CME Education Series

CME Options on Futures
The Basics
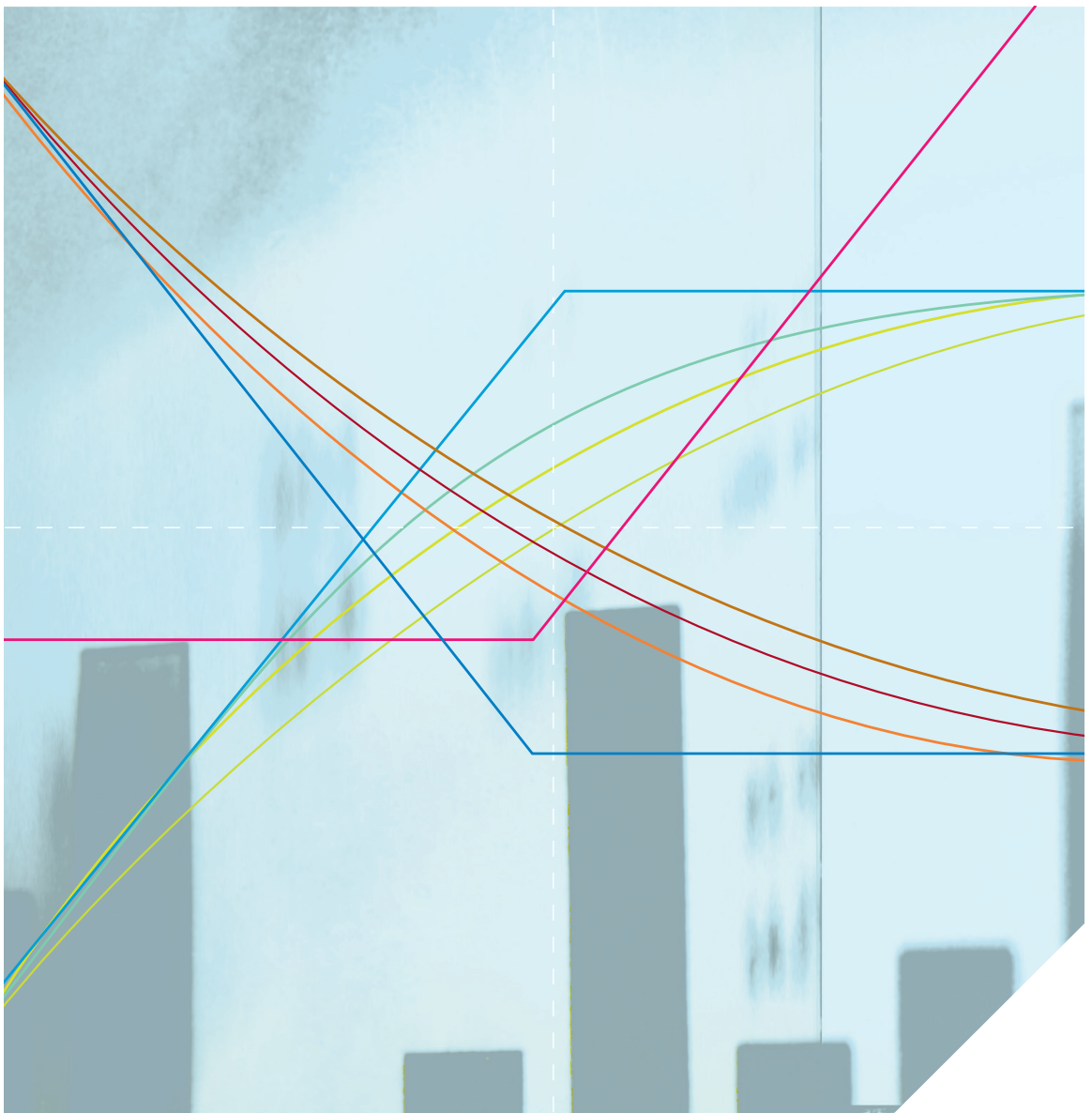
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Options on futures are one of the most versatile risk management products offered by CME. These powerful tools can be used to protect against adverse price moves in commodity, interest rate, foreign exchange and equity markets. Whether they are traded for purposes of hedging or speculating, the risk involved can be limited to the amount paid up-front for the option. As a result, they have become an increasingly popular hedging vehicle, and they are used today by corporate treasurers, bankers, farmers and equity portfolio managers throughout the world.

