4. Options Markets

4.3. Trading Strategies

Three Types

1. Asset and Option
2. Spread:
   using calls *or* puts
3. Combination:
   using calls *and* puts

Data

strike	call	put
90	24.81	3.07
$S = 100$	18.84	5.80
110	13.97	9.62

1. Covered Call

buy asset
write call

1. Protective Put

buy asset
buy put

2. Bull Spread Using Calls

buy in-the-money call
write out-of-the-money call

2. Bull Spread Using Puts

buy out-of-the-money put
write in-the-money put

2. Bear Spread Using Calls

buy out-of-the-money call
write in-the-money call

2. Bear Spread Using Puts

buy in-the-money put
write out-of-the-money put

2. Butterfly Spread Using Calls

buy 1 in-the-money call
write 2 at-the-money calls
buy 1 out-of-the-money call

2. Butterfly Spread Using Puts

buy 1 in-the-money put
write 2 at-the-money puts
buy 1 out-of-the-money put

2. Calendar Spread Using Calls

buy call with T_2
write call with $T_1 < T_2$

2. Calendar Spread Using Puts

buy put with T_2
write put with $T_1 < T_2$

3. Collar

buy asset
write out-of-the-money call
buy out-of-the-money put

3. Synthetic Forward

buy out-of-the-money call
write in-the-money put
where $c = p$

3. Straddle

buy at-the-money call
buy at-the-money put

3. Strangle

buy out-of-the-money call
buy out-of-the-money put

3. Strip

buy 1 at-the-money call
buy 2 at-the-money puts

3. Strap

buy 2 at-the-money calls
buy 1 at-the-money put

Homework

1. (Hull 10.10) Suppose that put options on a stock with strike prices \$30 and \$35 cost \$4 and \$7 respectively. How can the options be used to create
(a) a bull spread?
(b) a bear spread?
Construct a table that shows the profit and payoff for both spreads.

2. (Hull 10.12) A call with a strike price of \$60 costs \$6. A put with the same strike price and expiration date costs \$4. Construct a table that shows the profit from a straddle. For what range of stock prices would the straddle lead to a loss?

3. (Hull 10.19) Three put options on a stock have the same expiration date and strike prices of \$55, \$60, and \$65. The market prices are \$3, \$5, and \$8 respectively. Explain how a butterfly spread can be created. Construct a table showing the profit from the strategy. For what range of stock prices would the butterfly spread lead to a loss?