

Risk Management

The Minimum Price Contract

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Producers should continually search for new marketing tools to help them cope with decreases in farm program support, price variability, and the growing need to be competitive in the global marketplace. Being able to use many kinds of marketing tools makes it easier to manage price and production risk and achieve financial goals. Minimum price contracts are one of the marketing tools available to producers. While there are a number of ways to combine futures, options and cash contracts to establish minimum price arrangements, the one we will discuss is the minimum price contract offered through the local elevator.

Like any marketing tool, the minimum price contract has advantages and disadvantages. Producers who are interested in price risk management should know about this marketing alternative and understand how to use it in their marketing programs.

Advantages of a minimum price contract

- Locks in a minimum price but has upside price potential.
- Provides some leverage in obtaining credit.
- Establishes a price floor and helps in production management decisions.
- No need to deal directly in futures or options markets.
- Limited risk, no margin calls.

- Contract quantity is often negotiable (i.e., can contract less than 5,000 bushels).

Disadvantages of a minimum price contract

- Must pay a premium and any transaction charges.
- Grain must be delivered to a specific elevator.
- May lose option time value.
- During volatile markets, the premium associated with this contract can be high.

When to Use

Since this pricing tool allows the producer to lock in a price floor, yet still have upside price potential, there are several appropriate times to use it. One may be when the producer is concerned about protecting his break-even cost of production and needs some price protection, but the market is not offering enough profit potential to meet his objectives. The price floor of the minimum price contract offers some security for covering costs and some protection against falling prices. Thus, the producer can afford to wait and see if the market will move higher later on and bring him a better final price.

A producer also may choose to use the minimum price contract when prices are trending higher and he finds it difficult to sell in a rising market. With a minimum price contract, he can



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lock in a floor price and still have upside potential if the market rallies.

Options-based marketing strategies, such as the minimum price contract, work well in times of major and sustained price trends. The threat of margin calls makes a futures-based strategy alone much more costly in such situations. However, price volatility increases the cost of option premiums and increases the fees associated with writing and implementing minimum price contracts.

In the following example, we consider a minimum price contract that combines a forward cash contract with the elevator and the purchase of a call option.

Figure 1. January

December corn futures	\$5.20
Forward contract for October delivery	\$5.30
December \$5.20 call premium.....	\$0.60

In this case, the producer is considering locking in a floor price before the crop is even planted. During the winter (January), the producer looks at the corn futures prices for next fall to see what the market might be offering. Because he intends to harvest his corn in October, he looks at the December futures and sees that the price is \$5.20 per bushel. He also notices that the December \$5.20 call option is trading at \$0.60 per bushel. Seeing this, the producer calls his local elevator and asks at what price he can forward contract the coming year's corn production. The elevator manager says he will offer a forward contract at \$5.30 for delivery in early October (basis = +\$0.10). The producer decides that while this price is high enough to cover his costs, it is not high enough to meet his price objective and achieve his financial goals. As a result, the producer asks the elevator manager what he would offer as a minimum price contract.

As seen in Figure 2, the elevator manager can calculate his minimum price bid by starting with the forward contract price of \$5.30 and subtracting the call premium, any interest cost from financing the premium, and any commission or transaction fee.

Figure 2. January

Forward contract	\$5.30
December \$5.20 call premium.....	-\$0.60
Commission, interest, and fees	-\$0.05
Minimum/floor price.....	\$4.65

In this case, the minimum price bid would be \$4.65. While this is a lower price than the \$5.30 forward contract bid, the minimum price contract has upside potential, and the producer can do better than the minimum price bid of \$4.65 if the December futures price moves above \$5.20.

If the producer chooses to accept the minimum price contract, he will sign a cash forward contract with the elevator, and the elevator will purchase the \$5.20 December call option. The long call option allows the purchaser to buy futures at \$5.20, so the elevator will make money on the call option if the futures price moves above \$5.20. This is the money the elevator will return to the producer as the amount above his minimum price.

Price Increases

If by harvest the December futures price has risen to \$6.00, the December \$5.20 call option should be worth at least \$0.80. In that case, the producer would receive the \$4.65 minimum price plus \$0.80 from the call premium, for a net final price of \$5.45 per bushel (Fig. 3).

