Speculator Uses of Options

Options allow speculators to make bets on market activity that they cannot make using futures contracts alone. These include speculating on futures prices trading within a specific range, speculating on futures prices moving higher or lower with less risk than a futures position, and speculating on futures prices not changing at all. When options are used in combination with either futures contracts or other options, understanding the risk/reward relationship can get complicated and confusing. Thus, for our purposes we will develop graphs for each position we consider that shows us our down-side risk, our up-side opportunity, and our breakeven point. Because options provide the opportunity to take positions in the futures market, the risk/reward analysis will always be based on movement in the futures price itself. Further, we will always measure profits as if the options are exercised. This results in a lower bound measure of potential reward because it assumes that all the time value of the option has disappeared, and all we receive is the intrinsic value. Anytime we want to liquidate an option position prior to its expiration, the value of the option will include both intrinsic value and time value.

Synthetic Futures Positions

We have already looked at generating a synthetic long or a synthetic short position using options. Recall from the slides used in class (and available from the class web site) that creating these positions includes buying one option (a put or a call) and selling the other. In class we looked at the example of using put and call options with identical strike prices, and ended up with positions represented by Figures 1 and 2. Note we are considering options on the August live cattle futures contract. The futures price is $70 per hundred pounds, and each option premium is $2.15 per hundred pounds. As we noted in class, we would generally not create these positions with options because they have the same risk/reward relationship associated with

taking a position in the futures market itself, with higher transactions costs (we have to pay two broker's commissions instead of just the one we would pay if bought or sold a futures contract). We might decide to create a synthetic position using different strike prices from each option, however. This will create a flat spot on the risk/reward chart. In Figure 3, I have generated a synthetic long position using a put and a call with different strike prices. In this case the live cattle futures price is still $70 per hundred pounds, but I sell a put option with a $68 strike price and buy a call option with a $72 strike price. Each option has a premium of $1. Now I make no money until the price goes to at least $72, but I also have no losses unless the price goes below $68. Why would I do this? I might want to be long the futures market if the price moves higher, but I am not sure the trend will be to higher prices unless it goes up at least $2 per hundred pounds.

Option Spreads – Vertical

There are two types of option spreads – vertical and horizontal. In a vertical spread, the trader is making a bet about the direction the futures price will move, similar to the bet made when one buys or sells a futures contract. A vertical spread involves buying one option and selling another option of the same type (for example, buy one call and sell another call), the same commodity, and the same contract month.

A bull spread is a bet on higher futures price. The most common is a bull call spread. This involves buying a call option at one strike price, and selling a call option at a higher strike price. As an example, assume the current price for a July corn futures contract is $2.29 per bushel. A $2.30 call option is 12 cents per bushel. I think corn prices should go higher, thus I could either buy a corn futures contract (and take on unlimited risk), or I could buy a $2.30 call option. With the option I will only lose 12 cents if I am wrong, but I will not start making

money until the futures price goes to $2.42 (the $2.30 strike price the option lets me buy futures for, plus the premium I pay). If I think the market will only go to $2.60, I can reduce my option cost by selling someone else the right to buy July corn futures at $2.60 (I am willing to do this because I have decided the futures price is not likely to go above $2.60). I have now bracketed the market, and reduced my net cost. In our example, assume the $2.60 strike price call option is selling for 4 cents per bushel. When I sell this option, I collect the 4 cents, lowering my net cost to 8 cents per bushel (the 12 cents I paid for the $2.30 strike price option minus the 4 cents I collected for the $2.60 strike price option). If the market goes above $2.60 per bushel before the options expire, I will have to sell futures for $2.60 to whoever bought the $2.60 strike price option, but since I have the right to buy futures at $2.30 I will still make a profit. I can buy at $2.30, I have to sell at $2.60, earning me 30 cents profit in the futures market. When I subtract my net cost of 8 cents, my net profit is 22 cents per bushel. This is the most I can make. The most I can lose is the 8 cent initial net investment. Figure 4 illustrates this strategy.