This booklet will introduce you to the basic terms and strategic uses of options on futures.

1. Vocabulary

Options on futures are relatively easy to understand once you master the basic vocabulary. Only advanced options concepts and strategies require complex mathematics.

Option

An option on a futures contract is the right, but not the obligation, to buy or sell a particular futures contract at a specific price on or before a certain expiration date. There are two types of options: call options and put options. Each offers an opportunity to take advantage of futures price moves without actually having a futures position.

Call Option

A call option gives the holder (buyer) the right to buy (go long) a futures contract at a specific price on or before an expiration date. For example, a September CME® Japanese Yen 85 call option gives the holder (buyer) the right to buy or go long a yen futures contract at a price of 85 (short-hand for $.0085/yen) anytime between purchase and September expiration. Even if yen futures rise substantially above .0085, the call holder will still have the right to buy yen futures at .0085.

Put Option

A holder of a put option has the right to sell (go short) a futures contract at a specific price on or before the expiration date. For example, an October 70 CME Live Cattle put gives the put holder the right to sell October CME Live Cattle futures at 70 cents/lb. Should the futures decline to 64 cents/lb., the put holder still retains the right to go short the contract at 70 cents/lb.

Option Buyer

An option buyer can choose to exercise his or her right and take a position in the underlying futures. A call buyer can exercise the right to buy the underlying futures and a put buyer can exercise the right to sell the underlying futures contract. In most cases though, option buyers do not exercise their options, but instead offset them in the market before expiration, if the options have any value.

Option Seller

An option seller (i.e., someone who sells an option that he or she didn't previously own) is also called an option writer or grantor. An option seller is contractually obligated to take the opposite futures position if the buyer exercises his or her right to the futures position specified in the option the buyer has purchased. In return for the premium, the seller assumes the risk of taking a possibly adverse futures position.

Puts and Calls

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, and for every call buyer there is a call seller.

The option buyer pays a premium to the seller in every transaction. The following is a list of the rights and obligations associated with trading put and call options on futures.

Call Buyers	*Call Sellers*
» pay premium	» collect premium
» have right to exercise, resulting in a long futures position	» have obligation if assigned, resulting in a short position in the underlying futures contract
» have time working against them	» have time working in their favor
» have no performance bond requirements	» have performance bond requirements

Put Buyers	Put Sellers
» pay premium	» collect premium
» have right to exercise, resulting in a short futures position	» have obligation if assigned, resulting in a long position in the underlying futures contract
» have time working against them	» have time working in their favor
» have no performance bond requirements	» have performance bond requirements

Exercise Price

Also known as the strike price, the exercise price is the price at which the option buyer may buy or sell the underlying futures contracts. Exercising the option results in a futures position at the designated strike price. For example, by exercising a September CME E-mini™ S&P 500® 1200 call, the buyer of the option would then be long a September CME S&P 500 contract at 1200. If the holder of a June CME Live Cattle 80 put were to exercise his or her option, the result would be a short futures position, at 80, in June CME Live Cattle.

Strike prices are set by the Exchange and have different intervals depending on the underlying contract. Strike prices are set above and below the existing futures price and additional strikes are added if the futures move significantly up or down.

Underlying Futures Contract

The underlying is the corresponding futures contract that is purchased or sold upon the exercise of the option. For example, an option on a June CME Live Cattle futures contract is the right to buy or sell one such contract. An option on September CME Canadian dollar futures gives the right to buy or sell one September CME Canadian dollar futures contract.

Premium

The premium is the price that the buyer of an option pays and the seller of an option receives for the rights conveyed by an option. Thus, ultimately the cost of an option is determined by supply and demand. Various factors affect options premiums, including strike price level in relation to the futures price level; time remaining to expiration; and market volatility—all of which will be discussed further.

Exercise

Exercise refers to the process whereby the option buyer asserts his right and goes long the underlying futures (in the case of exercising a call) or short the underlying futures (in the case of exercising a put).

Assignment

Assignment refers to the obligation of sellers to take the opposite and possibly adverse futures position to the buyers' if assigned and for this risk receive the premium. Remember: Buyers *exercise* and sellers get *assigned*.

Expiration Date/Last Trading Day

This is the last day on which an option can be exercised into the underlying futures contract. After this point the option will cease to exist; the buyer cannot exercise and the seller has no obligation.

