Nasdaq

Understanding Options

Imagine a baseball team has the right to extend a player's contract for another year at an agreed-upon salary. This is known as an option. And a team might choose to 'exercise' an option if they think a certain player is a good fit for the coming season—and if they think the price is right.

But options aren't limited to sports; they're also widely used in financial markets as they provide versatile instruments that can be used in numerous trading and investment strategies.

What are Options?

An option is a type of financial contract. The contract provides the holder with the right, but not the requirement, to buy or sell an underlying asset at a specific price known as the **strike price**. This transaction can occur either up until or on a certain date, which is known as the **expiration date**.

Options form part of a larger group of financial instruments named derivatives, as their price is derived from another asset called the **underlying asset** or **underlying security**. Examples of these assets can range from stocks and bonds, market indices, foreign currencies, to commodities like gold or oil.

Calls and Puts, Defined

There are two primary kinds of options: call options and put options. When investors believe that the price of the asset will increase, they generally purchase a **call option**. This provides them with the right to buy the asset. On the other hand, **a put option** gives the holder the right to sell the asset. Investors typically acquire this when they foresee a decline in the asset's price.

Options contracts are essentially bets on future events. They act as financial tools allowing investors to potentially benefit from market volatility, or alternatively, to insulate themselves against possible losses. Investors can achieve this by opting for 'long' or 'short' stances when dealing with call and put options.

When an investor takes a "**long**" position in options, they're buying an options contract with the right, but not the obligation, to buy (in case of a call option) or sell (in case of a put option) the underlying asset at a specified price before the option's expiration date.

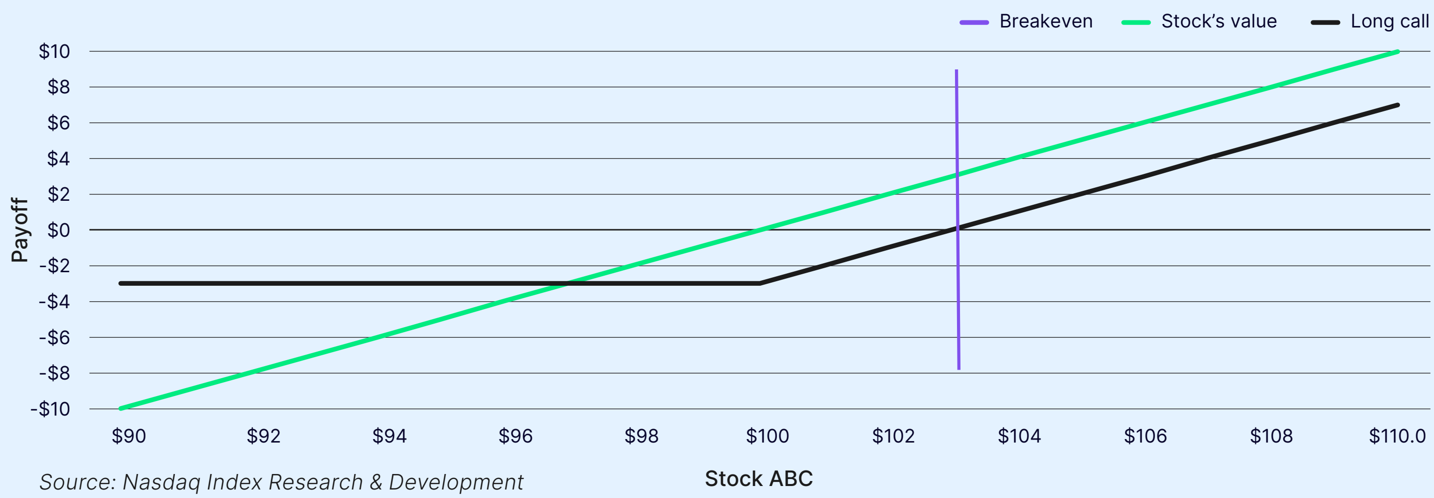
- ↑ A **long call**: Right to buy; typically used when the price of the underlying asset is expected to increase
- ↓ A **long put**: Right to sell; typically used when the price of the underlying asset is expected to decrease

On the other hand, a "**short**" position in options means the investor is selling an options contract. The seller of an option has the obligation to sell (for a call option) or buy (for a put option) the underlying asset if the buyer chooses to exercise the option.

