

# UNDERSTANDING INDEX OPTIONS

## **OIC** The Options Industry Council

The Options Industry Council (OIC) is an industry cooperative created to educate the investing public and brokers about the benefits and risks of exchange-traded options. Options are a versatile but complex product and that is why OIC conducts seminars, distributes educational software and brochures, and maintains a web site focused on options education.

All seminars are taught by experienced options instructors who provide valuable insight on the challenges and successes that individual investors encounter when trading options. In addition, the content in our software, brochures and web site has been created by options industry experts. All OIC-produced information has been reviewed by appropriate compliance and legal staff to ensure that both the benefits and risks of options are covered.

OIC was formed in 1992. Today, its sponsors include BATS Options Exchange, BOX Options Exchange, Chicago Board Options Exchange, C2 Options Exchange, International Securities Exchange, NASDAQ OMX PHLX, NASDAQ Options Market, NYSE Amex Options, NYSE Arca Options and OCC. These organizations have one goal in mind for the options investing public: to provide a financially sound and efficient marketplace where investors can hedge investment risk and find new opportunities for profiting from market participation. Education is one of many areas that assist in accomplishing that goal. More and more individuals are understanding the versatility that options offer their investment portfolio, due in large part to the industry's ongoing educational efforts.

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This publication discusses exchange-traded options issued by The Options Clearing Corporation. No statement in this publication is to be construed as a recommendation to purchase or sell a security, or to provide investment advice. Options involve risk and are not suitable for all investors. Prior to buying or selling an option, a person must receive a copy of *Characteristics and Risks of Standardized Options*. Copies of this document may be obtained from your broker, by calling 1-888-OPTIONS, or by visiting **[www.OptionsEducation.org](http://www.OptionsEducation.org)**.

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# Introduction

The purpose of this booklet is to provide an introductory understanding of index options and how they can be used. Index options may be listed on all U.S. option exchanges. Like trading in stocks, options trading is regulated by the Securities and Exchange Commission (SEC).

Options exchanges seek to provide competitive, liquid and orderly markets for the purchase and sale of standardized options. All option contracts traded on U.S. securities exchanges are issued, guaranteed and cleared by OCC. OCC is a registered clearing corporation with the SEC and plays a critical role in the U.S. capital markets as the exclusive clearinghouse for exchange-traded options. OCC's conservative financial and procedural safeguards, substantial and readily available financial resources, and its members' mutual incentives protect the organization from settlement losses.

As referred to in this booklet, an index is a measure of the prices of a group of securities or other interests. Although indexes have been developed to cover a variety of interests such as stocks and other equity securities, debt securities and foreign currencies, and even to measure the cost of living, indexes on equity securities (which are called stock indexes) are among the most familiar. The following discussion refers only to stock indexes and stock index options.

Stock indexes are compiled and published by various sources, including securities markets. An index may be designed to be representative of the stock market of a particular nation as a whole, securities traded in a particular market, a broad market sector (e.g., industrials) or a particular industry (e.g., electronics). An index may be based on the prices of all or only a sample of the securities whose prices it is intended to represent. Indexes may be based on securities traded primarily in U.S. markets, securi-

ties traded primarily in a foreign market or a combination of securities whose primary markets are in various countries.

Readers who intend to trade index options should familiarize themselves with the features of the *underlying indexes*<sup>\*</sup>, including the general methods of calculation. Readers who are attempting to follow a precise and sophisticated strategy involving index options may wish to inform themselves about the exact method for calculating each index involved. Information regarding the method of calculation of any index on which options are traded, including information concerning the standards used in adjusting the index, adding or deleting securities and making similar changes is generally available from the options market where the options are traded.

While this discussion will focus on general characteristics of index options, specific classes of index options can have slightly different product specifications. Before investing, you should determine the specific terms of each product class. This and other information on index options or option products not included in this booklet can be obtained by contacting the appropriate exchange or The Options Industry Council (OIC). In addition, OCC publishes a booklet, *Understanding Equity Options*, which covers the basics of exchange-listed equity options and is recommended to investors contemplating the use of index options. This booklet can also be obtained either by calling I-888-OPTIONS or by visiting OIC's web site, [www.OptionsEducation.org](http://www.OptionsEducation.org).

