



OPTIONS →

## CME GROUP OPTIONS ON FUTURES

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As the world's leading and most diverse derivatives marketplace, CME Group is where the world comes to manage risk. CME Group exchanges offer the widest range of global benchmark products across all major asset classes, including futures and options based on interest rates, equity indexes, foreign exchange, energy, agricultural commodities, metals, weather and real estate. CME Group brings buyers and sellers together through its CME Globex® electronic trading platform and its trading facilities in New York and Chicago. CME Group also operates CME Clearing, one of the world's leading central counterparty clearing providers, which offers clearing and settlement services across asset classes for exchange-traded contracts and over-the-counter derivatives transactions. These products and services ensure that businesses everywhere can substantially mitigate counterparty credit risk.

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# Options on Futures

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CME Group's vast and liquid family of option contracts on futures can help you diversify your portfolio while helping to mitigate your downside risk. This introductory guide will walk you through the basic fundamentals, strategy and vocabulary of our options markets, providing a solid base of knowledge that will make you well-prepared to tackle these opportunities.

We also would like to share our most active options on futures contracts traded at CME Group. This listing is not exhaustive of all options products, but is a good representation of the broad spectrum of options that we offer.

## Most Active Options Products

The below listing represents some of the most active options contracts traded on futures at CME Group. This listing is not exhaustive of all options products, but is a good representation of the types of options that CME Group offers.

**Agriculture:** Cheese, Corn, Feeder Cattle, Lean Hogs, Live Cattle, Class III Milk, Lumber, Oats, Soybeans, Soybean Meal, Soybean Oil, Wheat

**Energy:** Ethanol, Heating Oil, Light Sweet Crude Oil, Natural Gas, RBOB Gasoline, Brent Crude Oil

**Equity Index:** S&P 500, E-mini S&P 500, NASDAQ 100, E-mini NASDAQ 100, Nikkei 225

**FX:** Australian Dollar, British Pound, Canadian Dollar, Euro, Japanese Yen, New Zealand Dollar, Swiss Franc

**Interest Rates:** Eurodollar Mid-Curves 30-Day Fed Funds, 2-, 5-, and 10-Year Note, U.S. T-Bond, Ultra T-Bond

**Metals:** Copper, Gold, Palladium, Platinum, Silver

**Real Estate:** S&P/Case-Shiller Home Price Index

**Weather:** Frost, Hurricane, Rainfall, Snowfall, Temperature

# 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 CME September Japanese Yen 126 call option gives the holder (buyer) the right to buy or go long a Yen futures contract at a price of 126 (\$.0126/ Yen) anytime prior to September expiration. Even if yen futures rise substantially above .0126, the call holder will still have the right to buy Yen futures at .0126. If Yen futures moves below .0126, the call option buyer is not obligated to buy at .0126.

## 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, a CME October Live Cattle put gives the put holder the right to sell October Live Cattle futures at \$1.24/lb. Should the futures decline to \$1.14/lb., the put holder still retains the right to go short the contract at \$1.24/lb. If Cattle futures move higher, the put holder is not obligated to sell at \$1.24.

## Option Buyer

An option buyer can choose to exercise their 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 (take the opposite position) 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 they 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 option buyer exercises their right to the futures position specified in the option. In return for the premium, the option 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 option 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

- » pay premium
- » have right to exercise, into in a long futures position
- » have time decay, works against them
- » no margin performance bond requirements

### Call Sellers

- » collect premium
- » have obligation if assigned, to assume a short futures position
- » have time decay, works in their favor
- » have performance bond margin requirements

## Put Buyers

- » pay premium
- » have right to exercise, into in a short futures position
- » time decay, works against them
- » no performance margin bond requirements

## Put Sellers

- » collect premium
- » have obligation to assume if assigned, a long futures position
- » time decay, works in their favor
- » have performance margin 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 CME September E-mini S&P 500 1290 call, the buyer of the option would then be long a September E-mini S&P 500 futures contract at 1290. If the holder of a CBOT August Soybean 15.00 put were to exercise their option, the result would be a short futures position, at \$15.00/bushel, in August Soybean Futures.