- ↑ A **short call**: Obligation to sell; typically used when the price of the underlying asset is not expected to rise significantly
- ↓ A **short put**: Obligation to buy; typically used when the price of the underlying asset is not expected to fall considerably

Long Call Payoff

Based on stock purchase of $100, strike of $100, and call premium of $3

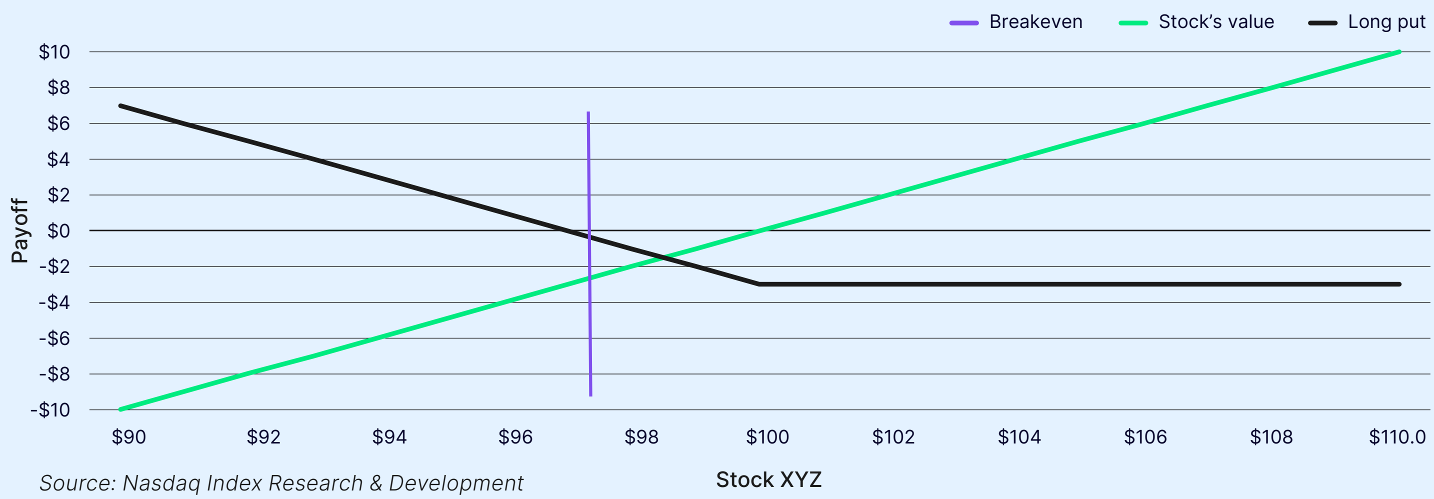


Source: Nasdaq Index Research & Development

In this situation, an investor has acquired a call option at a strike price of $100, paying a premium of $3. If the value of the Stock ABC surpasses $103, the investor stands to gain by exercising their option. Conversely, if the Stock ABC’s price doesn’t cross $103, the investor can opt not to exercise the option, limiting their potential loss to the spent premium of $3.

Long Put Payoff

Based on stock purchase of $100, strike of $100, and call premium of $3



Source: Nasdaq Index Research & Development

In this example, an investor has bought a long put option on Stock XYZ with a strike price of $100, paying a premium of $3. If the value of Stock XYZ dips below $97 (strike price minus premium), the investor stands to make a profit by exercising the option; they can sell Stock XYZ at the higher strike price of $100. However, if the market price of Stock XYZ stays above $97, it wouldn’t be advantageous for the investor to exercise the option. In such a case, their maximum loss is the $3 premium paid.

Listed Exchanges vs. Over The Counter Options (And Why The 'Where' Matters)

Options are traded in two basic venues: on listed exchanges, and Over The Counter ("OTC").

Much like shares are traded on stock exchanges, options contracts are bought and sold on **listed exchanges**. The Nasdaq Stock Exchange is a prime example of this, hosting one of the world's most extensive options trading platforms alongside its globally recognized stock market operations.

One key advantage of listed exchange-traded calls and puts is the guarantee provided by a central clearinghouse. This entity commits to fulfill the obligations of an option contract should any party default on their commitments.

Alternatively, there's the **over-the-counter (OTC)** market, which is also referred to as off-exchange trading. An OTC is a decentralized marketplace where the trading of financial instruments such as stocks, commodities, currencies, or derivatives transpires directly between two parties. OTC markets do not have a physical location and trading occurs via a network of dealers.