This introductory booklet should be read in conjunction with the basic options disclosure document, *Characteristics and Risks of Standardized Options*, which outlines the purposes and risks of listed options transactions. Despite their many benefits, options are not suitable for all investors.

Individuals should not enter into option transactions until they have read and understood the

<sup>\*</sup>*Definitions for italicized words in bold can be found in the glossary section of this booklet.*

risk disclosure document which can be obtained from their broker, by calling 1-888-OPTIONS, or by visiting [www.OptionsEducation.org](http://www.OptionsEducation.org). It must be noted that despite the efforts of each exchange to provide liquid markets, under certain conditions it may be difficult or impossible to liquidate an option position. Please refer to the disclosure document for further discussion on this risk and other risks of trading index options. In addition, *margin requirements*, transaction and commission costs and tax ramifications of buying or selling options should be discussed thoroughly with a broker and/or tax advisor before engaging in option transactions.

*Note: For the sake of simplicity, the calculations of profit and loss amounts in this booklet do not account for the impact of commissions, transaction costs and taxes.*

## Benefits of Listed Index Options

Like *equity options*, index options offer the investor an opportunity either to capitalize on an expected market move or to protect holdings in the underlying instruments. The difference is that the underlying instruments are *indexes*. These indexes can reflect the characteristics of either the broad equity market as a whole or specific industry *sectors* within the marketplace.

### **Diversification**

*Index options* enable investors to gain exposure to the market as a whole or to specific segments of the market with one trading decision and frequently with one transaction. To obtain the same level of diversification using individual stock issues or individual equity option classes, numerous decisions and transactions would be required. Employing index options can defray both the costs and complexities of doing so.

### **Predetermined Risk for Buyer**

Unlike other investments where the risks may have

no limit, index options offer a known risk to buyers. An index option buyer absolutely cannot lose more than the price of the option, the *premium*.

### **Leverage**

Index options can provide leverage. This means an index option buyer can pay a relatively small premium for market exposure in relation to the contract value. An investor can see large percentage gains from relatively small, favorable percentage moves in the underlying index. If the index does not move as anticipated, the buyer's risk is limited to the premium paid. However, because of this leverage a small adverse move in the market can result in a substantial or complete loss of the buyer's premium.

Writers of index options can bear substantially greater, if not unlimited, risk.

### **Guaranteed Contract Performance**

An option holder is able to look to the system created by OCC's By-Laws and Rules rather than to any particular option writer for performance. Through that system, OCC guarantees performance to selling and purchasing clearing members, eliminating counterparty credit risk. Prior to the existence of option exchanges and OCC, an option holder who wanted to *exercise* an option depended on the ethical and financial integrity of the writer or his brokerage firm for performance. Furthermore, there was no convenient means of closing out one's position prior to the expiration of the contract.

OCC, as the common clearing entity for all exchange-traded option transactions, resolves these difficulties. Once OCC is satisfied that there are matching trades from a buyer and a seller, it severs the link between the parties. In effect, OCC becomes the buyer to the seller and the seller to the buyer. As a result, the seller can buy back the same option he has written, closing out the initial transaction and terminating his obligation to deliver the cash equal to the exercise value of the option to OCC, and this will in no way affect the right of the original buyer to sell,

hold or exercise his option. All premium and settlement payments are made between OCC and its clearing members. In turn, OCC clearing members settle independently with their customers (or brokers representing customers).

## What Is an Index?

A stock index is a compilation of several stock prices into a single number. Indexes come in various shapes and sizes. Some are *broad-based* and measure moves in broad, diverse markets. Others are *narrow-based* and measure more specific industry sectors of the marketplace. Different stock indexes can be calculated in different ways. Accordingly, even where indexes are based on identical securities, they may measure the relevant market differently because of differences in methods of calculation.

### **Capitalization-Weighted**

An index can be constructed so that weightings are biased toward the securities of larger companies, a method of calculation known as *capitalization-weighted*. In calculating the index value, the market price of each *component security* is multiplied by the number of shares outstanding. This will allow a security's size and capitalization to have a greater impact on the value of the index.

