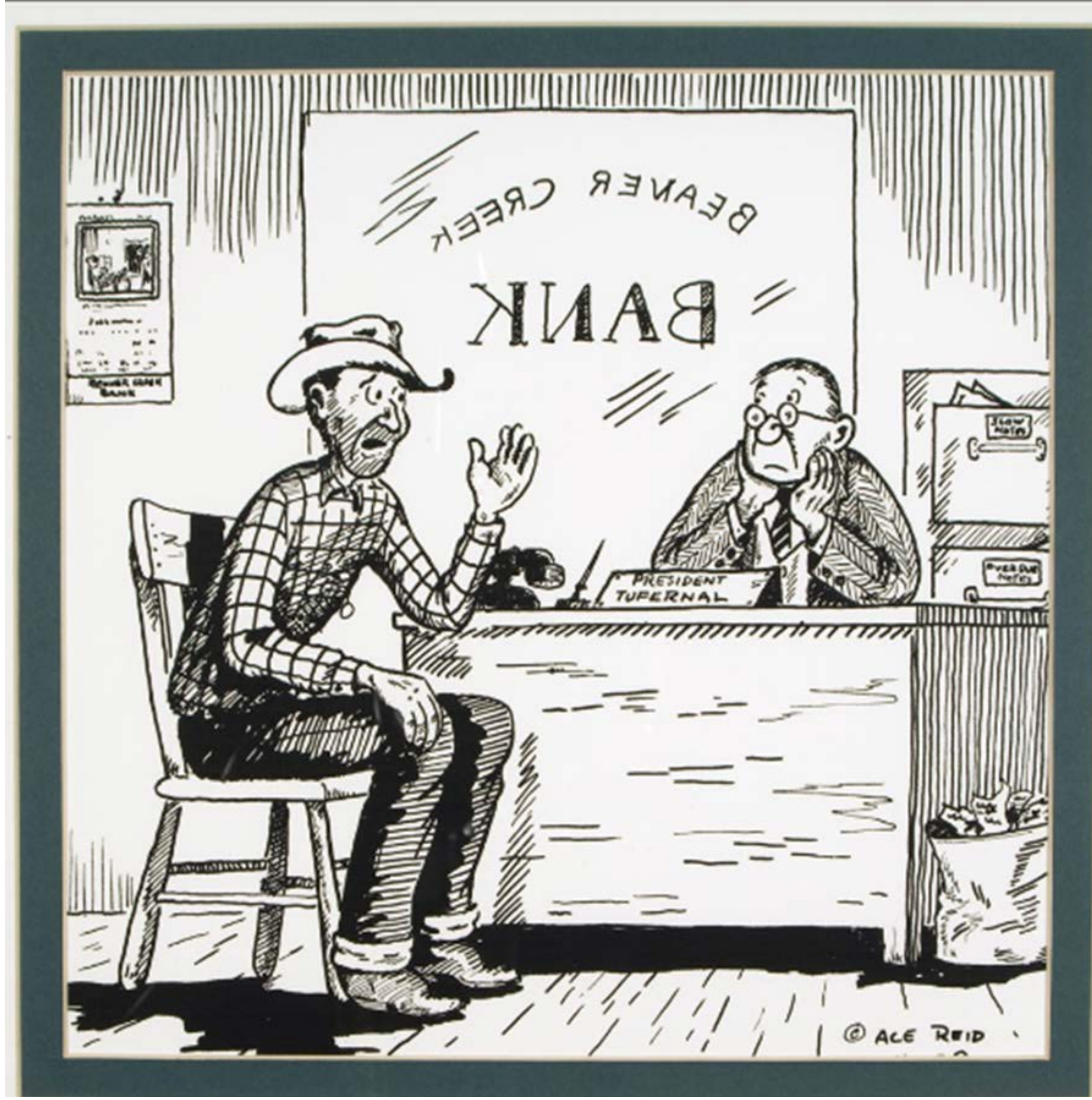
Texas A&M AgriLife Extension

Managing Price Risk: are we more afraid of high prices or low prices?

