

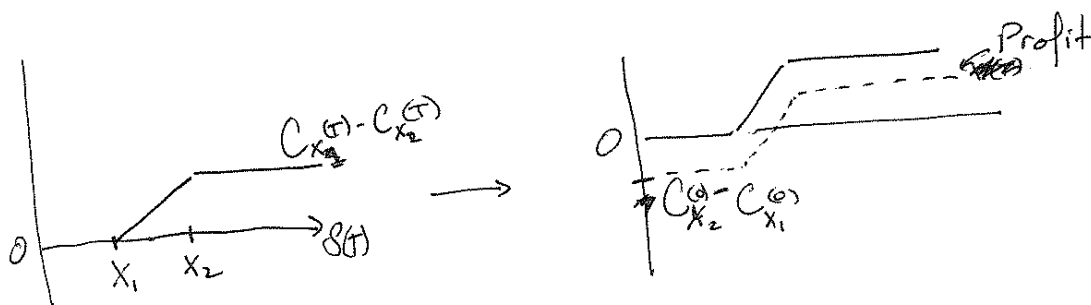
(1)

Option strategies

Call spread: Long Call @ X_1 + Short Call @ X_2 .

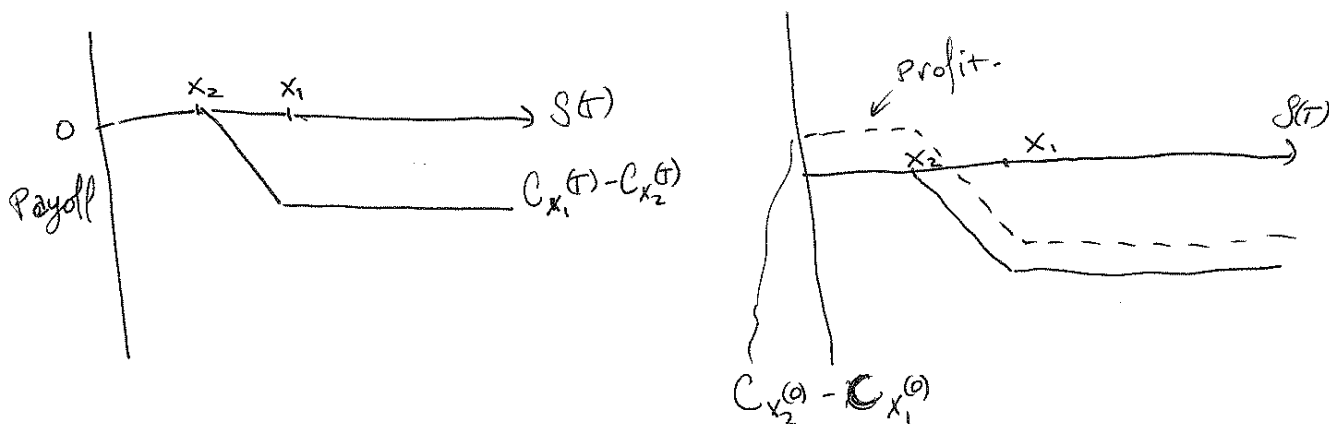
Bull market $X_1 < X_2 \dots$ Expect ~~security to~~ Security to rise above X_1 but not above X_2

* Short call @ X_2 to offset cost



Bear Market $X_2 < X_1 \dots$ Expect security to fall below X_1 , but not below X_2 .

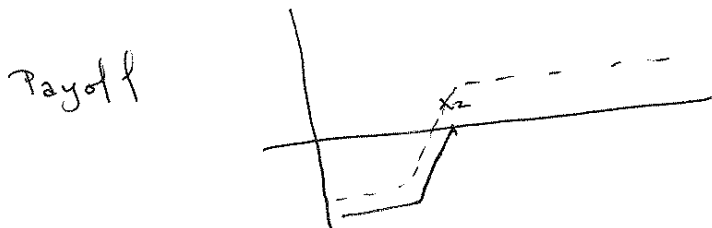
Long call @ X_1 offsets loss
in case security does not fall.



(2)

Put Spread: Long Put @ X_1 ; Short @ X_2 .

