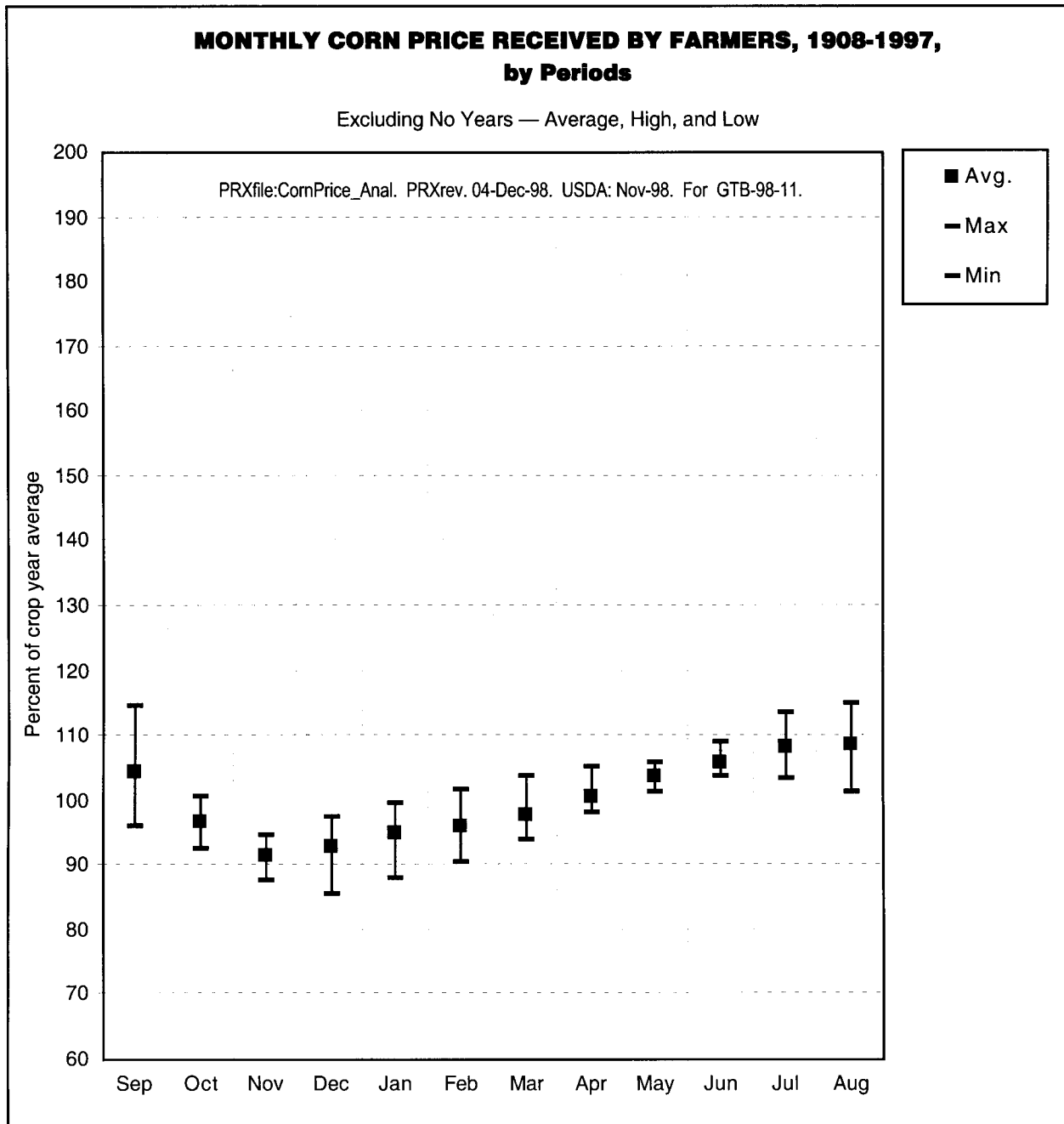
D. Human behavioral risks include the risk that behavioral or psychological make-up may interfere with objective marketing decisions, leading to less than optimal results. The most important behavioral characteristics discussed here include: 1) risk aversion; 2) reference price anchoring; and 3) escalation.

1. **Risk aversion:** Most humans are risk averse and seek to avoid risk. However, based upon studies, there tend to be identifiable biases in human behavior that lead to irrational decision-making. One of these biases is the tendency to accept increased risk over a guaranteed loss. In grain marketing, this tendency leads some to accept price risk rather than pay for insurance—such as a put option purchase or guaranteed minimum price contract. This tendency might be related to the willingness to “self-insure,” but it also reflects a tendency to underestimate the chances for an “extreme” market situation occurring. People buy insurance to protect their cars, their houses, and their life. Why aren’t farmers more willing to buy insurance for their crop prices to protect expected gross revenue streams?

Farmers may wish to consider the chances for extreme events in markets in the future. The past may or may not be a guide as to the frequency of extreme situations, but the historical corn price chart (Chart 4) indicates that unusual circumstances can and do occur. What would price insurance—a guaranteed minimum with opportunity to capture market gains—accomplish in the unusual years of the last century?



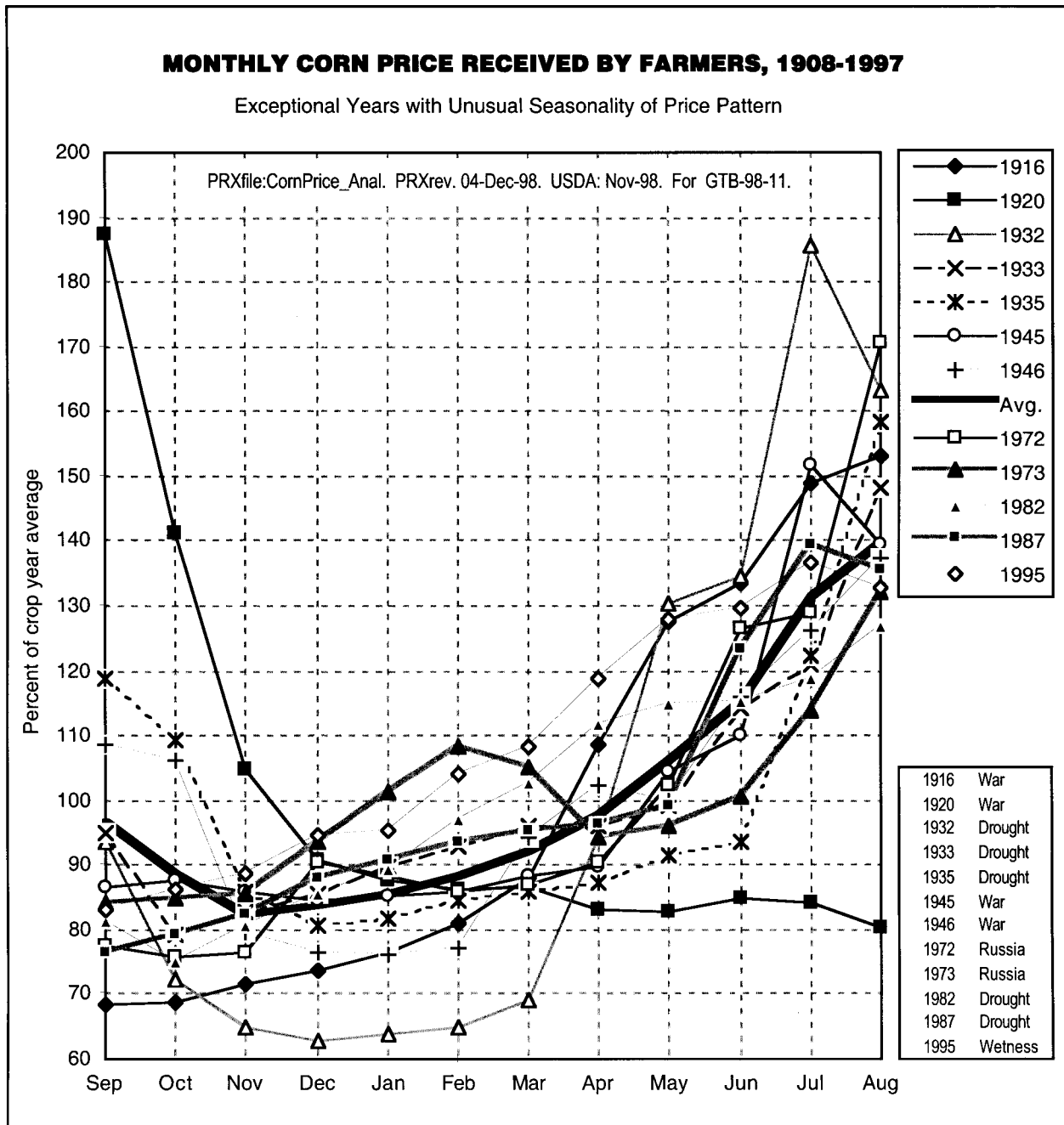
Chart 3



In 78 of 89 years, the record shows that the farm price at harvest will not be exceeded later in the year by an enormous amount—just the 10-15 percent "carrying charge."



Chart 4



However, in 11 of the years, the farm price at harvest could be dramatically exceeded later in the year—by as much as 40 to 100 percent. These exceptional years are associated with war, politics (Russia), drought, and wetness—factors which must surely be deemed unpredictable.



