Making Markets Function With Single Stock Futures

On September 21, 2008, the Securities & Exchange Commission amended its Emergency Order of September 18, 2008 pertaining to restrictions on short sales for a specific schedule of stocks with an Amended Emergency Order (collectively, the "Orders").

The combined effect of the Orders is single stock futures (SSFs) are now more valuable than ever for traders seeking to manage their risks and establish the positions they want. An example trade is presented after the short discussion below.

Two key points pertaining to SSFs are:

1. SSF trading is not affected by the SEC actions. A contract expiring on Friday, October 17, 2008 becomes a corresponding securities position on Saturday, October 18, 2008 and is delivered on Wednesday, October 22, 2008. An expiring long SSF becomes 100 shares of the underlying stock; an expiring short SSF becomes an obligation to deliver 100 shares of the underlying stock. These obligations are cleared at The Options Clearing Corporation (OCC), a AAA-rated counterparty with decades of experience in delivering shares through the National Securities Clearing Corporation and Depository Trust Corporation mechanisms; and
2. Market makers at OneChicago may engage in short-sale transactions in the publicly traded securities of any financial firm covered by the Orders, as identified in the Order and by the Nasdaq Stock Market and NYSE Euronext ("covered securities") as part of a bona fide market making and hedging activity related directly to bona fide market making in SSFs *as long as the market maker does not know the customer or counterparty will establish or increase an economic net short position (i.e., through actual positions or otherwise) in the issued share capital of a firm covered by the Orders* [emphasis added].

Using The EFP Mechanism

As SSFs deliver seamlessly into their underlying stock, long or short, investors and traders should take advantage of this property by using the exchange of futures for physicals (EFP) mechanism. Two trades related to this EFP mechanism of particular importance are:

1. One trader selling a SSF against an existing long stock position ("selling the EFP"); and
2. A second trader such as such as a beneficial owner of shares in a custodial account replacing a long stock position with a long SSF, which then
    a. Will deliver into the very same long stock position at expiration, replacing the shares, or
    b. That can be sold and replaced with another long SSF position expiring later.

Two relative performance bonds, or initial margins, need to be considered. Any combination of long stock and short SSF or vice-versa is margined at 5% of the current market value (CMV) of the more expensive leg. The second is any outright long or short SSF position, including one held as a substitute for a long stock position, is margined at 20% of the SSF's CMV. Please note this CMV varies with each day's close. Treasury bills can be posted in a margin account to satisfy the performance bond's requirements.

One important thing to remember about EFP trades and indeed all futures trades is the exchange clearinghouse, in this case the OCC, is the counterparty to the trade. This allows both the long and the short SSF positions to do whatever they wish after the trade is initiated. A trader who has sold the EFP and is short the SSF against an underlying stock position can, at a time and price of his or her choosing, sell the long stock position and retain the short stock position or vice-versa, buy back the short SSF and retain the long stock position. This is an anonymous trade between the trader and the OCC; the original counterparty on the EFP transaction need not and indeed should not be aware of any offsetting trades at all; the original counterparty to the trade has an obligation to the OCC, not to you.

A second important thing to remember about SSFs is they are of de facto European exercise. Unlike a stock sold short in a conventional securities lending transaction, the short SSF cannot be recalled regardless of any changes in market conditions. The costs involved in the EFP transaction, discussed below, are fixed at the trade's initiation and are subject only to dividend risk over the life of the trade.

Finally, SSF positions traded at OneChicago are completely open and transparent. Bids and offers are visible in the trading book, a competitive system of market makers provides liquidity to the market and OneChicago is regulated by both the SEC and the Commodity Futures Trading Commission.

Fair Value
The fair value of a SSF is:

$$SSF = Stock * e^{r*((t_x - t_0)/360)} - Div * e^{r*((t_x - t_d)/360)}$$

Where r is the effective federal funds rate, t_x is the expiration date of the future, t_d is the ex-dividend date of the stock and t_0 is the date of evaluation. If the firm's management has signaled the dividend is safe, this full calculation loses nearly all of the stochastic elements from the dividend payout. If, however, the dividend is viewed as being at risk, the price of the SSF will rise over this simple fair value calculation as the future value of the expected dividend will decrease. This is no different than the risks known to and faced by options traders for decades.