Mark Welch
Extension Economist—Grain Marketing
JMWelch@tamu.edu
(979)845-8011

Southern Extension Risk Management Education



"Well sir it's like this: I wuz offered 35 cents on them 28 cent calves, but I was holdin' out fer 40 cents. Now it looks like we're gonna have to feed them 21 cent calves til spring."

Marketing

What I hate…

- What if I don't make a crop?
- As soon as I sell, the price goes up
- Margin calls
- Broker talks me into buying puts—always lose money
- Keep sending money to Chicago, never get any back

What I love…

- Hedging can pay even if you don't make a crop
- When you make a selling decision, you want to be wrong
- You want to make margin calls
- You want to lose money when you buy puts
- Your money comes back in the value of your crop

Texas A&M AgriLife Extension

Marketing Strategies

Basics

1. Do Nothing
   – Cash sales at harvest
2. Fix Price Now
   – Cash forward contract
   – Hedge
3. Set a Price Floor
   – Options

Advanced

4. Set a Price Floor/Ceiling
   – Options

Texas A&M AgriLife Extension

Marketing

1. Do Nothing

- If you do no pre-harvest pricing you are a speculator in the cash market.
- You accept all the price risk between now and whenever you decide to sell.

Texas A&M AgriLife Extension

2. Fix Price Now—Cash Contract

- **Private negotiation in which the farmer and the merchant agree now upon a price of a commodity to be delivered in the future**
- **Advantages**
  - Farmer and merchant lock in a price ahead of time
  - Helps eliminate the uncertainty caused by price fluctuations

Texas A&M AgriLife Extension

2. Fix Price Now—Cash Contract

- Disadvantages
  - It didn’t eliminate the risk that the merchant might default on the agreement.
  - Similarly, farmers could default in the delivery if prices had gone up substantially.
  - It didn’t solve all the unforeseen price changes related to product delivery (such as quality, measurement, and timing, etc.)
  - Locked in to a set delivery point

2. Fix Price Now: Hedging with Futures Contracts

- Hedging is a position in the futures market that is opposite one's position in the cash market.
- Since futures and cash markets move together, any loss in the cash market is offset by gains in the futures market.
- Hedging is doing ***now*** in the futures market what you anticipate doing ***later*** in the cash market.