2. Reference price anchoring: Price anchoring is the tendency for a person to “fix” a specific figure in their mind as the perceived value. In retail stores, the “retail price” is a reference price that is often the basis for discounts or running sales. Anything less than the quoted retail price is viewed as a good deal by the purchaser. In agricultural markets, reference prices are often caused by “bearish” or “bullish” forecast information. One example is during the El Nino season of 1998, corn price forecasts of \$1.00 higher than spot prices frequently appeared. Because the forward market was not offering contracting opportunities at that level, this factor undoubtedly led to lower forward contracting of that crop by farmers. The conclusion of that story is, of course, that the 1998 El Nino impacts were felt in Texas, Arkansas and other southern states, but missed the bulk of the corn belt. Production was near normal and attractive forward pricing opportunities dissipated quickly.

What can farmers do to avoid reference price anchor bias?

- 1) *Consider reframing the issue; evaluate how your thinking might change if the reference price changed;*
- 2) *Are you giving equal consideration to factors that could lower or raise price potential?*
- 3) *Consider whether the source of your market information may be biased and seek other independent views (such as extension service and USDA); and*
- 4) *Look at market assessment of price using options-derived probabilities.*

3. Escalation—Too much invested to quit: Escalation is a behavioral trap in which individuals enter a transaction hoping for a favorable outcome but after circumstances change to unfavorable the individual finds it difficult to escape. The person may fear terminating a losing position because circumstances could improve. As result, the most comfortable position is to delay position termination or in some cases adding to (escalating) the losing position with hopes of recovering some of the losses. Escalation is dangerous—it has the potential to turn a risk management strategy into a risk-compounding situation. Some degree of escalation risk is present in any marketing strategy that includes the potential to delay or defer final pricing. Hedge to arrive, basis, and minimum price contracts possess varying degrees of escalation risk. Strategies that include both price and spread risk are most vulnerable since price and spreads tend to move together.

How to overcome escalation:

- 1) *Seek input from people not involved with initial strategy; have someone not involved in original decision make final pricing decision;*
- 2) *Always consider the real potential for an extreme event occurring;*
- 3) *Write down an exposure limit (stop loss) which would trigger immediate contract pricing;*
- 4) *Do not make your marketing position public, except for trusted partners; publicly declaring a position makes objective management of marketing strategies more difficult and prone to escalation; and*
- 5) *Seek out non-conforming evidence; avoid asking leading questions that invite confirming responses; get someone to play devil's advocate before entering a marketing strategy.*



E. Farm Program Risks refers to the risks of losing some benefits of farm programs by transferring ownership of farm-produced commodities prior to taking out a non-recourse loan or obtaining a loan deficiency payment (LDP) in lieu of a loan. This issue is not addressed fully here because of complexity and space limitations. Also, USDA is in the process of reviewing program requirements and they may be subject to change in the near future.

USDA requires that farmers maintain “beneficial interest” to be able to obtain a loan or an LDP. This is based upon the law that requires the producer loan recipient to be the one that actually grew the crop. The risk of losing beneficial interest prior to obtaining a loan or LDP lies mostly with cash contracts in which title transfers (and thus beneficial interest of the producer is lost). Delayed Price Contracts generally call for immediate title transfer upon delivery of the grain. However, other contracts, such as cash forwards, HTAs, Basis, etc. can cause an untimely loss of beneficial interest if the LDP is not obtained prior to physical grain marketing and delivery.

This risk of loss of farm program benefits is not a reason to delay marketing decisions. It is an issue, however, that must be managed. Ask your local Farm Service Agency representative how to ensure that beneficial interest is maintained. You may also wish to consult with your local elevator or other buyer. Make sure that contracts you enter don't inadvertently cause you to lose beneficial interest.



III. The Role of Price in Optimal Marketing

Most experts agree that no one can predict prices with any great consistency because there are too many variables that change at random. Then why do so many people and firms spend so much time with price forecasting, price outlook, and other mechanisms to establish expected values of future prices? We don't have an answer to that question, but obviously higher prices translate into higher returns. At the same time, there are other ways to improve market performance that are more predictable than guessing right on price all the time. And a singular focus on price can lead to poor marketing decisions. The ultimate goal for farmers should be to achieve an acceptable level of gross revenue that will pay expenses and provide an income and level of profitability to sustain and achieve the goals of the farming enterprise.

A. Prices are truly random. Options markets, such as the Chicago Board of Trade options on corn, wheat and soybeans, provide a well-established mechanism to develop probability distributions for future prices. On any given day, the seller of the option prices the option (premium) to cover the perceived future market risk. A seller would not price the option premium at less than the anticipated future price risk and the buyer would not pay a premium greater than the anticipated price risk. Thus, options reflect the market's best estimate of future price probabilities by converting the anticipated price risk into a premium, traded daily on organized commodity exchanges.

Chart 5 below indicates probability of various prices based upon the premium being charged on a specific date for an at-the-money option. It indicates the price (denoted by the 'X' — approximately \$2.40 in this example) at which the marketplace is assigning 50% probability to both higher and lower prices in the future. Options theory suggests that efficient markets are unpredictable; i.e., that the price traded at any given moment is the best indication of the commodity's underlying value for future delivery periods. And, on any given day, there is a 50/50 chance that prices will increase/decrease from current levels. But options markets also reflect expected volatility—the probability range of higher and lower prices. Charts 6 and 7 are probability distributions of expected prices upon two different market circumstances. Chart 6 indicates an expected higher volatility; Chart 7 indicates expected lower volatility with prices trading in a more narrow range.

Chart 5

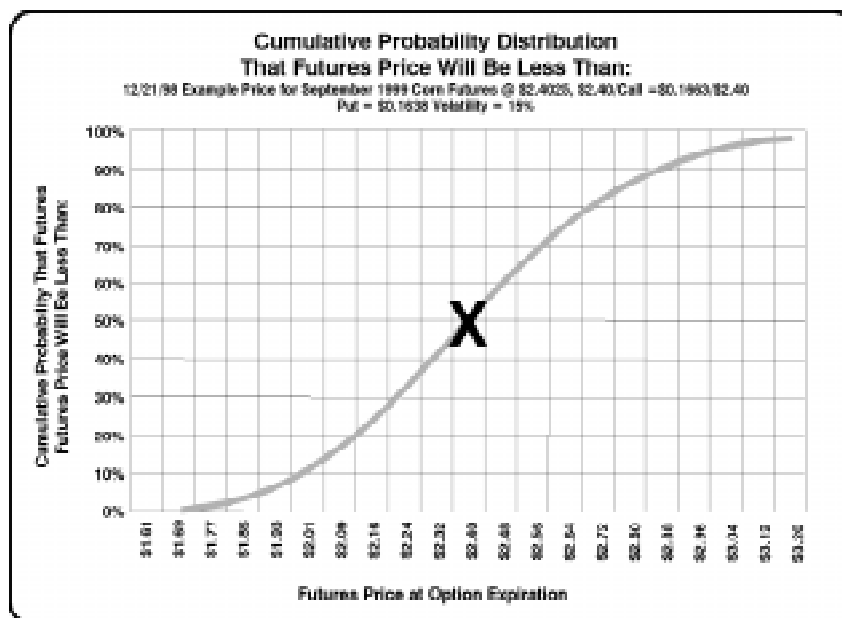




Chart 6 — Higher Volatility

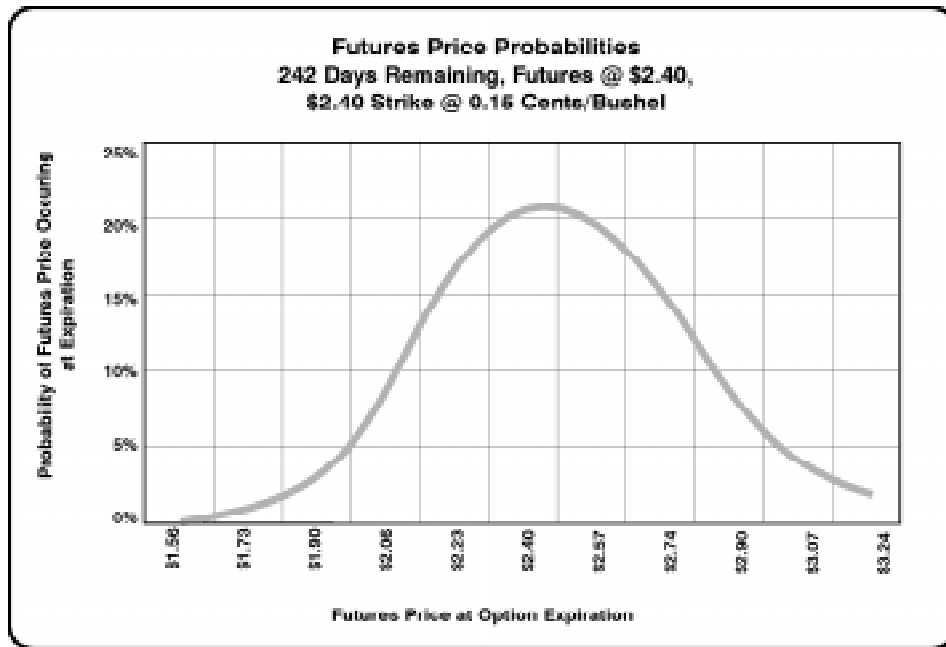
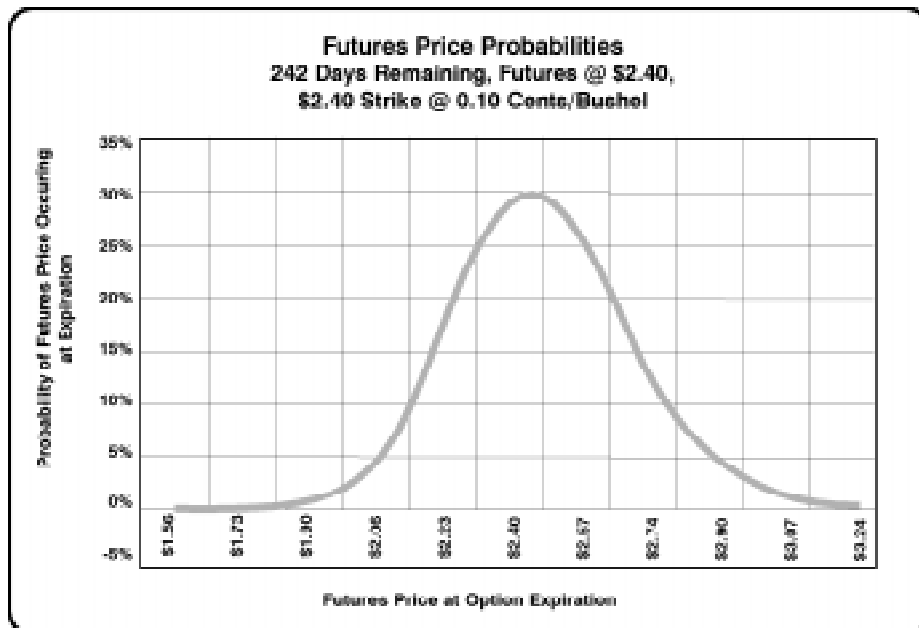