Note that some options expire prior to the final settlement or expiration of the underlying futures contract. For example, a Sep 2005 CME British pound 2000 call option will expire September 9, 2005. However, the underlying futures will expire September 19, 2005. The last trading day is the last day on which an option can be offset.

Offset

The buyer is under no obligation to exercise an option on a futures contract. As a matter of fact, many traders choose to offset their position prior to expiration. Traders will offset their position if they wish to take profits before expiration or limit losses on the downside. Buyers can offset their options by instructing their broker to sell their option before expiration. An option seller can offset a position by buying back or "covering" a short position. Options on futures, like futures themselves, trade both on the CME floor, where a market normally exists to offset options positions, and on the CME® Globex® electronic trading platform, where many options can be traded virtually around-the-clock throughout the trading week.

2. Pricing Fundamentals

An option gives the holder the right, though not the obligation, to take a long or short position in a specific futures contract at a fixed price on or before the expiration date. For this right granted by the option contract the buyer pays a sum of money or premium to the option seller. The option seller (or writer) keeps the premium whether the option is exercised or not. The seller must fulfill the obligation of the contract if the option is exercised by the buyer.

How are options premiums (or prices) determined? While supply and demand ultimately determine the price of options, several factors have a significant impact on option premiums.

1. The volatility of the underlying futures markets

Volatility is a function of price movement. When prices are rising or falling substantially, volatility is said to be high. When a futures contract shows little price movement, volatility is said to be low. High volatility generally causes options premiums to increase—sometimes very dramatically. Lower volatility environments generally cause options premiums to decline.

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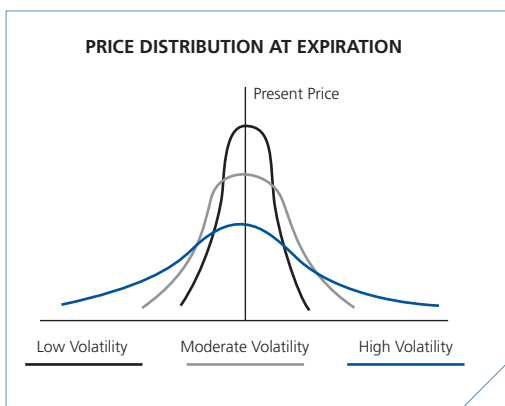
This is because when markets become volatile, option buyers are willing to pay larger premiums for greater protection against adverse price risk because there is greater chance of price change in the underlying instrument. On the other hand, a greater chance for price change means more risk for the option seller. Sellers therefore demand a larger premium in exchange for this risk. It is much the same as insurance and insurance underwriters. If risk is perceived to be large, the insurance company will require a larger premium. If the risk is not large the insurance purchaser will not have to pay a large premium. With options, anytime there is a greater chance of the underlying futures advancing or declining through one or more exercise prices, risk is perceived to be greater and premiums will increase.

The Impact of Volatility on Option Premiums

	Low Volatility	Medium Volatility	High Volatility
Dec CME E-mini S&P 500 1150 call option	8.50 pts.	11.40 pts.	14.20 pts.

The chart above shows that as volatility increases, options premiums increase. This effect can be significant. Options traders should be sure to address volatility before using these markets.

2. The exercise price compared to the underlying futures price

The relationship between the option's strike price and the underlying futures price is another key influence on option premiums. If CME S&P 500 futures are trading at 1150.00, common sense tells us that an 1130 call option will be worth more than an 1140 call option (the right to buy ten full points lower will be more costly). Similarly, an 1170 call option would be relatively cheap because the underlying CME S&P 500 futures is a full 20 points away from the exercise price.

3. Time remaining to expiration

An option's value erodes as its expiration nears. An option with 60 days until expiration will have greater theoretical value than an option with 30 days until expiration. Because there is more time for the underlying futures to move, sellers will demand, and buyers will be willing to pay, a larger premium.

The Effect of Time on Option Premiums

	60 days until expiration	30 days until expiration
June CME S&P 500 900 call option value	41.80 pts.	30.70 pts.

Option Premium Quotations

Closing prices for CME options products are found in many business publications, such as *The Wall Street Journal*. If you have mastered the vocabulary and concepts up to this point, locating various options with differing strike prices and expiration months should be easy. Delayed options quotes are also available on the CME Web site, www.cme.com, in the market data section under "intraday quotes." It is also possible to get options quotes, including real-time quotes through various quote vendors.

