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Introduction

The Chicago Mercantile Exchange offers the most comprehensive livestock risk management tool ever developed—options on live cattle, feeder cattle and lean hog futures. Producers can establish a floor price for the livestock they buy, and a ceiling for it as well, without giving up profit opportunity. What's more, all of this can be accomplished with one up-front cost—the premium. When options are purchased, there are no performance bond requirements. These features of options buying—limited risk, unlimited profit potential, elimination of performance bond calls—explain why options should be considered in every producer's marketing strategy.

Learning to use this tool requires the same attention that most new skills require: a little time and patience to become familiar with the vocabulary and to develop a comfort level with the concepts. But options aren't that complicated. Some people find it useful to compare options to insurance: options can be purchased as a form of insurance to guard against price changes, just as home insurance or auto insurance protect against damage to your possessions. The purchase price of an option, like an insurance premium, can be thought of as a business expense—and options, like insurance, give protection in the event of adverse market conditions or they can simply be allowed to lapse if the protection is not needed.

The *Self Study Guide to Forward Pricing with Livestock Options* is an introduction to the mechanics of using options to forward price your livestock. We will also look into the specific applications of basic options pricing strategies for lean hogs, live cattle and feeder cattle, examining some of the ways in which livestock options can help reduce the uncertainty that is naturally present when making key marketing decisions. Understanding and using livestock options can increase your confidence in those decisions, while adding flexibility to the range of marketing strategies available.

Option Terminology

The first and most important step to understanding options on futures is to understand the terms involved.

Option

An option is a choice. It is the right, but *not* the obligation, to buy or sell something, in this case, a futures contract, at a specific price on or before a certain expiration date. There are two different types of options: *puts* and *calls*. Each offers opposite pricing alternatives. Each offers an opportunity to take advantage of futures price moves without actually having a futures position.

Option buyer

The buyer or holder of an option can choose to exercise his right and take a futures position, although he nearly always sells it back into the market if it has value. A producer who wants to hedge either his production or purchases would typically be an option buyer. *It is important to understand that for every option buyer there is an option seller.*

Option seller

An option seller is also called the writer or grantor. The seller is usually a speculator and is obligated to take the opposite futures position if the buyer exercises his right. In return for the premium, the seller assumes the risk of taking an adverse futures position.

Put option

A put option gives the buyer the right to sell (go “short”) a futures contract at a predetermined price on or before an expiration date. For example, a July 70 Lean Hog put gives the buyer the right to be short July hog futures at \$70/cwt. even if July hog futures are trading at \$65/cwt. This is a form of insurance against falling prices.

Call option

A call option gives the buyer the right to buy (go “long”) a futures contract at a specific price on or before a certain expiration date. For example, a September 78 Feeder Cattle call gives the buyer the right to be long September feeder cattle futures at \$78/cwt. even if September feeder cattle futures are trading at \$82/cwt.

Puts and calls are separate option contracts. They are *not* the opposite side of the same transaction. For every put buyer there is a put seller; for every call buyer there is a call seller. The buyer pays a premium to the seller in each transaction.

Calls and Puts

Call Buyer

- Pays premium
- Has right to exercise



Call Seller

- Collects premium
- Has obligation if exercised

Put Buyer

- Pays premium
- Has right to exercise



Put Seller

- Collects premium
- Has obligation if exercised

Strike price

The strike price, also known as the exercise price, is the price at which the option holder—the buyer—may buy or sell the underlying futures contract. Exercising the option results in a futures position at the designated strike price. Strike prices are set by the Exchange at \$1.00 or \$2.00/cwt. intervals for livestock.* Strike prices are set around the existing futures prices. Additional strike prices are added as the futures market moves higher or lower. The initial strike prices will continue to be listed.

Underlying futures contract

The corresponding futures contract that may be purchased or sold upon the exercise of the option. For example, an option on a June live cattle futures contract is the right to buy or sell one June live cattle futures contract.

Premium

The market-determined price of an option. The premium of an option at a specific strike price is ultimately determined by the willingness of buyers to purchase the option and sellers to sell it. Factors that affect this willingness are: strike price level relative to futures price level, time remaining until expiration and market volatility.

Exercise

Action taken by the buyer of an option who wants to have a futures position. Only the buyer has the right to exercise the option. (The seller has the obligation to take an opposite, possibly adverse, futures position than the buyer and for this risk receives the premium.)

Expiration date

The last day that an option may be exercised or offset. Exercising a put would mean that you would have a short futures position. Exercising a call would mean that you would have a long futures position. It is important that you know exactly when livestock options expire so that you can determine your strategies accordingly. The current year CME livestock, meat and lumber options expiration calendar can assist you. You can obtain it by contacting the CME Office Services Department at (312) 930-8210.