Chart 7 — Lower Volatility



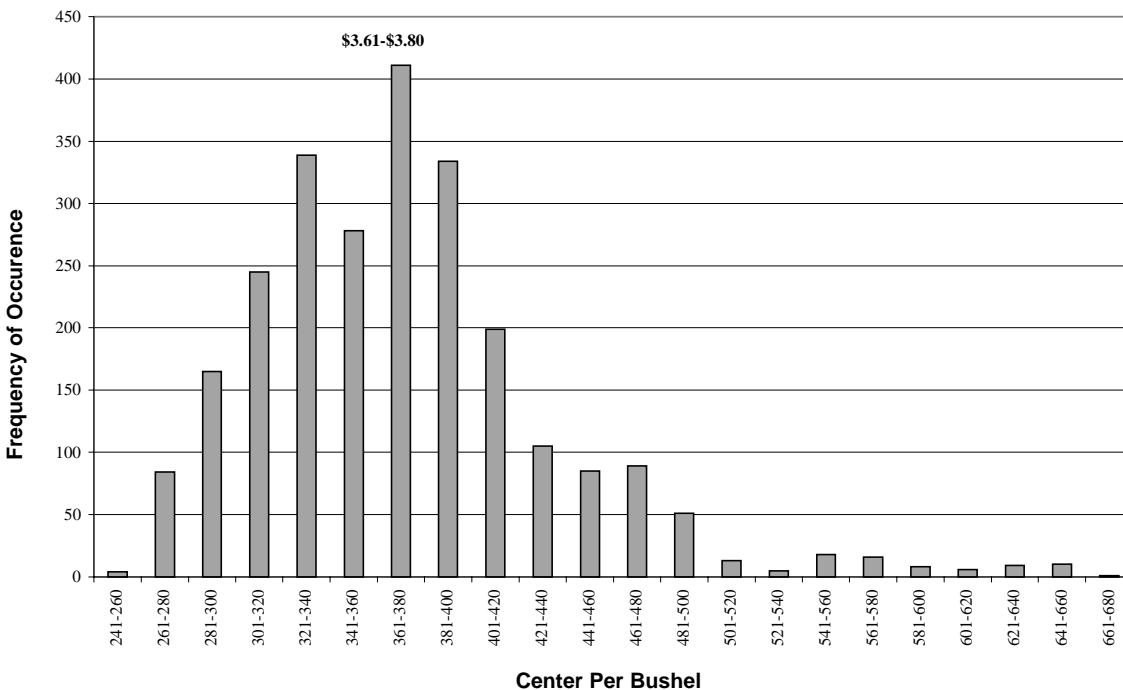


An evaluation of the expected price and market volatility implied by the pricing of options markets can be very helpful in objectively reviewing the expected value of future prices and the volatility. Internet software is available to assist in such analysis (see: <http://www.agribiz.com/ngfa> and <http://www.msu.edu/user/hilker/>)

B. Prices are unpredictable, but sure aren't random. Another way to view markets is that while prices can't be predicted, prices aren't all that random either. Chart 8 reflects a 10-year frequency histogram of observed closing prices in Minneapolis Grain Exchange July Wheat contract. While no one will guarantee that the "pattern" depicted in this historical chart will be repeated in the future, there does seem to be some central tendency around the \$3.00 to \$4.20 range.

Chart 8

Frequency of Closing Price in Minneapolis July Wheat 1988-97



Prices are unpredictable, but are prices truly random (always a 50-50 chance that they will go higher or lower) or subject to a pattern of behavior? Farmers have to make up their own mind about this, because marketing experts don't agree either. Your conclusions will affect your marketing decisions.

For example, suppose hard red spring wheat supplies are viewed as getting tighter as the pending harvest looks to be shorter than was expected early in the season. Prices for HRS wheat are trading at \$5.25 for harvest delivery. Should you contract your production or wait? Options theory suggests you have an equal probability of guessing right or wrong on any given day that you might choose to forward contract at a fixed price. The historical price Chart 8 indicates that prices below \$5.25 tend to dominate over time. For any given situation, prices clearly could go higher or lower—*what would you do?* Ever find that you waited too long to sell and prices fell back as the market made its adjustments to shorter supplies? Ever contract for what you thought was an attractive price, only to watch markets climb higher and higher?



C. Judging marketing performance—give yourself a break! The best experts in the market can't pick the best price for sale or purchase of a commodity; why should farmers think they can? But farmers often judge their performance in marketing compared to the market high for the month or even the high for the year! An analysis of market advisory firms indicates that on average, these firms have difficulty selling at the "average" market price of the year, much less the high! This statement is not meant to be critical. It reflects that marketing is a tough game. Prices are unpredictable. These experts don't try to pick the top of the market; they try (but often fail) to beat the average. *Think about the goals you set for your own operation—are they realistic?*

Focus on gross revenue not price. While it's crazy to try to predict price, it's o.k. to have an opinion on the price level that is acceptable to your operation—a price that, given a reasonable production year, will result in gross revenues that will pay expenses and achieve a reasonable profit goal. You will always feel some regret at watching prices go higher after you sell, or declining sharply after hesitating to book the grain—those reactions are just human. **But if you know your costs and what gross revenues are required to stay in business, you know what prices will achieve your goals.** If the market gives you a chance to sell at those levels, it's just smart business to take advantage of such opportunities that arise.



IV. Crop Insurance Products

Crop insurance comes in many forms, both private non-subsidized products and those sponsored by USDA. Products reviewed here are only a sampling of what is available, but represent the most widely used insurance products offered through USDA. Additional information on insurance products is available through crop insurance agents or through the Internet (Web site: www.agrisk.umn.edu/contents.asp).

A. Catastrophic Insurance (CAT). CAT coverage provides indemnification only for yield losses in excess of 50% of the producer's Actual Production History (APH). APH is the average of at least four, but not more than ten, years of production history. Indemnity payments are made at only 60% of the base price set for the crop by the government in the spring (at time of sign-up).

While CAT coverage only pays a maximum of 30% of approximate value of the crop (even if yield is zero, CAT covers 50% of yield at 60% of established price; $.50 \times .60 = 30\%$), the premiums are subsidized by government and are very inexpensive. Premiums currently run \$60 per crop (soybeans, wheat, corn, etc.) per county.

If the farmer chooses to forgo purchasing "buy-up" coverage like MPCCI or CRC, essentially choosing a strategy of self-insurance, CAT coverage still makes considerable business sense. The premium is extremely affordable and the policy would offer a minimal safety net in case of true disaster. There is another reason to purchase CAT. If the government does decide to run an ad hoc disaster program, the purchase of CAT coverage is a pre-requisite for obtaining such disaster program benefits.

It should also be noted that at the time of this writing (April 1999), Congress and the administration were actively considering legislation to expand both CAT benefits and subsidy levels to make the program even more attractive.

B. Multi-Peril Crop Insurance (MPCI). Multi-peril crop insurance is based upon the same formula as CAT coverage. In the case of MPCI, the farmer is able to choose the level of coverage desired—anywhere in the range of 50% to 75% of Actual Production History (APH). And in the case of MPCI, the indemnity payments are based upon 100% (rather than 60% in CAT) of the base price set for the crop by the government in the spring.

An example of MPCI coverage is:

- ▶ Producer has APH of 150 bu. of corn per acre
- ▶ USDA sets a base price of \$2.50 in the spring
- ▶ The farmer chooses a coverage level of 65% ($.65 \times 150 = 97.5$ bu. guaranteed)
- ▶ Actual yield is 50 bu.