To understand option quotes in print format, please notice the shaded areas in the following CME Euro FX options table, showing the premium quotes on a CME Euro FX September 1.325 call option. The premium is quoted at .54 cents/euro. In other words, the buyer of this option has the right, but not the obligation, to go long CME Euro FX futures at 1.325 any time before expiration. The buyer of this call will pay $675.00 (.54 cents/euro x 125,000 euro = $675.00) to the seller.

CME EURO FX (IMM) – 125,000 Euros

Strike Price	Jun-c	Sep-c	Dec-c	Jun-p	Sep-p	Dec-p
1.300	2.00	2.81	3.31	0.06	0.65	0.96
1.305	1.17	2.12	2.69	0.23	0.95	1.30
1.310	0.53	1.57	2.15	0.59	1.38	1.72
1.315	0.19	1.12	1.69	1.25	1.90	2.22
1.320	0.05	0.79	1.31	2.11	2.56	2.60
1.325	0.02	0.54	1.01	3.08	3.29	3.46

Columns: **1** Strike Price, **2** Expiration month (Jun-c), **3** Calls-Settle, **4** Puts-Settle

5—Est. vol. 13,020, Wed. vol. 6,007 calls, 4,526 puts
Open interest Wed.: 73,689 calls, 70,024 puts

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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 open short or long option positions at the end of the previous day's trading session.

3. Arithmetic

In the CME Swiss Franc option quote table, again notice the shaded areas. They represent the settlement price of a CME Swiss Franc September 85 put option, .99. This would give the put buyer the right to sell September CME Swiss Franc futures at 85 anytime between purchase and expiration. The buyer would pay $1,237.50 (.99 cents/ franc x 125,000 francs = $1,237.50) to the seller.

CME SWISS FRANC (IMM) 125,000 francs; cents per franc

Strike Price	Calls- Settle				Puts- Settle	
	Jun-c	Jul-c	Dec-c	Jun-p	Jul-p	Sep-p
85	2.02	2.22	2.69	0.21	0.50	0.99
86	1.28	1.58	2.10	0.46	0.85	1.38
87	0.73	1.06	1.59	0.91	1.32	1.85
88	0.38	0.68	1.21	1.56	1.92	–
89	0.18	0.42	0.88	–	–	–
90	0.09	0.24	0.63	–	–	–

Est. vol. 1,976, Fri. vol. 2,480 calls, 4,459 puts
Open interest Fri.: 15,989 calls, 24,450 puts

Breakeven Points
As mentioned previously, options are versatile instruments that allow the possibility of profit while also limiting risk to a predetermined amount. The maximum amount options buyers can lose is the premium that they originally paid, plus brokerage commissions. But before initiating an options position, the trader should first calculate the breakeven point. To calculate an options breakeven point the trader uses the strike price and the premium. Knowing breakeven points will help traders choose more effective strategies.

Example: *A trader purchases a June CME E-mini S&P 500 1150 call option and pays a premium of 7.50. Where does the underlying futures have to advance for the option to break even at expiration?*

Breakeven point for calls:

Strike Price	+	Premium Paid	=	Breakeven Point
1150	+	7.50	=	1157.50

Thus, for this position to break even, the underlying June futures contract has to advance to 1157.50.

Example: *If a trader purchases a September CME Swiss Franc 85 put option for .99 pts., how far must the September CME Swiss Franc future decline for the option to break even at expiration?*

Breakeven point for puts:

Strike Price	–	Premium Paid	=	Breakeven Point
85	–	.99	=	84.01 (or .8401)

* *Commissions should also be factored into this equation, but differ from firm to firm. Discuss the effects of commissions on breakeven points with your broker.*

Time Value and Intrinsic Value

The underlying futures price level compared with the exercise price and the passage of time both have an impact on options premiums. Two terms that describe these effects are referred to as time value and intrinsic value. An option's premium can be made up of one or both of these components. Calculating these two values requires only the strike price, the underlying futures price and the option premium.

Intrinsic value and time value for calls:

In the case of a call, intrinsic value is the amount by which the underlying futures price exceeds the strike price:

Futures Price	–	Strike Price	=	Intrinsic Value
				(must be positive or 0)

Example: *June CME Live Cattle futures are trading at 82.50 cents/lb. and the June 80 CME Live Cattle call option is trading at 3.50 cents/lb. What are the time value and intrinsic value components of the premium?*

Futures Price	–	Strike Price	=	Intrinsic Value
82.50	–	80.00	=	2.50

Time value represents the amount option traders are willing to pay over intrinsic value, given the amount of time left to expiration for the futures to advance in the case of calls, or decline in the case of puts.