Broker

You must have a broker to place an order to hedge your livestock with either futures or options. Brokers work for brokerage firms that must be licensed by the Commodity Futures Trading Commission (CFTC).

Commission

The amount of money you pay the brokerage firm to execute your order on the trading floor of the exchange.

*Effective January 2, 1998, options on feeder cattle futures were listed with 1/2-cent intervals in a 2-cent range for the nearby contract month.

Study Questions

1. Which of the following describes an option?
A The right to buy or sell a futures contract
B Establishing a fixed price
C Opposite of a futures contract
2. A put option is:
A The other side of a call option transaction
B The right to buy a futures contract
C The right to sell (go short) a futures contract
3. A call option is:
A The other side of a put option transaction
B The right to buy (go long) a futures contract
C A short futures position
4. Strike prices are:
A Set by the seller
B Set by the buyer
C The exercise prices set by an exchange
5. The premium is:
A Set by the exchange staff
B Determined by buyers and sellers
C Unaffected by the futures price

Answers

1. **A** The right to buy or sell a futures contract
2. **C** The right to sell (go short) a futures contract
3. **B** The right to buy (go long) a futures contract
4. **C** The exercise prices set by an exchange
5. **B** Determined by buyers and sellers

The Concept of Options

Choice is the main feature of an option. When you buy a livestock option you acquire the right, but not the obligation, to take a long or short position in a specific futures contract at a fixed price on or before an expiration date. For the right granted by the option contract you pay a sum of money called the premium to the option seller. The option seller, or writer, keeps the premium whether the option is used or not. The seller must fulfill the contract terms if the option is exercised by you, the buyer.

When you buy an option, you are buying a choice. You could choose to let the option expire without a commitment or delivery obligation. This is not an alternative with most cash or agricultural futures contracts.

Who buys and sells options?

There are two types of traders in the futures and options markets—speculators and hedgers. A speculator is willing to accept risk in the hope of profit and the hedger wants to transfer that risk to someone else. The speculator plays a very necessary part in futures and options markets. Without him, the hedger could not transfer risk, because there would be no capital available to absorb it.

Where are options traded?

Options on futures are traded at exchanges such as the Chicago Mercantile Exchange. The CME provide a centralized marketplace for buyers and sellers to meet and trade options. Livestock options are traded in a pit located adjacent to the corresponding futures pit. They are traded by open outcry, very much like futures.

How are option prices determined?

Who establishes the price or premium of an option? The buyers and sellers of options, representing supply and demand, ultimately determine the price. Several factors affect option premiums:

1. *The volatility of the underlying futures price* – A more volatile futures market will command a higher premium than a less volatile market. This is because when futures prices fluctuate significantly, option buyers think there is a greater chance of a price change and are willing to pay more to protect against it or to capitalize on it. Sellers tend to see this situation as more risky, and are only willing to accept that risk if they can receive a higher premium.

Volatility Comparison

June Lean Hog: 70 put
4 months to Expiration
Futures @ \$71.00/cwt.

Volatility	17%	20%	24%
Approximate Option Premium	2.85/cwt.	3.35/cwt.	4.02/cwt.

2. *The strike price compared to the futures price* – The relationship between the strike price and the underlying futures price is a key influence on option premiums. Options can be in-, at- or out-of-the-money.

Key Points

1. **An option gives the buyer the right but not the obligation to buy or sell a futures contract.**
2. **Speculators and hedgers are the two types of traders in the futures and options markets.**
3. **Options are traded at exchanges such as the Chicago Mercantile Exchange.**
4. **Buyers and sellers ultimately establish the price or premium of an option. Volatility, time to expiration and the relationship of the futures price to the strike price are the major factors that affect option prices.**
5. **Option contracts are standardized and one option equals one futures contract in quantity and quality.**

A call option is *in-the-money* when the price of the underlying futures contract is *above* the strike price. This makes sense because buying at a lower price has greater value than buying at a higher price. A put option is *in-the-money* when the underlying futures contract is *below* the strike price. This makes sense because selling at higher prices has greater value than selling at lower prices. In-the-money options are always more expensive than out-of-the-money options.

Call and put options are *at-the-money* when the price of the underlying futures is the same as the strike price.

A call option is *out-of-the-money* when the underlying futures price is *below* the strike price. A put option is *out-of-the-money* when the current price of the underlying futures contract is *above* the strike price.

3. *Time* – An option’s value erodes as the option moves toward the expiration date. This is because the longer the time remaining until expiration, the more chance that the underlying futures price will move to a point where the purchase or sale of the futures at the option strike price will become desirable. Time value is usually greatest when the futures price and the strike price are the same.

