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Cornhusker Economics

Pork in the Future:

The New Futures and Options Contracts on Pork Cutout

Market Report	Year Ago	4 Wks Ago	10-23-20
Livestock and Products, Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.	107.00*	*	
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.	156.05	161.46	151.41
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb. 1	150.54	150.71	144.32
Choice Boxed Beef, 600-750 lb. Carcass.	223.08	216.87	209.03
Western Corn Belt Base Hog Price Carcass, Negotiated	*	*	94.80
Pork Carcass Cutout, 185 lb. Carcass 51-52% Lean.	75.00	90.18	NA
Slaughter Lambs, woolled and shorn, 135-165 lb. National.	136.60	138.18	168.73
National Carcass Lamb Cutout FOB.	398.03	423.67	445.96
Crops, Daily Spot Prices			
Wheat, No. 1, H.W.			
Southwest NE, bu.	3.65	4.31	5.00
Corn, No. 2, Yellow			
Central NE, bu.	3.69	3.38	3.94
Soybeans, No. 1, Yellow			
Central NE, bu.	8.29	9.28	5.03
Grain Sorghum, No.2, Yellow			
Southeast NE, cwt.	5.96	4.12	10.22
White Oats, No.1/2, Bulk			
Minneapolis, Mn, bu.	3.13	2.96	3.17
Feed			
Alfalfa, Large Squares, Good, Central Nebraska, ton.	-	-	115.00
Alfalfa, Large Rounds, Good Central Nebraska, ton.	-	-	95.00
Prairie/Meadow Grass, Large Rounds, Good Central Nebraska, ton.	-	-	92.50
Dried Distillers Grains, 10% Moisture Nebraska Average.	155.50	156.00	174.00
Wet Distillers Grains, 65-70% Moisture Nebraska Average.	51.0	45.47	52.80
* No Market			

The CME Group has announced its plan to launch futures and options contracts on pork cutout. The new contracts are scheduled to start trading on November 9, 2020. The exchange has already been offering futures and options contracts on lean hogs and now adds another contract that the industry can use for risk management. While the existing futures contract on lean hogs is based on prices paid for hogs in the U.S., the new contract on pork cutout is based on prices paid for wholesale cuts of pork.

According to the exchange, the new contracts were developed from discussions with industry indicating that pricing agreements have been increasingly based on pork cutout prices. In these cases, futures and options contracts on lean hogs would not be an accurate tool for risk management since hog prices and pork cutout prices do not necessarily exhibit the same patterns over time.

One of the specifications of the new contract is that it is not settled by physical delivery. Instead, it is cash settled based on the Pork Cutout Index.

Not all futures contracts are deliverable

Futures markets as we know today evolved from cash markets and forward markets, so futures markets started as delivery markets. Still today, physical delivery remains the main method to settle futures contracts at maturity in agricultural markets. It is true that only a small proportion of futures contracts is actually delivered (since most

hedgers and speculators choose to offset their contracts before expiration), but physical delivery is still the settlement method for most agricultural futures contracts.

As opposed to physical delivery, some futures contracts are cash settled (or financially settled) upon contract maturity. Cash settlement was approved by the Commodity Futures Trading Commission (CFTC) in the early 1980's and was initially used mostly on futures contracts whose underlying assets cannot be physically delivered, such as stock indexes (e.g. Dow Jones or S&P500) or Eurodollars (U.S. dollar-denominated deposits at banks outside the U.S.). Over time, other futures contracts also started using cash settlement.

In agricultural markets, some futures contracts are cash settled because the underlying commodity cannot be delivered in the U.S. For example, the CME Group has recently launched new contracts on South American soybeans, Black Sea wheat, Black Sea corn, and Australian wheat, whose underlying commodities are based in other countries.

There are also cases in which cash settlement is used because of the structure of the underlying cash market. Physical delivery becomes less effective when the underlying cash market is not fully represented by large, concentrated supply and/or demand centers. For example, when producers are relatively small and/or geographically disperse (i.e. the market is decentralized), this creates challenges to developing an efficient delivery system in the futures market due to issues with deliverable supply and freight. In those cases, cash settlement tends to be a more effective method to settle contracts at maturity. The lean hogs and feeder cattle futures contracts are examples of this case.

How cash settlement works

In cash-settled futures contracts, sellers and buyers do not deliver or take delivery of the underlying commodity upon contract maturity. Instead, sellers and buyers accept a credit or debit on their trading accounts upon contract maturity. At contract maturity, open positions are marked-to-market against the settlement price of the last trading day and the balance of traders' accounts are adjusted accordingly. Then all positions are offset and traders no longer have any obligation in the futures market for the now-expired contract.