Options Premium	–	Intrinsic Value	=	Time Value
3.50	–	2.50	=	1.00

Time Value	+	Intrinsic Value	=	Premium
1.00	+	2.50	=	3.50

Intrinsic value and time value for puts:

In the case of a put, intrinsic value is the amount by which the underlying futures price is below the strike price:

				Intrinsic Value
Strike Price	–	Futures Price	=	(must be positive or 0)
Put Option Premium	–	Intrinsic Value	=	Time Value
Put Time Value	+	Put Intrinsic Value	=	Put Option Premium

Example: *What are the time value and intrinsic value of a CME Eurodollar 95.00 put if the underlying futures are trading at 94.98 and the option premium is 0.03?*

Strike Price	–	Futures Price	=	Intrinsic Value
95.00	–	94.98	=	0.02

There are 0.02 points of intrinsic value.

Options Premium	–	Intrinsic Value	=	Time Value
0.03	–	0.02	=	0.01

There is 0.01 point of time value.

4. Important Concepts

In-the-money

A call option is said to be in-the-money when the futures price exceeds the option's strike price. A put is in-the-money when the futures price is below the option's strike price. For example, a September CME Canadian Dollar 60 call option will be in-the-money if September CME Canadian Dollar futures are above 60, meaning that the holder has the right to buy these futures at 60, regardless of how much the price has risen. Any option that has intrinsic value is in-the-money.

At-the-money

An option is at-the-money when the futures price equals the option's strike price. A December CME E-mini S&P 500 call option with a strike price of 1100 is at-the-money if the December CME E-mini S&P 500 futures contract is trading at 1100.00.

Out-of-the-money

When the futures price is below the strike price (for calls) and above the strike price (for puts) the option is said to be out-of-the-money. An option that has no intrinsic value, but only time value, is out-of-the-money. If CME Eurodollars are trading at 94.00, a 94.50 call would be out-of-the-money.

Delta

Delta measures the rate of change of an option premium with respect to a price change in the underlying futures contract. Delta is a measure of price sensitivity at any given moment. Not all options move point-for-point with their underlying futures contracts. If a futures contract moves .50 points and the option only moves .25 points, its delta is 50%; i.e., the option is only 50% as sensitive to the movement of underlying futures contract.

The delta will change as an option moves from out-of-the-money to at-the-money to in-the-money, approaching 100%. Deltas range from 0% to 100%. The delta of the underlying futures contract is 100% (options pricing software is normally used to calculate delta).

Time Value Decay

As discussed in the previous section, the value of an option beyond intrinsic value is called time value. It is the sum of money option traders are willing to pay given the likelihood of the option increasing in value. Time value erodes as each day passes, accelerating as expiration nears. This characteristic of options is referred to as time-decay and is the reason why options are sometimes considered "wasting assets." If time passes and the underlying futures contract does not move far enough by expiration, the option's time value will decay and the option trader may incur a loss. The graph below illustrates the principle of time decay and its acceleration as expiration draws near.
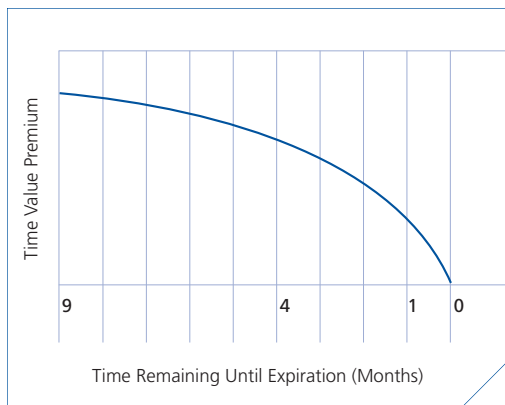
Performance Bond

An option buyer must only put up the amount of the premium, in full, at the time of the trade. However, because option selling involves more risk, an option seller or writer will be required to post performance bond. Your broker can discuss the performance bond requirement associated with selling options (see section regarding risks in selling options). Once an options position is exercised into a futures position, performance bond is required, just as for any other futures position.

5. Basic Strategies

There are literally dozens of options strategies that a trader can employ to take advantage of a particular opinion and market environment. The examples that follow merely suggest what you can do given the flexibility of options, not what you should do.