Figure 3. Harvest/October

December futures	\$6.00
December \$5.20 call option value	\$0.80
Cash price	\$6.10

Final result

Minimum price	\$4.65
December \$2.70 call option value	+\$0.80
Final price.....	\$5.45

Price Declines

If by harvest the December futures price has declined to \$4.40 (Fig. 4) and the cash price is \$4.50, the December \$5.20 call premium should be worth \$0.00. In this case, the producer would

receive the \$4.65 minimum price, and the call option would expire having no value. As prices fell, the producer was protected from the price decline by a forward contract that assured him a minimum price of \$4.65. This is 15 cents per bushel better than the \$4.50 he would have received had he sold for the cash price at harvest (Fig. 4).

Figure 4. Harvest/October

December futures	\$4.40
December \$2.70 call option value	\$0.00
Cash price	\$4.50

Final result

Minimum price	\$4.65
December \$5.20 call option value	+\$0.00
Final price.....	\$4.65

Figure 5 compares the prices the farmer can expect to receive at harvest from a cash-only sale, a cash forward contract (CFC) based on futures prices at the time, and a minimum price contract (MPC). This assumes a current futures price of \$5.20, a +\$0.10 basis, and -\$0.65 for call option premium and fees.

The cash price is equal to the futures price at any point in time adjusted for the basis (+\$0.10). The cash forward contract locks in a price at current levels and is equal to the current futures price adjusted for basis ($\$5.20 + \$0.10 = \$5.30$). The minimum price contract (MPC) is equal to the cash forward contract less premium and fees below the call option strike price of \$5.20 ($\$5.30 - \$0.65 = \4.65). At futures prices equal to or above the strike price, the floor price is the cash forward contract price + option value – premium and fees.

These two examples show one of the true advantages of the minimum price contract as a marketing tool. It allows the producer to lock in a price floor as protection from a downward price move, while at the same time maintaining potential for his price to increase if market prices move higher after the contract is signed.

Another possible benefit of this tool is that it may give some producers the courage or disci-

Figure 5.



pline to sell into a market that is rallying. This is far better than doing nothing for fear of selling before prices peak. No one knows when or at what price the market will peak, and prices often retreat from the peak very rapidly. As a result, producers who do not sell on the way up often do not sell on the way down either, or at least, not until prices have fallen a long way. The minimum price contract allows the producer to set a price floor, so that if the market breaks quickly he will be protected at the minimum price. If, instead, the market continues to rally, he can use the call option to improve his overall price.

Another reason producers like the minimum price contract is that it gives them added protection in case their production falls short of the contracted amount and they must purchase grain at a higher price at harvest to fulfill their forward contract. This is a particular problem in regions such as Texas and Kansas, where producers face substantial production risk. The combination of having a shortfall in production and having to take a loss on grain not produced, but that had to be purchased to fulfill a lower-priced elevator contract, could be financially devastating. With the minimum price contract, if prices rally after the producer signs the contract and production falls short of the contracted amount, the money made on the call option will help offset much of the higher price of the grain purchased to meet the elevator contract. As a result, many producers feel more secure using this type

of contract to sell pre-harvest production, and are more likely to make pre-harvest sales than they would if their only alternative were to use a flat price forward contract.

Choice of Call

Since there are always a number of different strike prices trading at any given time, the elevator may allow the producer to choose the call option he prefers to use. This gives the producer some control over the minimum price he will receive and the amount of upside potential he will have if the market rallies later (Fig. 6).

Since the call options with a higher strike price have a lower premium cost, the producer can get a slightly higher minimum bid price by selecting a call option with a higher strike price and a cheaper premium. Figure 6 shows that a minimum price contract using a \$5.00 call option has a floor price of \$4.55; the \$5.10 call option has a floor price of \$4.60; and the \$5.20 call has a floor price of \$4.65. However, selecting a call with a higher strike price means that the market will have to rally further before the producer will benefit from the rise in price.

Figure 6.

January

Futures price	\$5.20		
Strike price	\$5.00	\$5.10	\$5.20
Forward contract price	\$5.30	\$5.30	\$5.30
Call premium	-\$0.70	-\$0.65	-\$0.60
Commission and interest	-\$0.05	-\$0.05	-\$0.05
Minimum/floor price	\$4.55	\$4.60	\$4.65

October

Price if futures market rallies to \$6.00			
Minimum price	\$4.55	\$4.60	\$4.65
+ Gain on call	\$1.00	\$0.90	\$0.80
= Final price	\$5.55	\$5.50	\$5.45

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