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Hedge-to-Arrive Contracts

Hedge-to-arrive (HTA) contracts came into use in the western Corn Belt in the early 1990s, but have been used much longer in the eastern Midwest. There are four main types of futures-based HTAs, ranging from a relatively simple two-decision version to much more complex types that require several decisions after the contract is initiated. Potential market and non-market risk exposure increases dramatically with the more complex HTAs, particularly where rolling futures positions between crop years is permitted. The four basic types of HTAs are:

- non-roll
- intra-year rolling
- inter-year rolling involving one year's production
- multi-year rolling

Non-roll HTAs remove price-level risk but involve exposure to basis risk—the risk that the difference between local cash prices and the nearby futures price will move in an adverse direction and lower the producer's net price. **Basis risk normally is relatively small, but can be sizable in times of inadequate storage space or transportation shortages. Spread risk is not involved with these contracts.**

Intra-year HTAs involve exposure to both basis risk and intra-year spread risk. Intra-year spreads (differences in futures prices for delivery months within the same crop year) typically are much less volatile than inter-year spreads (price differences for contract delivery months in two marketing years, such as July 1996 and December 1996). Even so, intra-year spreads can have sizable risk in years when stocks are low.

Inter-year spreads can be extremely volatile and involve large exposure to risk. In addition, the complexity of rolling HTAs means that several separate decisions must be made before the contract is completed. Multiple decisions increase exposure to control risk, the risk that rapid market movements will lower the net price to an unacceptable level before the producer can take preventive action. For an explanation of these types of risk, see *About Grain Contracting: Commonly Used Grain Contracts* (PM-1697a). Examples 1, 2, and 3 illustrate how various types of HTAs work and are based on 1995-96 and 1996-97 conditions.

Non-roll HTAs

These contracts originally were offered as an alternative to basis contracts, in which the basis is set at the start of the contract, but the producer is given an extended time to choose his or her price level as reflected by the futures market. In contrast, non-roll HTAs set the futures price at the start of the contract, but leave the basis to be set at a later time. Non-roll HTAs are quite similar to cash forward contracts, except that the basis is established at a time the producer chooses. The elevator covers the position by selling futures contracts, and is exposed to margin calls on the futures market if prices move in an adverse direction. The producer rather than the elevator carries the basis risk. The main difference between non-roll HTAs and forward cash contracts is basis risk with its potential for a higher or lower price through basis changes.

Non-roll HTAs require a specific quantity and quality of grain to be delivered at a predetermined date and place that cannot be changed. The only decision remaining after the contract is signed is when to set the basis. **Non-roll HTA contracts for corn and soybeans can be for delivery in the current crop year or for delivery of the next two years' crops.** Delivery in later crop years is possible because the Chicago Board of Trade has simultaneous trading of harvest-delivery futures contracts for three different crop years. Hence, elevators could simultaneously offer non-roll corn HTAs for fall 1996 delivery based on December 1996 futures contracts, and 1997 and 1998 crop non-roll HTAs based on the December 1997 and 1998 futures.

Basis risk is the main market risk for the producer using non-roll HTA contracts. Basis risk normally is much smaller than price-level risk. Like a forward cash contract, non-roll HTAs prevent the producer

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from benefiting if prices rise, but protect against declining futures prices. If the basis strengthens from the start of the contract to the time the producer sets the basis, the net price will increase from what was available at the start of the contract. If the basis weakens, the net price to the producer will decline. To effectively use these contracts, the producer must have a good understanding of the local basis and factors affecting it. He or she also must monitor the basis and be able to act quickly to decide when to set the basis.

Intra-year rolling HTAs

These contracts are similar to non-roll HTAs except that the delivery date can be changed to another time within the same crop marketing year (September to August). This flexibility in delivery dates creates exposure to intra-year spread risk.

With this type of contract, potential price gains come only from basis improvement and/or rolling the price up a few cents to a later-delivery old-crop futures month. Neither of these sources of higher prices is guaranteed. Both involve risk, and both can result in lower prices. These contracts lock in a level of futures prices, and prevent gaining from a rising futures market.

Intra-year rolling HTAs are more complex than non-roll HTAs because the producer must decide when to set the basis and when to roll the contract. Risk exposure is greater because the intra-year rolling HTA contracts include both basis risk and intra-year spread risk. Although intra-year spreads typically are much less volatile than inter-year spreads, they can be quite volatile and can involve substantial risk, especially in years when grain stocks are low. The added complexity of these contracts also increases exposure to control risk.