Strategy A:

Buying calls to take advantage of a rising stock market

Example:

S&P 500 STOCK INDEX (CME) $250 times premium

Strike Price	Calls- Settle May-c	Jun-c	Sep-c	May-p	Puts- Settle Jun-c	Sep-p
1145	11.80	14.40	24.20	0.30	3.00	8.20
1150	7.30	10.60	20.50	0.80	4.10	9.40
1155	3.40	7.30	17.10	1.80	5.80	10.80
1160	1.20	4.60	14.00	4.70	8.10	12.60
1165	0.20	2.70	11.20	–	11.10	–
1170	0.10	1.50	8.70	–	14.90	17.00

Est. vol. 11,631: Mon. vol. 5,373 calls; 7,170 puts
Open interest Mon; 79,531 calls; 150,715 puts

| Outlook:	Significant advance in the stock market
Futures price Strategy:	June CME S&P 500 stock index futures @ 1156.50
	Buy 1 Sep 1170 CME S&P 500 call option @ 8.70 pts.
	(8.70 pts. x $250/pt. = $2175.00)
Breakeven point:	1178.70 (strike + premium or 1170 + 8.70)
Risk:	Limited to premium paid: 8.70 pts./call ($2175.00)

Profit/Loss at expiration:

Futures Price	1170 Call Price	Profit/Loss
1155.00	0.00	- 8.70 pts. (-2175)
1160.00	0.00	- 8.70 pts. (-2175)
1165.00	0.00	- 8.70 pts. (-2175)
1170.00	0.00	- 8.70 pts. (-2175)
1175.00	5.00	- 3.70 pts. (-925)
1180.00	10.00	+ 1.30 pts. (+325)
1185.00	15.00	+ 6.30 pts. (+1575)

As the profit/loss table above and the graph below demonstrate, buying calls can result in significant profits should the CME S&P 500 futures rally. More importantly though, the trader's risk is limited to 8.70 points no matter how far the CME S&P 500 futures may decline.

S&P 500 1170 Call Purchase: Profit/Loss
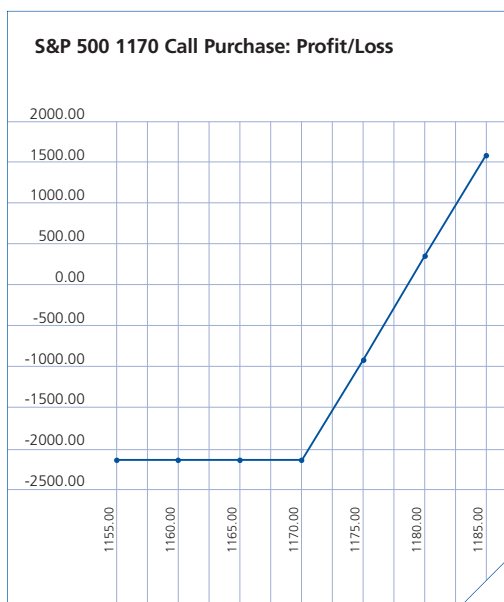
Strategy B:

Buying put options to profit from declining live cattle prices

Example:

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

Strike Price	Calls-Settle Jun-c	Aug-c	Oct-c	Jun-p	Puts-Settle Aug-c	Oct-p
80	3.72	2.92	5.02	0.02	0.55	0.52
82	1.87	1.57	3.45	0.17	1.17	0.90
84	0.47	0.72	2.10	0.77	2.27	1.50
86	0.10	0.27	1.15	2.40	–	2.50
88	0.00	0.10	0.55	–	–	–
90.00	–	0.22	–	–		

Est. vol. 2,577, Mon. vol. 483 calls, 547 puts
Open interest Mon.; 26,617 calls, 35,197 puts

Outlook:	A speculator thinks cattle prices will retreat from recent highs. He wants to avoid the unlimited risk associated with selling futures short.
Futures price:	October CME Live Cattle futures @ 84.60
Strategy:	Purchase October 82 CME Live Cattle put option @ .90
	(Actual dollar amount: .90 cents/lb. x 40,000 lbs. = $360.00)
Breakeven point:	81.10 cents/lb. (strike price - premium)
Risk:	Limited to premium paid: .90 cents/lb. or $360.00

Profit/Loss at expiration:

Futures Price	Put Price	Profit/Loss
76.00	6.00	+ 5.10 (2040.00)
78.00	4.00	+ 3.10 (1240.00)
80.00	2.00	+ 1.10 (440.00)
82.00	0.00	- .90 (360.00)
84.00	0.00	- .90 (360.00)
86.00	0.00	- .90 (360.00)