One key characteristic of OTC markets is the opportunity for customization. OTC transactions can be tailored to fit specific needs, offering a higher degree of flexibility than standardized products traded on an exchange. However, this customization can lead to increased risk due to less regulatory oversight, greater reliance on counterparty creditworthiness, and lower liquidity compared to exchange-traded securities.

Why Investors Use Options

Different market participants use options for different objectives.

Some use options for the purpose of **speculation**—seeking to profit from anticipated moves in the price of a financial asset. Options can be attractive for speculative purposes due to their inherent leverage because option prices can fluctuate far more than the 'underlying' asset.

Others use options to **hedge market risk**. For example, an equity investor worried about a sharp market correction may not wish to sell their portfolio, but they can buy a put option that may end up cushioning the blow if the market indeed tumbles.

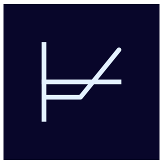
Some investors use options to **generate income**. Selling a call option, for example, can be profitable if the underlying asset declines during the term of the option—or even stays flat.

Understanding the Risks and Rewards of Options

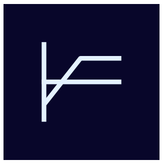
As with every investment, there are potential risks and rewards with options that must be considered. In the case of an option buyer, the risk is that the market doesn't cooperate. Should this happen, the option will expire worthless, and the buyer will lose the amount they paid for the option (i.e. the premium).

Option sellers, on the other hand, can expose themselves theoretically to unlimited risk if the market goes against them. Note that this is only the case when the seller is unhedged.

Common Options Strategies



Buying a "**protective put**" is somewhat akin to buying term insurance on an investment. An investor might buy a protective put when they don't want to sell a long-term holding but fear it may decline in the short to medium term.

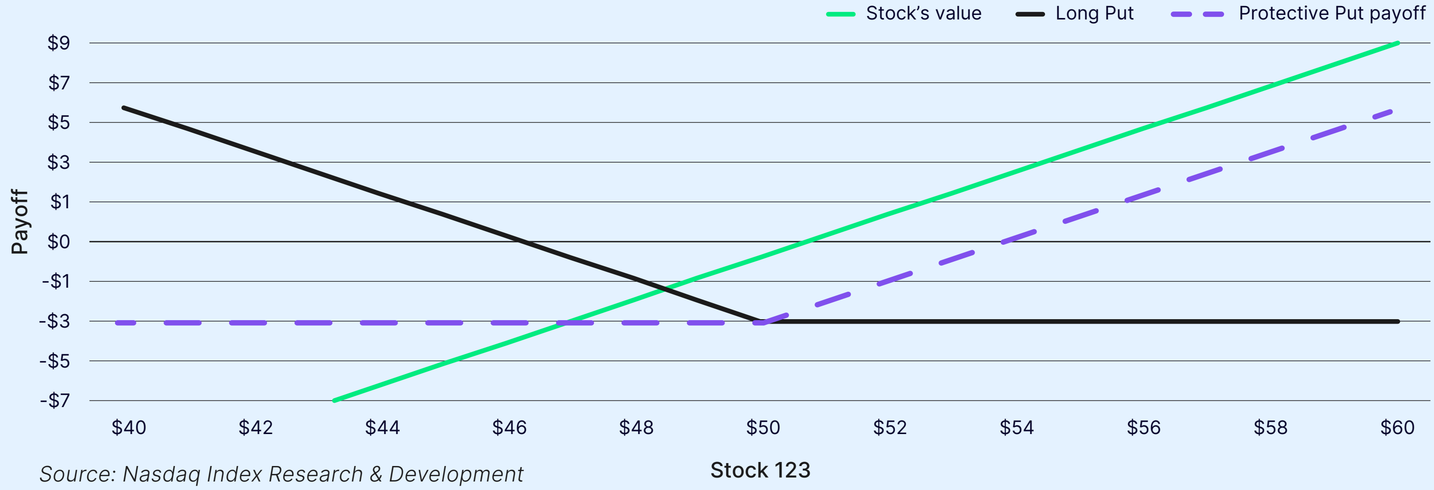


A **covered call strategy** is a popular way of generating income by selling (also known as "writing") call options on a stock or asset that is owned (hence the term 'covered')— this strategy has a risk that the underlying holdings may get called away if the option is in the money. The upside to this strategy is that risk is defined, and options often expire worthless.