What Effect Does Time Have on Option Premiums?

100 Days to Expiration

Feeder Cattle Futures at \$74.00/cwt.
Strike Price at 76

Approximate Option Premium	Call \$1.05	Put \$3.03

30 Days to Expiration

Feeder Cattle Futures at \$74.00/cwt.
Strike Price at 76

Approximate Option Premium	Call \$0.33	Put \$2.33

4. *Market Expectations* – Options market participants will pay according to their expectations of futures price movements.

Option specifications

Like futures contracts, livestock option contracts are standardized. There are four basic standard elements for each contract:

1. The type or kind of option—that is, whether the option is a put or a call.
2. The underlying or corresponding futures contract—in this case Lean Hogs, Live Cattle or Feeder Cattle.
3. The option month—the listed futures contract months on which options contracts will be based. Live cattle options contracts expire on the first Friday of the month of the underlying futures contracts. Feeder cattle and lean hogs expire the same time as the futures contracts. Serial month expirations also are available; these vary from contract to contract, so contact the CME or your broker for further information.
4. The strike price, which is set by the Exchange.

(NOTE: Contact the CME or your broker for current contract.)

What is time decay?

It is important to note that an option is a wasting asset; that is, its market value erodes as the option approaches expiration. This time decay normally accelerates the last 35–40 days to expiration. A similar analogy would be how a term insurance premium would erode in value as the policy approaches the renewal period.

What is delta?

The price of an option does not move exactly with the futures price. For example, the price of a deep out-of-the-money option will move differently than the price of an at-the-money option for the same price movement of the corresponding futures contract.

The word “delta” means change. In the options market, delta refers to the change—either an increase or decrease—in an option’s premium in relation to the change in the underlying futures price.

For example, a put option with a .3 delta implies that the put option would increase in value about \$.30/cwt. with a \$1.00 drop in the futures price.

Where can I find option premiums?

Option premiums are available in major newspapers, from your broker, electronic news systems, and on the Internet (www.cme.com). Livestock option premiums are quoted in dollars per hundredweight. The following illustration can help you understand what you’re looking at in newspapers such as *The Wall Street Journal*.

Options on Live Cattle Futures

Cattle-Live (CME) 40,000 lbs.; cents per lb.

Strike Price	Calls—Settle			Puts—Settle		
	2–Feb-c	Apr-c	Jun-c	Feb-p	Apr-p	Jun-p
68	5.10	7.20	...	0.15	0.35	0.70
70	3.32	5.50	4.92	0.37	0.52	1.10
72	1.85	3.97	3.55	0.90	0.97	1.77
74	0.90	2.65	2.50	1.95	1.60	2.60
76	0.37	1.67	1.70	3.42	2.60	3.77
78	0.15	1.00	1.00	5.20

5 — Est. vol. 3,732, Thurs vol. 1,486 calls, 883 puts

6 — Open Interest Thur; 30,585 calls, 30,767 puts

1 Most active strike prices

2 Expiration month

3 Closing prices for call options

4 Closing prices for put options

5 Volume of options transacted in the previous two trading sessions. Each unit represents both the buyer and the seller.

6 The number of options that were still open positions at the end of the previous day’s trading session.

Study Questions

- Who buys and sells options?
 - Speculators
 - Hedgers
 - Both of the above
 - Neither of the above
- What following two factors affect options premiums?
 - Volatility of the underlying futures
 - Brokerage firms
 - Market expectations
- Livestock option quotes are available from which of the following?
 - The Wall Street Journal*
 - Newsweek*
 - Your local broker
- Choose two basic standard elements for each contract:
 - Cash settlement
 - The option month
 - The strike price
- If the futures price drops \$1.00/cwt. and the put premium increases .40/cwt., the put option has which of the following delta factors?
 - .40
 - .60
 - .80

Answers

- C** Speculators and hedgers buy and sell options.
- A & C** Volatility of the underlying futures and market expectations affect option premiums.
- A & C** Option quotes are available in *The Wall Street Journal* and from your local broker.
- B & C** The option month and the strike price are basic standard elements for each contract.
- A** Delta reflects this ratio between the premium change and the futures price changes; $40/100 = .40$

How Do I Incorporate Options into My Marketing Plan?

Know your breakeven costs

Just as in using the futures market to hedge your livestock, it is important for you to know your cost of production to hedge with options. You should be able to calculate all your costs, both fixed and variable. Under variable costs, you would include feeder purchases, feed costs, death loss, interest, marketing charges, insurance and labor expenses to name a few. Fixed costs would include building depreciation, equipment and taxes. If you do not know your cost of production, you would not know if you were hedging at a profit or loss.