CME Live Cattle 82 Put: Profit/Loss
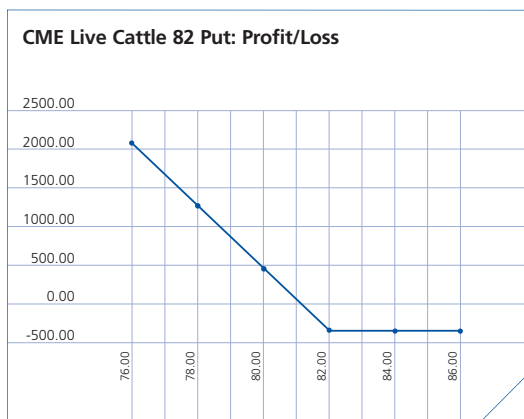
Futures Prices and Profits/Losses

The graph above again demonstrates one of the prime advantages of buying options on futures. If the trader were wrong and CME Live Cattle futures advanced sharply, his risk would be limited to the .90 cents/lb. premium he paid. And, if his analysis were correct, he could realize substantial profits on a relatively small investment.

Strategy C:
Straddles Using Options on CME E-mini S&P 500 futures

Outlook:	Although a trader believes that volatility, currently at eight-year lows, will rise in the coming months, he is not sure of the direction of the underlying S&P 500 index.
Strategy:	Trader decides to go long the March 1200 straddle (i.e., the at-the-money straddle using options on CME E-mini S&P 500 futures. He/she will thus go long the March 1200 call option and the March 1200 put option.

Strike	March Calls	March Puts
1190	34.10	25.50
1195	31.25	27.75
1200	28.25	29.75
1205	25.75	32.00
1210	23.25	34.50

March CME E-mini S&P 500 price: 1198.75

Cost of straddle:	58.30 pts (Call premium + Put premium)
Upside breakeven:	1200 + 58.00= 1258.00
Downside breakeven:	1200 - 58.00= 1142.00
Maximum loss:	58.00 (limited to premium paid)
Point of maximum loss:	1200 (put and call become worthless at expiration)

Profit/Loss at Expiration

March Futures Price	1200 Call Price	1200 Put Price	Straddle Price	Total +/-
1100	0	100	100	+42.00
1150	0	50	50	- 8.00
1200	0	0	0	- 58.00
1250	50	0	50	- 8.00
1300	100	0	100	+42.00

CME E-mini S&P 1200 Straddle: Profit/Loss
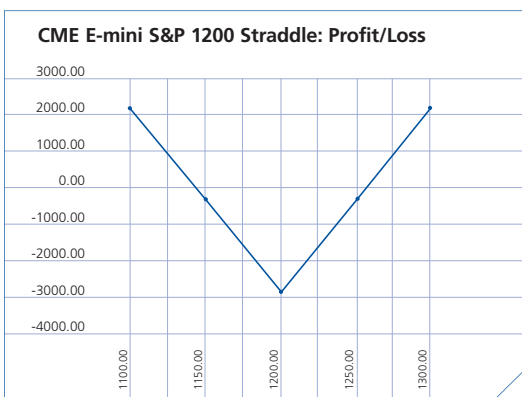
Straddles are designed to turn a profit as long as the underlying futures contract has a large enough move to cover the cost of the call and the put. In this case, the futures must move at least 58.00 pts. (the direction does not matter) to attain break even. Hence, any move above 1258 or below 1142 will allow the trader to profit. Clearly, options offer a myriad of strategies to take advantage of all sorts of market conditions.

A Word About Selling Options on Futures
This booklet has emphasized the advantages of a limited risk investment involved in purchasing options on futures. As discussed earlier, if someone buys an option on a futures contract, there must be a seller on the other side of the trade. While selling options on futures can also be a profitable strategy, it must be stressed that it entails substantially more risk than buying options on futures. An individual who sells options on futures has the potential to lose large sums of money. The strategy should therefore only be initiated by individuals who fully understand options on futures as well as the considerable risk associated with option selling, and who can meet the financial requirements.