97.5 bu guarantee – 50 bu yield = $47.5 \times \$2.50 = \118.75 per acre payment

(CAT coverage alone in the above example would pay only \$37.50 per acre)



C. Group Risk Plan (GRP). Group Risk Plans insure against widespread loss of production throughout a county. As such, they provide good protection for the money for drought, countywide freezes, and other perils that effect an entire county's yields. As such, it may be good coverage for those farmers whose yields are about average with the county averages. The coverage is much less cumbersome since individual records are not required and premiums are usually lower.

The government establishes an Expected County Yield (based on historicals) for the county. The producer chooses what level of coverage he wants (70-90%). This coverage amount is vs. the Expected County Yield. While GRP may be a good policy value for some farmers it is difficult to analyze and compare with other policies such as CRC and MPCCI because it provides almost no coverage for perils that are site specific.

Example: Assume a farmer has chosen 85% coverage at \$160/ac. Let's also assume Expected County Yield is 150 bu./acre.

What if the average county yield for the year is 110?

$$150 \text{ bu (expected)} \times 85\% \text{ (coverage)} = 127.5 \text{ (trigger yield)}$$

$$127.5 \text{ (trigger)} - 110 \text{ (actual county ave)} = 17.5 \text{ bu}$$

To figure your payment amount you take the difference (17.5 bu) and divide by the trigger yield:

$$17.5/127.5 = .13 \text{ (Called the Payment Calculation Factor)}$$

This number is multiplied by the dollar amount chosen at sign up.

$$.13 \times \$160 = \$20.80/\text{ac}$$

This number is multiplied by the total number of acres covered to produce the amount of the total indemnity payment.

D. Crop Revenue Coverage (CRC). Crop Revenue Coverage (CRC) insures not only yields, but also revenue per acre. It protects against lost revenue caused by low yields, low prices, or a combination of both. As an example, a farmer can choose alternate levels of coverage ranging from 50% to 75% of APH. The initial Minimum Revenue Guarantee is established by the February price of December futures (**for corn**; other commodities vary by month). The standard CRC policy covers 95% of this price level, but farmers may buy up coverage to cover 100% of the price.

For example, assume 65% coverage on 150 APH and a February futures price of \$2.50. The Minimum Revenue Guarantee would be \$232 per acre: $150 \times 65\% \times \$2.50 \times 95\%$.

In addition to the Minimum Revenue Guarantee, a Harvest Guarantee is established, based upon the Harvest Price, defined as December futures values observed during the month of November. If the November price of Dec corn futures is \$1.90, the Harvest Guarantee is \$176 per acre: $150 \times 65\% \times \$1.90 \times .95$.



The producer's revenue guarantee is the higher of the Minimum Revenue Guarantee or the Harvest Guarantee. To compute the indemnification benefits, the producer's actual yield is multiplied by the Harvest Price (December futures values observed during the month of November), to compute Calculated Revenue. If Calculated Revenue is less than either the Minimum Revenue Guarantee or the Harvest Guarantee, the farmer receives a payment for the difference.

For example: Assume 65% coverage on 150 APH and base price of \$2.375 ($\$2.50 \times 95\%$). In this case, the Minimum Revenue Guarantee purchased via the CRC contract would be \$232/acre ($150 \times 65\% \times \2.375).

At Harvest: Additionally, a Harvest Guarantee is established at harvest using the coverage level, the APH, and the Harvest Price. The Harvest Price is the average of December futures during the month of November for corn and the average of November futures in October for soybeans.

For example: Assume 65% coverage on 150 APH and Harvest Price of \$1.805 ($\$1.90 \times 95\%$). In this case, the Harvest Guarantee is \$176/acre ($150 \times 65\% \times \1.805).

Once the crop is harvested, the actual yield is multiplied by the Harvest Price, giving you Calculated Revenue.

For example: Assume actual yield of 125 bu/ac \times \$1.805 (harvest price) = \$226/ac.

If the Calculated Revenue is less than either the Revenue Guarantee or the Harvest Guarantee, the farmer receives a payment for the maximum difference.

The CRC policy coverage of not only yield, but also revenue, which includes a price component, adds a new dimension to crop insurance. It makes crop insurance a much more powerful tool. It can protect the financial ability to purchase "replacement bushels" in the case of cash contracts being made early in a season where yields are inadequate to cover contracted quantities. CRC can assure the farmer that funds will be available to purchase bushels for delivery that are not grown.

While adding a powerful new dimension to risk management, CRC has also created confusion about where crop insurance stops and crop marketing begins. It has also made it challenging to compare the benefits and costs of crop insurance products.

In the following questions and answers, we attempt to clarify some of these topics:

Question 1: As a farmer that owns his own land, and other financial resources, I have always self-insured. Why should I even worry about crop insurance?

Answer: *Even if you choose to self-insure, the low-cost of CAT coverage makes it almost too good to pass up. But there may be sound business reasons to consider higher coverage levels even if you can afford to self-insure. In 1999, premiums for MPC and CRC were subsidized an additional 30%, which resulted in extremely low premiums. In some cases, even the high-end buy-up products ensuring higher levels of yield were priced very attractively. You may wish to compare these products to options premiums in analyzing alternatives. Congress is now actively considering legislation to further subsidize insurance products approved by the federal government. In short, even if you don't think you need crop insurance, you should carefully analyze the costs versus potential payoffs. It may be too good of a deal to pass up!*



Question 2: If CRC guarantees minimum revenue, why should I worry about forward contracting my crop?

***Answer:** CRC does guarantee minimum revenue, but CRC is simply a contract with an insurance company that pays off in the event that the revenue guarantee exceeds your Calculated Revenue. If the policy pays off, that adds to your total revenue for the year, but you still have bushels to market and sell to a buyer. CRC does not eliminate the need to market or price the physical grain. Both CRC and MPCl actually provide the framework for more aggressive forward contracting, as they both give some degree of assurance of a minimal number of bushels available for delivery against cash contracts in the event of crop failure. (Note that the CRC policy, because it assures the higher of the revenue guarantee calculated on the basis of spring or harvest prices, gives stronger assurance of 100 percent of needed financial resources being available to acquire bushels.)*

Question 3: When I make the decision on which insurance product to purchase, should I be thinking ahead about the types of cash contracts or futures/options products I might be using later to market my crops?

***Answer:** Yes. Some insurance products work better with some forms of cash contracts. Many of the issues related to the integration of crop insurance and crop pricing and marketing strategies are addressed in a later section.*

Question 4: If I am considering purchasing MPCl or CRC, how do I make an objective decision as to which offers me the best value (potential payoff versus cost)?

***Answer:** The products are difficult to compare, as the base price for the MPCl policy is generally different than the prices used to establish revenue guarantee in the CRC policy. The best way to determine cost/value comparisons of the two products is for the farmer to work through a number of example yield situations. Even so, there will always be some uncertainty in comparing the two products, because the Harvest Guarantee for CRC is not known until the fall harvest.*

There are, however, some rules of thumb that can prove helpful:

Assuming comparable base price for MPCl and futures prices used for CRC, CRC potential gross rewards (payoffs) are superior to MPCl in all but very narrow circumstances (see # 4 below). However, CRC also tends to be more expensive than MPCl. Potential gross payoff has to be compared to the premiums for both policies.

Note:

1. If MPCl base price = CRC Feb price = CRC Nov price, MPCl gross payoff = CRC gross payoff.
2. If MPCl base price = CRC Feb price < CRC Nov price, CRC gross payoff is higher.
3. If MPCl base price = CRC Feb price > CRC Nov price, CRC gross payoff is higher.
4. If MPCl base price > CRC Feb price and CRC Nov price stays within the range of prices bound by the MPCl base price and CRC Feb. price, the MPCl gross payoff is generally higher. [Note that there is an exception to this rule of thumb: as the harvest yield goes down, the lower limit of this range goes down. (MPCl payoff is better for a lower range of possible CRC harvest prices). That is because at any given pair of MPCl and CRC prices, since the CRC price is lower, for every bushel decline in yield, the harvest revenue per acre drops less than the MPCl payment increases.]



V. Cash Contracts and Futures/Options

This section discusses fundamental features of cash contracts offered through many commercial elevators and other grain buyers and futures/options products available through the futures exchanges. Not all of the cash contract products may be offered by elevators due to regional, cropping or other business differences. An overview summary of the various contract tools is contained in Chart 9 on the following page.

A. Exchange-based futures and options. Futures markets are the undisputed centerpiece of price discovery and price risk management in grain-based agriculture. Futures markets are highly valuable to an efficient and fair pricing mechanism as they are very transparent and bring together buyers and sellers from around the world. Many of the cash contracts that have been developed are structured so as to be readily hedgeable through the exchanges, and many such products would not be offered in the absence of the exchanges.

Despite the major role of futures exchanges in grain marketing and risk management, a minority of farmers use these markets directly to manage grain price risk. The advantages of futures and options are many: 1) highly liquid markets; 2) guaranteed counter-party performance; 3) transparent pricing; and 4) provide mechanisms for deferred sales, permitting the capture of the futures market “carry” for the holder of inventory. In addition, the purchase of put options on the exchanges permits the establishment of a minimum futures price for an up-front premium.

Who should consider using futures? The futures markets allow for very efficient management of the futures portion of price risk. Farmers that understand the basics of hedging and are willing to manage various price and production risks with separate tools should consider the use of exchange futures and options. Farmers that use futures also should be sure to educate their banker about hedge positions and the need at times to finance margin calls to maintain a hedged position.

