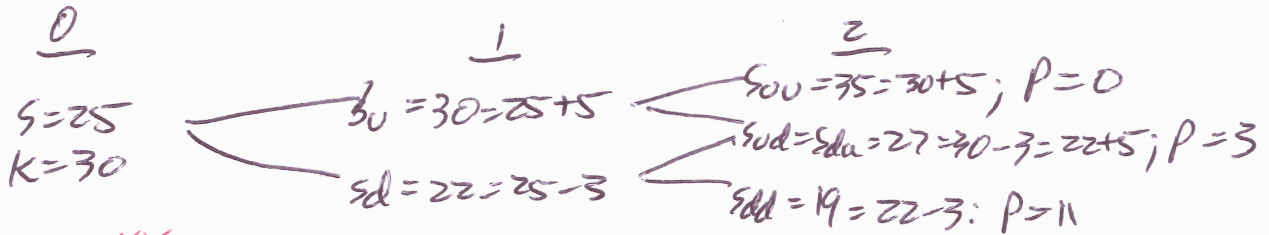


Note: Answer everything on a per-share basis.

Assume that Dellay Computers has a current stock price of \$25 per share and its stock price will rise by \$5 or fall by \$3 each of the next two years. You would like to build a portfolio today that is equivalent to a put that expires two years from today with a \$30 strike price. The risk-free interest rate is 2%.

- What portfolio today is equivalent to the put?
- What will it cost today to build this portfolio?
- How will you need to rebalance your portfolio one year from today if Dellay's stock price rises next year?



(18)  $\Delta_0 = \frac{0-3}{35-27} = -0.375$ ;  $B_0 = \frac{3 - (-0.375)(27)}{1.02} = 12.8676$

$P_0 = 30(-0.375) + 12.8676 = 1.6177$

(18)  $\Delta_d = \frac{3-11}{27-19} = -1$ ;  $B_d = \frac{11 - (-1)(19)}{1.02} = 29.4118$

$P_d = 22(-1) + 29.4118 = 7.4118$

(18)  $\Delta = \frac{1.6177 - 7.4118}{30 - 22} = -0.7243$ ;  $B = \frac{7.4118 - (-0.7243)(22)}{1.02} = 22.8878$

$P = 25(-0.7243) + 22.8878 = 4.7812$

a. Short-sell .7243 shares, buy \$22.8878 of bonds

b. \$4.7812

c. change in shares =  $-0.375 - (-0.7243) = +0.3493$  shares  
 $\rightarrow$  buy .3493 shares

Change in bonds = sell \$10.4779 of bonds

Calculation

$-0.3493 \times 30$

or

$12.8676 - 22.8878(1.02)$