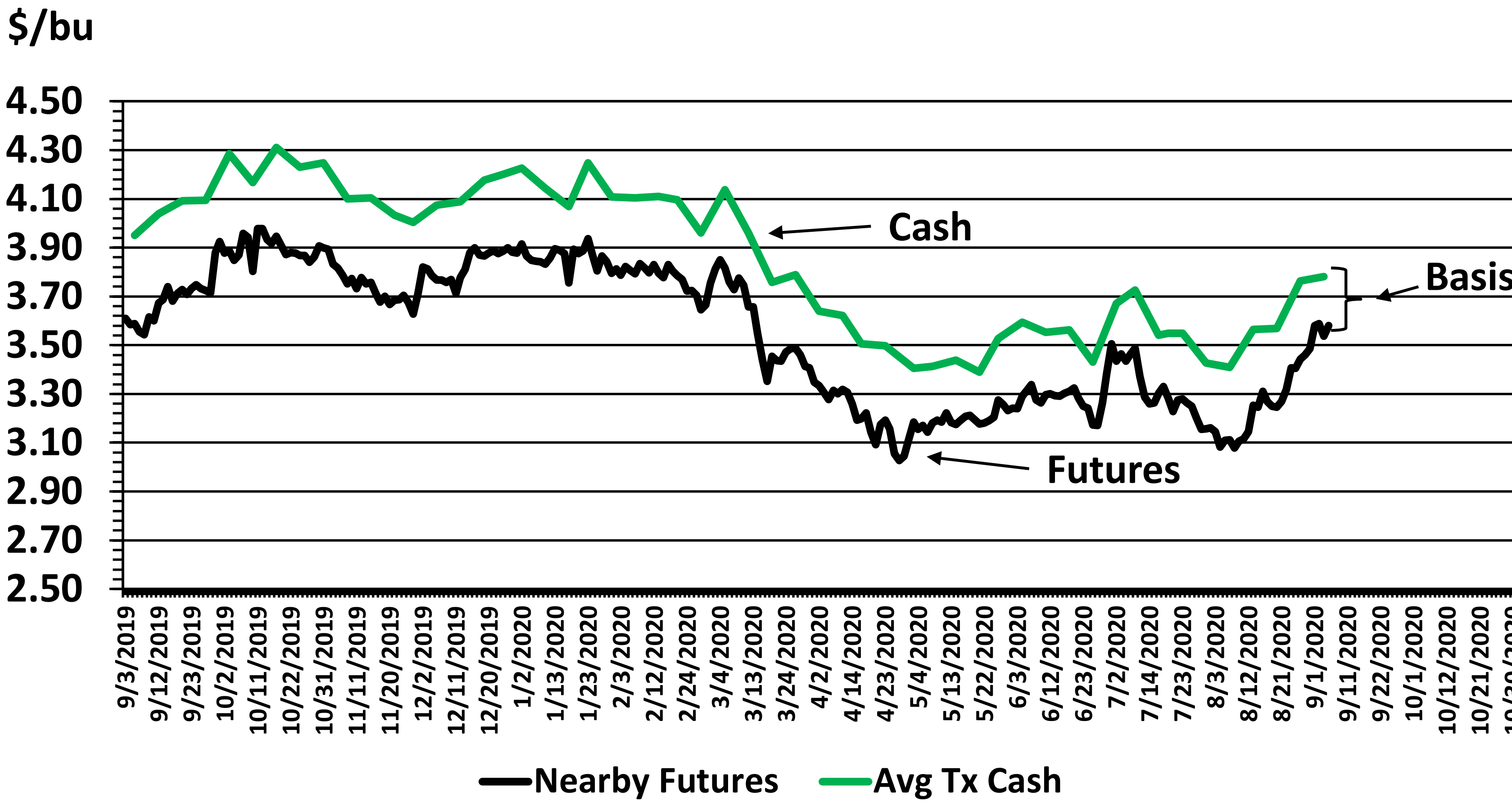
Texas A&M AgriLife Extension

Why Futures Markets Work

- **Forward pricing using futures markets is based on the premise that cash and futures prices move together over time.**
- **Therefore, adjusting for local conditions, pricing in the futures market is a close approximation to pricing in the cash market.**

Texas A&M AgriLife Extension

Nearby Corn Futures, daily
Average Texas Cash Corn, weekly



USDA, AMS, Market News: TX cash = average (area North of the Canadian River, Triangle Area from Plainview to Canyon to Farwell, area South of a Line from Plainview to Muleshoe)

Basis

- The amount that the local cash price of a commodity is above or below the futures price for a particular month
- Impacted by transportation costs, storage and handling, interest charges, local demand

(basis = cash - futures)

Basis and Expected Price

- Knowledge of local basis is necessary to translate a given futures price into a probable price for local delivery.
- The futures price adjusted for basis is the price the market is offering for your grain delivered at a local elevator during a particular month.

(expected price = futures + basis)

Texas A&M AgriLife Extension

Hedging

- Hedging is simply shifting the risk of a price change in the cash market to the futures market.
- This involves simply taking an opposite position in the cash market relative to the futures position.
- In other words, hedging is replacing a future cash transaction with a futures contract.

Futures Contract

- **A standardized agreement (legally binding) to buy or sell a commodity specifying quantity, quality, maturity date, and delivery (place and time)**
- **The only non-established variable is price.**

The Futures Price

- What buyers and sellers expect the price to be in a given future month based on currently available information
- The futures price is a statement of a commodity’s value at a specific point in time at a particular location.

CME Corn Futures Quotes

MONTH	OPTIONS	CHARTS	LAST	CHANGE	PRIOR SETTLE	OPEN	HIGH	LOW	VOLUME	HI / LOW LIMIT	UPDATED
SEP 2020	OPT		348'2	+1'0	347'2	348'0	353'0	347'0	95	No Limit / 0'2	08:30:46 CT 08 Sep 2020
DEC 2020											:30:51 CT Sep 2020
MAR 2021											:30:50 CT Sep 2020
MAY 2021											:30:51 CT Sep 2020
JUL 2021											:30:49 CT Sep 2020
SEP 2021											:30:48 CT Sep 2020
DEC 2021											:30:48 CT Sep 2020
MAR 2022											:30:28 CT Sep 2020
MAY 2022											:19:45 CT Sep 2020
JUL 2022											:30:00 CT Sep 2020
SEP 2022	OPT		391'0	+0'2	390'6	391'0	391'0	391'0	38	415'6 / 365'6	08:19:45 CT 08 Sep 2020
DEC 2022	OPT		393'4	-2'0	395'4	395'2	396'0	393'4	56	420'4 / 370'4	08:30:08 CT 08 Sep 2020