B. Cash Contracts. Fixed price forward contracts, sometimes referred to as “flat price” contracts, guarantee a price on a specific quantity for future delivery. Forward contracts are used either to price a growing or stored crop. The producer locks in a price reflecting both futures and basis for delivery to a grain handling facility. Once a crop is contracted with a fixed price forward contract, the contract requires little ongoing management. The potential downsides of the use of this contract are that the contract is made too early in an uptrending market (lost opportunity) or that the bushels contracted were ultimately not grown, in which situation, the producer is obligated to purchase replacement bushels.

Guaranteed minimum price (GMP) contracts are similar to a forward price contract with one important exception: the price is not fixed but guaranteed to be no lower than a predetermined price while leaving upside pricing opportunity. GMP contracts combine an imbedded option with a forward contract. Establishing a GMP effectively manages both futures and basis risk and allows the farmer to participate in price rallies, should they occur. Premiums for GMP contracts will be related to premiums being charged for exchange-traded options and are affected by both time to maturity and volatility in the market.

Mini-Max contracts (establishing both minimum and maximum prices) are similar to GMP contracts with the addition of a cap on upside market potential. The primary advantage compared to GMP contracts is the lower premium cost.



Chart 9

Summary of Major Cash Contract and Exchange Tools for Grain/Oilseed Producers

	Risks Being Managed	Major Advantages	Major Disadvantages	Other Factors
I. Exchange tools				
Exchange Futures	<ul style="list-style-type: none"> • Price Risk: (futures portion only) 	<ul style="list-style-type: none"> • Liquidity • Daily mark to market • Guaranteed counterparty performance • Central price discovery • Permits hedging of futures carry • Production and marketing flexibility 	<ul style="list-style-type: none"> • Addresses only futures prices • Margin calls in rapidly changing market (potential financing risk) 	<ul style="list-style-type: none"> • Requires opening account with futures broker
Buying Exchange Put Option (set min futures prices)	<ul style="list-style-type: none"> • Price Risk: (futures price only; limits downside risk) 	<ul style="list-style-type: none"> • liquidity • ability to cash settle; access to additional time value upon liquidation • no counterparty risk • Production and marketing flexibility 	<ul style="list-style-type: none"> • Addresses only futures price risk 	<ul style="list-style-type: none"> • Requires opening account with futures broker
II. Cash Contracts				
Fixed Cash Forward	<ul style="list-style-type: none"> • Price Risk: futures and basis risk 	<ul style="list-style-type: none"> • Ability to lock in firm cash price (futures and basis) 	<ul style="list-style-type: none"> • Risk of unexpected large yield loss (required to deliver whether physically produced or not) • Perceived opportunity cost (contracted too early in up-trading market) • Counterparty risk 	<ul style="list-style-type: none"> • Simple: requires no active contract management after signing; eliminates all price risk in one transaction • Delivery requirement limits flexibility
Guaranteed Minimum Price (GMP) Contract	<ul style="list-style-type: none"> • Price risk; futures and basis risk 	<ul style="list-style-type: none"> • Sets minimum price but seller may benefit from market rallies • Reduced risk of lower yields compared to fixed price 	<ul style="list-style-type: none"> • Counterparty risk 	<ul style="list-style-type: none"> • Delivery requirement limits flexibility
Mini-max	<ul style="list-style-type: none"> • Price risk; futures and basis 	<ul style="list-style-type: none"> • Sets minimum price at lower cost 	<ul style="list-style-type: none"> • Limit upside market prices • Counterparty risk 	<ul style="list-style-type: none"> • For producers willing to accept a cap on price, provides more affordable coverage than GMP • Delivery requirement limits flexibility



Summary of Major Cash Contract and Exchange Tools for Grain/Oilseed Producers (Cont'd.)

II. Cash Contracts (Cont'd)	Risks Being Managed	Major Advantages	Major Disadvantages	Other Factors
Basis Contract	<ul style="list-style-type: none"> • Basis risk only 	<ul style="list-style-type: none"> • Independent pricing of futures and basis enhances ability to maximize total price 	<ul style="list-style-type: none"> • Leaves the most sizable portion of price risk (futures) open to declines • Counterparty risk 	<ul style="list-style-type: none"> • Sets basis (1st) and futures (2nd) components in separate transactions • Requires active management and monitoring until futures price established • Need understanding of basis patterns and factors affecting basis • May lead to escalating behavior • Delivery requirement limits flexibility
Hedge-to-Arrive (HTA)	<ul style="list-style-type: none"> • Futures (marketing outcome virtually equivalent to short futures position, except delivery required) 	<ul style="list-style-type: none"> • Independent pricing of futures and basis enhances ability to maximize total price • Buyers have the right to contractually require cash performance guarantees, (this may or may not be exercised). 	<ul style="list-style-type: none"> • Counterparty risk • Risk of unexpected yield loss 	<ul style="list-style-type: none"> • Sets futures (1st) and basis (2nd) components in separate transactions • Requires active management and monitoring • Understanding of basis patterns and factors affecting basis needed • May lead to escalating behavior • Delivery requirement limits flexibility
Delayed Price (DP)	<ul style="list-style-type: none"> • Manages no risks 	<ul style="list-style-type: none"> • Logistical tool that provides alternative to storage • Helps manage quality factors 	<ul style="list-style-type: none"> • Counterparty risk 	<ul style="list-style-type: none"> • Does not protect against adverse movements • Transfers title upon delivery • Delivery requirement limits flexibility



Basis contract establishes a basis—the relationship between the local cash market and the futures market—but does not establish the final selling price. Basis contracts, until the futures price level is fixed at a later time, leave the farmer exposed to what is typically the most volatile portion of price risk (futures). Basis contracts permit the farmer flexibility to establish futures and basis at different times (thus providing an opportunity to optimize both components of price), but require ongoing management. An understanding of basis patterns and factors that affect basis are needed to use this contract successfully. Because some basis contracts can be rolled to a different delivery period, under some circumstances they may lead to escalating behavior.

Hedge to arrive contracts establish a futures reference price but do not establish the basis. HTA contracts need to be actively managed until the basis is established. Like basis contracts, HTAs offer pricing flexibility to establish values for futures and basis at different times, but require active management and knowledge of the market to be used successfully. Because some HTA contracts can be rolled to a different delivery period, they may under some circumstances lead to escalating behavior.

Delayed price contracts transfer title from the farmer to the grain buyer but do not establish a price or basis. Delayed price is an alternative to storage and is therefore a logistical tool, not a risk management tool.



VI. Combining Crop Insurance and Cash Contracts

With the many risk management tools available, there is no truly comprehensive product that can effectively address all production and price risks. Thus, if there is a desire to address multiple risks, the producer has to combine various products. This section discusses some of the issues involved in integrating crop insurance and cash contracts.

A. In General.

- ▶ All crop insurance products discussed in this booklet, including CAT, MPCl and CRC, provide a basis for more aggressive forward contract marketing. Since prices often reach higher levels prior to or during the growing season, such products can provide a means of forward contracting higher quantities with greater confidence when attractive pricing opportunities arise. The CAT coverage doesn't cover many bushels—only approximately 30% of expected bushels at the base price established in the spring. MPCl covers between 50% and 75%, depending on coverage level selected. The CRC policy covers between 50% and 75% of yields too, but provides greater assurance of being able to purchase bushels that are not grown, because the payment calculation may increase if prices increase during the period from planting to harvest. CRC premiums generally are more expensive than MPCl because of this added feature.
- ▶ Crop insurance is not grain marketing. Insurance agents don't have grain dump pits, and even if you like the price that CRC is offering in the spring, price is not established for physical bushels that you grow when you buy a CRC policy. CRC is not, therefore, a complete risk management or marketing tool. CRC does have an imbedded put on price, but because it is a guarantee on revenue, higher yields can erode the value of the put on price.

Consider how much “expected” price protection you are really buying with a CRC policy. At a proven yield of 150 bushels of corn, 65% coverage and a \$2.50 spring price, you have an expected minimum price (assuming normal yields) of \$1.63. That's below the loan value. And, if actual yields increase by 10%, the effective price protection is even lower.

B. Crop Revenue Coverage.

- ▶ **Fixed Price Forward Contracts:** CRC and fixed price forward contracts tend to work well together, because the fixed price commits the producer to delivering a fixed number of bushels and the CRC policy gives some strong assurance that a specific number of bushels will be available for delivery. Fixed price contracts also establish a basis level, something the CRC policy does not do (CRC is based on futures price only).
- ▶ **Basis Contracts:** CRC and basis contracts work well together. The assurance of a minimum number of bushels from the insurance dovetails nicely with the obligation to deliver. Since the basis contract sets the basis and the CRC is based upon futures, the two products are complementary to a degree. The basis contract still leaves the ultimate futures level pricing open on the physical commodity. The producer must actively manage the basis contract until final price is established.



- ▶ **HTA Contracts:** HTA contracts work ok with Crop Revenue Coverage, but both CRC and the HTA are based upon futures. The HTA has to be actively managed to establish a basis level for final pricing of physical bushels.
- ▶ **Guaranteed Minimum Price Contracts:** The GMP contract contains an imbedded put option on price. The CRC policy is a put on revenue, and therefore has some minimum (but variable) price protection. Thus, part of the CRC premium and the GMP premium go for the same purpose, and this combination is likely to be an expensive means of achieving marketing and risk management goals. Even so, a comparison of the cost versus potential payout of a CRC versus MPCCI policy is encouraged prior to making a crop insurance decision.