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 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 March CBOT 10-Year Treasury Note futures contract is the right to buy or sell one such contract. An option on COMEX December Gold futures gives the right to buy or sell one COMEX December Gold 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. 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 market volatility and interest rates—all of which will be discussed further.

## Exercise

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

## Assignment

Assignment refers to the obligation of option sellers to take the opposite and possibly adverse futures position to the option 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 2012 CME September British pound 1550 call option will expire September 7, 2012. However, the underlying futures will expire September 17, 2012. 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 option position prior to expiration. Traders will offset their option position if they wish to take profits before expiration or limit their losses. Options 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 trading floors, and on the CME Globex® electronic trading platform, where many options can be traded virtually around-the-clock throughout the trading week.

# Pricing Fundamentals

An option gives the options buyer 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 and when 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 option premiums to increase — sometimes very dramatically. Lower volatility environments generally cause options premiums to decline.

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 usually 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
CME Dec 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, (all other factors being equal) options premiums increase. Options traders should be sure to consider 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 NYMEX Crude Oil futures are trading at 98.00 per barrel, common sense tells us that a 94.00 call option will be worth more than an 96.00 call option (the right to buy \$2.00/barrel lower will be more costly). Similarly, a \$100.00 call option would be relatively cheap because the underlying NYMEX Crude Oil futures is a full \$2.00 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. When 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
CBOT July 7.50 Corn call option value	\$0.25/bushel	\$0.15/bushel

### Option Premium Quotations

Closing prices for CME Group 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 [cmegroup.com](http://cmegroup.com), in the market data section under "Intraday Data." 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 Euro FX options table, showing the premium quotes on a 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 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

1 Strike Price	3 Calls-Settle			4 Puts-Settle		
	2 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

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 Settlement prices for call options
- 4 Settlement 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

In the CME Swiss Franc option quote table, again notice the shaded areas. They represent the settlement price of a CME September Swiss Franc 102 put option, 1.26. This would give the put buyer the right to sell September CME Swiss Franc futures at 102 anytime between purchase and expiration. The buyer would pay \$1,575.00 (1.26 cents/franc x 125,000 francs = \$1,575.00) to the seller.

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

Strike Price	Calls-Settle			Puts-Settle		
	Sep-c	Dec-c	Mar-c	Sep-p	Dec-p	Mar-p
100	4.02	5.26	6.33	0.71	1.67	2.43
101	3.27	4.56	5.65	0.95	1.97	2.75
102	2.58	3.91	5.02	1.26	2.32	2.93
103	2.00	3.35	4.42	1.68	2.75	3.11
104	1.51	2.83	3.90	2.19	3.23	3.51
105	1.10	2.37	3.41	2.78	3.76	3.98

Open Interest  
2,609 Calls; 2,046 Puts

## Arithmetic

### 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 CME June 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:

$$\begin{array}{rclclcl} \text{Strike Price} & + & \text{Premium Paid} & = & \text{Breakeven Point} \\ 1150 & + & 7.50 & = & 1157.50 \end{array}$$

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 Swiss Franc 85 put option for .99 pts., how far must the September CME Swiss Franc futures decline for the option to break even at expiration?

#### Breakeven point for puts:

$$\begin{array}{rclclcl} \text{Strike Price} & - & \text{Premium Paid} & = & \text{Breakeven Point} \\ 85 & - & .99 & = & 84.01 \text{ (or .8401)} \end{array}$$

\* 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:

$$\text{Futures Price} - \text{Strike Price} = \text{Intrinsic Value} \\ (\text{must be positive or 0})$$

**Example:** NYMEX January Natural Gas futures are trading at 3.47 NYMEX Natural Gas Million British Thermal Units (MMBTU) and the January 3.45 call option is trading at \$0.28 MMBTU. What are the time value and intrinsic value components of the premium?

$$\begin{array}{rclcl} \text{Futures Price} & - & \text{Strike Price} & = & \text{Intrinsic Value} \\ 3.47 & - & 3.45 & = & 0.02 \end{array}$$