MARKETS | COMMODITIES

CME, Nasdaq to Launch Water Futures Contract

Market will be first of its kind for world's most crucial commodity, organizers say

Farmers are known to pray for rain. Now they can hedge against unanswered invocations.

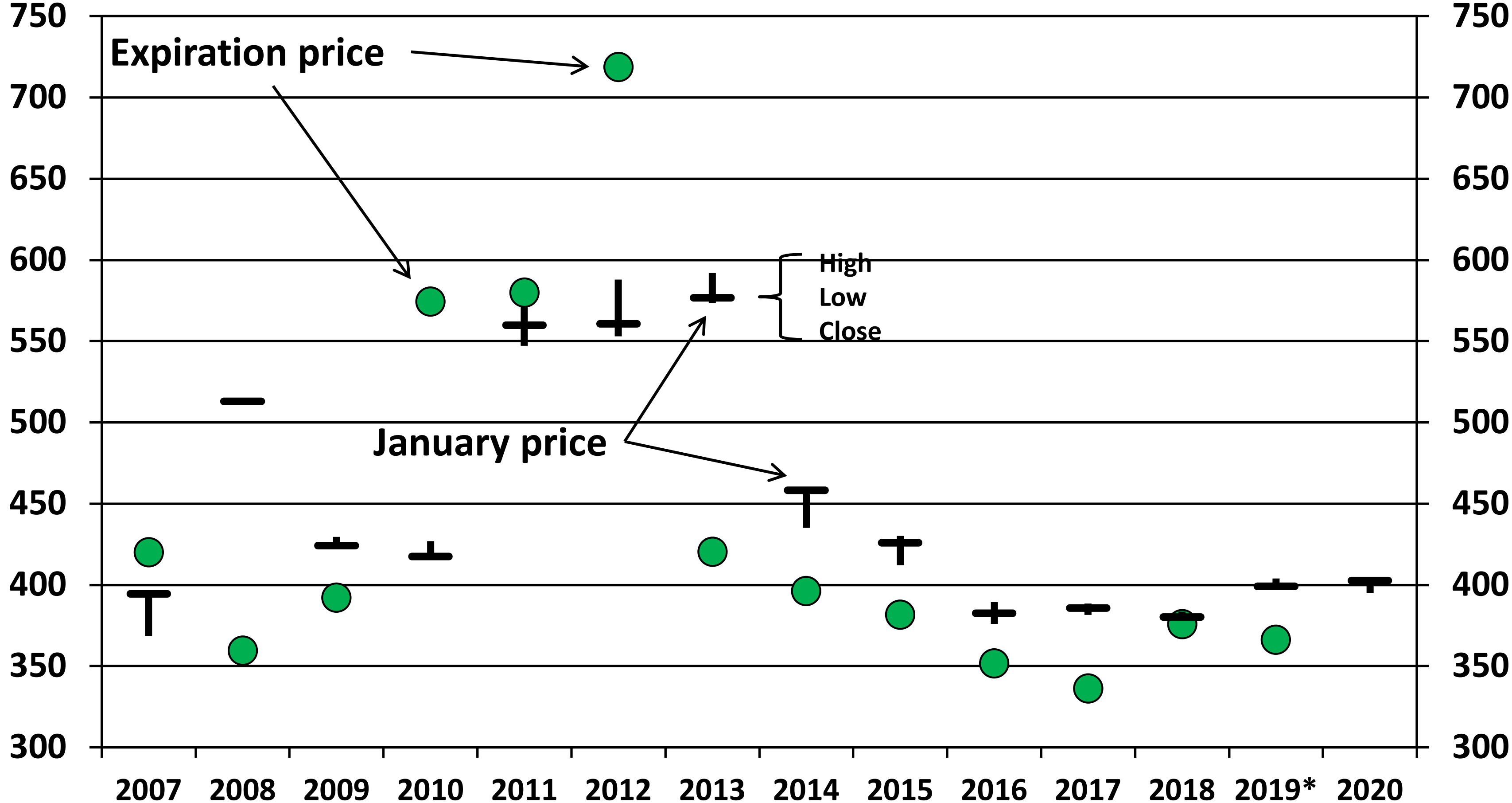
Exchange operators CME CME +0.02% ▲ Group Inc. and Nasdaq Inc. NDAQ +0.06% ▲ are planning to launch a futures contract later this year that will allow farmers, speculators and others to wager on the price of water.