There are many services available to help you determine your breakeven cost. Farm consulting services, university extension services, your lender and feed company can all assist you.

Estimate your local basis

Basis has to be taken into consideration in hedging with options just as it does with futures. Basis is the difference between your local cash price and the closing futures price on the day you sell your livestock. A simple equation would be: $BASIS = \text{Cash} - \text{Futures}$.

You need to localize a futures or options price by adjusting it by the normal difference (basis) between your local cash market price and the futures price. The best way to get this information is to calculate it yourself. You could keep a record of local cash prices for the months you normally sell hogs and compare that price to the current or nearby futures price. By doing this for several years, you will have developed a valuable history of basis information that localizes the futures market to your particular area. For example, you want to forward price some hogs in the July market and you know that normally in July your hogs sell for \$1.00/cwt. above the futures contract. The July futures contract is now at \$70.00/cwt. and your estimated basis of plus \$1.00/cwt. would give you a localized price of \$71.00/cwt. This is the estimated price you will receive in July, if you hedge today. Some university extension offices, your local hedge broker and the CME have historical basis information for some locations. While there is some risk in estimating your basis, there is certainly less risk than facing the market price of livestock, when they are ready to sell.

A typical corn belt cattle feeding enterprise is presented for comparison's sake

Cattle Purchased in November and Marketed in May

Variable Costs

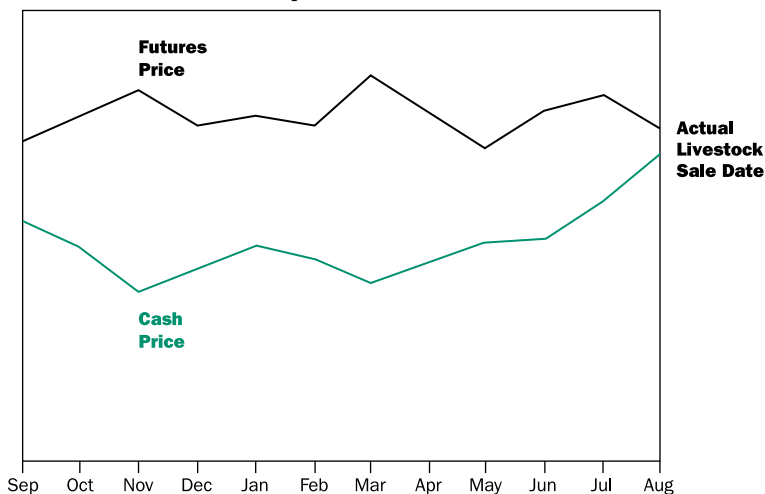
600 lb. steer	\$477.00
Transportation to feedlot	5.28
Corn	72.45
Silage	27.43
Protein	34.43
Hay	9.80
Labor	15.72
Management	7.86
Vet-Medicine	5.32
Interest	26.00
Death Loss	4.77
Transportation	2.31
Marketing Expenses	3.35
Miscellaneous	10.73

Fixed Costs

Power, equipment, shelter, depreciation	<u>24.81</u>
Total cost	\$727.26
Total breakeven/cwt.	
1050 lb. steer	\$69.26

Source: USDA Livestock and Poultry Situation

Basis: The Relationship Between Cash and Futures Prices

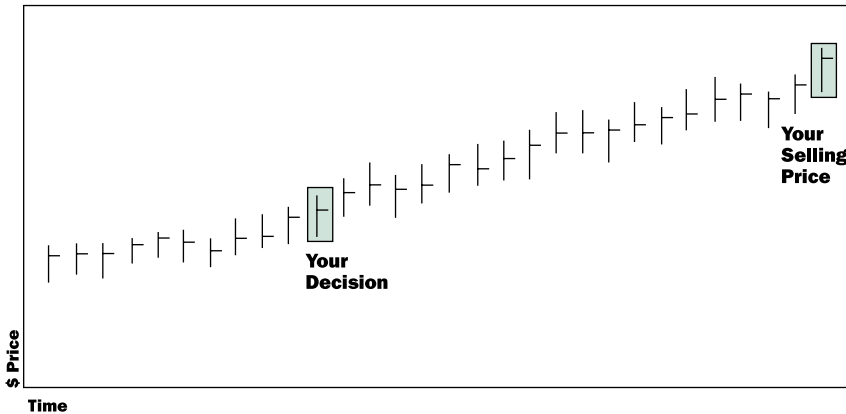


Which option to buy?