C. Multi-Peril Crop Insurance.

- ▶ **Fixed Price Forward Contracts:** MPCCI and fixed price forward contracts work well in combination, because the MPCCI gives some assurance that contracted bushels will be available for delivery. There is a price risk on replacement bushels (to cover yield shortfalls) with the MPCCI policy. This strategy essentially results in a form of guaranteed revenue per acre.
- ▶ **Basis Contracts:** Basis contracts and MPCCI work well together (see rationale given above for fixed price contracts). Basis contracts do leave the futures portion of price open until the final pricing decision and must be actively monitored and managed.
- ▶ **HTA Contracts:** HTA contracts work well with MPCCI, because HTAs do require physical delivery and MPCCI gives an assurance of yield protection.
- ▶ **Guaranteed Minimum Price Contracts:** The GMP works very well with MPCCI policies. GMP contains an imbedded put option on price. Combining the MPCCI policy with a GMP contract tends to achieve an assured level of total minimum revenue, much like a CRC policy alone. The risk/reward profiles for the CRC versus MPCCI/GMP strategy are not, however, identical. The producer is encouraged to work through a number of example yield and market circumstances to compare potential payoffs and premium costs. *[Note: While the MPCCI policy would seem to work better than CRC with GMP contracts (because there is not duplication of the minimum price and minimum revenue coverage) producers are encouraged to compare cost versus potential payout of CRC vs. MPCCI before making a decision. Subsidies on policies may shift the expected benefit/cost ratios to favor one over another.]*



VII. Taking Action

A. Planning. A well-thought out marketing plan will be based on triggers, or occurrences that will cause the producer to respond and act. Producers should avoid developing plans that are predictive or not grounded in reality. The difference is subtle, but important. There are three primary marketing triggers to which producers can respond:

- ▶ price
- ▶ date or time
- ▶ by event (e.g., the end of planting, a major crop report, tax time)

A successful marketing plan can use any of these three triggers to initiate action. There is no right or wrong approach. The key is that in all cases, the producer remains willing to adjust the plan if necessary. If price is the trigger, but the goal isn't reached by a certain time, then the producer will take specific action, for example.

▶ **Responsive planning:** "I planted 1000 acres of corn, and it's now July 1. December corn futures are at \$2.40. Anticipating at least some weather scares this spring when futures were at \$2.50, I sold only 10% of my expected production at that time. I also had offers in to sell 10% of my expected production at \$2.60, and a third 10% at \$2.70. But I said to myself that I'd have at least 40% priced by July 1, no matter what. And crops looks great now - I need to respond to that and modify my plan. I'm going to price another 30% now with futures at \$2.40."

▶ **Predictive planning:** "I planted 1000 acres of corn, and it's now August 1. December corn futures are now at \$2.40. This market is way too cheap, and I bet we're going back up. The weather forecasts all say we're going to have an early frost. Besides, it costs me \$2.70 to grow corn these days. I think we're going higher and I'm going to wait. I'll leave my orders in to sell more at \$2.90 futures."

Time is *not* on your side

Time can be the enemy of a producer's marketing hopes and plans. The longer a producer delays acting or selling, the fewer days remain in which a favorable outcome can occur. Waiting may still produce a favorable result, but the odds decrease as the days and months roll by. Producers can realistically market a crop over a span of two or more years. Some will start a year before harvest, perhaps even earlier. Some will extend their marketing over the full course of the crop year after production, or even beyond.

Cost of production — How it fits in

Markets are efficient, over time. Prices may swing up and down dramatically, but over the long pull will remain high enough to ensure sufficient production. In any given year, however, if existing stockpiles are large, prices may never need to move high enough to cover the full cost of production for many producers.

Part of the key to success lies in attitude and looking at the long-range picture. Markets won't always give producers the chance to reap large profits every year. But becoming an efficient *low-cost* producer, and marketing responsively, will help a farm on the road to success.



Write it down

Putting the marketing plan in writing is important. The document serves as a blueprint and timetable, and can reduce the odds the farmer will get caught up in emotional reactions or will fail to act at all. A marketing plan should include:

- ▶ Acreage
- ▶ Farm Service Agency information for the farm
- ▶ Cost of production (variable) - in dollars per acre
- ▶ Crop insurance information: coverage/terms, and cost
- ▶ Revenue per acre objectives
- ▶ Studying market fundamentals for the given crop and crop year
- ▶ Decide on market “triggers” to initiate the plan
- ▶ Price levels
- ▶ Event(s)
- ▶ Date
- ▶ Record of pricings, sales, and copies of any contracts
- ▶ Schedule for monitoring the plan (and adjusting as needed)
- ▶ Notes and reminders

A sample marketing outline (for a single crop) — “*Producer Risk Management Guide*” — is presented on page 32, and could be useful in developing a comprehensive marketing plan.

Summary Checklist for successful producer marketing

- Understand crop insurance products and coverage
- Identify all areas of risk
- Quantify these risks for my farm
- Quantify my ability to absorb adverse consequences
- Quantify cost of production per acre
- Develop a marketing plan

Implement
Monitor
Modify as needed

B. Developing a Marketing Plan. Producer Risk Management Evaluation Worksheet: Managing yield and market risks is a complex task. You must consider many factors each year, and circumstances will vary significantly. As a result, what may turn out to be a good way to manage risk one year may be less effective next year. What’s good for one person may not work for others.

This form presented on pages 27-28 is designed solely to help *you* quantify *some* of the factors that impact your crop insurance and marketing decisions. In turn, quantifying these factors can help you sort through the available choices to find ones consistent with your answers.



LEFT

Important factors that affect crop insurance and production marketing decision.

Most of these call for subjective answers. It is not practical for this form to quantify the exact conditions that may define certain answers in all situations. (e.g., "high" prices in one crop year may be "low" in different circumstances.)

CENTER

There are three columns reflecting three possible ratings for each factor listed in the "Category" section to the left.

Circle the most accurate or most appropriate selection.

(E.g., if you farm irrigated land in the Texas Panhandle, you may consider your yield variability to be low.)

RIGHT

There are three columns, containing basic crop insurance products or cash market strategies that may be appropriate, given your answer in the center column. (Use Column 1 on the right if you circled the selection in Column 1 in the center section.)

(E.g., If you circled "High" for current futures price level, then you might consider three possible strategies: sell fixed price, sell futures, or use an HTA if available.)



Producer Risk Evaluation Guide

Date/farm: _____

Your answer

Possible Crop Insurance choices* ("CI")

Issue/Question

Circle the most appropriate answer for each question/issue.

Match the Selection with your choice in the comparable Column (e.g., Selection 1 with Column 1)

Note: the selections are simply choices to consider - these are not recommendations for all circumstances.

	Column 1	Column 2	Column 3	Selection 1	Selection 2	Selection 3
Time (for marketing the crop)	Pre-planting	Between planting and harvest	Post-harvest	Crop insurance is available	CRC MPCI GRP	Not available
Time (for crop insurance)	Before CI deadline	After CI deadline		CRC+ MPCI+ GRP	CRC MPCI GRP	CAT GRP CH
*Your yield variability	High	Moderate	Low	CRC+ MPCI+ GRP	CRC MPCI GRP	CAT GRP CH
*Your financial status	High debt, or financing is uncertain	No serious problems	low debt, or farm is well-financed	CRC+ MPCI+ GRP	CRC MPCI GRP	CAT GRP CH
*Your 'comfort zone' in yield/revenue risk.	Conservative, want to minimize risks	Moderate	Aggressive, risk-taker	CRC+ MPCI+ GRP	CRC MPCI GRP	CAT GRP CH

Note: CAT coverage required for eligibility for FSA disaster aid.

"CRC+" refers to selecting a high acreage coverage percentage (up to 75%); same for MPCI+.

* Note: this form is intended solely to help producers sort through risk factors. The decision whether to purchase crop insurance, and the choice of crop insurance product, should not be based solely on yield variability, financial status, or tolerance for risk. For any given year and farming operation, the premiums for various crop insurance products should be evaluated against the probability of payoff. In some years, particularly those years in which the government heavily subsidizes crop insurance, the costs/potential payoffs of all possible insurance coverage should be evaluated. High subsidies can make products much more attractive than they would be otherwise. This form is not intended to serve as a specific recommendation for any single individual or for specific market conditions.