### **Equal Dollar-Weighted**

Another type of index is known as *equal dollar-weighted* and assumes an equal number of shares of each component stock. This index is calculated by establishing an aggregate market value for every component security of the index and then determining the number of shares of each security by dividing this aggregate market value by the current market price of the security. This method of calcula-

tion does not give more weight to price changes of the more highly capitalized component securities.

### **Other Types**

An index can also be a simple average: calculated by simply adding up the prices of the securities in the index and dividing by the number of securities, disregarding numbers of shares outstanding. Another type measures daily percentage movements of prices by averaging the percentage price changes of all securities included in the index.

### **Adjustments & Accuracy**

Securities may be dropped from an index because of events such as mergers and liquidations or because a particular security is no longer thought to be representative of the types of stocks constituting the index. Securities may also be added to an index from time to time. Adjustments to indexes might be made because of such substitutions or due to the issuance of new stock by a component security. Such adjustments and other similar changes are within the discretion of the publisher of the index and will not ordinarily cause any adjustment in the terms of outstanding index options. However, an adjustment panel has authority to make adjustments if the publisher of the underlying index makes a change in the index's composition or method of calculation that, in the panel's determination, may cause significant discontinuity in the index level.

Finally, the reported level of a stock index will be accurate only to the extent that:

- the component securities in the index are being traded
- the prices of these securities are being promptly reported
- the market prices of these securities, as measured by the index, reflect price movements in the relevant markets

# Equity vs. Index Options

An *equity index option* is an option whose underlying instrument is intangible - a stock index. The market value of an index put and call tends to rise and fall in relation to the underlying index. The price of an index call will generally increase as the level of its underlying index increases, and its purchaser has unlimited profit potential tied to the strength of these increases. The price of an index put will generally increase as the level of its underlying index decreases, and its purchaser has substantial profit potential tied to the strength of these decreases.

## Pricing Factors

Generally, the factors that affect the price of an index option are the same as those affecting the price of an equity option: value of the underlying instrument (an index in this case), *strike price*, *volatility*, time until expiration, interest rates and dividends paid by the component securities.

## Underlying Instrument

The underlying instrument of an equity option is a number of shares of a specific stock, usually 100 shares. Cash-settled index options do not relate to a particular number of shares. Rather, the underlying instrument of an index option is usually the value of the underlying index of stocks times a multiplier, which is generally \$100. (All references to dollars in this booklet refer to U.S. dollars.)

## Volatility

Indexes, by their nature, are less volatile than their individual component stocks. The up and down movements of component stock prices tend to cancel one another out, lessening the volatility of the index as a whole. However, the volatility of an index can be influenced by factors more general than can

affect individual equities. These can range from investors' expectations of changes in inflation, unemployment, interest rates or other economic indicators issued by the government and political or military situations.

## **Risk**

As with an equity option, an index option buyer's risk is limited to the amount of the premium paid for the option. The premium received and kept by the index option writer is the maximum profit a writer can realize from the sale of the option.

However, the loss potential from writing an uncovered index option is generally unlimited. Any investor considering writing index options should recognize that there are significant risks involved.

## **Cash Settlement**

The differences between equity and index options occur primarily in the underlying instrument and the method of settlement. Generally, when an index option is exercised by its holder, and when an index option writer is *assigned*, the exercise settlement amount (of cash) will change hands. This is known as *cash settlement*.

## **Purchasing Rights**

Purchasing an index option does not give the investor the right to purchase or sell all of the stocks that are contained in the underlying index. Because an index is simply an intangible, representative number, you might view the purchase of an index option as buying a value that changes over time as market sentiment and prices fluctuate.

An investor purchasing an index option obtains certain rights per the terms of the contract. In general, this includes the right to exercise and receive a specified amount of cash from the writer of a contract with the same terms (if the contract is in-the-money).

## Option Classes

Available strike prices, expiration months and the last trading day can vary with each index option class, a term for all option contracts of the same *type* (*call* or *put*) and style (American or European) that cover the same underlying index. To determine the contract terms for the option class(es) you wish to employ, please contact your brokerage firm.

## Strike Price

The strike price, or *exercise price*, of a cash-settled option is the basis for determining the amount of cash, if any, that the option holder is entitled to receive upon exercise.