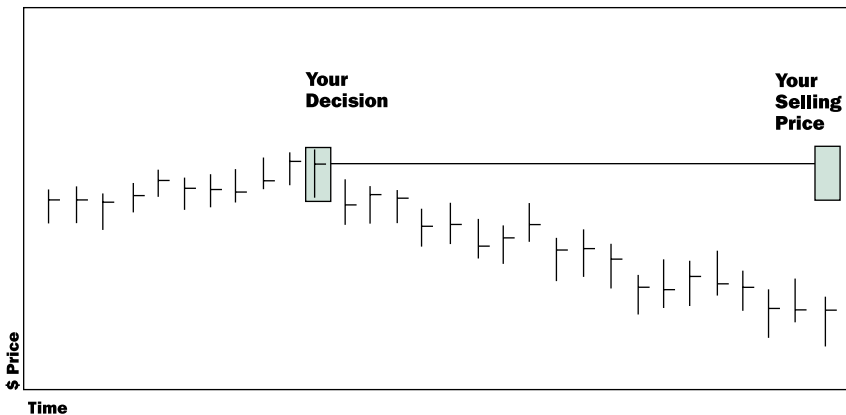
Once you have determined your cost of production and estimated your local basis, it is time to determine which type of option to buy. Remember from the option terminology that you have two choices, puts or calls. Puts are used by short hedgers, or those who have livestock to sell at some future date. They are used to establish a floor price, leaving an upward price movement opportunity open.

For example, you want to use options to hedge a group of cattle you have purchased in October, and estimate you will sell in March. You also know you want to be a short hedger, so you would want to buy a put option in this case. Since the April live cattle put options expire in early April, the April contract would be the most logical choice for you.

Example A



Example B



A farmer knowing his breakeven and anticipated basis makes his marketing decision to purchase a *put option*. If prices increase (Example A), he sells his livestock at the higher price less the cost of the option. If prices decrease (Example B), he simply sells his option back at the increased value which helps offset the decline in cash value.

Key Points

1. You must know your breakeven costs to determine if you are pricing at a profit or loss.
2. Basis is used to translate a futures or options quote into a price that's meaningful to your business.
3. Puts are used by short hedgers to protect against falling prices. Calls are used by long hedgers to protect against rising prices.
4. There is no one strike price that is right for everyone. The level of protection or insurance you want will determine which strike price is right for you.
5. Your alternatives after you purchase an option are to sell it back, let it expire or exercise your right.

Calls are used by long hedgers or by someone who wants to purchase livestock in the future and wants to guarantee a ceiling on that price, leaving a downward price move open.

You must also determine the month you want to sell or buy your livestock and choose a put or call option that corresponds to that month. If there is no option month available when you want to sell or buy your livestock, you should consider purchasing an option in the following month. This will give you time to market your livestock and get out of the option hedge.

Which strike price to choose?

There is no one right answer to this question. This depends on your ability to bear risk, which direction you think the market is going and how much you are willing to pay for the option. For example, the higher the strike price (and resulting floor price) you choose on a put option, the more it is going to cost. If the market goes down by the time you sell your livestock, the higher price has been worth the additional cost. However, if the market remains stable or goes up, the higher floor price would not be needed and the premium that you paid would be left on the table. So it is up to you, and possibly your lender, to determine the amount of insurance or protection you want to take.

The same consideration, in reverse, must take place if you want to purchase a call. The higher strike price would offer you the least amount of insurance or protection against rising prices but would cost you the least. Keep in mind that there is no one strike price that is right for everyone.

Which Put Strike Price to Choose

	<u>Market Down</u>	<u>Market Up</u>
Higher Strike	Higher Floor	Less Opportunity
Lower Strike	Lower Floor	Greater Opportunity
	Example	
<u>Strike Price</u>	<u>Premium</u>	<u>Floor*</u>
70	2.50	67.50
66	1.00	65.00
62	.30	61.50

Which Call Strike Price to Choose

	<u>Market Down</u>	<u>Market Up</u>
Higher Strike	Greater Opportunity	Higher Ceiling
Lower Strike	Less Opportunity	Lower Ceiling
	Example	
<u>Strike Price</u>	<u>Premium</u>	<u>Ceiling*</u>
66	2.35	68.35
70	1.02	71.02
74	.35	74.35

*Assuming that basis is zero

What do you do after you have bought an option?

You have three alternatives once you have purchased an option.

1. Sell the option back if it has value. Typically, you would offset the option prior to or at expiration and receive the current premium value. Prior to expiration, the premium value could be higher or lower than the original purchase price, depending on how the underlying futures price has changed.
2. Exercise the option. You would do this if you wanted to take a short futures position if you had bought a put, or a long futures position if you had bought a call.
3. Let the option expire if it has no value. Should the option have no value at the time of expiration you may simply let it expire without taking any action.