Page 2 Producer Risk Evaluation Guide

Date/farm: _____

Your answer

Marketing alternatives

Issue/Question	Circle the most appropriate answer for each question/issue.	Match the Selection with your choice in the comparable Column (e.g., Selection 1 with Column 1)				
	Column 1	Column 2	Column 3	Selection 1	Selection 2	Selection 3
Your "comfort zone" on marketing risk.	Conservative, want to minimize risk.	Moderate	Aggressive, a risk-taker	Fixed-price GMP Sell futures Buy put	Fixed price GMP Sell futures Buy put Basis contract	Consider any strategy
Futures price level is:	High	"Average"	Weak	Fixed price GMP Sell futures Buy put HTA	Fixed price GMP Sell futures Buy put HTA	Wait, Use FSA loan as coverage
Basis is:	Strong	"Average"	Weak	Fixed price GMP Basis contract	Any strategy	Wait Sell futures HTA
Cash/futures spread	Net nearby values exceed deferreds	Market carry about equal to your cost to hold	Deferred values exceed your cost to hold	Sell for nearby shipment	Select shipment period for convenience	Sell deferred shipment if possible
TIMING (post harvest) Quality of "on-farm" grain	Questionable, problems exist	Okay for now	Fine	Sell for nearby shipment	Select shipment period for convenience	Select shipment period for convenience
Cash flow requirements	Need cash soon	Of minimal concern	Of no concern	Sell for nearby shipment or take our FSA loan	Select shipment period for convenience	Select shipment period for convenience

Note: the selections are simply choices to consider - these are not recommendations

GMP=guaranteed minimum price.
HTA=Hedge to Arrive

Choosing to sell or wait when prices are low may depend on a variety of factors, including loan levels and whether or not the crop has been harvested.

LDP/Marketing loan notes.

Pre-harvest: Selling grain at a price *below* your local loan level may be unnecessary and inappropriate on FSA "program crops."

Post-harvest: Selling grain at a price *below* your local loan level is acceptable, but consider FSA payment limitations. Forfeiture may be a better alternative in certain situations.



C. Decision Tree Approach to Crop Insurance/Cash Contract Decisions. On the following page is a flow chart diagram that may help farmers in considering combinations of crop insurance and cash alternatives. The numbers on paragraphs below refer to the numbered circles at the bottom of the decision tree.

1. By selling the fixed price contract, price risk (basis and futures) has been eliminated. Give consideration to purchasing yield insurance via crop insurance to establish a revenue guarantee. Purchasing crop insurance also provides some security that should there be yield loss, indemnity payments will provide funds to settle any shortfall on the cash contract. CAT coverage is cheap but provides very little coverage. MPCCI and variations of MPCCI provide good protection and allow a choice of coverage levels. Group Risk may be a good choice if your yields track those of the county. Group risk is less expensive than MPCCI too.

At this point, you can purchase CRC or other revenue policies to lock in minimum revenue guarantees. It is strongly recommended that doing so be evaluated against the strategy described above. Purchasing a yield only policy guarantees a minimum revenue guarantee the same as CRC. Since the flat price portion of this strategy has already been implemented, CRC may be an expensive alternative. It is important to remember that CRC also provides opportunity for greater revenues should prices rally into the fall, and that may make it worth the extra cost.

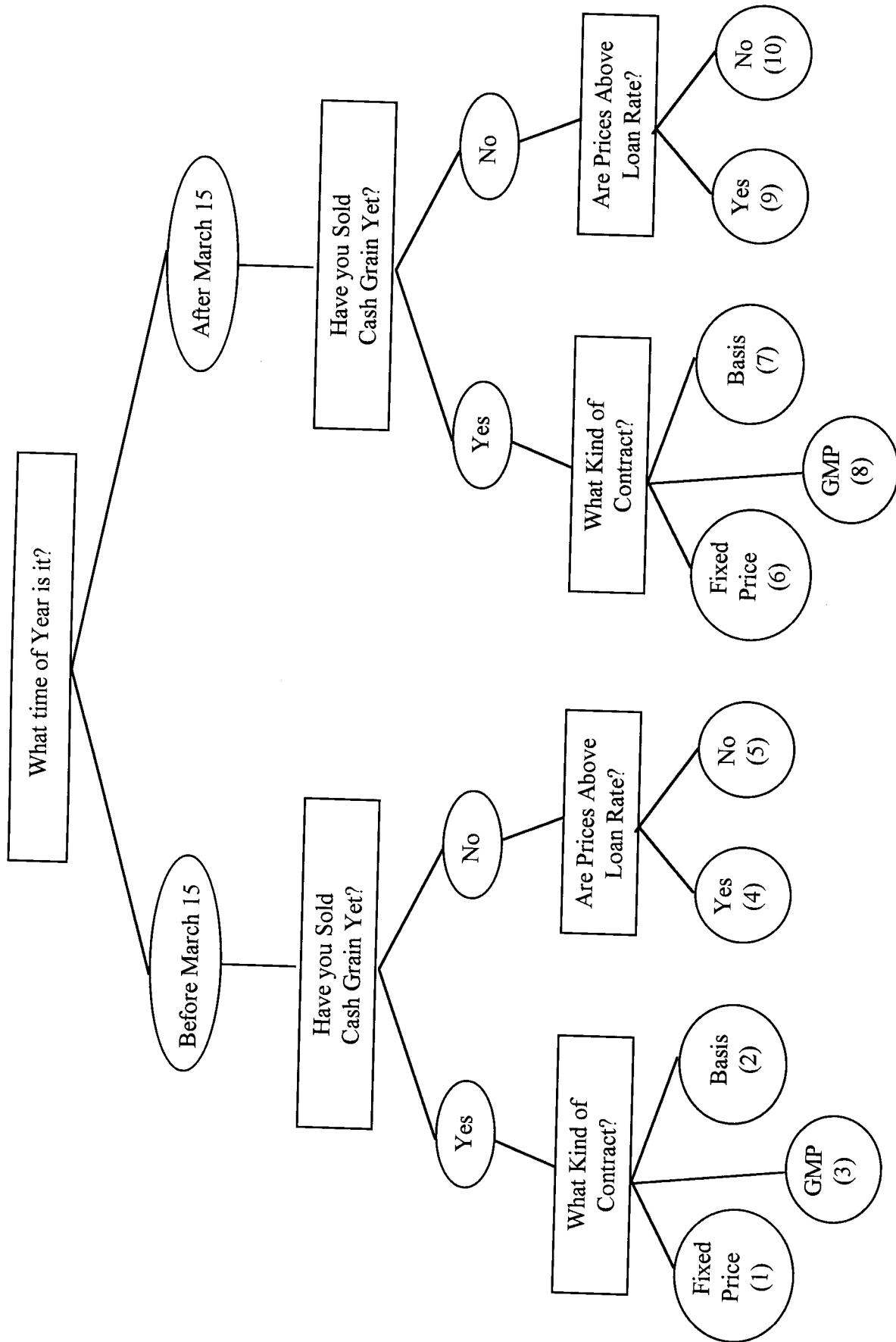
2. If new crop has been sold via a basis contract, only the basis portion of price risk has been established. Yield risk has not been addressed and consideration should be given to purchasing yield coverage (via the policies described in 1 above). Using a basis contract DOES NOT establish revenue guarantee since the futures portion (the main part of price) has not yet been established. It will however, provide the opportunity to do so later on. In addition, purchasing crop insurance provides some security that should their be yield loss, indemnity payments will provide funds to settle any shortfall on the cash contract.

Revenue based crop insurance products such as CRC provide a revenue guarantee. Since a basis contract does not eliminate a significant portion of price risk (futures), CRC is an excellent companion to basis contracts. That said, a farmer should weigh the cost of the CRC premium vs. a strategy of simply pricing the basis contract (turning it into a fixed price contract) and purchasing yield insurance via a yield only policy such as MPCCI as described in 1 above.

3. GMP contracts lock in a minimum price. In addition, an argument can be made that there is some limited intrinsic financial protection against yield loss. Because of these unique aspects of GMP contracts, purchase of yield and revenue/yield crop insurance products may not be as important as with other cash contracts. That is not to say that they are never an effective strategy with GMPs. It simply means that some of the same benefits are embedded in each product (GMP and CRC) and the value of combining these strategies should be carefully considered.
4. At this point, two decisions need to be made: 1) Will crop insurance be purchased? If so, what kind? This document provides descriptions of some of the more popular crop insurance options. Yield protection can be purchased that will bring confidence (that yield is assured) to cash grain sales that may be made later. Revenue based products can provide varying degrees of guaranteed revenue per acre. These policies should be given consideration in light of the cash grain sales that may be made at a later date. 2) Since current cash grain prices are higher than the loan rate, consideration should be given to whether current cash marketing opportunities fall within the goals of the marketing plan. If so, it may be time to price. If not, then the goals of the marketing plan should be reevaluated and/or a "wait to price" strategy is in effect.



C. Decision Tree Approach to Crop Insurance/Cash Contract Decisions





5. Loan rate prices provide an effective floor on prices (because of LDP payments). As such, there is less reason to implement cash marketing practices unless there are individual circumstances that dictate. As described in 4 above, decisions regarding crop insurance strategies need to be made prior to March 15 deadlines.
6. Opportunities to dovetail risk management strategies via crop insurance passed March 15. Monitor future cash sales to make sure sales are in line with marketing plan and expected production.
7. Monitor opportunities to “roll” the contract or price the futures portion of the contract at levels in line with the marketing plan. Opportunities to dovetail risk management strategies via crop insurance passed March 15. Monitor future cash sales to make sure sales are in line with marketing plan and expected production.
8. Monitor opportunities to price this contract in line with the goals of the marketing plan. Opportunities to dovetail risk management strategies via crop insurance passed March 15. Monitor future cash sales to make sure sales are in line with marketing plan and expected production.
9. Opportunities to dovetail risk management strategies via crop insurance passed March 15. Look for opportunities to sell cash grain in line with the marketing plan.
10. Opportunities to dovetail risk management strategies via crop insurance passed March 15. Since the loan rate provide an effective floor on prices (because of LDP payments), there is less reason to implement cash marketing strategies unless individual circumstances dictate.