## In-the-money, At-the-money, Out-of-the-money

An index call option is *in-the-money* when its strike price is less than the reported level of the underlying index. It is *at-the-money* when its strike price is the same as the level of that index and *out-of-the-money* when its strike price is greater than that level.

An index put option is in-the-money when its strike price is greater than the reported level of the underlying index. It is at-the-money when its strike price is the same as the level of that index and out-of-the-money when its strike price is less than that level.

## Premium

Premiums for index options are quoted like those for equity options, in points and decimal amounts, with one point ordinarily equaling \$100. For example, a quoted premium of \$1.00 equals \$100, \$1.25 equals \$125, \$1.50 equals \$150, \$2.00 equals \$200, etc. An index option buyer will generally pay a total of the quoted premium amount times a multiplier of \$100 for the contract. The writer, on the other hand, will receive and keep this amount.

The amount by which an index option is in-the-money is called its *intrinsic value*. Any amount of premium in excess of intrinsic value is called an

option's *time value*. As with equity options, time value is affected by changes in volatility, time until expiration, interest rates and dividend amounts paid by the component securities of the underlying index.

### **American vs. European Exercise**

Although equity option contracts generally have only *American-style* expirations, index options can have either American- or European-style.

In the case of an American-style option, the holder of the option has the right to exercise it on or at any time before its *expiration date*. Otherwise, the option will expire worthless and cease to exist as a financial instrument. It follows that the writer of an American-style option can be assigned at any time, either at or before the option's expiration, although *early assignment* is not always predictable.

A *European-style* option is one that can only be exercised by its holder during a specified period of time prior to its expiration, and this period may vary with different classes of index options. The writer of a European-style option can be assigned only during this same period. (As of the date of this booklet, every European-style index option traded on options exchanges in the US can be exercised, and assignment made, only on its expiration date.)

### **AM & PM Settlement**

The exercise settlement values of equity index options are determined by their reporting authorities in a variety of ways. The two most common are:

- *PM settlement* - Exercise settlement values are based on the reported level of the index calculated with the last reported prices of the index's component stocks at the close of market hours on the day of exercise.
- *AM settlement* - Exercise settlement values are based on the reported level of the index calculated with the opening prices of the index's component stocks on the day of exercise.

If a particular component security does not open for trading on the day the exercise settlement value is

determined, the last reported price of that security is used.

Investors should be aware that the exercise settlement value of an index option that is derived from the opening prices of the component securities may not be reported for several hours following the opening of trading in those securities. A number of updated index levels may be reported at and after the opening before the exercise settlement value is reported. There could be a substantial divergence between those reported index levels and the reported *exercise settlement value*.

### **Exercise & Assignment**

The exercise settlement value is an index value used to calculate how much money will change hands, the exercise settlement amount, when a given index option is exercised, either before or at expiration. The value of every index underlying an option, including the exercise settlement value, is the value of the index as determined by the reporting authority designated by the market where the option is traded. Unless OCC directs otherwise, the value determined by the reporting authority is conclusively presumed to be accurate and deemed to be final for the purpose of calculating the exercise settlement amount.

If the holder of an index option decides to exercise his right to be paid the exercise settlement amount, he must direct his broker (if an OCC clearing member) to submit an *exercise notice* to OCC. In order to ensure that an index option is exercised on a particular day before expiration, the holder must notify his broker before the broker's cut-off time for accepting exercise instructions on that day. On the last trading day for the option, the cut-off time for exercise may be different from that for an early exercise (before expiration).

*Note: Different firms may have different cut-off times for accepting exercise instructions from customers, and those cut-off times may be different for different classes of options. In addition, the cut-off times for index options may be different from those for equity options.*

OCC will then assign this exercise notice to one or more clearing members with *short positions* in the same *series* in accordance with its established procedures. If the exercise is assigned to a clearing member's customers' account, the clearing member will, in turn, allocate the exercise to one or more of its customers (either randomly or on a first in first out basis) who hold short positions in that series. Upon assignment of the exercise notice, the writer of the index option has the obligation to pay the *exercise settlement amount*. Settlement and the resulting transfer of cash generally occur on the next business day after exercise.