The market will be the first of its kind, its creators say, putting water on the board for investors alongside other raw materials like crude oil, soybeans and copper.

"You have the most important commodity in the world and everything else is listed except the water price," said Lance Coogan, chief executive of Veles Water Ltd., which created a water-price index to which the futures will be tied.

Prices are reported in 1/8ths of a cent, minimum price move = 2/8 or 1/4 cent

December Corn Futures on the day of the January Crop Report (High, Low, Close) and Closing Price at Contract Expiration in December



*No January Crop Report, February Crop Report 2/8/2019

What is the futures market?

- **A centralized market where futures contracts are traded. The trading occurs in organized exchanges either by open outcry or electronically or both.**

Purpose of Futures Markets

- Provide buyers and sellers of commodities with the opportunity to establish prices for future delivery (transfer price risk)
- Provide a central market place where buyers and sellers from all over the world can interact to determine prices (price discovery)

Futures Market Participants

- Hedgers (transfer risk)
  - Buyers
    - Users of commodities seek protection from rising prices
  - Sellers
    - Producers of commodities seek protection from falling prices
- Speculators (assume risk)
  - Willing to accept price risk in order to make profits

Texas A&M AgriLife Extension

Hedgers

- Producers risk that the value of commodities will decline before time to sell them. Users of commodities risk prices will go up before they need to buy them.
- The producer or owner of commodities will use a selling *short* hedge as protection against declining prices.
- The user of commodities will use a buying *long* hedge to protect against rising prices.

Speculators

- **The speculator fulfills two roles:**
  1. **The speculator takes on the risk that the producer or user of a commodity is unwilling or unable to accept.**
  2. **The speculator is available at the time of need to assume the risk, thereby providing an economic function, *liquidity*.**
  3. **Two main groups of speculators:**
     - Hedge Funds/Money Managers
     - Index Funds (e.g. Goldman Sachs, Reuters CRB)

CBOT Corn

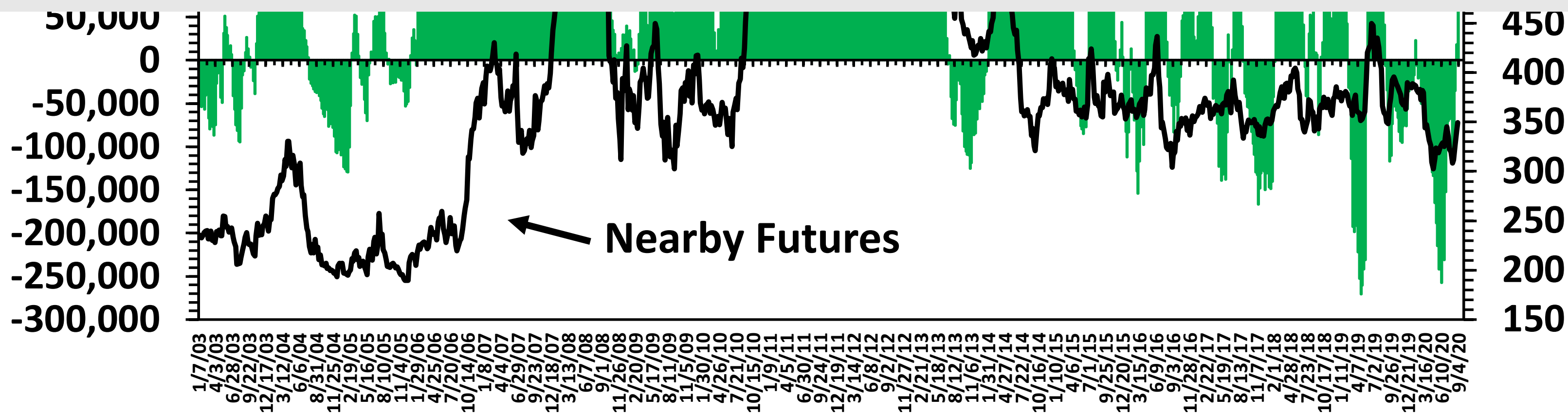
Commitment of Traders (Futures and Options)