Producer Risk Management Guide

Date:

Farm:

Use this form to document key factors and variables important to your risk management planning. Update the information as needed, but modify your marketing plan only after careful consideration.

Variables	
Production	Crop 1
Planted acres	
APH (bushels per acre)	
Projected production yield (bushels per acre)	
Variable production cost \$/A	
Market Variables:	
Today's harvest cash bid	
- Harvest futures (today)	
= harvest basis	
Projected basis at harvest	
Projected futures at harvest	
Projected LDP (harvest)	
County Loan Rate	
Option Factors	
Strike price/month	
Premium (¢/bu)	

Notes:

Crop Insurance	Available & willing to use? (Y/N)	Premium cost: \$/acre	Payout yield % (CAT = fixed %)	Crop Ins. Gtd. Bu. (% X APH)	Payout \$ %	Gtd. Price	Fall price
CAT			50% X APH		60%	X \$	
MPCI			% (50-75%)		100%	X \$	
CRC			% (50-75%)		95%*	X \$	or \$

(*CRC uses 95% of higher of Gtd or Fall futures price)

Marketing Strategies

Strategy (forward price)	Knowledge/comfort level?			
	Fully understand	Understand need info.	No experience	Will not use
Fixed price				
Gtd. Min. Price				
"Mini Max"				
Basis only				
Hedge to Arrive				
Sell futures				
Buy puts				
Delayed Price (DP)				
Sell at harvest				

Marketing plan – potential triggers

By event		By timing		By price	
By planting	%	Each month	%	Mo./Price	%
By mid-season	%		%	Mo./Price	%
Other	%		%	Mo./Price	%
By harvest	%		%	Mo./Price	%
Post harvest	%		%	Mo./Price	%

100%



VIII. Common Marketing Mistakes —Don't Leave Money on the Table—

A. Always Market in the upper 1/3 of the price range. This is certainly great advice if only it could be executed. However, it is probably not realistic. AgMAS offers an Internet-based service comparing the performance of selected agricultural market advisory services. The web site is <http://www.aces.uiuc.edu/~agmas/>.

In general, the advisory firms sometimes have track records of marketing grain above the average price, but many do not. And, it is unusual to see market advisory firms consistently in the top five performers from one year to the next. Choosing the best professional advisory firm may be as difficult as predicting the market. Producers are encouraged to have reasonable pricing and revenue goals in developing a sound marketing plan.

B. You can't make a profit without taking risks, so take risks to make a profit. There is a trade-off between risks and rewards. You can see it clearly in highly visible markets like stocks (high return/high risk) versus government bonds (low return/low risk). However, not all market risk/reward profiles are so open and evident to potential investors.

In managing risks of production and price through crop insurance and cash contracts, sometimes taking risks does not come with compensating rewards. Likewise, there are situations that are relatively low risk that have higher than average expected returns. The changing levels of crop insurance subsidies causes some of these "market" distortions. In some cases the premium calculations may leave opportunities open to farmers that may not have been intended.

Farmers are encouraged to evaluate alternatives, and closely compare the costs and returns based upon what they can reasonably expect from the production performance of their operation. Farmers should work with grain buyers, crop insurance agents and others seeking information on products and tools. But farmers need to do some homework to fully evaluate alternatives.

C. Don't use free delayed price contracts, because it dumps grain on the market before the producer prices it (this is a myth). When elevators offer free delayed price grain, it generally reflects the market's incentive to move physical grain into the pipeline. The grain warehouse is responding to strong demand. Delayed price grain remains un-priced by the producer but the grain warehouse must price the grain to ship it to a customer. As soon as the grain warehouse sells the physical grain, they must immediately purchase an equal and opposite futures contract to hedge the price risk. When the producer later prices grain on a delayed price contract, the elevator must then sell an equivalent amount in the futures market, thus lifting the hedge

Delayed price grain can cause grain to move into the cash market. However, if sold by the commercial buyer, it simultaneously causes an order to buy futures. Does this support or depress price levels?

D. Base grain-market decision on minimizing tax liability

The calendar year end brings with it the need for tax planning. Some producers attempt to shift income into the current year while in other years they choose to defer income. Tax advisors may assist the producer in the evaluation. Unfortunately, most tax advisors do not consider the cost or benefit of specific grain marketing alternatives. Rather they simply look at bushels times price.



Factors to consider in tax based marketing:

Separate the marketing decision between the price and basis component. Perform a simple economic analysis of the opportunity cost associated with selling grain when the market signals suggest storage.

Example	Dec	Mar	May	July
Futures	2.65	2.77	2.83	2.89
Cash Bids	2.45	2.45	2.45	2.45
Basis	-.20	-.32	-.38	-.44

Assume the cash bid for corn on December 1, delivered to a local grain warehouse, is \$2.45 and futures are \$2.65. The basis in our example is -.20 December or -.32 March. Assume historically we can expect a March basis of -.12 March. Given these assumptions, the market currently returns a potential for .20 cents additional gain in basis less storage and interest costs. How does the additional \$0.20 per bushel (less carrying costs) compare to the tax benefit? If the tax savings outweigh the market return, sell the grain; if not, it may return more to pay higher taxes but receive more for the grain.

The decision to establish the grain value is separate from the decision to physically move the grain. Price only strategies include hedge-to-arrive, exchange traded futures and options, and guaranteed minimum price contracts. Logistical contracts include basis, delayed price and physical storage.

E. Find out what other producers think about the market before making a decision. It may be comforting to know that one is making a decision similar to others. It might suggest that one's timing must be good. Or, as the saying goes, misery loves company in case the decision turns sour.

AgMAS web site offers a weekly Consensus Report measuring the "average" belief of market participants regarding future price trends.

(http://www.aces.uiuc.edu/~agmas/consensus_view/tables/current_value_table.htm)

These indicators are intended to be a simple and quick way of assessing the average outlook of advisory services regarding market trends for a corn, soybeans, wheat, cotton, live hogs and live cattle.

Market consensus reflects popular opinion. Recall that the advisory service's advice monitored for these reports seldom, over time, exceeds the simple average price offered during the marketing year. Some professional traders view consensus reports as an indication of potential market turnarounds. Since the majority of price forecasters are generally incorrect, their combined opinions may likewise be incorrect.

F. I can't leave the bins empty at fall. That's why I built them. If you have some unpriced grains at harvest, and you have some empty bin space, take a hard look at your marketing alternatives. Sometimes the market is telling you to store. Other times, you should be leaving those bins empty, whether or not you own them.



Example:

- ▶ Assume a farmer with no on-farm bins.
- ▶ Commercial storage will cost 12¢ from October to January 31, and then 3¢ per month thereafter (charged on Day 1 of each month).
- ▶ Interest cost: corn - approximately 1¢ per month (assume 5% on \$2.15 cash corn)

Assume our producer is comparing market values on October 15. The producer checks around and gathers the following information on cash and futures prices, and elevator storage costs.

On October 15

Shipment period	Oct	Dec	Jan	March	May	July
Futures	\$2.50 Dec	\$2.58 March	\$2.58 March	\$2.63 May	\$2.70 July	\$2.70 July
Basis	-.40	-.33	-.32	-.28	-.28	-.22
Cash price	\$2.10	\$2.25	\$2.26	\$2.35	\$2.42	\$2.48
• Storage	-0-	-.12	-.12	-.18	-.24	-.30
• Interest	-0-	-.02	-.03	-.05	-.07	-.09
NET	\$2.10	\$2.11	\$2.11	\$2.12	\$2.11	\$2.09

This farmer has a relatively easy choice: If he or she wants to market grain on this day, it doesn't really matter which month the farmer sells it. All of the bids are nearly equivalent when the farmer allows for storage and interest costs. If the basis in this farmer's area generally runs from about -45 to -25¢, then it doesn't appear there's a great deal to be gained by the farmer selling futures and waiting for the basis to firm.

The trap in this example is how producers view this marketing choice if they only look at the bid for October (\$2.10 in this case) and think it's too cheap. Some farmers will simply sit back and wait - assuming that cash bids will rise. They ignore the fact the market *already* compensates them for their holding costs: through the higher bids for later shipment. July delivery corn, for example, is bid at \$2.48, a full 38¢ higher than for October. After holding costs, however, it doesn't net any higher for our producer to sell today for July.

But to do nothing, to sit and wait, means this producer is 'bullish' from \$2.48 cash corn for July. So unless our producer thinks cash prices for the following summer will be higher than \$2.48 (gross), he or she should go ahead and sell the corn today, for *any* delivery period. The choice of October, January, or later might be a function of cash flow or tax considerations.

G. I've tried options but I always lose the premium. Losing the option premium isn't that bad. The purpose is to insure against an adverse price move. To compare this situation, consider how you felt when you didn't need your car insurance last year. Or better yet, consider how fortunate you are that your life insurance premium didn't pay off last year!

Options that limit downward price risk (futures options or imbedded in guaranteed minimum price contracts) should be viewed as protecting expected revenue streams rather than protecting against future losses.

H. Use "Cancel if Close" Orders. Offer contracts (or firm offer contracts) are firm orders to sell grain if and when the cash market moves to a specified level. "Cancel if Close" refers to the tendency to place firm offers above the current market, only to cancel the offer as the market approaches the offer price. Is this a mistake? Will markets go higher forever? You be the judge.