Derivative Instruments
Paris Dauphine University - Master IEF (272)

Jérôme MATHIS (LEDa)

Exercises Chapter 8

Exercise 1 *An investor sells a European call on a share for $4.*
The stock price is $47 and the strike price is $50.

Draw a diagram showing the variation of the investor's profit with the stock price at the maturity of the option.

Exercise 2 *An investor sells a European call option with strike price of K and maturity T and buys a put with the same strike price and maturity.*

Describe the investor's position.

Exercise 3 (Done) *A company declares a 2-for-1 stock split.*

Explain how the terms change for a call option with a strike price of $60.

Exercise 4 *Suppose that a European call option to buy a share for $100.00 costs $5.00 and is held until maturity.*

Draw a diagram illustrating how the profit from a long position in the option depends on the stock price at maturity of the option.

Exercise 5 *Describe the terminal value of the following portfolio : a newly entered-into long forward contract on an asset and a long position in a European put option on the asset with the same maturity as the forward contract and a strike price that is equal to the forward price of the asset at the time the portfolio is set up.*

Show that the portfolio has the same value as a European call option with the same strike price and maturity.

Exercise 6 (Done) *A trader buys a call option with a strike price of $45 and a put option with a strike price of $40.*
Both options have the same maturity.
The call costs $3 and the put costs $4.

Draw a diagram showing the variation of the trader's profit with the asset price.