Inter-year single-crop rolling HTAs

These contracts operate differently than intra-year rolling HTAs. The date of delivery for inter-year single-crop rolling HTAs can be changed from the original marketing year to the next marketing year. This flexibility has been used in several different ways, including selling old-crop grain on a higher-than-expected cash market and later rolling the futures position into the next year's crop. **This converts the contract into a speculative position in which higher futures prices generate losses that must later be deducted from the new-crop position.** In addition, when a producer plans to move the delivery date from an old-crop month into the next crop year, risk exposure increases dramatically because of exposure to inter-year futures price spreads. If old-crop to new-crop spreads widen before rolling, the new crop price will be reduced. In years of tight supplies, this risk can be extremely large.

Control risk also can be large in fast moving markets. **Exposure to large control risk means the net price can move quickly to an unacceptable level before a producer can take preventive action.** In

Example 1. 1996 corn, non-roll HTA contract.

On July 1, 1996, a producer decided to use an HTA for 1996 production based on a December 1996 futures contract. Due to a relatively wide local new-crop forward contract basis, the producer chose non-roll HTA contracts. The elevator sold December 1996 futures to protect the contract price.

- Producer fixed December 1996 futures, $3.75
- Elevator sold December 1996 futures, $3.75
- Producer expected basis, $0.30; price, $3.45

On November 19, 1996, the producer delivered the corn to close out the contract.

- Elevator bought December 1996 contract, $2.65
- Cash price was $2.37

Producer's price

$2.37	Cash
+1.10	Gain on December futures (3.75-2.65)
$3.47	Net price

Elevator's cost

+1.10	Gain on December futures (3.75-2.65)*
3.47	Price paid to producer
$2.37	Net price paid for grain

*Offset higher price paid to producer

Note: by using a non-roll HTA (delivery period was fixed and unchangeable), the producer avoided spread risk. However, basis risk remained. In this example, basis risk worked to the producer's advantage by providing a slightly higher price than initially expected. **In 1995, basis risk during harvest season in the western Corn Belt worked to producers' disadvantage.**

Example 2. 1995 corn, intra-year rolling HTA.

On July 3,1995, a producer sold 1995 production on a December 1995 HTA contract.

- Producer fixed December 1995 futures, $2.85
- Elevator sold December 1995 contract, $2.85
- Producer expected basis, -$0.40; expected price, $2.45 (previous year's harvest price, $1.90/bu.)

On November 27, 1995, due to the wide basis at harvest, the producer rolled the December 1995 HTA to the July 1996 contract.

- Elevator bought December 1995 contract, $3.25; sold July 1996 contract, $3.28 (cash price, $2.60)
- Producer stored the grain

On May 21, 1996, the producer closed out the contract by setting the basis and delivering corn.*

- Producer fixed basis at -$0.20 under July
- Elevator bought July 1996 contract, $5.01
- Cash bid price was $4.81 ($5.01-0.20)

Producer's price

$2.85	December 1996 futures
-0.20	Basis
+0.03	December–July spread (3.25-3.28)
$2.68	Price received from elevator

Elevator's cost

$0.40	December 1995 futures loss ($2.85-$3.25)
1.73	July 1996 loss (3.28-5.01)
2.68	Price paid to producer
$4.81	Total price paid for corn**

*Incurred storage costs until May 21
**Same as cash price in May; excludes trading costs, roll charges, and interest on margin money

Note: if this had been a non-roll HTA, the grain would have been delivered to the elevator in November or earlier. Delivery on November 27 would have given a price of $2.20 for the HTA contracted corn, and the transaction would have ended. The net price would have been $0.25 less than the producer originally expected. The lower price would have been due to exposure to basis risk that developed with inadequate storage and lack of transportation equipment.

spring 1996, the Commodity Futures Commission (CFTC), the regulatory agency for commodity futures markets, issued guidelines discouraging the use of HTAs that allow inter-year rolling. Regulatory review and pending litigation could alter future use of these contracts as well as multi-year inter-crop rolling HTAs.

In short, very large risk exposure is involved with inter-year rolling HTAs. Risk exposure with these contracts is far greater than with non-roll HTAs. In volatile markets which may be common place in the late 1990s and early 21st Century, risk exposure could be very extreme. Net prices from these contracts can quickly move to unacceptable levels before producers can take preventive action. Tax treatment of these contracts also is a potential problem.