*Note: Firms may require their customers to notify the firm of the customer's intention to exercise, even if an option is in-the-money. You should ask your firm to thoroughly explain its exercise procedures, including any deadline your firm may have for exercise instructions on the last trading day before expiration.*

## **Exercise Settlement**

The amount of cash received upon exercise of an index option or when it expires depends on the exercise settlement value of the underlying index in comparison to the strike price of the index option. The amount of cash changing hands is called the exercise settlement amount. This amount is calculated as the difference between the strike price of the option and the level of the underlying index reported as its exercise settlement value, in other words, the option's intrinsic value, and is generally multiplied by \$100. This calculation applies whether the option is exercised before or at its expiration.

In the case of a call, if the underlying index value is above the strike price, the *holder* may exercise the option and receive the exercise settlement amount. For example, with the settlement value of the index reported as 79.55, the holder of a long call contract with a 78 strike price would exercise and receive \$155  $[(79.55 - 78) \times \$100 \text{ multiplier} = \$155]$ . The writer of the option would pay the holder this cash amount.

In the case of a put, if the underlying index

value is below the strike price, the holder may exercise the option and receive the exercise settlement amount. For example, with the settlement value of the index reported as 74.88, the holder of a long put contract with a 78 strike price would exercise and receive \$312  $[(78 - 74.88) \times \$100 \text{ multiplier} = \$312]$ . The writer of the option would pay the holder this cash amount.

## Closing Transactions

As with equity options, an index option writer wishing to close out his position buys a contract with the same terms in the marketplace. Provided that an exercise notice has not been assigned, an index option writer may effect a closing transaction in order to terminate his obligations. To close out a *long position*, the purchaser of an index option may either sell the contract in the marketplace or exercise it if profitable to do so.

# Basic Strategies

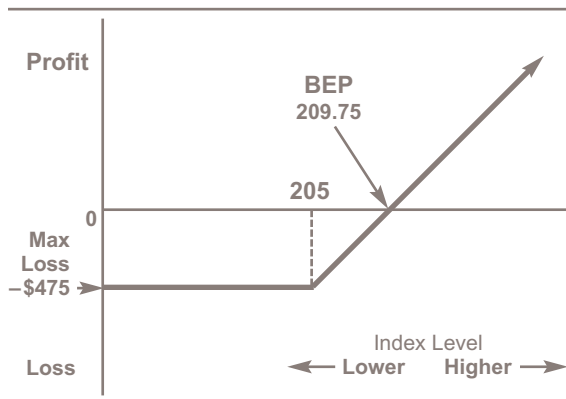
The versatility of index options stems from the variety of strategies available to the investor. The most basic uses of index options are explained in the following examples. These examples are based on hypothetical situations and should only be considered as examples of potential trading approaches. Other strategies that might be used with equity options, such as spreads and straddles, can be employed with index options. For more detailed explanations, contact your brokerage firm or the exchanges where index options are traded.

*Note: For purposes of illustration, commission and transaction costs, tax considerations and the costs involved in margin accounts have been omitted from the examples in this booklet. These factors will affect a strategy's potential outcome, so always check with your brokerage firm*

and tax advisor before entering into any of these strategies. The index option positions in all of the following examples are shown to be held until expiration. The premiums are intended to be reasonable, but in reality will not necessarily exist at or prior to expiration for a similar option.

## Buying Index Calls

### Long Index Call



Market outlook: Bullish over the short term

Goal: Positioning to profit from an increase in the level of the underlying index

You are anticipating an advance in the broad market or market sector measured by the underlying index in the near future. You want to take an aggressive position that can provide a great deal of leverage. This decision is made with the understanding that there is a possibility you may lose the entire premium you pay for the option.

An index call option gives the purchaser the right to participate in underlying index gains above a predetermined strike price until the option expires. The purchaser of an index call option has unlimited profit potential tied to the strength of advances in the underlying index.

### Scenario

Assume the underlying index that interests you is symbolized as XYZ and is currently at a level of 200. You decide to purchase a 6-month XYZ 205 call for a quoted price of \$4.75 per contract. Your

net cost for this call is \$475 ( $\$4.75 \times \$100$  multiplier). You are risking \$475 if the underlying index level is not above the strike price of 205 when the XYZ call expires. The break-even point (BEP) at expiration is an XYZ index level of 209.75 (strike price 205 + premium paid \$4.75) because the call will be worth its intrinsic value of \$4.75, which is what you originally paid for it. The higher the XYZ index settlement value is above the break-even point at expiration, the greater your profit.