Reportable Non-Commercial Positions and Nearby Futures Prices

Contracts of 5,000 Bushels

Cents/Bu.

Speculators continued their bullish run on corn futures and options last week, according to Friday's Commitment of Traders report from the CFTC. Hot weather and strong Chinese demand supported hedge fund interest in corn as yield estimates continue to slide and demand recovers in the pandemic-era. Money managers trimmed a behemoth 72,889 short positions from their portfolios to end the week, becoming net buyers of corn for the first time in over a year to the tune of 18,659 contracts. --*Farm Futures 9/8/2020*



Weekly

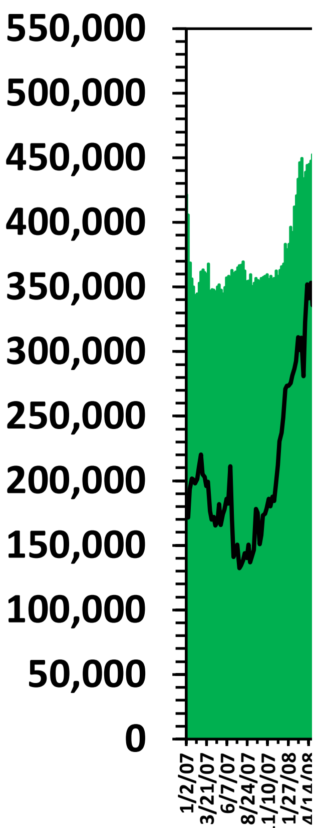
January 7, 2003 Through September 1, 2020

CBOT Corn

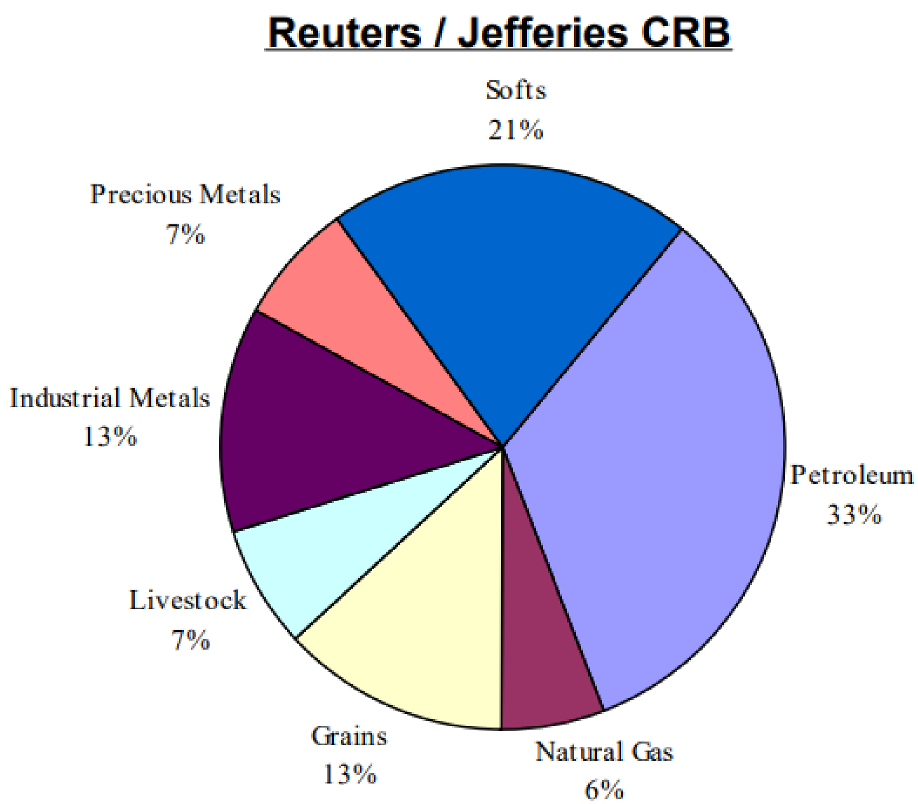
Commitment of Traders (Futures and Options)