6. Review Questions

(Select all answers that are correct for each question)

1. Which of the following best describes options on futures?

A the right to buy or sell a futures contract

B the right to take delivery of a cash commodity

C the right to assign a futures contract

2. A put option is:

A the other side of a call option position

B the right to buy a futures contract

C the right to sell a futures contract

3. A call option is:

A the other side of a put option transaction

B the same as a short futures position

C the right to go long a futures contract

4. Options on futures are:

A usually offset before expiration

B wasting assets

C traded on regulated commodity exchanges such as CME

5. The premium of an option is:

A set by the exchange staff

B unaffected by futures prices

C determined by buyers and sellers reflecting supply and demand

6. The exercise price is:

A the number of days remaining in the life of an option

B the number of contracts you can exercise

C the price at which the option holder may go long (calls) or short (puts) the underlying futures

7. The different strike prices are set by:

A option sellers

B option buyers

C the Exchange

8. Intrinsic value for call options is calculated by:

A futures price minus the exercise price

B exercise price minus the futures price

C futures price minus the call premium

9. The breakeven point for a call option purchase is:

A strike price plus days to expiration

B futures price plus the call option premium

C strike price plus the call option premium

10. Options can be used by:

A speculators desiring to profit from a market move with limited risk

B hedgers wishing to protect themselves against adverse price moves

C anyone knowledgeable in finance

11. Sellers of options:

A should be aware of the risks involved with selling options

B can lose large sums of their trading capital

C must meet performance bond requirements

12. To take advantage of a rising market one could:

A sell call options on futures

B buy call options on futures

C sell futures contracts

13. If a trader pays 4.00 pts. for an option on the CME S&P 500 futures, the most he or she could lose is:

A 4.00 pts.

B 8.00 pts.

C losses could be unlimited

14. A speculator who is considering the purchase of a put option will:

A pay the entire premium up front

B put up performance bond funds

C profit if the market advances on him

15. CME offers options on:

A equity products

B foreign currency products

C livestock products

D interest rate products

16. If one exercises a call option on a futures contract, the resulting position will be:

A a long futures

B a short futures

C a neutral position

Answers to review questions:

1. **A**	4. **A, B, C**	7. **C**	10. **A, B**	13. **A**
2. **C**	5. **C**	8. **A**	11. **A, B, C**	14. **A**
3. **C**	6. **C**	9. **C**	12. **B**	15. **A, B, C, D**
				16. **A**

Basic Option Strategies

Initiating a Market Position

BULLISH
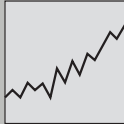
BEARISH
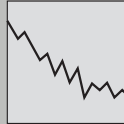
UNDECIDED
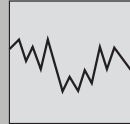
VOLATILITY RISING

LONG CALL

Buy a call
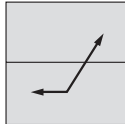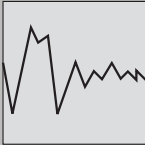
LONG PUT

Buy a put
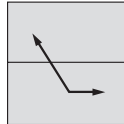
LONG STRADDLE

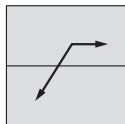Buy a call and buy a put at same strike
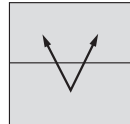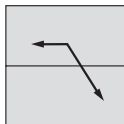
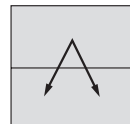VOLATILITY FALLING

SHORT PUT

Sell a put

SHORT CALL

Sell a call

SHORT STRADDLE
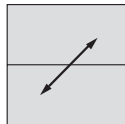
Sell a call and sell a put at same strike
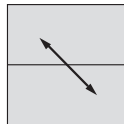
VOLATILITY UNDECIDED
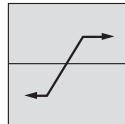
LONG FUTURES

Buy a futures
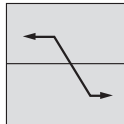
SHORT FUTURES

Sell a futures

BULL SPREAD

Buy a call and sell a call at a higher strike/ or/Buy a put and sell a put at a higher strike

BEAR SPREAD

Buy a put and sell a put at a lower strike / or/Buy a call and sell a call at a lower strike

Sources of Additional Information

For more information about options on futures and the important opportunities they provide, contact your futures broker. Together, you can determine what role options should play in your investment strategy.

You may also wish to enroll in one or more classes offered by the CME Education Department. A number of options-related classes are offered, both online and in classrooms. For more information, please go to the education section of the CME Web site, www.cme.com.

This brochure is intended as a discussion of the use of options on futures. It was not prepared to meet the Commodity Futures Trading Commission requirements for a disclosure statement about the risks of trading options on futures contracts. That statement must be furnished by your broker.

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