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.

$$\begin{array}{rclcl} \text{Options Premium} & - & \text{Intrinsic Value} & = & \text{Time Value} \\ 0.28 & - & 0.02 & = & 0.26 \end{array}$$

$$\begin{array}{rclcl} \text{Time Value} & + & \text{Intrinsic Value} & = & \text{Premium} \\ 0.26 & + & 0.02 & = & \$0.28 \end{array}$$

### 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:

$$\text{Strike Price} - \text{Futures Price} = \text{Intrinsic Value} \\ (\text{must be positive or 0})$$

$$\text{Put Option Premium} - \text{Intrinsic Value} = \text{Time Value}$$

$$\text{Put Time Value} + \text{Put Intrinsic Value} = \text{Put Option Premium}$$

**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?

$$\begin{array}{rclcl} \text{Strike Price} & - & \text{Futures Price} & = & \text{Intrinsic Value} \\ 95.00 & - & 94.98 & = & 0.02 \end{array}$$

There are 0.02 points of intrinsic value.

$$\begin{array}{rclcl} \text{Options Premium} & - & \text{Intrinsic Value} & = & \text{Time Value} \\ 0.03 & - & 0.02 & = & 0.01 \end{array}$$

There is 0.01 point of time value.

# Important Concepts

## In-the-money

A call option is said to be in-the-money when the futures price exceeds the strike price. A put is in-the-money when the futures price is below the strike price. For example, a COMEX September Silver 35.00 call option will be in-the-money if September Silver futures are above 35.00 meaning that the holder has the right to buy these futures at 35.00 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 CBOT December Mini-sized Dow call option with a strike price of 13,000 is at-the-money if the December Mini-sized Dow futures contract is trading at 13000.

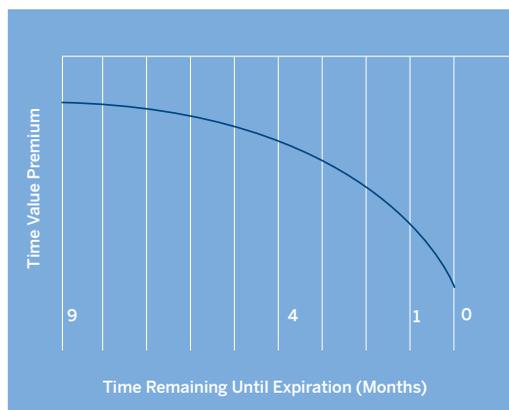
## Out-of-the-money

When the futures price is below the strike price (for calls) or above the strike price (for puts) the option is said to be out-of-the-money. An out of the money option doesn't have intrinsic value, it only has time value. If CME Eurodollars are trading at 99.50, a 100.00 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%. (0–1) The delta of the underlying futures contract underlying or cash product 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 or extrinsic 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 buyer may incur a loss. The graph above illustrates the principle of time decay and its acceleration as expiration draws near.

## Performance Bond

An option buyer must only pay the amount of the premium, in full, at the time of the trade. However, because selling an option involves more risk, an option seller or writer will be required to post performance bond margin. 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 margin is required, similar to any other futures position.

# 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			Puts-Settle		
	Mar-c	Jun-c	Sep-c	Mar-p	Jun-p	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:** CME September S&P 500 futures @ 1165.50

Buy 1 CME September S&P 500 1170 call option @ 8.70 pts.  
(8.70 pts. X \$250/pt. = \$2175.00)

**Breakeven point:** (strike + premium or 1170 + 8.70) in September futures

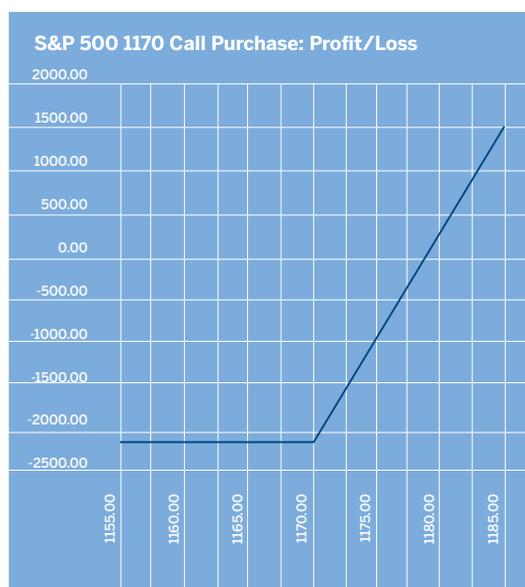
**Risk:** Limited to premium paid: 8.70 pts/call (\$2175.00)