Reportable Positions Index Traders and Nearby Futures Prices

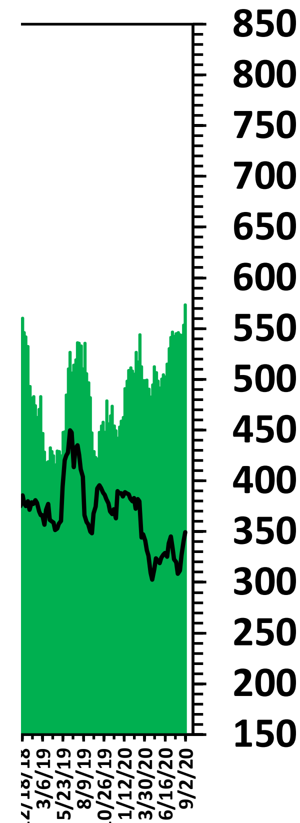
Contracts of 5,00



Weighting Factors: Sector Comparison



Cents/Bu.



Weekly

January 2, 2007 Through September 1, 2020

The Role of Speculators

Many contemporary [nineteenth century] critics were suspicious of a form of business in which one man sold what he did not own to another who did not want it.

--Morton Rothstein, Professor of History and Agricultural Economics, University of Wisconsin (1966)

The Basics of Futures Market

- Buying: This is similar to most investment buying. You are buying in anticipation of selling it later at a higher price. If you buy a futures contract, you are said to be long.
- Selling: You can also sell a futures contract with the anticipation of buying it back at a later date, hopefully at a lower price. The initial sell is called a short.
- Offsetting: If you buy a futures contract and sell it later or if you sell a futures contract and buy it later.

Texas A&M AgriLife Extension

The Basics of Futures Market

Buy (or sell) a futures contract

Offset

Sell (or buy back) the futures contract

Delivery usually occurs in less than 1 percent of all contracts traded.

Margin

- Purpose: To assure performance, i.e., to guarantee that both buyers and sellers ultimately meet their contractual obligations
- Level of margin: depends on the price volatility of the commodity that underlies the futures contract

Margin Requirements

- Money that you as a buyer or seller of commodities place on deposit with your broker to ensure contract performance
- Minimum set by exchange—specific amount set by the brokerage firm (typically 5-10%)
- Account is balanced at end of day,

  'Marked to Market'

Marked to Market

- On paper, each person's account is balanced at the end of each day using the closing or settlement prices of that day.
- This determines whether or not you will receive a margin call.

Grain futures are mostly a little lower this morning as the market seeks new direction following a fairly uneventful USDA monthly world supply and demand Wednesday. The CME cut margins for corn, soybeans and wheat speculators 10% to 20%, reflecting low volatility. Farm Futures March 10, 2016

TEXAS A&M AGRILIFE EXTENSION

Margin Example, Corn

Initial margin = $3,000

Maintenance margin = $2,500

Buy Corn at $3.40/bu.