Figure 5 illustrate a bull spread using put options. In this case, I sell a put option with a high strike price and buy a put option with a lower strike price. It is still a bet that futures will go higher (or at least not go lower), but the risk reward profile is different than that of the call spread.

Vertical Bear Spreads are bets that futures prices will fall. Use the data from the charts in figures 4 and 5 and see if you can construct a put bear spread, and a call bear spread. Remember, you are betting on the futures price going lower. How would you do that with a put spread? How about with a spread using call options?

Figure 1

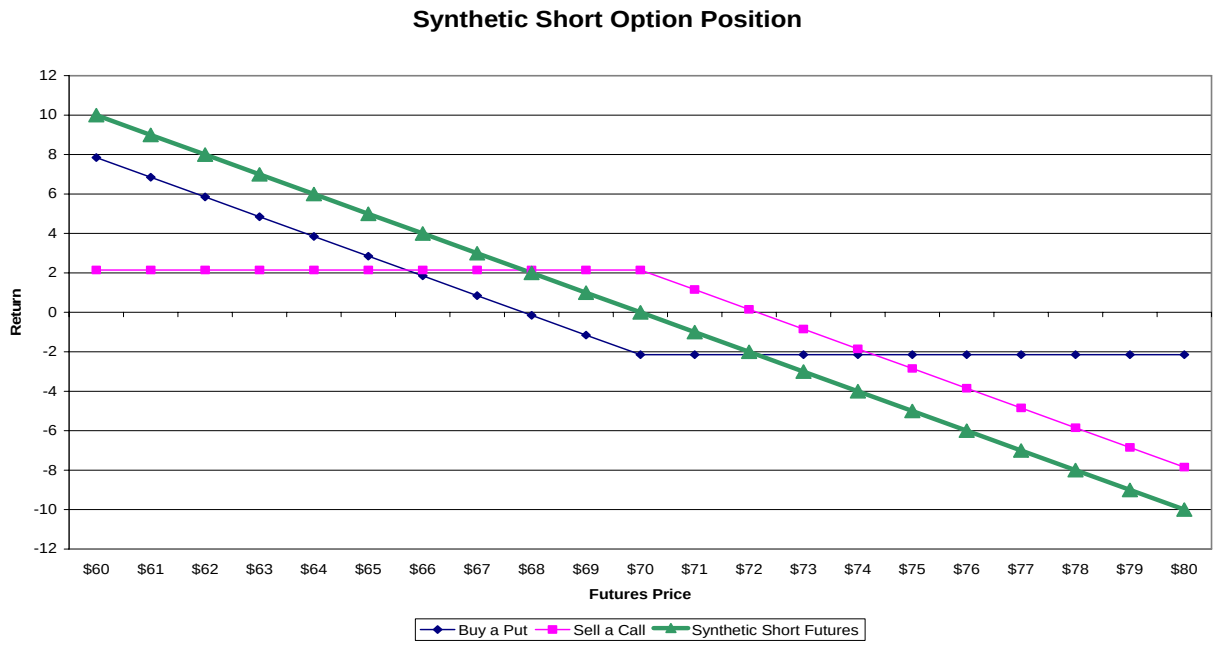


Figure 2

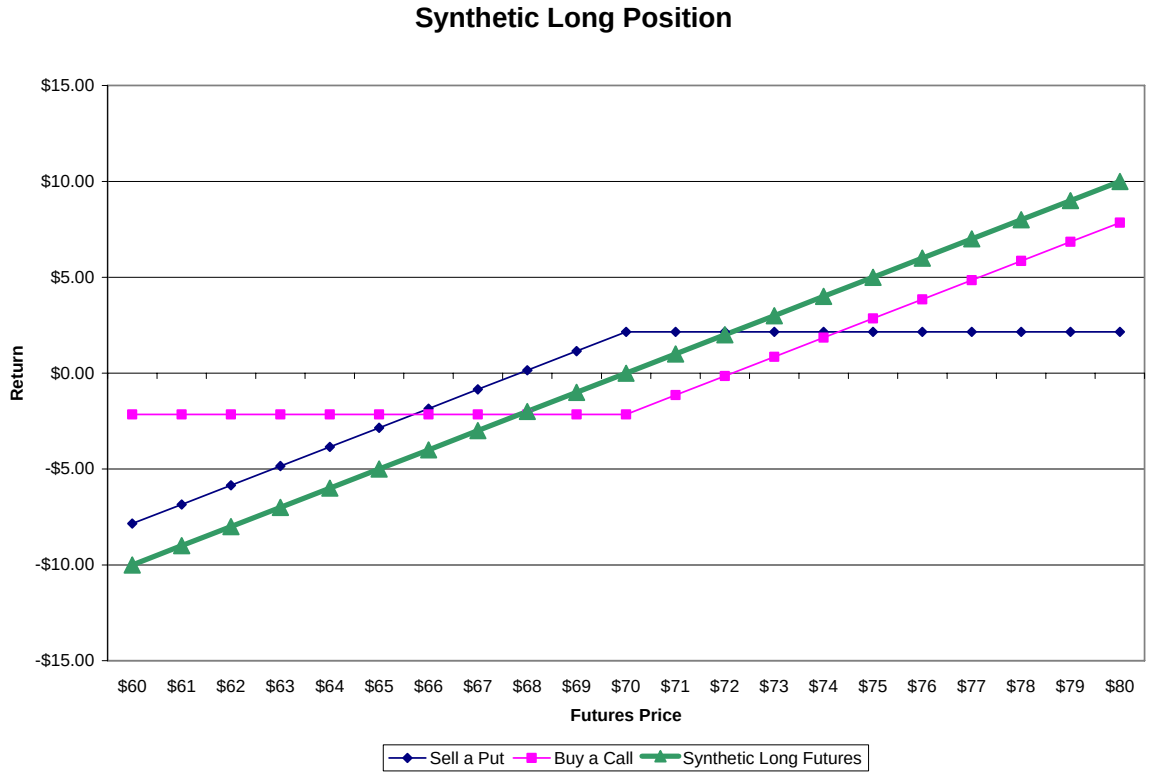


Figure 3

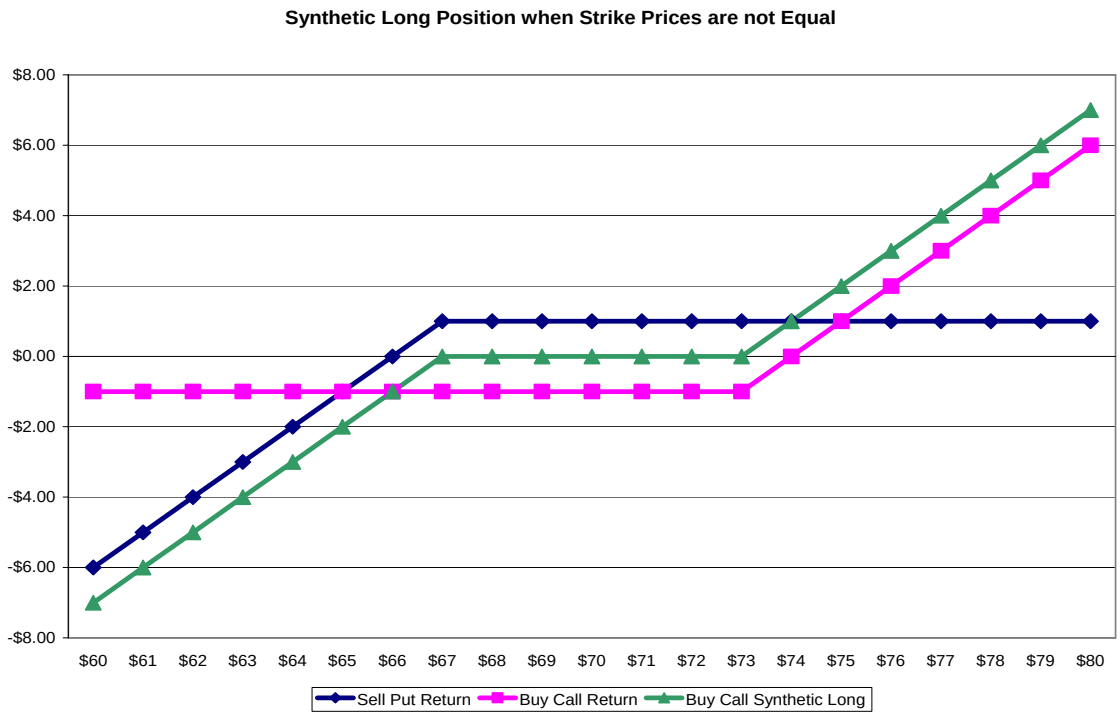


Figure 4

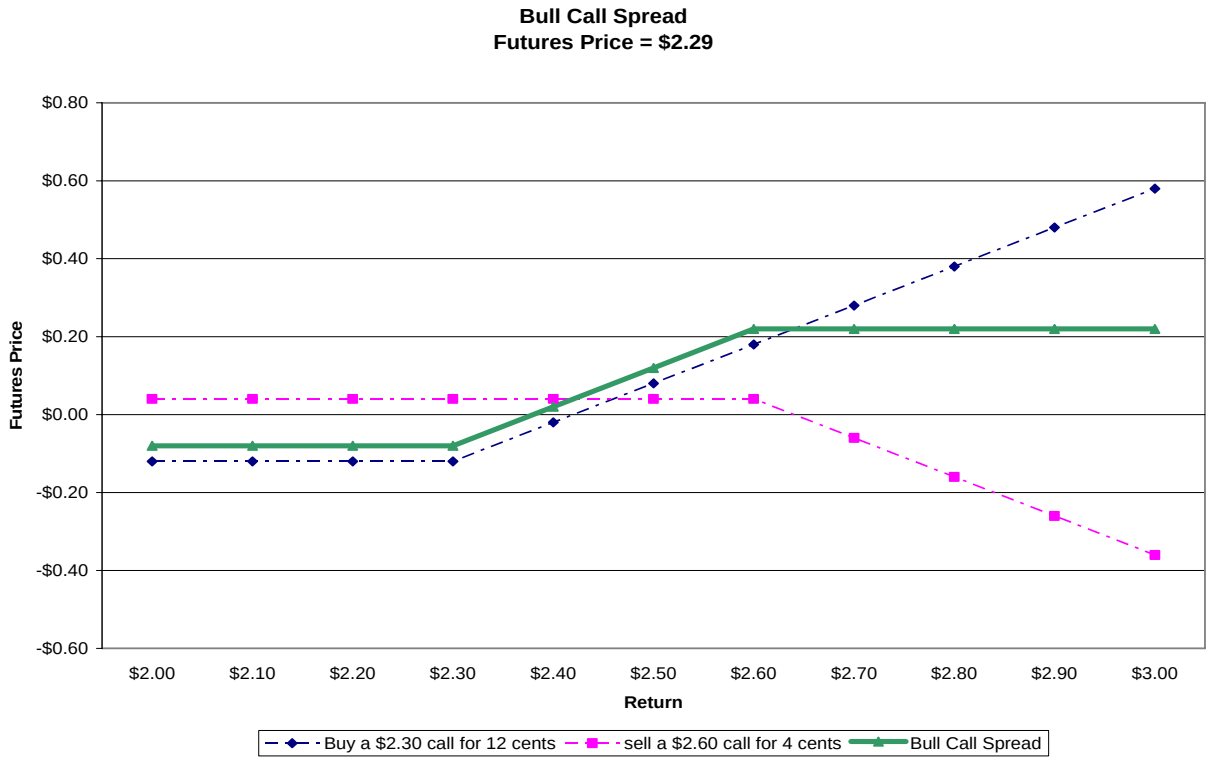