### Possible Outcomes at Expiration

#### 1. XYZ index level above the break-even point (209.75):

If at expiration XYZ index has advanced to 215, the XYZ 205 call will be worth its intrinsic value of \$10 (settlement value 215 – strike price 205). Your net profit in this case would be \$525 (settlement amount \$1000 received from exercise – net cost of call \$475).

### Buy XYZ Index 205 Call at \$4.75

with Index at 200

Net Cost for Call = \$475

Level of XYZ index at expiration	XYZ index declines to 198 (below strike)	XYZ index advances to 207 (between strike and BEP)	XYZ index advances to 215 (above BEP)
Move in level of index	-2 pts.	+7 pts.	+15 pts.
Value of call at expiration (per contract)	0 (out-of-the money)	\$2	\$10
Less premium paid for call (per contract)	\$4.75	\$4.75	\$4.75
Net profit/loss* (per contract x \$100)	-\$475	-\$275	+\$525

\*Exclusive of commissions, transaction costs and taxes.

#### 2. XYZ index level between strike price (205) and break-even point (209.75):

If at expiration XYZ index has advanced to 207,

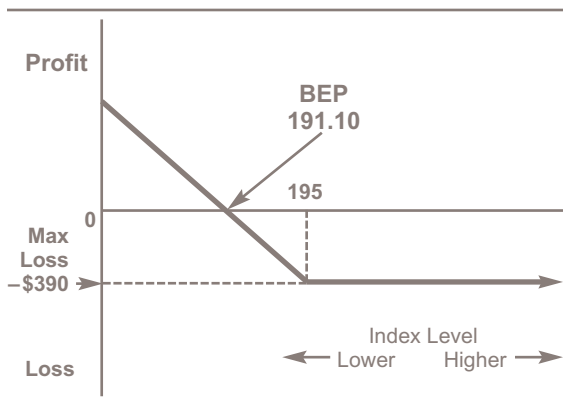
the XYZ 205 call will be worth its intrinsic value of \$2 (settlement value 207 – strike price 205). You could exercise the option and receive the settlement amount of \$200 (\$2 intrinsic value x \$100 multiplier). This amount would be less than the net amount paid for the call (\$475), but it would offset some of that cost. The net loss in this case would be \$275 (net cost of call \$475 – settlement amount \$200 received from exercise). This loss represents a little more than half of your initial investment.

### 3. XYZ index level below strike price (205):

If at expiration XYZ index has declined to 198, the call would have no value because it is out-of-the-money. You will have lost all of your initial investment, a net of \$475. The net premium paid for an index option represents the maximum loss for an option purchaser. **Note:** *No matter how far XYZ declines below the strike price, the loss will not exceed \$475.*

## Buying Index Puts

### Long Index Put



Market outlook: Bearish over the short term

Goal: Positioning to profit from a decrease in the level of the underlying index

You are anticipating a decline in the broad market or market sector measured by the underlying index in the near future. You want to take an aggressive position that can provide a great deal of leverage.

This decision is made with the understanding that there is a possibility you may lose the entire premium you pay for the option.

An index put option gives the purchaser the right to participate in underlying index declines below a predetermined strike price until the option expires. The purchaser of an index put option has substantial profit potential tied to the degree of declines in the underlying index.

### **Scenario**

Assume the underlying index that interests you is symbolized as XYZ and is currently at a level of 200. You decide to purchase a 6-month XYZ 195 put for a quoted price of \$3.90 per contract. Your net cost for this call is \$390 ( $\$3.90 \times \$100$  multiplier). You are risking \$390 if the underlying index level is not below the strike price of 195 when the XYZ put expires. The break-even point (BEP) at expiration is an XYZ index level of 191.10 (strike price 195 – premium paid \$3.90) because the put will be worth its intrinsic value of \$3.90, which is what you originally paid for it. The lower the XYZ index settlement value is below the break-even point at expiration, the greater your profit.

### **Possible Outcomes at Expiration**

#### *1. XYZ index level below the break-even point (191.10):*

If at expiration XYZ index has declined to 185, the XYZ 195 put will be worth its intrinsic value of \$10 (strike price 195 – settlement value 185). Your net profit in this case would be \$610 (settlement amount \$1000 received from exercise – net cost of put \$390).