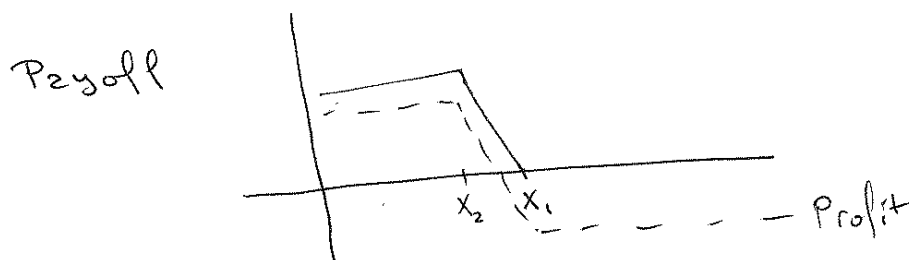
Bullish: $X_1 < X_2$



Collect $P_{EX_2}^{(0)} - P_{EX_1}^{(0)} > 0$ @ $t=0$

Short at X_2 below price you expect security to rise to,
long at X_1 to hedge loss.

Bearish: $X_2 < X_1$



Long at X_1 when you expect security to fall
below X_1 . Short at X_2 to

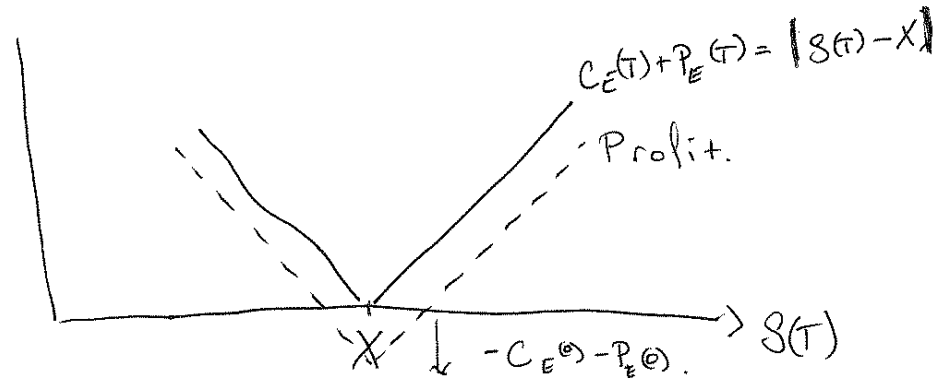
offset cost.

Cost $P_{X_2}^{(0)} - P_{X_1}^{(0)}$

(3)

Straddle

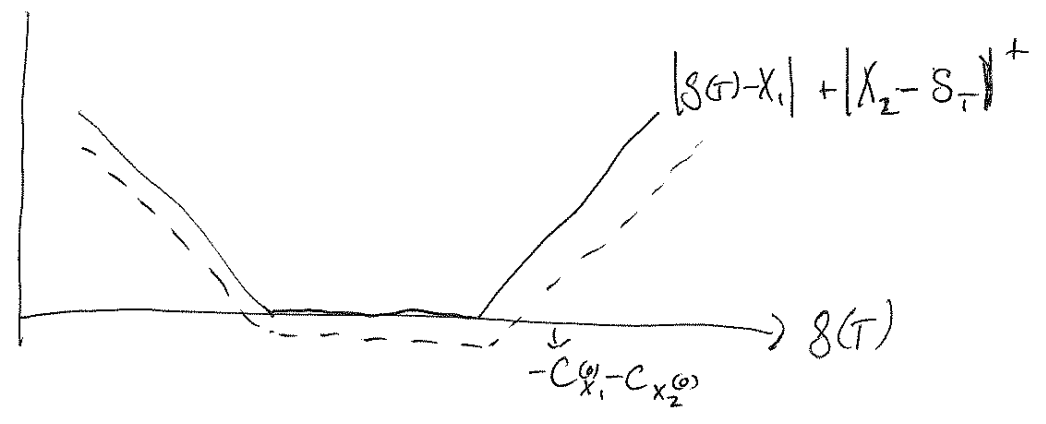
Suppose we do not know if stock is going to increase or decrease - We can ~~not~~ earn a profit on volatility of the market by
 Longing both a call & a Put at price X .



Strangle:

The price of a Call decreases for increasing strike X
 — Put — decreasing —

\therefore Long Call @ $X_1 > X$ + Long Put @ $X_2 < X$.
 We still profit from volatility but costs are smaller.



