4. Options Markets

4.1. Institutions
What is an Option?

An option contract gives the right

- to buy or sell an asset
- by a certain time
- for a certain price

As opposed to a futures contract that gives the obligation

- to buy or sell an asset
- at a certain time
- for a certain price
Option Class and Option Series

- Call and Put
- Maturity Date
- Strike Price
- European or American
Positions

• Buying a Call

• Buying a Put

• Writing a Call

• Writing a Put
Intrinsic Value

- In-the-money
- At-the-money
- Out-of-the-money
Dividends and Stock Splits

$N$ options with strike price $X$

- $n$-for-$m$ stock split:
  number of options $N$ increases to $\frac{nN}{m}$
  strike price decreases to $\frac{mX}{n}$

- Stock dividend:
  same adjustment as stock split

- Cash dividend:
  no adjustment
Non-standard Options

- Flex

- OTC:
  - Asian
  - Barrier
  - Binary
  - Chooser
  - Compound
  - Lookback
Corporate Securities

- Warrants
- Executive Stock Options
- Convertible Bonds
Homework

1. (Hull 8.9) Suppose that a European call option to buy a share for $100 costs $5 and is held until maturity. Under what circumstances will the holder of the option make a profit? Under what circumstances will the option be exercised? Draw a diagram illustrating how the profit from a long position in the option depends on the stock price at maturity of the option.

2. (Hull 8.10) Suppose that a European put option to sell a share for $60 costs $8 and is held until maturity. Under what circumstances will the seller of the option make a profit? Under what circumstances will the option be exercised? Draw a diagram illustrating how the profit from a short position in the option depends on the stock price at maturity of the option.

3. (Baby Hull 8.18, Papa Hull 8.17) Consider an exchange-traded call option contract to buy 500 shares with a strike price of $40 and maturity in four months. Explain how the terms of the option contract change when there is:
   (a) a ten percent stock dividend
   (b) a ten percent cash dividend
   (c) a four-for-one stock split