#### *2. XYZ index level between strike price (195) and break-even point (191.10):*

If at expiration XYZ index has declined to 193, the XYZ 195 put will be worth its intrinsic value of \$2 (strike price 195 – settlement value 193). You could exercise the option and receive the

settlement amount of \$200 (\$2 intrinsic value x \$100 multiplier). This amount would be less than the net amount paid for the put (\$390), but it would offset some of that cost. The net loss in this case would be \$190 (net cost of put \$390 – settlement amount \$200 received from exercise). This loss represents a little less than half of your initial investment.

### 3. XYZ index level above strike price (195):

If at expiration XYZ index has advanced to 202, the put would have no value because it is out-of-the-money. You will have lost all of your initial investment, a net of \$390. The net premium paid for an index option represents the maximum loss for an option purchaser.

*Note: No matter how far XYZ advances above the strike price, the loss will not exceed \$390.*

### Buy XYZ Index 195 Put at \$3.90 with Index at 200 Net Cost for Put = \$390

Level of XYZ index at expiration	XYZ index advances to 202 (above strike)	XYZ index declines to 193 (between strike and BEP)	XYZ index declines to 185 (below BEP)
Move in level of index	+2 pts.	-7 pts.	-15 pts.
Value of put at expiration (per contract)	0 (out-of-the money)	\$2	\$10
Less premium paid for put (per contract)	\$3.90	\$3.90	\$3.90
Net profit/loss* (per contract x \$100)	-\$390	-\$190	+\$610

\*Exclusive of commissions, transaction costs and taxes.

# Index Options Glossary

**American-style option:** An option contract that may be exercised at any time between the date of purchase and the expiration date.

**AM settlement:** A settlement style in which the exercise settlement values of options are based on the reported level of the index derived from the opening prices of the component securities on the day of exercise.

**Assignment (Assigned):** The allocation of an exercise notice to an index option writer (seller) that obligates him to pay (in the case of a call or put) the cash settlement amount for a particular index option if it is exercised by its holder.

**At-the-money:** An index option is at-the-money if the strike price of the option is equal to the current level of the underlying index.

**Broad-based index:** An index that measures moves in broad, diverse markets. See **Index**.

**Call:** An index option contract that gives the holder the right to receive, upon exercise of the option, the cash settlement amount for a fixed period of time.

**Capitalization-weighted index:** An equity index constructed so that more highly capitalized issues are weighted more heavily than the lesser-capitalized components. Changes in the stock price of highly capitalized issues have a greater impact on the index's value.

**Cash settlement:** The process by which the terms of an index option contract are fulfilled through the payment or receipt in dollars of the amount by which the option is in-the-money, as opposed to delivering or receiving the underlying instrument.

**Class of options:** Option contracts of the same type (call or put) and style that cover the same underlying index.

**Closing purchase:** A transaction in which the purchaser's intention is to reduce or eliminate a short position in a given series of options.

**Closing sale:** A transaction in which the seller's intention is to reduce or eliminate a long position in a given series of options.

**Component securities:** Securities whose prices are used to calculate a given index.

**Early exercise (or assignment):** Exercise of an option by its holder, or an assignment of an exercise notice to an option writer, on a day before the option expires.

**Equal dollar-weighted index:** An equity index which assigns equivalent influence to each component stock by representing them in approximate equal-dollar amounts. These indexes are typically re-balanced to ensure that the components continue to have equal influence.

**Equity index option:** An option whose underlying instrument is an index. Generally, index options are cash-settled.

**Equity options:** Options on shares of an individual common stock or exchange traded fund.

**European-style option:** An option contract that may be exercised only during a specified period of time just prior to its expiration.

**Exercise:** To implement the right under which the holder of an option is entitled to receive (in the case of a call or a put) the contract's exercise settlement amount for a particular index option.

**Exercise cut-off time:** A deadline by which an investor must notify his brokerage firm, or a clearing member to notify OCC of intention to exercise a long option contract. An individual investor must adhere to his brokerage firm's predetermined cut-off time.

**Exercise notice:** A notice submitted to OCC by clearing members to reflect their desire to exercise an option contract.