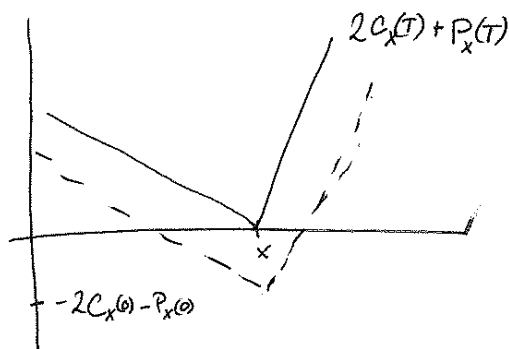
(4)

Strips

If the market is volatile + we think the price will go up,

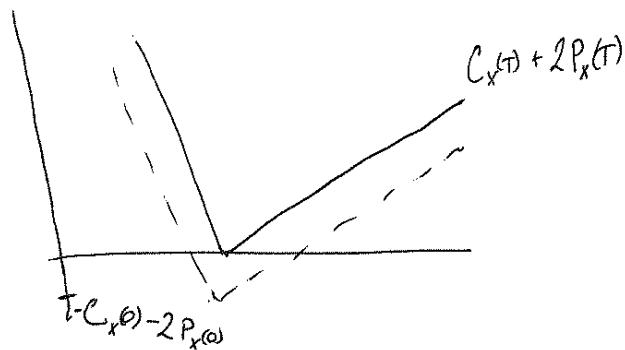
Long 2 calls @ X and 1 put @ X -

this increases profit for increase in stock price
+ protects us in case price falls



STRAPS - SIMILARLY, IF WE THINK THE PRICE IS VOLATILE
BUT WILL FALL,

Long 2 Puts @ X + 1 Call @ X



(5)

FOR STABLE MARKETS:

The most popular portfolio is the Butterfly spread:

Put Spread $X_1 < X_2 < X_3$

- Long Put @ $X_1 + X_3$

- Long 2 Puts @ X_2

cost @ $t=0$: $2P_{X_2} + P_{X_1} + P_{X_3}$

If $X_2 = \frac{1}{2}(X_1 + X_3)$

convexity $\Rightarrow 2P_{X_2} - P_{X_1} - P_{X_3} < 0$

Call Spread $X_1 < X_2 < X_3$

- Long Call @ $X_1 + X_3$

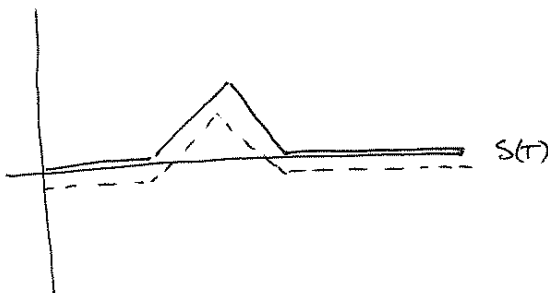
- Long 2 Calls @ X_2

cost @ $t=0$:

$-2C_{X_2} + C_{X_1} + C_{X_3}$

Neutral

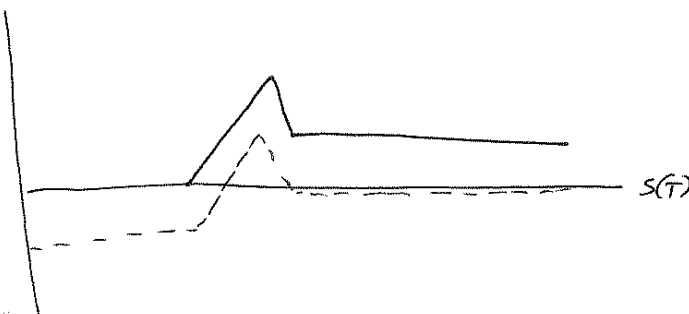
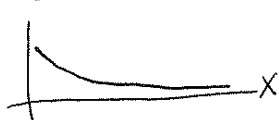
$X_2 \sim \frac{1}{2}(X_1 + X_3)$



"Bull"

$X_1 \ll X_2 \leq X_3$

(Calls)
 $C(x)$



$X_1 \leq X_2 \ll X_3$ "Bear"

(Puts)

$P(x)$