This fair value can be verbalized as the stock plus the short-term interest rate cost of carry minus the future value of the expected dividend. If the short-term interest rate cost of carry exceeds the future value of the expected dividend, the seller of the EFP will earn an interest rate equivalent to the SSF's amortization rate, or downward convergence to the stock, over time. If the opposite occurs, as can happen when the stock becomes hard to borrow or if there is a large expected dividend, the seller of the EFP will pay an interest rate equivalent to the SSF's accrual rate, or upward convergence to the stock over time.

These interest rate calculations are opposite for buyers of the EFP. EFP buyers include those who are hedging a short stock or short option position with a long SSF or those who sell their stock and replace it with a long SSF. Traders with long stock positions looking to sell it and replace it with a long SSF can compare the costs of holding a long SSF and the costs of holding the stock by using the interactive OneChicago Calculator.

Large distortions in the basis point costs of the EFP are rich in information. The first occurs when the SSF is priced well over apparent fair value. This often signals the market is expecting a dividend cut in the underlying stock. The second occurs when the SSF is priced well under apparent fair value. This often reflects a stock that is hard to borrow; this is one where the short stock rebate is negative. Unlike conventional securities lending where information costs are high and borrowing costs vary from transaction to transaction, the borrowing costs for an EFP are open. Interactive Brokers has an online quote screen (go to the 'EFP Int' tab) showing the highest and lowest interest rates for a range of stocks on a real-time basis.

Trade Example
Let's say Pension Fund Alpha decides to buy the EFP of a stock with a high EFP rate, say Covidien Limited (COV). On September 22, 2008, the stock closed at a bid-ask spread of $53.41 - 53.44. The October 2008 future, which expires on October 17, 2008, closed at $53.32 – 53.51. There is no dividend expected in the interim. With an effective federal funds rate of 1.48% and 25 days remaining on the future, this implies a fair value of:

$53.41 * $e^{(25/360*.0148)}$, or $53.465.

As the SSF could be purchased near the midpoint of the spread, say $53.44, savings turns out to be a positive EFP rate of

$(1+(53.465-53.44)/53.32)^{(360/25)}-1$, or .0677%.

These calculations are obviously very sensitive to small changes in prices paid and received, and in the case of September 2008 markets, to short-term interest rates. The Interactive Brokers real-time calculation showed an EFP rate of 3.05%.

Pension Fund Alpha now is long an October future on Covidien instead of holding Covidien shares. If nothing further is done, Pension Fund Alpha will receive Covidien shares back at the SSF's expiration.

If Pension Fund Alpha is buying the EFP, someone else, say Trader Beta, can sell the EFP. Trader B does the exact opposite trade, buying Covidien and selling the October SSF. Trader Beta can hold this position as an EFP margined at 5% of the CMV of the more expensive leg, exit the trade as an EFP, buy the short October SSF back as a separate trade and retain Covidien shares or sell Covidien shares and retain the short October SSF.

If Trader Beta chooses the last alternative, selling the shares from the short EFP position and retaining the short October SSF, Trader Beta must either deliver the shares at expiration or close the short October future by expiration. The short October SSF can be rolled forward into a short November SSF.

It is important and indeed critical to emphasize how this last alternative does not violate the Orders. Regardless of whether a market maker was on the other side of Trader Beta's trade or whether it was Pension Fund Alpha taking a long position in the October 2008 Covidien SSF, neither side knew of Trader Beta's subsequent plans. Their trades exist independently with the OCC after initiation.

The end result is Pension Fund Alpha retains all of the exposure to Covidien during the period when the October or any subsequent SSF is open as a long position and can make more efficient use of its capital. The funds tied up in the stock and not earning interest represent an opportunity cost of capital that can be compared to the cost of financing a long SSF position at 20% margin using Treasury bills as collateral; this is done readily and interactively on the OneChicago Calculator. Trader Beta now has a short EFP position which can be held as such, closed as such, or split into either a long Covidien stock or a short Covidien SSF.

Regardless of whether your position is closer to that of Pension Fund Alpha or Trader Beta, SSFs can give you the position you want at a lower financing cost and with greater operational flexibility.