Purchased option has value – Sell back

Purchased option has no value – Let expire

A futures position desired – Exercise

In most cases, options are sold back prior to expiration if they have value, or left to expire if they have no value. Very few options are ever exercised, and then only if a futures position is desired.

Study Questions

1. It is important to know your cost of production when using options because:
A You can compare your costs to other operators
B You will know if you are hedging at a profit or loss
C You can determine your contract size
2. Basis is:
A Not important
B Your local cash price
C The difference between your local cash price and the closing futures price on the day you sell your livestock
3. The best way to determine your basis is to:
A Get the information from a neighbor
B Read your local newspaper
C Calculate the information yourself
4. A livestock producer interested in establishing a minimum selling price for his commodity would most likely:
A Buy a call
B Buy a put
C Sell a put
5. Once an individual has purchased an option, he can:
A Offset (sell back) the option
B Exercise the option into a futures position
C Let the option expire
D All of the above
E None of the above

Answers

1. **B** You must know your costs to determine if you are hedging at a profit or loss.
2. **C** Basis is the difference between your local cash price and the closing futures price on the day you sell your livestock.
3. **C** Calculating your local cash price and the closing futures price on the same day is the best way for you to determine *your own* basis.
4. **B** Purchasing a put establishes a floor price and leaves potential for further gain open.
5. **D** An individual buying an option can either offset, exercise, or let the option expire.

Establishing a Minimum Sale Price for Your Livestock—Buying Put Options

You may utilize livestock put options to create a floor price for your livestock. Choosing a particular strategy depends mainly on the level of protection you want. Consider these two short hedging strategies using put options.

Example Number 1 – Buying a Put Option

A producer purchases a February 64 put option @ \$2.00/cwt. to price a group of cattle. At the time, February live cattle futures are at \$64.75/cwt. Estimated basis for the end of January is -\$1.00/cwt. The producer's estimated minimum selling price would be the 64 strike, minus the premium of \$2.00, and the estimated basis of -\$1.00 which would equal \$61.00/cwt. Let's take a look at what happens in late January if the market goes up, stays roughly the same or goes down.

At the end of January, the cattle are ready for market:

If Feb Futures Are	Value of 64 Put	A 64 Put Net Gain/Loss		B Local Cash Sale	=	C Net Realized Price
\$74	\$ 0	– \$2.00	+	\$73	=	\$71
64	0	– 2.00	+	63	=	61
54	10	8.00	+	53	=	61
						A+B=C

As you can see, when the futures price drops below the put strike price, the minimum selling price or insurance kicks in and protects the floor that was established when the 64 live cattle put was purchased. Should the market go higher, you will be able to realize the increase less the cost of the premium, while you enjoyed having protection from a price drop.

Example Number 2 – Rolling Up to a Higher Floor

Say you have purchased a put option similar to Example 1 and the market increases after the original purchase. What are your alternatives? You still want protection but you would like to establish a higher floor price. Here's how you can establish that higher floor.

You purchase a June lean hog 70 put option for \$1.95; at that time June futures are at 70.85. Estimated basis for the end of May is plus \$1.00/cwt. Your estimated minimum selling price would be \$70, minus the premium of \$1.95, plus the estimated basis of \$1.00, or \$69.05/cwt.

Two months later, June lean hog futures are trading at \$76.25/cwt. You buy a June 76 lean hog put for \$1.00/cwt. You can either sell back, or offset, the original 70 put if it has value, or leave it in place for extra protection if the market should drop below your established floor. In this example you will leave the 70 put in place. Your new minimum price is the put strike price of 76, minus the premium of \$1.00, minus the \$1.95 premium of the 70 put, plus your estimated basis of \$1.00, or \$74.05/cwt. You increased your floor or minimum selling price by \$5.00. Let's take a look at what happens when the market goes up, sideways or down from its initial position.

Key Points

- 1. Purchasing a put option establishes a floor price for sale of your livestock.**
- 2. Rolling up to a higher strike price can be used as a follow-up strategy to purchasing a put.**
- 3. Read *Ten Strategies for Forward Pricing Livestock Using Livestock Futures & Options* to learn or review other strategies.**

At the end of May, the hogs are ready for market:

Without Rolling Up To Higher Floor

If June Futures are	Value of 70 Put	A 70 Put Gain/Loss	B Local Cash Sale	C Net Realized Price
\$80	\$ 0	-\$1.95	\$81	\$79.05
70	0	- 1.95	71	69.05
60	+ 10	8.05	61	69.05
				A+B=C

Rolling Up To Higher Floor

If June Futures are	A 70 Put Gain/Loss	Value of 76 Put	B 76 Put Gain/Loss	C Local Cash Sale	D Net Realized Price
\$80	-\$1.95	\$ 0	-\$1.00	\$81	\$78.05
70	- 1.95	6.00	5.00	71	74.05
60	8.05	16.00	15.00	61	84.05
					A+B+C=D

These opportunities do not come along that often to pass up. Rolling up a put is a good way to take advantage of a price increase while maintaining the downside price protection you need.

