FRM Part 1

Book 3 - Financial Markets and Products

TRADING STRATEGIES INVOLVING OPTIONS

Learning Objectives

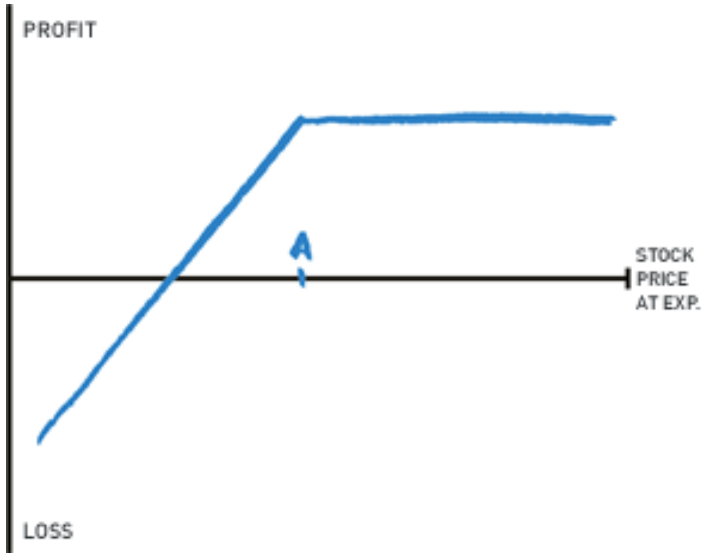
After completing this reading you should be able to:

- ✓ Explain the motivation to initiate a **covered call** or a **protective put** strategy.
- ✓ Describe the use and calculate the **payoffs of various spread strategies**.
- ✓ Describe the use and explain the payoff functions of **combination strategies**.

Covered Call

- A covered call describes a trading strategy where the **seller (writer) of a call option also owns the underlying stock**.
- The holder of a covered call can **only profit** on the stock **up to the strike price** of the options contract.
  - The maximum profit is capped at:

$$(Strike\ Price - Purchase\ Price) + Option\ Premium\ Received$$



Covered Call

- The **maximum loss** a covered call holder can incur is equal to:

$$(Purchase\ Price - \$0) - Option\ Premium\ Received$$

- That could theoretically happen when the stock drops to $0.

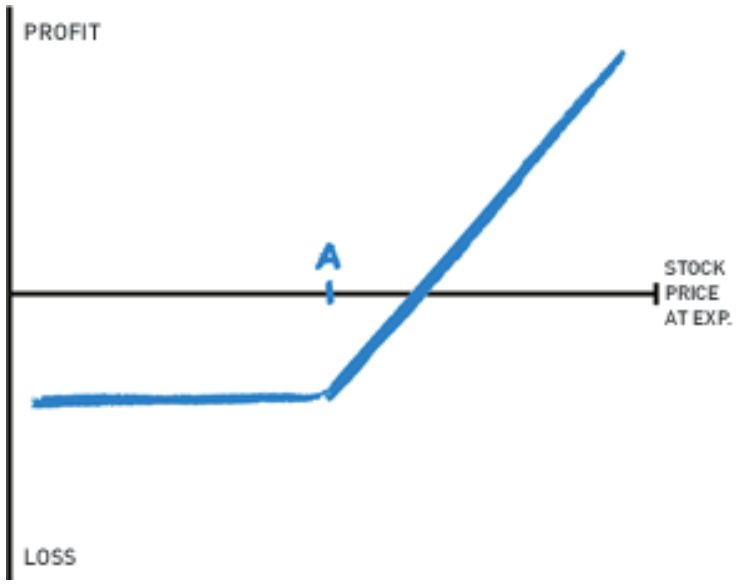
➢ For these reasons, a covered position is taken up to **generate cash** (the premium received) on a stock that is **not expected to increase above the exercise price** over the life of the option.

Protective Put

- A protective put is a **hedging strategy** where the holder of a security buys a put to **protect themselves against a drop in the stock price** of that security.
- A protective put has **unlimited profit potential** and limited losses.

  - **Max Profit** = Unlimited
  - **Max Loss** = Premium Paid + Purchase Price of Underlying – Put Strike

- A protective put is taken by bullish investors **worried about near-term uncertainties** on a stock.



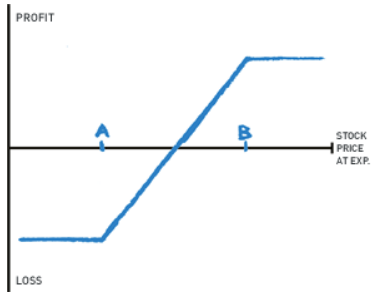
Payoffs of Various Spread Strategies

- Spread strategies include:

I. **Bull Spread** - A bull spread is a bullish options strategy designed to take advantage of a **moderate rise in the price of the underlying in the near term**.

