Chapter 8

Mechanics of Options Markets

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Definition 8.1

- A call is an option to buy
- A put is an option to sell
- To buy an option means to be in a long position
- To write (or sell) an option means to be in a short position

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Example 8.2

- Payoff from buying a European
  - Call
  - Put
- Payoff from writing a European
  - Call
  - Put
- Profit from positions in European options

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Example 8.3

Suppose a stock is \$60, a European call with strike price \$70 costs \$1 and a European put with strike price \$50 costs \$3. Draw profit graphs for the following strategies (ignoring the time value of money) and determine for which stock prices the profit will be positive.

(a) Long positions in a call and a put.

(b) Long positions in three calls and two puts.

(c) Long stock, long put, short call.

(d) Long stock, two long puts, two short calls.

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Remark 8.4

- Assets underlying exchange-traded options:
  - Stocks (~ 1000 different ones, usually 100 shares per contract)
  - Foreign currency (size depends on currency, e.g, £31,250; 6.25 million yen)
  - Stock indices (100×index, settlement in cash)
  - Futures (option matures just before delivery period for futures)

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Remark 8.4 (continued)

- Stock options specifications:
  - Expiration date (Sat right after 3rd Fri of expiry month, 4:30 pm)
  - Strike price (spacing \$2.50/5/10)

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Definition 8.5

- We say that an option is in the money if
  - $K<S(t)$ for call
  - $K>S(t)$ for put
- and out of the money if
  - $K>S(t)$ for call
  - $K<S(t)$ for put
- and at the money if
  - $K=S(t)$.
- We may also refer to an option being deep in or out of the money.