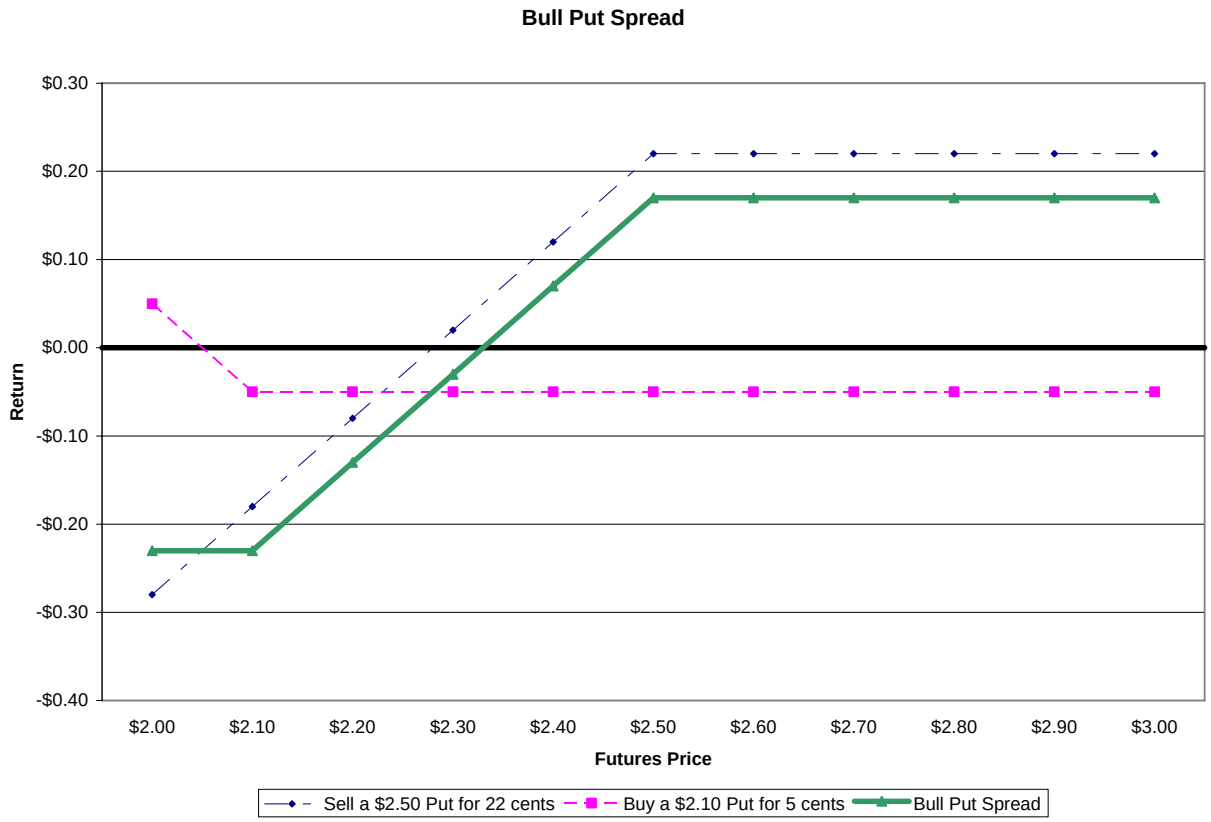


Figure 5


Bull Put Spread
$0.30
$0.20
$0.10
$0.00
-$0.10
-$0.20
-$0.30
-$0.40
Return
$2.00
$2.10
$2.20
$2.30
$2.40
$2.50
$2.60
$2.70
$2.80
$2.90
$3.00
Futures Price
Sell a $2.50 Put for 22 cents
Buy a $2.10 Put for 5 cents
Bull Put Spread