5,000 bu./contract

$0.01 x 5,000 bu. = $50/contract

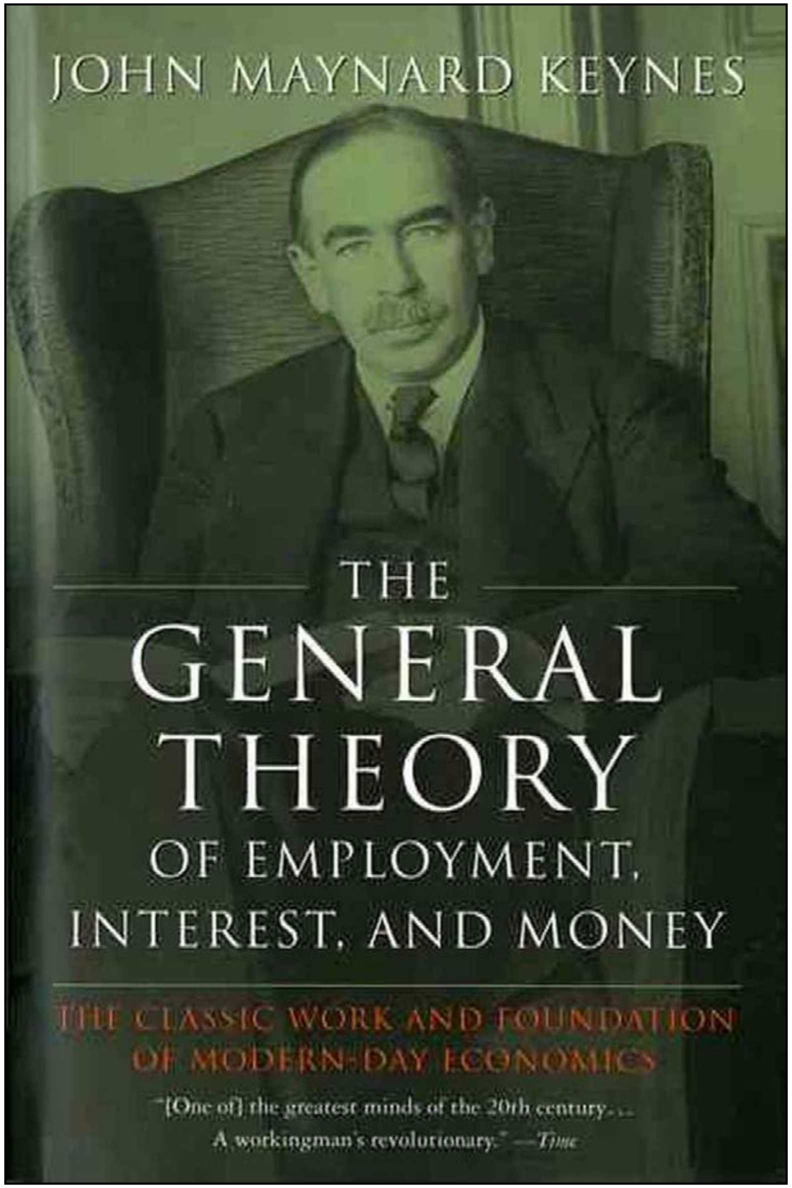
Day	Futures Price	Price +/-	Margin +/-	Preliminary Daily Margin Balance	Margin Call	Final Daily Margin Balance
1	$3.42	+0.02	+100	3100	0	3100
2	$3.45	+0.03	+150	3250	0	3250
3	$3.37	-0.08	-400	2850	0	2850
4	$3.28	-0.09	-450	2400	600	3000
5	$3.25	-0.03	-150	2850	0	2850

Profit from trade = (3.25-3.40)*5000 = -$750 plus commission

Net Return = Final Margin Balance – Initial Investment – margin calls and commission

2850 – 3000 – 600 = -750

Texas A&M AgriLife Extension



"The market can stay irrational longer than you can stay solvent."

--John Maynard Keynes

Texas A&M AgriLife Extension

Hedge Price

- Hedge Price is the price actually paid or received in the cash market plus or minus the gain or loss on the futures transaction.
- Use the futures contract month closest to the time, but not the same month as, you plan to sell the physical commodity.

Texas A&M AgriLife Extension

Futures vs. Cash

- Cash contracts require negotiation of price, quality, delivery date, location, etc.
- Futures contracts vary only by price. All other conditions are set by the exchange.

Which Marketing Strategy is Best?

Cash

- Advantages
  - No margin calls
  - Locks in the basis
- Disadvantages
  - Must deliver physical commodity
  - Must deliver to a specific location

Futures

- Advantages
  - Not forced to deliver physical commodity
  - Not tied to a specific delivery location
- Disadvantages
  - Margin calls
  - Still have basis risk

Managing Risk at CME