Option straddles involve buying both calls and puts and attempting to profit from increases in implied volatility. Implied volatility is a measure of how much the market expects the price of a security to fluctuate in the future. Buying a straddle is a strategy that can pay off if there is a big move in a security before the options expire.

Protective Put Payoff

Based on stock purchase of $50, strike of $50, and put price of $3

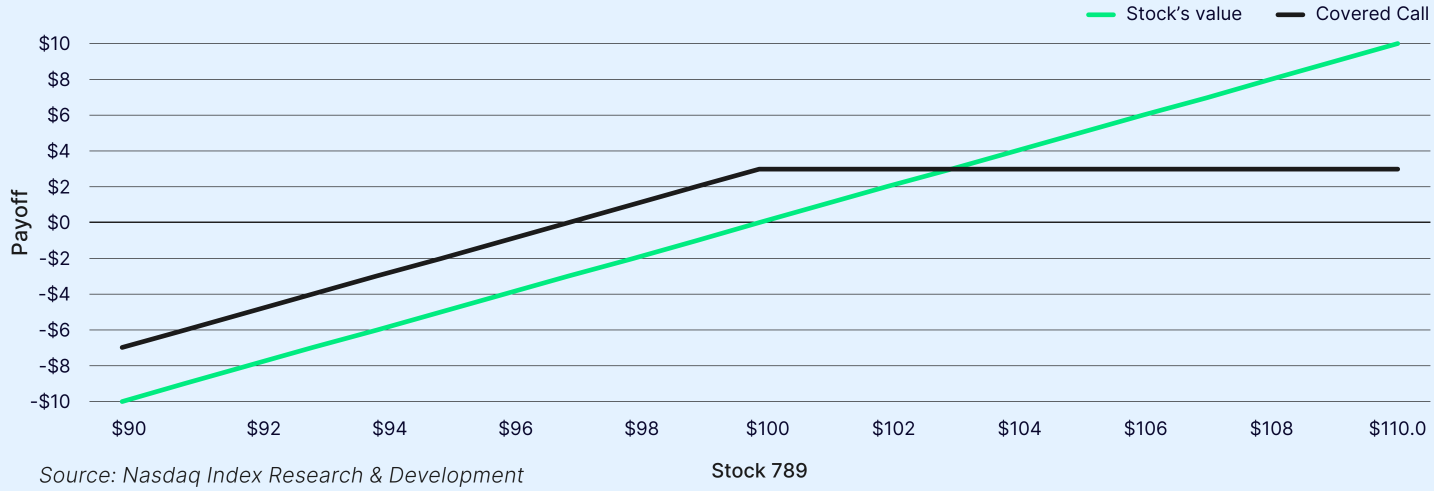


Source: Nasdaq Index Research & Development

In this example, an investor has placed a protective put on Stock 123 at a strike price of $50, at a $3 premium. If Stock 123's price remains above $50 at expiry, the put option expires worthless, and the investor loses the premium paid ($3), but profits from any rise in the stock's value, effectively making their investment cost $53 per share. If the stock's price falls below $50, the put option provides downside protection as it can be exercised to sell the stock at $50 per share, regardless of a lower market price. The maximum loss yet is confined to the premium paid of $3 per share. Thus, the Protective Put strategy limits losses – even amidst unfavorable market conditions – to the premium paid, while still allowing for upside potential.

Covered Call Payoff

Based on stock purchase of $100, strike of $100, and call premium of $3



Source: Nasdaq Index Research & Development

In this example, an investor has executed a covered call on Stock 789 with a strike price of $100, paying a premium of $3. If the stock price remains under $100 at expiry, the option expires worthlessly, allowing the investor to retain the $3 premium, effectively reducing the original stock investment cost. However, should Stock 789's price surpass $100, the call buyer can acquire the stock from the investor at the strike price, capping the investor's profit at $100 plus the earned premium. This approach provides additional income through premiums and protection against minor stock price declines, yet limits potential maximum gains.

The Interplay Between Options and Indexes

Investors can use index options for the purpose of speculating on the direction of the index or as a risk management tool. They can also use both puts and calls for the purpose of generating income.

Movements in the value of an index will have a direct impact on the price of options linked to the index. For example, call options on the Nasdaq 100 Index® will generally increase if the index rises. Similarly, put options on the Nasdaq 100 Index® will tend to rise if the index declines.

Conclusion

Options connect market participants who wish to speculate, with those who want to hedge or generate income. They provide an important risk-taking and risk-management function in financial markets.

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