For example, I bought the commodity for \$100 using futures contracts for December "delivery" (although the contract is not actually deliverable, we still use the standard terminology). I keep my futures contract open until expiration. On the last trading day of the contract for December delivery, the settlement price is \$103. My contract is then offset by the clearing house and I leave the futures market with a profit of \$3 (bought at \$100, "sold"/offset at \$103). It essentially works as if I were offsetting my futures contract by taking the opposite position in the futures market.

The settlement price is typically given by a price index that represents the general behavior of prices in the underlying cash market, and not by the futures price of the last day of trading.

The Pork Cutout Index

As previously stated, the new pork cutout futures contract is cash settled based on the Pork Cutout Index, which is derived from prices paid for pork cutout as reported by the USDA's National Pork Report FOB Plant (Negotiated Sales-Afternoon).

The index is calculated as a five-business day weighted average of pork cutout prices. Every day, the daily total value of pork cutout is calculated by multiplying the daily number of loads by the daily carcass price. The sum of daily total values over five consecutive days is divided by the sum of daily loads over those five days, which results in a 5-day weighted average price in cents per pound.

Therefore, the value of the Pork Cutout Index reflects pork cutout prices over a 5-day period. The behavior of the index over time represents the change of average cutout prices over a 5-day rolling window.

When futures contracts are cash settled

Regardless of how the futures contract is settled at maturity, it is essential for the futures price to be closely tied to the cash price of the underlying commodity. When futures contracts are settled by physical delivery, they actually represent a transaction in the cash market at maturity, which should create a close connection between prices in the futures and cash markets. On the other hand, when the futures contract is cash settled, the connection between the futures and cash markets is supposed to happen through the index used to settle futures

contracts at maturity. This is why the choice of the index is critical for the success of the futures contract.

The index must include prices that are representative of the cash market for the underlying commodity, i.e. the changes in the value of the index over time must closely reflect the changes of prices of the underlying commodity over time. This is essential to establish the connection between futures and cash prices, which is important for hedgers and also for speculators. In addition, the index must be constructed in a way that prevents manipulation by market participants. If the index can be manipulated, it means that settlement at contract maturity can be manipulated, leading to larger gains to some traders and larger losses to other traders. This would make the contract unreliable and keep traders away from it.

Speculators in cash-settled futures contracts

In principle, speculators can trade in cash-settled futures contracts in the same way that they trade in delivery-settled contracts. They can buy and sell based on their price expectations and later offset their contracts at a gain or loss. Since the pork cutout futures contract is not deliverable, speculators don't need to worry about offsetting their positions before the delivery period starts. Still, they need to keep in mind that outstanding positions are liquidated at maturity based on the Pork Cutout Index, i.e. based on the 5-day weighted average of cutout prices in the cash market. The index may not capture sudden large changes in the futures price within the last few days before maturity, which can lead to larger- or smaller-than-expected gains or losses at maturity. However, this situation can be avoided if speculators simply offset all their positions before maturity.

Hedging with contracts that are not deliverable

In theory, as long as futures and cash prices are closely tied, futures contracts can be beneficial to hedgers either when they are settled by physical delivery or cash settled. Most hedgers choose not to deliver against the futures market anyway, so the fact that they can't deliver cutouts with the new contract shouldn't be a concern for most hedgers.

What really matters for hedgers in futures markets is the behavior of the basis over time, i.e. the behavior of the spot price in the hedger's cash market relative to the futures price. This will be the main point for hedgers to watch once the new contract starts trading.

Moving forward after November 9

The success of a futures contract relies basically on its ability to attract hedgers and speculators to the market. Both types of traders are necessary for the well-functioning of a futures market. In general, we can say that speculators should be more likely to trade in futures markets with large price volatility (which creates more opportunities to profit from price changes) and a "large enough" number of traders in the market (so that it is easy to find someone to trade with and hence get in and out of the market smoothly). For hedgers, liquidity is also important. More traders in the market would mean that hedgers could easily hedge all the quantity that they want to, as well as offset their positions when they need to. Besides, as mentioned earlier, hedgers will be watching for the behavior of their local cash prices relative to the futures price.

However, liquidity is often a tricky point in futures markets. If traders choose to wait and only start trading once there is more liquidity in the market, then there will never be more liquidity in the market. As the popular saying goes, "Liquidity begets liquidity." As more traders start trading in the new market, more traders will join in. On the other hand, few traders in the market will not motivate more traders to join in. After some time with low liquidity, it becomes more likely for the market to lose traders rather than to attract more traders.

Despite all the efforts to develop effective futures and/or options contracts (after all, it is in the exchange's best interest to have contracts that are heavily traded), many new contracts have historically failed and ended up delisted after a while. It will be exciting to follow the initial weeks of the new contract and see how liquidity evolves, how much price volatility there will be, and what happens with the basis in different cash markets.

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