

CENTURY FINANCIAL BROKERS

OPTIONS TRADING

An Introduction to the Futures Options Markets

OPTIONS TRADING 101

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INTRODUCTION

Options on futures contracts have added a new dimension to futures trading. Like futures, options provide price protection against adverse price moves. Present-day options trading on the floor of an exchange began in April 1973 when the Chicago Board of Trade created the Chicago Board Options Exchange (CBOE) for the sole purpose of trading options on a limited number of New York Stock Exchange-listed equities. Options on futures contracts were introduced at the CBOT in October 1982 when the exchange began trading Options on U.S. Treasury Bond futures.

REASONS FOR USING OPTIONS

Options differ considerably from futures. When used prudently, options can be of immense importance, especially in attempting to preserve the value of an existing fixed-income portfolio.

To many in the financial markets, options are considered "insurance" against adverse price movements while offering the flexibility to benefit from possible favorable price movement.

The reasons for using options on futures are reflected in the structure of an option contract.

First, an option, when purchased, gives the buyer the right, but *not the obligation*, to buy or sell a specific amount of a specific commodity at a specific price within a specific period of time. By comparison, a futures contract *requires* a buyer or seller to perform under the terms of the contract if an open position is not offset before expiration.

Second, the decision to exercise the option is entirely that of the *buyer*.

Third, the purchaser of the option can lose no more than the initial amount of money invested (premium). That is not the case, however, for the buyer of a futures contract.

Finally, an option buyer is never subject to margin calls. This enables the purchaser to maintain a market position, despite any adverse moves without putting up additional funds.

OPTIONS TERMINOLOGY

There are several important terms the would-be user of options on futures should understand. They include:

CALL OPTION

Gives the buyer the right, but not the obligation, to buy a specific futures contract at a predetermined price within a limited period of time.

PUT OPTION

Gives the buyer the right, but not the obligation, to sell a specific futures contract at a predetermined price within a limited period of time.

HOLDER

The buyer of the option.

PREMIUM

The dollar amount paid by the buyer of the option to the seller.

WRITER

The option seller.

STRIKE PRICE

The predetermined price at which a given futures contract can be bought or sold. Also called the **exercise price**, these levels are set at regular intervals. For example, if Treasury bond futures were at 79-00, T-bond option strike prices would be at 74, 76, 78, 80, 82, and 84.

AT-THE-MONEY

An option is at-the-money when the underlying futures price equals, or nearly equals, the strike price. For example, a T-bond put or call option is at-the-money if the option strike price is 78 and the price of the Treasury bond futures contract is at, or near, 78-00.

IN-THE-MONEY:

A call option is in-the-money when the underlying futures price is greater than the strike price. For example, if Treasury bond futures are at 80-00 and the T-bond call option strike price is 78, the call is in-the-money. The put option is in-the-money when the strike price of the option is greater than the price of the underlying futures contract. For example, if the strike price of the put option is 80 and T-bond futures are trading at 77-00, the put option is in-the-money.

OUT-OF-THE-MONEY

A call option is out-of-the-money if the strike price is greater than the underlying futures price. For example, if T-bond futures are at 80-00 and the T-bond call option has an 82 strike price, the option is out-of-the-money. The put option is out-of-the-money if the underlying futures price is greater than the strike price. For example, if T-bond futures are at 77-00, and the T-bond put option strike price is 76, the put option is out-of-the-money.

	Call Option	Put Option
In-the-Money	Futures > Strike	Futures < Strike
At-the-Money	Futures = Strike	Futures = Strike
Out-of-the-Money	Futures < Strike	Futures > Strike

Options are considered "wasting assets." In other words, they have a limited life because each expires on a certain day, although it may be weeks, months, or years away. The expiration date is the last day the option can be exercised, otherwise it expires worthless.

For every option buyer there is an option seller. In other words, for every call buyer there is a call seller; for every put buyer, a put seller. The buyer of the option, unlike the buyer of a futures contract, need not worry about margin calls. However, the seller of the option is generally required to post margin.

If an option position is **covered**, the seller holds an offsetting position in the underlying commodity itself or a futures contract. For example, the seller of a Treasury bond call option would be covered if he actually owned cash market U.S. Treasury bonds or was long the Treasury bond futures contract.

If the writer did not hold either, he would have an **uncovered** or "naked" position. In such instances, margin would be required because the seller would be obligated to fulfill terms of the option contract in the event the contract is exercised by the buyer. It is imperative, therefore, that the seller demonstrate the ability to meet any potential contractual obligations beforehand. In addition, the seller of uncovered options on interest rate futures assumes the potential for significant losses.

MOTIVES FOR BUYING AND SELLING OPTIONS

One may be a buyer or seller of call or put options for a variety of reasons.