**Exercise price:** See **Strike price**.

**Exercise settlement amount:** The difference between the exercise price of the option and the exercise settlement value of the index on the day an exercise notice is tendered, multiplied by the index multiplier.

**Exercise settlement value:** The price level of an underlying equity index used to calculate the cash settlement amount.

**Expiration date:** The day on which an option contract becomes void. All holders of options must indicate their desire to exercise, if they wish to do so, by this date.

**Expiration cut-off time:** The time of day by which all exercise notices must be received on the last trading day. An individual investor must adhere to his brokerage firm's predetermined cut-off time.

**Holder:** The purchaser of an option.

**Index:** A compilation of several stock prices into a single number used as a benchmark against which financial or economic performance is measured.

**Index option:** An option contract that has an equity index as its underlying instrument.

**In-the-money:** An index call option is in-the-money if the strike price is less than the current level of the underlying index. An index put option is in-the-money if the strike price is greater than the current level of the underlying index.

**Intrinsic value:** The amount by which an option is in-the-money.

**Long position:** A position wherein an investor's interest in a particular series of options is as a net holder (i.e., the number of contracts bought exceeds the number of contracts sold).

**Margin requirement (for options):** For customer level margin, the amount an option writer is required to deposit and maintain with his broker to cover a position. The margin requirement is calculated daily.

**Narrow-based index:** An index that measures specific industry sectors of the marketplace. See **Index**.

**Opening purchase:** A transaction in which the purchaser's intention is to create or increase a long position in a given series of options.

**Opening sale:** A transaction in which the seller's intention is to create or increase a short position in a given series of options.

**Out-of-the-money:** An index call option is out-of-the-money if the strike price is greater than the level of the underlying index. A put option is out-of-the-money if the strike price is less than the level of the underlying index.

**PM settlement:** A settlement style in which the exercise settlement values of options are based on the reported level of the index derived from the last reported prices of the component securities of the index at the close of market hours on the day of exercise.

**Premium:** The price of an option contract, as determined in the competitive marketplace, which the buyer of the option pays to the option writer for the rights conveyed by the option contract.

**Put:** An index option contract that gives the holder the right to receive, upon exercise of the option, the cash settlement amount for a fixed period of time.

**Sector:** A distinct subset of a market, industry, or economy, whose components share similar characteristics.

**Series:** All options of the same class that have the same strike price and expiration date.

**Short position:** A position wherein an investor's interest in a particular series of options is as a net writer (i.e., the number of contracts sold exceeds the number of contracts bought).

**Stock index option:** See **Equity index option**

**Strike price:** The strike price (or exercise price) of a cash-settled option is the base for the determination of the amount of cash (exercise settlement amount), if any, that the option holder is entitled to receive upon exercise.

**Time value:** The portion of the option premium that is attributable to the amount of time remaining until the expiration of the option contract. Time value is the amount of premium in excess of intrinsic value.

**Type:** The classification of an option contract as either a put or a call.

**Underlying index:** The equity index on which a class of index options is based.

**Volatility:** A measure of the fluctuation in the price level of the underlying index. Mathematically, volatility is the annualized standard deviation of returns.

# For More Information

## **BATS Options Exchange**

[www.batsoptions.com](http://www.batsoptions.com)

## **BOX Options Exchange**

[www.bostonoptions.com](http://www.bostonoptions.com)

## **Chicago Board Options Exchange**

[www.cboe.com](http://www.cboe.com)

## **C2 Options Exchange**

[www.c2exchange.com](http://www.c2exchange.com)

## **International Securities Exchange**

[www.ise.com](http://www.ise.com)

## **NASDAQ OMX PHLX**

[www.nasdaqtrader.com](http://www.nasdaqtrader.com)

## **NASDAQ Options Market**

[www.nasdaqtrader.com](http://www.nasdaqtrader.com)

## **NYSE Amex Options**

[www.nyse.com](http://www.nyse.com)

## **NYSE Arca Options**

[www.nyse.com](http://www.nyse.com)

## **OCC**

[www.optionsclearing.com](http://www.optionsclearing.com)

## **The Options Industry Council**

[www.OptionsEducation.org](http://www.OptionsEducation.org)

# Notes

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