Multi-year inter-crop rolling HTAs

These contracts involve extreme risk exposure that vastly exceeds even that of single-crop inter-year rolling HTAs. The contracts sometimes have been used to price several years' expected production with an HTA that begins in old-crop futures. Using these contracts involves making a very questionable and high-risk assumption. The producer assumes that spread relationships from rolling the current crop-year futures prices to prices for later-year crops (perhaps one to five or more years ahead) will provide a net price near that reflected by old-crop futures. **There is absolutely no way producers can be assured that the end result of these contracts several years into the future will be even close to the current old-crop market. These contracts reflect extreme and very high-risk speculation.** In addition, they expose the producer to a high degree of production risk stemming from such things as changing government programs, loss of leases on rented land, unforeseen health problems that might require reducing planted acreage or leaving agriculture, loss of financing for part of the intended acreage, and weather risks. Losses the elevator incurs from selling futures to cover these positions become obligations of the contracting producer. In addition, these contracts have a high risk of adverse tax consequences.

Thus, multi-year inter-crop rolling HTAs are extremely risky, with huge exposure to several types of market and non-market risk. Instead of being hedge-based, these contracts actually involve extreme speculation. Consider the loss a producer could face

if three to five years' production were sold on the futures market and prices moved adversely. **For a corn grower raising 90,000 bushels of corn in a normal year and selling four years' production, a $0.25 adverse price move would generate $90,000 in losses.**

The futures market, through margin calls, would require immediate compensation for the losses. Even if covered by the elevator, these losses would be an obligation of the contracting producer. Even modest adverse changes in futures prices can bring huge financial losses due to the leveraging effect of large volumes. **If contract provisions state that the elevator will cover margin calls, these HTAs lack the usual safeguards found in futures markets that would cause producers to exit their positions before losses became extreme.**

Conclusions

Hedge-to-arrive contracts range from relatively simple, low-risk non-rolling versions in which basis risk is the main area of risk exposure, to much more complex types that allow producers to roll (change delivery dates) and permit the next year's crop to be priced initially with old-crop futures contracts. In extreme cases, these contracts have been used to price several years' production through an initial position in old-crop futures. Contracts that involve inter-year rolling of HTAs have extreme risk exposure. Multi-year rolling HTAs are extremely high-risk speculative instruments, and can be much more risky than speculating in the futures market. They are neither price protection nor risk management tools.

Disclaimer

This publication provides educational information to help you understand risk-management features of grain contracts. It is neither a legal document nor an endorsement of any type of contract. Contract details vary. Some contracts may have provisions not included here. Understand a contract *before* you sign it. Seek professional assistance if there are details you do not understand. Before entering into the contract, each individual should evaluate his or her risk exposure with extreme market movements.

Example 3. 1995 corn, rolling to 1996 crop.

On July 3, 1995, a producer priced 1995 corn with a December HTA contract, intra-year rolling hedge.
- Producer fixed December 1995 futures, $2.85
- Elevator sold December 1995 futures, $2.85
- Producer expected basis, -$0.40; price, $2.45

On November 27, 1995, due to the wide basis at harvest, the producer rolled the December 1995 HTA to the July 1996 contract.
- Elevator bought December 1995 contract, $3.25; sold July 1996 contract, $3.28 (cash price, $2.60; July–December spread, $3.28-3.25=$0.03)
- Producer stored the grain

On March 12, the producer sold cash corn at $3.60.
- Basis was -$0.22 ($3.82 July - $3.60 cash)
- Producer decided to shift HTA to 1996 crop, **creating an inter-year rolling HTA**

On May 21, 1996, the producer rolled the position to December 1996 futures.
- Elevator bought July 1996, sold December 1996
- July-December spread, $5.01-$3.42=$1.59 (spread was about at its maximum); before May, spread was $0.65 to $0.95; in June, $0.90 to $1.25

In November 1996, the producer delivered the corn to close out the contract.
- Producer fixed basis, -$0.28 under December
- Elevator bought December 1996 futures, $2.65
- Cash price $2.37 ($2.65 - $0.28)

Producer's price, old crop—$3.60 cash
Producer's price, 1996 crop

$3.28	July 1996 futures
-0.28	basis
-1.59	July-December spread ($3.42-5.01)
-0.40	Loss on December 1995 futures
$1.01	Price of 1996 corn*

Elevator's cost

+$0.40	December 1995 loss ($2.85-3.25)
+ 1.73	July 1996 loss ($3.28 - 5.01)
- 0.77	December 1996 gain ($3.42 - 2.65)
+ 1.01	Price paid to producer
$2.37	Total paid for grain**

*Excludes trading costs, roll charges, and interest on margin money
**Same as cash price in November

Note: this is an approximate worst-case example for a December 1995 HTA placed in July 1995 and rolled to July 1996. Rolling to December 1996 in March, when old-crop corn was sold, would have avoided about $0.70 to $0.80 in adverse spread. Closing the HTA in late September, if corn was harvestable at that time, at some elevators would have provided a basis of as much as $0.50 over December, $0.78 better than this example. Harvesting the first week of October would have provided a moderately stronger basis than this example. **In short, potential returns were highly volatile.**