  - In a bull call spread, the bullish trader **buys a call with a lower strike price** and simultaneously sells a call with a higher strike price.
  - Being bullish, the buyer of a bull call spread expects the price of the underlying stock to **rise but remain below the strike of the short call**.

Buy 1 ABC 100 call at	(5.5$)
Sell 1 ABC 105 call at	$2.0
Net Cost	($3.5)



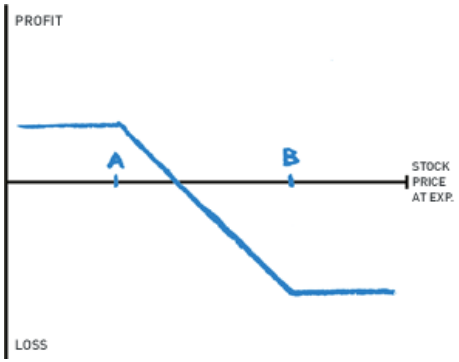
  - Max Profit = (Difference between the two strike prices) - Premium
  - Max loss = Net premium
  - **Note**: Bull spreads can be achieved using call **or** put options. However, the expiration date, as well as the underlying asset, must be the same for both positions.

Payoffs of Various Spread Strategies

- Spread strategies include:

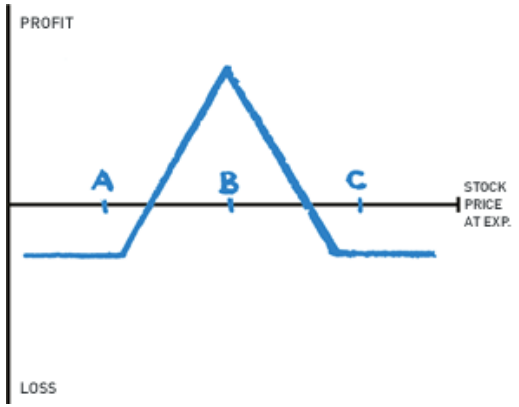
II. **Bear Spreads** – This is simply the inverse of the bull spread:

  - Again, it can be achieved by using either call or put options.



II. **Butterfly spreads** - A butterfly spread is a **neutral**, limited risk strategy that involves a combination of various bull spreads and bear spreads.

  - It's the combination of **4 options**.
  - The trader has reason to believe the underlying asset will **not move** too far away from the current price.



Payoffs of Various Spread Strategies

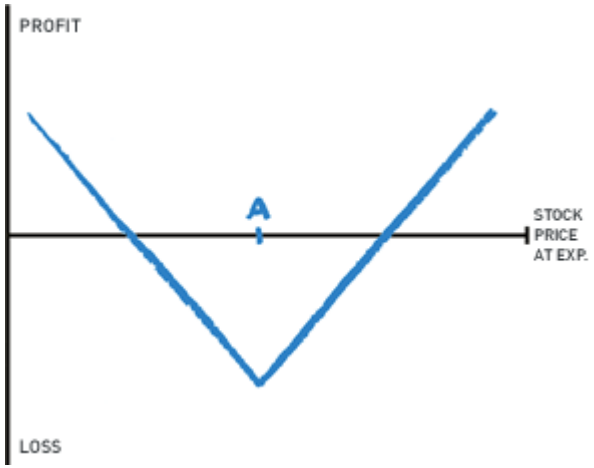
- Spread strategies include:

IV. **Calendar spreads** - A calendar spread is a trading strategy set up by simultaneously entering a long and a short position on the same underlying asset and at the same strike price, but **with different months to expiration**.
    - The holder **profits from the passage of time** or increase in the underlying's implied volatility.
    - As in a butterfly spread, the holder also believes the stock will have a **narrow range**.

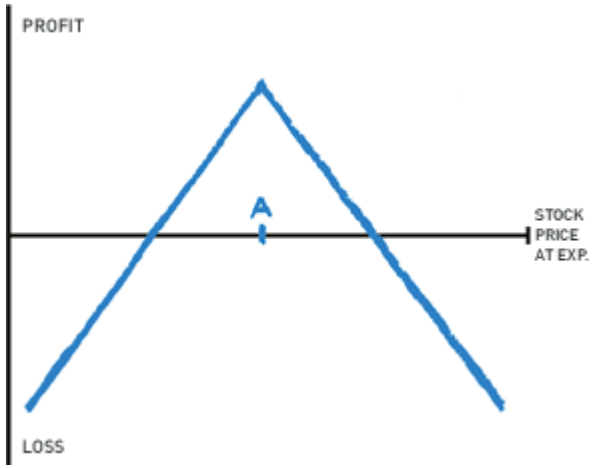
V. **Diagonal spreads** - A diagonal spread works much like a calendar spread, but with a little difference; the options in a diagonal spread can have **different strike prices** in addition to different expirations.

Payoff Functions of Combination Strategies

1. **Straddle** - A straddle involves two transactions on the same security, with positions that offset one another.
    - A **long straddle** is created by **purchasing** a call and a put with the same strike price and expiration.
    - A **short straddle** is created by **selling** a call and a put with the same strike price and expiration.