A call option *buyer*, for example, is bullish. That is, he or she believes the price of the underlying futures contract will rise. If prices do rise, the call option buyer has three courses of action available.

The first is to exercise the option and acquire the underlying futures contract at the strike price. The second is to offset the long call position with a sale and realize a profit. The third, and least acceptable, is to let the option expire worthless and forfeit the unrealized profit.

The *seller* of the call option expects futures prices to remain relatively stable or to decline modestly. If prices remain stable, the receipt of the option premium enhances the rate of return on a covered position. If prices decline, selling the call against a long futures position enables the writer to use the premium as a cushion to provide downside protection to the extent of the premium received. For instance, if T-bond futures were purchased at 80-00 and a call option with an 80 strike price was sold for 2-00, T-bond futures could decline to the 78-00 level before there would be a net loss in the position (excluding, of course, margin and commission requirements).

However, should T-bond futures rise to 82-00, the call option seller forfeits the opportunity for profit because the buyer would likely exercise the call against him and acquire a futures position at 80-00 (the strike price).

The perspectives of the put buyer and put seller are completely different. The buyer of the put option believes prices for the underlying futures contract will decline. For example, if a T-bond put option with a strike price of 82 is purchased for 2-00, while T-bond futures also are at 82-00, the put option will be profitable for the purchaser to exercise if T-bond futures decline below 80-00.

In many instances, puts will be purchased in conjunction with a long cash or long T-bond futures position for "insurance" purposes. For instance, if an institution is long T-bond futures at 82-00 and a T-bond put option with an 82 strike is purchased for 2-00, the futures contract could, theoretically, fall to zero and the put option holder could exercise the option for the 82 strike price, assuming the option had not yet expired.

The *seller* of put options on fixed-income securities believes interest rates will stay at present levels or decline. In selling the put option, the writer, of course, receives income. However, if interest rates rise, the *buyer* of the put option can require the writer to take delivery of the underlying instrument at a price greater than that in the new market environment.

Since an option is a wasting asset, an open position must be closed or exercised, otherwise the option expires worthless. The chart below illustrates what happens to the buyer and the seller after an option is exercised.

Futures Positions After Option Exercise

	Call Option	Put Option
Buyer Assumes	Long T-Bond/note futures position	Short T-Bond/note futures position
Seller Assumes	Short T-Bond/note futures position	Long T-Bond/note futures position

OPTION PREMIUM VALUATION

The price (value) of an option premium is determined competitively by open outcry auction on the trading floor of the CBOT. The premium is affected by the influx of buy and sell orders reaching the exchange floor. An option buyer pays the premium in cash to the option seller. This cash payment is credited to the seller's account.

Prices for T-bond and T-note futures contracts are quoted differently from the options premiums on these futures. Options on these contracts are quoted in 64th of a point. Therefore, a quote of -01 in options means 1/64, in futures, 1/32.

The option premium has two components: "intrinsic value" and "time value." The **intrinsic value** is the gross profit that would be realized upon immediate exercise of the option. In other words, intrinsic value is the amount by which the portion is in-the-money. (An option that is out-of-the- money or at-the-money has no intrinsic value.)

For example, in December, a June Treasury bond futures contract is priced at 82-00, while the June 80 call is priced at 3 10/64. The intrinsic value of the option is 2-00:

Bond futures	82-00
Option strike price	80-00
Intrinsic value	2-00

Time value reflects the probability the option will gain in intrinsic value or become profitable to exercise before it expires.

Time value is determined by subtracting intrinsic value from the option premium:

$$\begin{aligned}
 \text{Time Value} &= \text{Option Premium} - \text{Intrinsic Value} \\
 &= 3 \frac{10}{64} - 2-00 \\
 &= 1 \frac{10}{64}
 \end{aligned}$$

Several other factors also have an impact on the premium. One is the relationship between the underlying futures price and strike price. The more an option is in-the-money, the more it is worth. A second factor is volatility. Volatile prices of the underlying commodity can stimulate option demand, enhancing the premium. The greater the volatility, the greater the chance the option premium will increase in value and the option will be exercised; thus, buyers pay more while writers demand higher premiums.

A third factor affecting the premium is time until expiration. Since the underlying value of the futures contract changes more within a longer time period, option premiums are subject to greater fluctuation.

Some parallels can be drawn between the time value component of an option premium and the premium charged for an automobile insurance policy. The longer the term of the policy, the greater the probability a claim will be made by the policyholder. This, of course, presents a greater risk to the insurance company. To compensate for this increased risk, the insurer charges a greater premium. For example, the total dollar cost of a one-year policy to insure the vehicle will be greater than a six-month policy since the vehicle is being insured for twice as long. The same is true with options on interest rate futures-the longer the term until expiration, and the more volatile the underlying market, the greater the option premium.

Source: National Futures Association

Want to learn more about the Futures Options Markets ?

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