Lesson 13: International Options Markets.

International options markets are financial exchanges that enable traders to buy or sell options contracts on stocks, indices, commodities, and other financial instruments. Options contracts give traders the right, but not the obligation, to buy or sell the underlying asset at a specific price (strike price) on or before a specified date (expiration date). The international options market provides traders with the ability to hedge risk and speculate on future price movements of the underlying assets.

There are several options markets around the world, and some of the largest and most well-known are the Chicago Board Options Exchange (CBOE), the European Options Exchange (Eurex), and the Hong Kong Options Exchange (HKEX). Each market has its own trading hours, rules, and regulations, and traders must adhere to these requirements to participate in trading.

One of the most significant advantages of international options markets is the ability to trade around the clock, thanks to the global nature of these markets. Traders can access options trading at any time of day, which is especially important for those who operate in different time zones or who need to react quickly to market news or events.

Another key advantage of international options markets is the ability to trade a wide range of underlying assets. Options are available on a broad range of stocks, indices, commodities, and other financial instruments, providing traders with an extensive choice of assets to trade.

However, with the benefits of international options markets come some risks. The most significant risk is the potential for losses, which can occur if the underlying asset price moves in an unfavorable direction. Traders must manage their risks carefully and employ appropriate strategies to minimize their losses.

In summary, international options markets provide traders with an opportunity to trade options contracts on a wide range of underlying assets around the clock. However, traders must be aware of the risks associated with trading options and employ appropriate risk management strategies to protect themselves against losses.

The different types of financial options in the derivative markets:

Financial options are contracts that give the holder the right, but not the obligation, to buy or sell an underlying asset at a predetermined price within a specified time frame. Options are an essential tool for traders and investors to manage their risk exposure and speculate on price movements in the financial markets.

There are two main types of financial options: call options and put options.

1. **Call options**: A call option gives the holder the right, but not the obligation, to buy an underlying asset at a predetermined price (strike price) within a specific time frame (expiration date). Call options are typically used when a trader or investor expects the price of the underlying asset to rise. For example,

if an investor holds a call option on a stock with a strike price of $50 and the stock price rises to $60, the investor can exercise the option and buy the stock at the lower strike price of $50 and sell it at the higher market price of $60.

Some exercises about call options along with solutions:

Exercise 1: You buy a call option on XYZ stock with a strike price of $50 for $2 per share. The option has an expiration date in three months. What is your breakeven price and maximum profit potential if the stock price at expiration is $60?

Solution: Your breakeven price for the call option is the strike price plus the premium paid. So, the breakeven price is $50 + $2 = $52 per share. Your maximum profit potential is the difference between the stock price at expiration and the strike price, minus the premium paid. So, your maximum profit potential is ($60 - $50) - $2 = $8 per share.

Exercise 2: You sell a call option on ABC stock with a strike price of $75 for $3 per share. The option has an expiration date in two months. What is your breakeven price and maximum loss potential if the stock price at expiration is $80?

Solution: As the seller of the call option, your breakeven price is the strike price plus the premium received. So, your breakeven price is $75 + $3 = $78 per share. Your maximum loss potential is unlimited since the stock price can continue to rise beyond $80, and you are obligated to sell the shares at the strike price of $75. However, your loss is reduced by the premium received of $3 per share.

Exercise 3: You buy a call option on DEF stock with a strike price of $100 for $5 per share. The option has an expiration date in six months. The stock price at expiration is $95. What is your breakeven price and maximum loss potential?

Solution: Since the stock price at expiration is lower than the strike price, the call option expires worthless. Your breakeven price for the call option is the strike price plus the premium paid. So, the breakeven price is $100 + $5 = $105 per share. Your maximum loss potential is the premium paid of $5 per share, since the option expired out of the money.

2. **Put options**: A put option gives the holder the right, but not the obligation, to sell an underlying asset at a predetermined price (strike price) within a specific time frame (expiration date). Put options are typically used when a trader or investor expects the price of the underlying asset to fall. For example, if an investor holds a put option on a stock with a strike price of $50 and the stock price falls to $40, the investor can exercise the option and sell the stock at the higher strike price of $50 instead of the lower market price of $40.

some exercises along with solutions about put options:

Exercise 1: Basic Put Option Pricing Suppose you want to buy a put option on a stock that is currently trading at $50 per share. The strike price of the put option is $45, and the option has a premium of $3. Calculate the total cost of the put option, the breakeven price of the stock, and the maximum profit that can be earned.

Solution: The total cost of the put option is the sum of the premium and the strike price, which is $45 + $3 = $48. The breakeven price of the stock is the strike price minus the premium, which is $45 - $3 = $42. The maximum profit that can be earned is the strike price minus the breakeven price, which is $45 - $42 = $3.

Exercise 2: Put Option Payoff Suppose you bought a put option with a strike price of $100 and a premium of $5. The stock price at expiration is $90. Calculate your profit or loss.

Solution: Since the stock price is below the strike price, the put option is in-the-money. The profit is calculated as follows:

Profit = Strike price - Stock price - Premium Profit = $100 - $90 - $5 Profit = $5

Therefore, the profit is $5.

Exercise 3: Put Option Hedging Suppose you own 100 shares of stock in XYZ company, which is currently trading at $50 per share. You are worried about a possible downturn in the market and decide to buy put options as a hedge. You buy one put option with a strike price of $45 and a premium of $3. Calculate the total cost of the put option, the breakeven price of the stock, and the maximum loss that can be incurred.

Solution: The total cost of the put option is the premium multiplied by the number of shares, which is $3 x 100 = $300. The breakeven price of the stock is the stock price minus the premium divided by the number of shares, which is ($50 - $3) / 100 = $0.47. The maximum loss that can be incurred is unlimited, as the stock price could continue to decline below the strike price.

Exercise 4: Put Option Spreads Suppose you sell a put option with a strike price of $40 and a premium of $3, and at the same time, you buy a put option with a strike price of $35 and a premium of $1. Calculate the total credit received, the breakeven price of the stock, and the maximum loss that can be incurred.

Solution: The total credit received is the difference between the premium received for the sold put option and the premium paid for the bought put option, which is $3 - $1 = $2. The breakeven price of the stock is the strike price of the sold put option minus the credit received, which is $40 - $2 = $38. The maximum loss that can be incurred is the difference between the strike price of the bought put option and the breakeven price of the stock, minus the credit received, which is ($35 - $38) - $2 = -$5. This means that the maximum loss that can be incurred is $5, but this would only happen if the stock price falls below $35 at expiration.

In addition to call and put options, there are also several other types of financial options that traders and investors can use to manage their risk exposure and speculate on market movements. These include:

3. **American options:** American options can be exercised at any time before the expiration date, making them more flexible than European options.
4. **European options:** European options can only be exercised on the expiration date, making them less flexible than American options.
5. **Asian options:** Asian options are settled based on the average price of the underlying asset over a specific time period, rather than the price at a specific point in time.
6. **Barrier options**: Barrier options have a predetermined price barrier that, if reached, will automatically trigger the option to be exercised or expire.
7. **Binary options:** Binary options have a fixed payout if the underlying asset price is above or below a predetermined price level at expiration.

In summary, financial options are contracts that give the holder the right, but not the obligation, to buy or sell an underlying asset at a predetermined price within a specified time frame. The two main types of options are call options and put options, but there are also several other types of options available to traders and investors, including American options, European options, Asian options, barrier options, and binary options.