

# COMMODITY CHALLENGE

## Section I Introduction to Futures and Options Markets

### Chapter 5: Futures markets and commodities traded

#### Learning objectives

- To know major agricultural futures exchanges
- To see the types of commodities traded
- To understand common characteristics of futures traded commodities

#### Key terms

**Commodity:** A raw material or primary agricultural product that can be bought and sold, such as corn or silver. Commodities are homogenous products – buyers and sellers regard them as equal, regardless of who produced them. The same grade of corn has equal value, whether it was produced in Iowa, Indiana or Nebraska.

#### Major agricultural futures exchanges

The trading of futures contracts is conducted on organized commodity markets. There are a number of important agricultural futures markets in North America.

**CBOT:** Established in 1848, the Chicago Board of Trade is the oldest of all existing futures exchanges. Agricultural commodities traded include corn, soybeans, soybean oil and meal, and soft red winter wheat. The CBOT went public in 2005 and merged with the CME in July 2007.

**CME:** The Chicago Mercantile Exchange opened in 1898 as the Chicago Butter and Egg Board. It is home to live cattle, feeder cattle, lean hog futures and a complex of dairy products. The CME converted from a non-profit institution to a for profit institution in December 2002.

**ICE Futures U.S.:** In January of 2007, the IntercontinentalExchange acquired the New York Board of Trade and renamed it ICE Futures U.S. This exchange plays host to trading in "soft" commodities, including coffee, cocoa, sugar, cotton and orange juice.

**KCBOT:** The Kansas City Board of Trade was formally chartered in 1876 and trades hard red winter wheat futures and options. The KCBOT was purchased by the CME in December 2012.

**MGEX:** The Minneapolis Grain Exchange started in 1881 and is home to a successful hard red spring wheat contract.

**ICE Futures Canada:** Formerly known as the Winnipeg Commodity Exchange, this exchange features a successful canola contract.

This table shows the most actively traded agricultural futures contracts in North America.

**Annual Futures Trading Volume, 2011**  
Selected U.S. and Canadian Agricultural Commodities

| Commodity      | Exchange   | Contract Size | Year Started | Volume (contracts) |
|----------------|------------|---------------|--------------|--------------------|
| Corn           | CBOT       | 5,000 bushels | 1877         | 79,004,801         |
| Soybeans       | CBOT       | 5,000 bu.     | 1936         | 45,143,755         |
| Sugar #11      | ICE U.S.   | 112,000 lbs.  | 1914         | 24,704,245         |
| Wheat          | CBOT       | 5,000 bu.     | 1877         | 24,283,331         |
| Soybean Oil    | CBOT       | 60,000 lbs.   | 1950         | 24,156,509         |
| Soybean Meal   | CBOT       | 100 tons      | 1951         | 16,920,194         |
| Live Cattle    | CME        | 40,000 lbs.   | 1964         | 13,532,554         |
| Lean Hogs      | CME        | 40,000 lbs.   | 1966         | 9,969,961          |
| Wheat          | KCBOT      | 5,000 bu.     | 1876         | 6,342,782          |
| Cotton         | ICE U.S.   | 50,000 lbs.   | 1870         | 5,288,454          |
| Coffee         | ICE U.S.   | 37,500 lbs.   | 1964         | 5,174,538          |
| Cocoa          | ICE U.S.   | 10 tonnes     | 1925         | 4,948,052          |
| Canola         | ICE Canada | 20 tonnes     | 1963         | 4,274,882          |
| Wheat          | MGEX       | 5,000 bu.     | 1883         | 1,732,331          |
| Feeder Cattle  | CME        | 50,000 lbs.   | 1971         | 1,580,387          |
| Orange Juice   | ICE U.S.   | 15,000 lbs.   | 1966         | 627,610            |
| Class III Milk | CME        | 200,000 lbs.  | 1996         | 368,614            |
| Oats           | CBOT       | 5,000 bu.     | 1877         | 349,316            |

As we have seen, futures trading evolved from the growing cash markets for corn, oats and wheat in the 19th century. For the next century, futures markets and trading was limited to agricultural commodities.

The next table shows the most active agricultural futures contracts traded in other parts of the world. One note of caution when comparing the volume of trade; not all contracts are the same size. For example, the corn futures contract at the DCE in 10 tonnes (~400 bushels), while the CBOT corn contract is 5,000 bushels.

