



# Cornhusker Economics

## TAS Orders, Innovations and Challenges in Futures Markets

Futures contracts and futures exchanges were developed a long time ago in the process of evolution of commodity trading. They were created with the purpose of facilitating the buying and selling of commodities. Despite challenges along the way, they helped make commodity trading faster, easier, and more efficient for many buyers and sellers. Still today, futures exchanges are constantly looking for new ways to adjust to new developments in commodity markets and further facilitate trading. After all, as we have previously discussed in this space, futures exchanges provide a service to buyers and sellers, i.e., the marketplace to trade futures and options contracts. More trading in this marketplace means more profits for futures exchanges.

One example of these innovations is trading at settlement (TAS) orders, which were created in the early 2000's for certain futures contracts and since then have expanded to a wider variety of contracts. They developed following the needs of certain market participants, i.e., futures exchanges created this kind of order to encourage some buyers and sellers to trade in the futures market by providing a service that they needed. This new service also exemplifies a constant challenge of futures exchanges, which is trying to avoid abusive trading practices that can potentially drive traders away from their marketplace.

Before we discuss these points further, let us first talk about settlement in the futures market so that we can better understand the issues going on here.

### What is a settlement price?

The settlement price is an average price based on the trading activity during the settlement period, which corresponds to the last moments of the trading session. For example, for the corn and soybean futures contract, the settlement period goes from 13:14:00 to 13:15:00 CST, i.e., the last minute of the trading session. For the live cattle and feeder cattle futures contracts, the settlement period goes from 12:59:30 to 13:00:00 CST, i.e., the last 30 seconds of the trading session. Rules for final settlement of expiring contracts are a little different, but the idea is still that settlement prices are an average price based on the settlement period.

The settlement price is not just a simple average price, but rather a weighted average price. The weights are the trading volume at each price level during the settlement period, hence prices traded more heavily during the settlement period will have more weight in the calculation of the settlement price.

Therefore, the settlement price is not a single price based on the last trade of the trading session. Instead, it is a weighted average price based on all trades executed during the last moments (the settlement period) of the trading session.

### How exactly do TAS orders work?

Trading at settlement (TAS) is a type of trading order that allows traders to place orders to buy or sell futures contracts during the trading session at the settlement

price, i.e., at the price that will still be determined at the end of the trading session. TAS orders can be placed any-time during the trading session, but they will only be executed at the end of the trading session because that's when the settlement price will be determined. Therefore, traders don't know the exact price at which their orders will be executed at the moment they place TAS orders. They will only know the price at the end of the trading session, when the settlement price is determined, and their orders are actually executed.

TAS orders don't need to be submitted exactly at the settlement price. For agricultural commodities in the CME Group, for example, traders can also submit orders to buy or sell at a price up to 4 ticks above or below the settlement price. A tick is the minimum price fluctuation allowed in futures markets. For the corn and soybean futures contracts, the tick size is  $\frac{1}{4}$  of a cent (\$0.0025), which means that corn and soybean futures prices change by increments of \$0.0025/bu. For the live cattle and feeder cattle futures contracts, the tick size is \$0.00025/lb. If a trader places an order to trade corn futures contracts at TAS+1, they will trade at one tick above the settlement price. If a trader places an order to trade live cattle futures contracts at TAS-3, they will trade at three ticks below the settlement price.

### **Are TAS orders always executed at the end of the trading session?**

Not necessarily. TAS orders are placed during the trading session and then they are matched at the end of the day. TAS orders can only be matched with other TAS orders. If a TAS order cannot be matched at the end of the day, it will not be executed. For instance, if I place a TAS zero (or 'flat', or 'par') order, that means I want to trade exactly at the settlement price. But if nobody else submits a TAS zero order during the day, then nobody wants to trade exactly at the settlement price. Therefore, my order will not be executed because no other trader in the market wants to trade at the same price as I do.

Therefore, TAS orders work in the same way as any trading order in the futures market. There needs to be a buyer and a seller who want to trade at the same price. Whether it is a TAS zero order, or a TAS+2 order, or a TAS-5 order, it will only be executed if there is someone else in the market willing to trade at the same price level.

### **What is the advantage of using TAS orders?**

Some commercial firms, such as grain elevators, or merchandisers or other participants in commodity markets, can use the settlement price from the futures market as a reference for transactions in the cash market. Since these firms can also use futures contracts to hedge their trades in the cash market, being able to place their hedges at the settlement price allows them to manage their price risk more efficiently.

In addition, institutional investors, such as investment funds and ETFs, can also benefit from TAS orders because it can be more convenient to trade a large number of futures contracts at the same price when it comes to valuation of their positions. The ability to execute trades at the same settlement price can also be useful for traders and investors who need to transfer positions from one account to another.

TAS orders can also be beneficial during moments of higher volatility in the market during the day. Traders who don't have enough information to understand what is going on in the market might choose not to take higher risk by trading during these periods of larger volatility, but they can still trade by placing a TAS order that will only be executed at the end of the trading session at or near the settlement price.

### **Some challenges with TAS orders**

One challenge with TAS orders is what traders call "banging (or marking) the close". Essentially, a trader would trade a large quantity of futures contracts before and/or during the settlement period and then offset all these contracts before the end of the settlement period. By trading large positions this way, the intent is to drive prices in a certain direction and hence artificially determine the settlement price. There are risks involved in properly executing this kind of trade to manipulate the settlement price, but it is possible to do that (as can be seen in several filings of the Commodity Futures Trading Commission-CFTC).

Another challenge is liquidity. For some commodities, a large enough number of TAS orders are placed during the day and hence there is enough liquidity for buyers and sellers to have their orders matched and executed at the end of the trading session. However, for other futures

contracts, TAS orders represent a relatively small proportion of the trading activity on any given day. In these cases, it can be more challenging for some buyers and sellers to have their orders matched and executed at the end of the trading session (another issue with low liquidity is that it can also make it easier to manipulate prices as we discussed above). In fact, TAS orders are not even offered in futures markets that are normally thinly traded. Still, the volume of TAS orders in the markets in which they are offered can vary and these orders are used more often in some markets than others.

### **Take-away points**

Futures exchanges have developed many innovations over the years (such as TAS orders) to meet specific needs of buyers and sellers in the market. Their objective has always been to attract more trading activity and hence more revenue. Innovations were also seen by some market participants as opportunities to manipulate the market in their favor, which is not in the best interest of futures exchanges because it can drive traders away and eventually reduce trading activity.

Developing new trading tools and trying to avoid manipulation has always been present in the history of futures markets. Futures exchanges are a business like any other and their purpose is to generate profits by providing a service to traders in the form of a fair and efficient marketplace. Futures markets can be useful for some traders but not for others. Some traders may benefit from that marketplace while others may not. It is up to buyers and sellers in any given market to decide whether they are better off using the services of futures exchanges or finding other alternatives to meet their trading and risk management needs.

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