

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

**Chapter 10**

**Trading Strategies involving Options**

11/3/2021 Math 5737/Room 5337, Fall 2021 153

153

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**Definition 10.1**

Positions in **an option and the underlying**:

- Writing a **covered call** (long stock, short call)
- Reverse of writing a covered call (short stock, long call)
- **Protective put** strategy (long stock, long put)
- Reverse of protective put strategy (short stock, short put)

11/3/2021 Math 5737/Room 5337, Fall 2021 154

154

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**Example 10.2**

Recall: The relevant profit functions are:

- $S_T - S_0 e^{rT}$  **LONG STOCK**
- $(S_T - K)^+ - ce^{rT}$  **LONG CALL**
- $(K - S_T)^+ - pe^{rT}$  **LONG PUT**
- $S_0 e^{rT} - S_T$  **SHORT STOCK**
- $ce^{rT} - (S_T - K)^+$  **SHORT CALL**
- $pe^{rT} - (K - S_T)^+$  **SHORT PUT**

The profits for the strategies in Definition 10.1 are (for European options):

- $pe^{rT} - (K - S_T)^+$  **COVERED CALL**
- $(K - S_T)^+ - pe^{rT}$  **REVERSE CC**
- $(S_T - K)^+ - ce^{rT}$  **PROTECTIVE PUT**
- $ce^{rT} - (S_T - K)^+$  **REVERSE PP**

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155

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**Definition 10.3**

A **spread** is a position in two or more options of the same type.

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156

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**Example 10.4**

We discuss the following spreads:

- **bull spread**
- **bear spread**
- **box spread**
- **butterfly spread**
- **calendar spread**
- **diagonal spread**

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157

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**Definition 10.5**

A **combination** is a position in both calls and puts on the same stock.

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158

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**Example 10.6**

We discuss the following combinations:

- straddle
- strip
- strap
- strangle

11/2/2021  Math 579/Exam 5337, Fall 2021 159