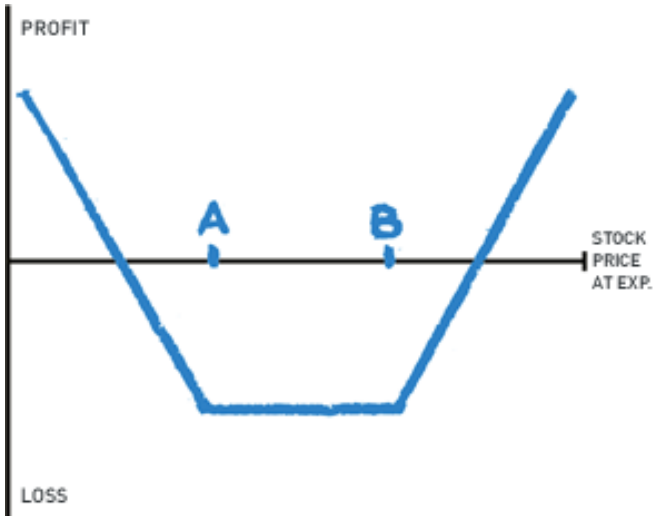
- Limited losses

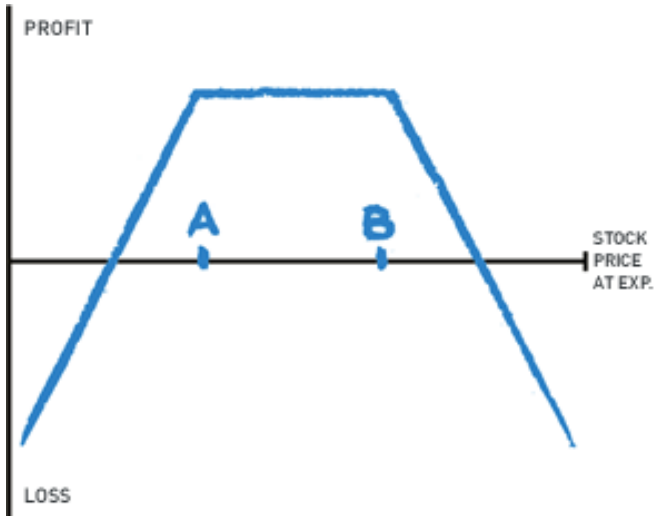


- Unlimited losses

Payoff Functions of Combination Strategies

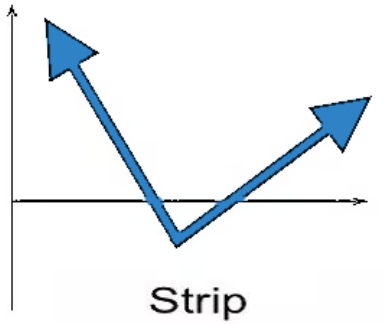
2. **Strangle** - Similar to the straddle, a long strangle consists of a long call and a long put option on the same underlying asset and with the same expiration date. In a strangle, however, the two options have **different exercise prices**.



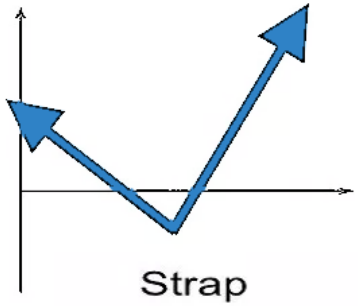


Payoff Functions of Combination Strategies

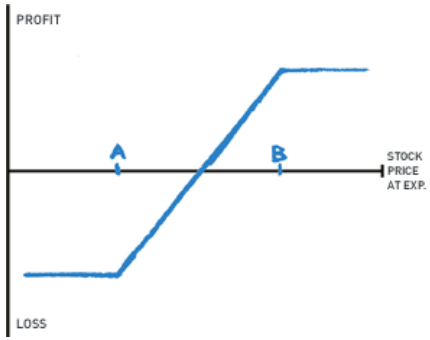
4. **Strips** - A strip involves the purchase of **two puts** and **one call** with the same strike price and expiration.



5. **Straps** - It consists of a long position in **two calls** and **one put** with the same exercise price and expiration date.



6. **Collar** - A collar is a combination of a **protective put** and a **covered call**.



Interest Rate Caps and Floors

- An interest rate cap is a type of **interest rate derivative** in which the buyer receives payments at the end of each period in which the interest rate **exceeds the agreed strike price**.
  - The strike rate is also called the **cap rate**.
  - For example, the buyer could receive payments when the rate exceeds LIBOR + 200bps.
- An interest rate floor, on the other hand, is a derivative contract in which the buyer receives payments at the end of periods in which the interest rate is **below the agreed strike price**.

➢ Interest rate caps and floors provide **protection against fluctuating interest rates**.

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NEXT

EXOTIC OPTIONS