

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

**Chapter 8**

**Mechanics of Options Markets**

Math 5737/Econ 5337, Fall 2022

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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.

- Long positions in a call and a put.
- Long positions in three calls and two puts.
- Long stock, long put, short call.
- 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. £1,250; 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 3<sup>rd</sup> 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.

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