### **Agricultural Futures Worldwide, 2010**

#### *Selected Agricultural Commodities*

| Commodity    | Exchange | Contract Size | Volume (contracts) |
|--------------|----------|---------------|--------------------|
| White Sugar  | ZCE      | 10 tonnes     | 305,303,131        |
| Rubber       | SHFE     | 5 tons        | 167,414,912        |
| Soy Meal     | DCE      | 10 tonnes     | 125,581,888        |
| Soy Oil      | DCE      | 10 tonnes     | 91,406,238         |
| Cotton No.1  | DCE      | 5 tonnes      | 86,955,310         |
| Palm Oil     | DCE      | 10 tonnes     | 41,799,813         |
| No.1 Soybean | DCE      | 10 tonnes     | 37,393,600         |
| Corn         | DCE      | 10 tonnes     | 35,999,573         |
| Early Rice   | ZCE      | 10 tonnes     | 26,854,086         |

**ZCE:** The Zhengzhou Commodity Exchange, established in 1990, is the first futures marketplace in China.

**DCE:** The Dalian Commodity Exchange, founded in 1993, is one of the four futures exchanges in China.

**SHFE:** Shanghai Futures Exchange. All of the trading on SHFE is executed electronically.

Organized commodity exchanges now exist across the globe. Some have converted to for profit status while some remain non-profit institutions. Among the functions performed by an exchange are providing a place to trade – a trading pit or an electronic trading platform (sometimes both). Exchanges establish and enforce rules and standards of conduct. They also collect and disseminate market information to the public.

Exchanges charge fees on every trade made in the market. These fees differ between exchanges, and between members and non-members. Large hedgers and speculators have an incentive to become members, as they enjoy lower exchange fees.

The real story in futures trading over the past 30 years has been the explosion of new futures markets and contracts for non-agricultural commodities. Today, futures markets have become the central pricing mechanisms for interest rates, currencies, stock indexes, metals, energy, and other industrial goods. The number of different contracts traded on exchanges throughout the world number in the hundreds.

Looking only at the CME Group, it is interesting to compare the corn contract (the largest volume agricultural contract) to large contracts in energy, interest rates and stock index futures.

### **Selected Futures Contracts at the CME Group, 2010**

*Ranked by Number of Contracts Traded and/or Cleared in 2010*

| Commodity             | Exchange | Contract Size   | Volume<br>(contracts) |
|-----------------------|----------|-----------------|-----------------------|
| Corn                  | CBOT     | 5,000 bushels   | 79,004,801            |
| WTI Crude Oil         | NYMEX*   | 1,000 barrels   | 168,652,141           |
| Henry Hub Natural Gas | NYMEX    | 10,000 mil. BTU | 64,323,068            |
| Eurodollar            | CME      | 1,000,000 USD   | 510,955,113           |
| 10 Year Treasury Note | CBOT     | 100,000 USD     | 293,718,907           |
| 5 Year Treasury Note  | CBOT     | 100,000 USD     | 132,149,948           |
| E-mini S&P 500 Index  | CME      | 50 USD          | 555,328,670           |

\* The New York Mercantile Exchange (NYMEX) joined the CME Group in March 2008.

Today, there is a wide variety of commodities trading on organized exchanges and they seem very different from each other. What does a soybean have in common with crude oil, gold, or a treasury note? They are all commodities, and futures traded commodities share some common characteristics. For example, commodities traded on futures markets...

- are bulk commodities that can be graded into interchangeable lots
- are not processed to the point where they can be branded or identified with an individual firm (the contracts specify, for example, #2 yellow corn and not Kellogg's Corn Flakes).
- have variable prices that are competitively determined. As a system of price discovery, futures trading will not exist in a regulated or fixed price environment.

Storability was once a common characteristic in agricultural markets, but not anymore. Live cattle, feeder cattle and soybean meal are examples of futures traded commodities that are not storable.

***Further readings and resources***

Self-Study Guide to Hedging with Grain and Oilseed Futures and Options (handbook), CME Group, April 2012 <http://www.cmegroup.com/trading/agricultural/self-study-guide-to-hedging-with-grain-and-oilseed-futures-and-options.html>

**Exercise #5**

Go play the game!