Mechanics of Options Markets

Chapter 9

Types of Options

- A call is an option to buy
- A put is an option to sell
- A European option can be exercised only at the end of its life
- An American option can be exercised at any time

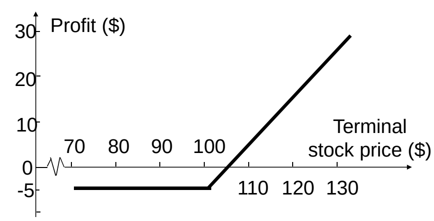
Option Positions

- Long call
- Long put
- Short call
- Short put

Long Call

(Figure 9.1, Page 207)

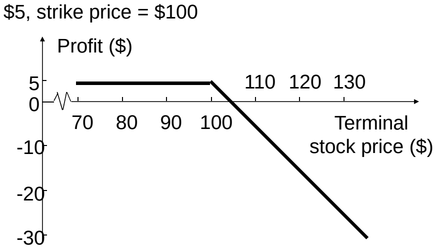
Profit from buying one European call option: option price = $5, strike price = $100.



Short Call

(Figure 9.3, page 208)

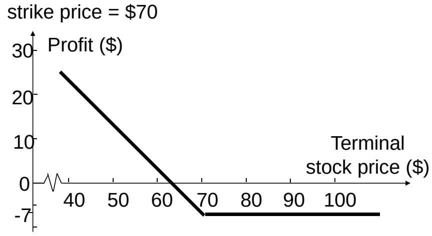
Profit from writing one European call option: option price = $5, strike price = $100



Long Put

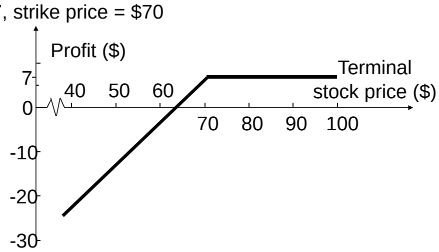
(Figure 9.2, page 208)

Profit from buying a European put option: option price = $7, strike price = $70



Short Put
(Figure 9.4, page 209)

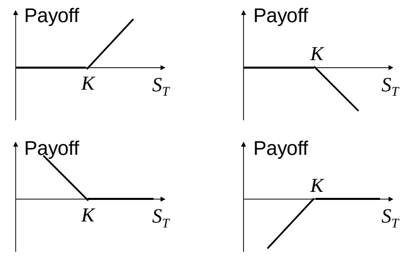
Profit from writing a European put option: option price = $7, strike price = $70



Payoffs from Options

What is the Option Position in Each Case?

K = Strike price, S_T = Price of asset at maturity



Assets Underlying Exchange-Traded Options
Page 210-211

- Stocks
- Foreign Currency
- Stock Indices
- Futures

Specification of Exchange-Traded Options

- Expiration date
- Strike price
- European or American
- Call or Put (option class)

Terminology

Moneyness :

- At-the-money option
- In-the-money option
- Out-of-the-money option

Terminology
(continued)

- Option class
- Option series
- Intrinsic value
- Time value

Dividends & Stock Splits
(Page 213-214)

- Suppose you own options with a strike price of K to buy (or sell) N shares:
  - No adjustments are made to the option terms for cash dividends
  - When there is an n-for-m stock split,
    - the strike price is reduced to mK/n
    - the no. of shares that can be bought (or sold) is increased to nN/m
  - Stock dividends are handled in a manner similar to stock splits

Dividends & Stock Splits
(continued)

- Consider a call option to buy 100 shares for $20/share
- How should terms be adjusted:
  - for a 2-for-1 stock split?
  - for a 5% stock dividend?

Market Makers

- Most exchanges use market makers to facilitate options trading
- A market maker quotes both bid and ask prices when requested
- The market maker does not know whether the individual requesting the quotes wants to buy or sell

Margins (Page 217-218)

- Margins are required when options are sold
- For example, when a naked call option is written in the US, the margin is the greater of:
  1. A total of 100% of the proceeds of the sale plus 20% of the underlying share price less the amount (if any) by which the option is out of the money
  2. A total of 100% of the proceeds of the sale plus 10% of the underlying share price

Warrants

- Warrants are options that are issued (or written) by a corporation or a financial institution
- The number of warrants outstanding is determined by the size of the original issue & changes only when they are exercised or when they expire

Warrants
(continued)

- Warrants are traded in the same way as stocks
- The issuer settles up with the holder when a warrant is exercised
- When call warrants are issued by a corporation on its own stock, exercise will lead to new treasury stock being issued

Executive Stock Options

- Option issued by a company to executives
- When the option is exercised the company issues more stock
- Usually at-the-money when issued

Convertible Bonds

- Convertible bonds are regular bonds that can be exchanged for equity at certain times in the future according to a predetermined exchange ratio

Convertible Bonds
(continued)

- Very often a convertible is callable
- The call provision is a way in which the issuer can force conversion at a time earlier than the holder might otherwise choose