There are many strategies you can use to forward price your livestock. The Chicago Mercantile Exchange publication, *Ten Strategies for Forward Pricing Livestock Using Livestock Futures & Options* covers some of them. When you get comfortable with the basics of options you might want to study this publication. It easily can be obtained by contacting the Chicago Mercantile Exchange or your broker.

Study Questions

- When you purchase a put option you are:
 - A** Establishing a ceiling price
 - B** Establishing a floor price
 - C** Fixing a price
- If you purchase a \$70 put and the premium is \$1.50 and your estimated basis is zero, what is your estimated minimum selling price?
 - A** \$71.50
 - B** \$70.00
 - C** \$68.50
- A put option is in-the-money when:
 - A** The underlying futures price is above the strike price
 - B** The underlying futures price is the same as the strike price
 - C** Neither of the above
- The follow-up strategy of rolling up to a higher floor is considered:
 - A** A way to reduce premium cost
 - B** Very risky
 - C** A sound hedge strategy
- When you roll up to a higher floor price, you may do which of the following?
 - A** Sell back the first put option
 - B** Keep the first put option
 - C** Neither of the above
 - D** Either of the above

Answers

- B** When you purchase a put option you are establishing floor price, leaving opportunity open for a higher price.
- C** \$70.00 strike price
- 1.50 premium
= 0 basis
\$68.50 estimated minimum selling price
- C** Neither of the above. A put option is in-the-money when the underlying futures price is *below* the strike price.
- C** Rolling up to a higher floor price is considered a sound hedging strategy.
- D** You may either sell back the original put option if there is some value or keep it in place for additional down-side protection.

Establishing a Maximum Purchase Price—Buying Call Options

A long hedger is one (such as a feedlot operator, a backgrunder or a stocker operator) who needs a commodity at some point in the future and seeks to forward price the anticipated purchase. Again, choosing a particular hedging strategy depends upon the level of protection you want. Consider these two long hedging strategies using call options.

Example Number 1 – Buying a Call Option

You purchase a January 74 call option @ \$2.55/cwt. to protect the purchase price of feeder cattle that will be needed in January. At the same time, January feeder cattle futures are at \$75.50/cwt. Estimated basis for the end of January is +\$3.00. Your estimated maximum purchase price would be the 74 strike price, plus the premium of \$2.55, plus the estimated basis of +\$3.00 or a total of \$79.55/cwt. Let's take a look at what happens in late January if the market goes up, stays the same or goes down.

At the end of January when feeder cattle are purchased for feeding:

If Jan Futures Are	A Local Cash Purchase	Value of 74 Call	B 74 Call Gain/Loss	C Net Realized Price
\$84	\$87	\$10	\$7.45	\$79.55
74	77	0	-2.55	79.55
64	67	0	-2.55	69.55
				A-B=C

Should the market rise between the time you purchased the 74 call and the time you actually purchased the animals, your feeder cattle cost would be limited to the ceiling price you created. In this example you have purchased an in-the-money call and would benefit from any price increase. Should the market fall after you purchased the 74 call, you would still benefit from a lower feeder cattle purchase price (although you would be out the premium you paid for the call).

Example Number 2 – Rolling Down to a Lower Ceiling Price

You have purchased a call option similar to Example 1 and the market falls after the original purchase. What can you do as a follow-up strategy? Say you have purchased a September 76 feeder cattle call option for \$2.60/cwt. anticipating a +1.00 basis, and the market goes down by \$4.00. Should you just ignore the decrease or is there something you can do to take advantage of the decrease before you are ready to purchase the feeder cattle in September?

Let's take a look at what would happen if you would purchase a September 72 feeder cattle call option for \$2.00/cwt. and leave the 76 September call in place. Your new maximum price is the call strike price of 72, plus the \$2.00 premium, plus the \$2.60/cwt. premium of the 76 call, plus the estimated basis of \$1.00, or \$77.60/cwt. Here's what happens if the market goes higher, sideways or lower from the initial position.