## 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)

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

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.



## Strategy B:

Buying put options to profit from declining Lean Hogs

### Example:

#### CME Lean Hogs 40,000 lbs: cents per lb.

Strike Price	Calls-Settle			Puts-Settle		
	Jun-c	Aug-c	Oct-c	Jun-p	Aug-p	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 hog prices will retreat from recent highs. He wants to avoid the unlimited risk associated with selling futures short.

**Futures price:** CME October Lean Hog futures @ 84.60

**Strategy:** Purchase CME October Lean Hog 82 put option @ .90  
(Actual dollar amount: .90 cents/lb. x 40,000 lbs. = \$360.00)

**Breakeven point:** 81.10 cents/lb. (82.00 strike price – premium 0.91)

**Risk:** Limited to premium paid: .90 cents/lb. or \$360.00

### Profit/Loss at expiration:

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



### 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 Lean Hogs 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 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:** 58.00 pts (Call premium + Put premium)

**Upside breakeven:**  $1200 + 58.00 = 1258.00$

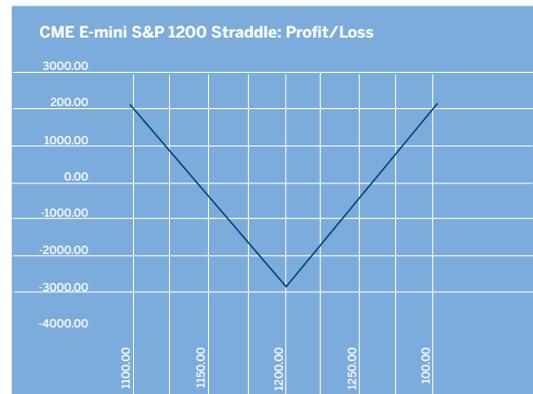
**Downside breakeven:**  $1200 - 58.00 = 1142.00$

**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



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.

Conversely, if you believe the markets will remain relatively stable, you could sell the straddle, which is selling both call and the put. Your profit opportunities would be the premium collected on both the call and the put if the markets remain stable or flat. However, your risk would occur if volatility increases and the underlying market moves significantly in either direction. 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.

## 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 CBOT NYMEX or COMEX
- D. all of the above

### 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. both A and B

### 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
- D. all of the above

**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 they 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 Group Exchanges offer options on:**

- A. equity products
- B. foreign currency products
- C. agricultural products
- D. interest rate products
- E. all of the above

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

- A. a long futures position
- B. a short futures position
- C. a neutral position

**Answers to review questions:**

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

# Basic Option Strategies

Initiating a Market Position

Bullish



Bearish



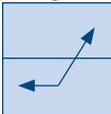
Volatile



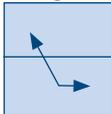
Stable



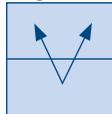
Long Call



Long Put

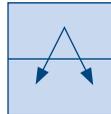


Long Straddle



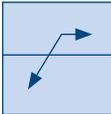
Buy a call and buy a put at same strike

Short Straddle

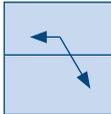


Sell a call and sell a put at same strike

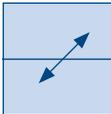
Short Put



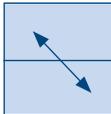
Short Call



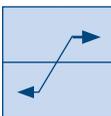
Long Futures



Short Futures

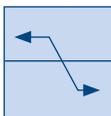


Bull Spread



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 put and sell a put 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.

*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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