Horizontal Options Spread

A horizontal spread is a bet that futures prices will trade in a very tight range over some time period. Profitability is based on the speed at which the time value of options deteriorates. The time value of an option close to maturity always deteriorates faster than the time value of options further to expiration, assuming all else equal. While we do not observe time value directly (it is the difference between the option's premium and the intrinsic value), the time value has been found to be proportionate to the time to maturity.

For example, if the time value of an option 1 month from maturity is \$1, the time value of an option 4 months from maturity would be approximately \$2 : $1*\sqrt{4}=2$

For any holding period, we would expect the price of the nearby option to decline more quickly than the deferred and thus the spread between the two options will widen (the deferred will become more valuable relative to the nearby).

Consider the following example:

It is March 23, 2006. The July futures contract for corn is \$2.30

A \$2.30 call option for the July contract is trading for 11 cents. This option has 11 cents time value.

Sep corn futures pries are \$2.40 cents. The time value in that option (it will expire about Aug 23) should be 11 cents * √2 (the Sept. option expires two months after the July option, so its time value should be the July option's time value times the square root of two (2 being the number of months between the two option's expirations)). Thus, the time value should be 15.5 cents for the September option. The option is actually trading for 16 cents.

If we do not think futures prices are going to change, then the time value in the Sept. option should equal 11 cents when the July option expires (when the July option expires the Sept. option will have two months of maturity left, which is the time to maturity for the July option on March 23). Since time value is proportional to time to maturity, the time value for options two months from maturity should be the same if futures prices have not changed (i.e., market volatility has not increased).

If this relationship holds, and we are sure the market will not move much, we would sell the July option for 11 cents, and by the Sept. option for 16 cents. If futures prices do not change, we will collect the 11 cents when the July option expires, and buy the Sept. option back for 11 cents (its time value when the July option expires). Thus, we will have collected 11 cents on the July option and lost 5 cents on the Sept. option. Our net is 6 cents.

TWO BETS: the price levels will not change much, and the spread between July and September futures prices will not change

Why not just sell the July option, and forget about September?