

Extendible option, writer

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writer extendible call option:

$$C_T = \begin{cases} S_t - K & \text{if } S_t \geq K \\ \max[S_T - K_2, 0] & \text{otherwise} \end{cases}$$

writer extendible put option:

$$P_T = \begin{cases} K - S_t & \text{if } S_t \leq K \\ \max[K_2 - S_T, 0] & \text{otherwise} \end{cases}$$

The writer extendible option are extended when the option is out-of-the-money at the initial expiration date. The extended option can sometimes have an adjusted strike.

Symbol list:

- S_t The value of the underlying at the initial expiration date
- S_T The value of the underlying at the extended expiration date
- K The initial strike that determines a possible extension
- K_2 The strike of the extended option