Assignment-2.2

1) 1400 : (2050-1400)×1000 = +6,50,000

1500 : (2050-1500)×1000 = +5,50,000

1560 : (2050-1560)×1000 = +4,90,000

1600 : (2050-1600)×1000 = +4,50,000

1800 : (2050-1800)×1000 = +2,50,000

2050 : (2050-2050)×1000 = 0

2200 : (2050-2200)×1000 = -1,50,000

2300 : (2050-2300)×1000 = -2,50,000

2400 : (2050-2400)×1000 = -3,50,000

6) This Put-Call Parity.

$C - P = S_0 - K \cdot e^{-rT}$

C=20, P=5, S_0 (current price) = 130, K (strike price) = 120

T = 1 year.

$20 - 5 = 15 = 130 - 120 \cdot e^{-r(1)}$

$120e^{-r} = 115 \Rightarrow -r = \ln\left(\frac{115}{120}\right)$

$r = \ln\left(\frac{120}{115}\right) = 0.0426$

$\Rightarrow$ r = 4.26% per annum

5) a) long-forward contract: payOff = $S_T - F_0$

S_T → terminal asset price, F_0 → forward price;

b) long-European Put option : payoff = $\max(F_0 - S_T, 0)$

$\Rightarrow$ Terminal Value = $(S_T - F_0) + \max(F_0 - S_T, 0)$

i) if $S_T \geq F_0$

$\Rightarrow$ Terminal value $= (S_T - F_0) + 0. = S_T - F_0$

ii) $S_T < F_0$

Terminal value $= (S_T - F_0) + (F_0 - S_T) = 0$

$\therefore$ Terminal value $= \max(S_T - F_0, 0)$

$\therefore \Rightarrow$ Put value = Call value.

(2)

Long position

$$P/L = (\text{closing price} - \text{opening price}) * \text{contract size} * \text{Number of contracts}$$

short position

$$P/L = (\text{opening price} - \text{closing price}) * \text{contract size} * \text{No' of contracts}$$

a) Corn futures

→ long position.

$P/L = (\$5.80 - \$5.20) \times 5000 \times 1$

$= \$3000$ (profit).

b) coffee futures

→ short position

$P/L = (\$1.60 - \$1.40) \times 37,500 \times 1$

$= \$7500$ (profit)

c) SPI200 futures

→ short position

$P/L = (7800 - 7800) \times A\$25 \times 40$

$= -A\$ 300,000$ (loss)

d) Stainless steel features

→ long position

$P/L = (12500 - 15000) \times 5 \times 3$

$= -$ RMB $22,500$ (loss)

(3) i, future contract and spot contract differ only in when the deal is done, In future contract we buy/sell a commodity after a time period listed in contract whereas it happen instantly in spot contract

(ii) future contracts works on some rules like, where, how when, how much quantity is delived, and also need to pay margins

(iii) It helps in making trade safe & fair and make people follow rules

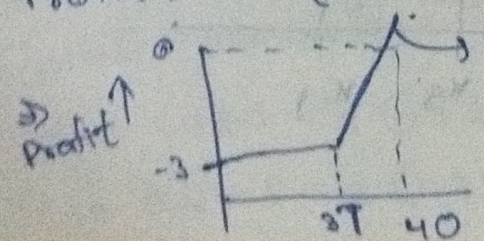
(4) i, strick price = $40
premium = $3
he will get profit if underlying price $40 is higher than spot price at time of that time
because of premium $3 we want stock price go below $37

⇒ stock price < $37

ii, same as above, we want stock in ITM option

stock price ≥ $37

iii, Profit = max (40 - S_T) - 3 S_T = stock price



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