Key Points

- 1. Purchasing a call option establishes a ceiling price for purchase of your livestock.**
- 2. Rolling down to a lower strike price can be used as a follow-up strategy to purchasing a call.**
- 3. Read *Managing Purchase Prices* to learn or review other strategies.**

When you are ready to purchase the feeder cattle in September:

Without Rolling Down to a Lower Ceiling Price

If Sep Futures are	A Cash Purchase	Value of 76 Call	B 76 Call Gain/Loss	C Net Realized Price
\$86	\$87	\$10	\$7.40	\$79.60
76	77	0	-2.60	79.60
66	67	0	-2.60	69.60
A-B=C				

Rolling Down to a Lower Ceiling Price

If Sep Futures are	A Cash Purchase	B 76 Call Gain/Loss	Value of 72 Call	C 72 Call Gain/Loss	D Net Realized Price
\$86	\$87	\$7.40	\$14	\$12.00	\$67.60
76	77	-2.60	4	2.00	77.60
66	67	-2.60	0	-2.00	71.60
A-B-C=D					

As you can readily see, the follow-up strategy of purchasing a call at a lower strike price was advantageous if the market turned around and became higher. Both premiums were lost if the market continued lower; however, you had a lower ceiling price in place and additional protection against increasing your purchase price of the feeder cattle.

These two strategies are only a few that can be considered. Once you become comfortable with purchasing a call, you might want to review the Chicago Mercantile Exchange booklet, *Managing Purchase Prices*, which covers many strategies for protecting a purchase price.

Study Questions

- When you purchase a call option to protect a purchase price, you are:
A Establishing a floor
B Establishing a ceiling
C Fixing a price
- If you purchase a \$75 call and the premium you pay is \$2.00 and the basis you expect at purchase time is \$2.00, what is your expected maximum purchase price?
A \$75
B \$79
C \$77
- If the underlying futures price moves up \$1.00, you would generally expect the call option premium to:
A Increase in value
B Decrease in value
C Remain stable
- A call option is in-the-money when:
A The underlying futures price is above the strike price
B The underlying futures price is below the strike price
C The underlying futures price is the same as the strike price
- When you roll down to a lower ceiling price, you may do which of the following?
A Buy back the first call option
B Sell back the first call option
C Keep the first call option
D None of the above

Answers

- B** When you purchase a call option you are establishing a ceiling price, leaving the downside potential open.
- B** \$75.00 strike price
 + 2.00 premium
 + 2.00 estimated basis
 \$79.00 estimated maximum purchase price
- A** Generally speaking, when the underlying futures price rises, a call option (right to buy) becomes more valuable.
- A** A call option is in-the-money when the underlying futures price is above the strike price.
- B & C**
 When you roll down to a lower ceiling price, you may sell back the first call option if it has any value or keep it for upside protection if it does not have any value.

Conclusion: How Do I Get Started?

As you can see, there are several option strategies you can use to forward price livestock. Some strategies are very simple and have limited risk. Others are more complex and require somewhat more knowledge and attention. Individuals using options for the first time may want to use simple strategies on a portion of their production or inventory, and then evaluate the results.

In addition to understanding the risks and rewards of a particular option strategy before actually “pulling the trigger” to get started, you should keep other factors in mind.

1. *Your own cost of production*

Unless you know what your cost of production is you are not sure if you are pricing in a profit or loss. To successfully price your livestock you must have a good estimate of your breakeven cost.

2. *The futures and options contract specifications*

You should be familiar with the major aspects of both the option contract and the underlying futures contract. Knowing the contract month, weight, type and expiration date lets you hedge your purchases or sales to the appropriate contract. It is important to remember that most option contracts expire *prior* to the underlying futures delivery month.

3. *Your local basis*

The relationship of your local cash market to the futures market when you sell or buy your livestock is known as the basis. It is extremely important for you to estimate your basis at sale or purchase time to calculate what your end result will be. As previously mentioned, it is best if you chart your own basis to use in your calculations.

4. *Work with a knowledgeable lender and broker*

If you are borrowing money for your livestock operation, it is important that your lender understands what your marketing objectives are and is willing to provide the necessary capital. You would not want to begin a hedging program on your own and find your lender not in support of that program. Likewise, it is important that you find a knowledgeable broker who understands the agriculture in your area. Also, he should be aware of what basis is and what your goal is as a hedger. Understanding and communication between your lender, broker and yourself as to your marketing goals will help you be a successful marketer.

5. *Write down a specific marketing objective*

When you write down a marketing objective you have a better chance of reaching that objective. A mental plan can be easily changed and the desired results more difficult to achieve.

6. *Be a disciplined marketer*

Once you have decided on a marketing plan, stick to it in most cases. Do not let market movement excite you into becoming a selective hedger.

Discipline is a key to marketing success.

Once you understand the basics of forward pricing with options and the factors necessary for you to make a marketing decision, it is time for you to “pull the trigger” by establishing an account with a broker and instructing him what to do. Individuals who understand and effectively use the marketing tools available will certainly stand a better chance of financial success in their livestock production business.