

Agricultural Commodity Marketing: Futures, Options, Insurance

Introduction to Futures Markets

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Fact Sheets

- Definition of Marketing Terms
- Introduction to Futures Markets

What is a commodity futures contract?

- A standardized forward contract that can be bought and sold
- A legal instrument calling for the holder of the contract to either deliver or to accept delivery of a commodity on or by some future date (contractual obligation)
- A trader who sells futures contracts (goes short) is obligated to deliver against the contract
- A trader who buys futures contracts (goes long) is obligated to take delivery on the contract
- Quantity, Quality and Delivery points are specified in the futures contract
- Price is determined in the market place (at the commodity exchanges)

History of Commodity Futures Contracts

- Cash grain forward contracts in mid 1800's
 - When prices at harvest were higher, farmers defaulted on forward contracts
 - When prices were lower at harvest, those who had forward contracted to take the grain couldn't be found
- Chicago Board of Trade organized 1848 to ensure contracts would be honored
 - Kansas City Board of Trade and Chicago Mercantile Exchange formed in 1870's
- Current growth in trade started in 1970s
- Growth has been fueled by
 - Price variability in cash (“spot”) markets
 - Price instability and uncertainty in general



Example Contract

CME Group

Corn Futures		
Contract Size	5,000 bushels (~ 127 Metric Tons)	
Deliverable Grade	#2 Yellow at contract Price, #1 Yellow at a 1.5 cent/bushel premium #3 Yellow at a 1.5 cent/bushel discount	
Pricing Unit	Cents per bushel	
Tick Size (minimum fluctuation)	1/4 of one cent per bushel (\$12.50 per contract)	
Contract Months/Symbols	March (H), May (K), July (N), September (U) & December (Z)	
Trading Hours	CME Globex (Electronic Platform)	18:00 - 7:15 and 9:30 - 13:15 central time, Sunday - Friday
	Open Outcry (Trading Floor)	9:30 - 13:15 Monday - Friday
Daily Price Limit	\$0.30 per bushel expandable to \$0.45 and then to \$0.70 when the market closes at limit bid or limit offer. There shall be no price limits on the current month contract on or after the second business day preceding the first day of the delivery month.	
Settlement Procedure	Physical Delivery	

Example Contract

CME Group

Feeder Cattle Futures		
Contract Size	50,000 pounds (~23 metric tons)	
Product Description	650-849 pound steers, medium-large #1 and medium-large #1-2	
Pricing Unit	Cents per pound	
Tick Size (minimum fluctuation)	\$.00025 per pound (\$12.50 per contract)	
Daily Price Limits	\$.03 per pound above or below the previous day's settlement price	
Trading Hours (All times listed are Central Time)	CME Globex (Electronic Platform)	MON 9:05 a.m. - FRI 1:55 p.m. Central Time Daily trading halts 4:00 p.m. - 5:00 p.m. Central Time
	Open Outcry (Trading Floor)	MON-FRI: 9:05 a.m. -1:00 p.m. Central Time
Last Trade Date/Time View Calendar	Last Thursday of the contract month with exceptions for November and other months, 12:00 p.m. - See CME Rule 10202.H.	
Contract Months View Listings	Jan, Mar, Apr, May, Aug, Sep, Oct, Nov	
Settlement Procedure	Cash Settlement. See CME Rule 10203.	

Sample Agricultural Contracts

Contract (Symbol)	Exchange	Contract Size
Corn (C)	CBOT	5,000 bu
Soybeans (S)	CBOT	5,000 bu
Soybean Meal (SM)	CBOT	100 tons
Wheat (W)	CBOT	5,000 bu
Wheat HRW (KW)	KCBT	5,000 bu
Wheat spring (MW)	MGE	5,000 bu
Live Cattle (LC)	CME	40,000 lb
Feeder Cattle (FC)	CME	50,000 lb
Lean Hogs (LH)	CME	40,000 lb
Pork Bellies (PB)	CME	40,000 lb
Class III Milk (DA)	CME	200,000 lb



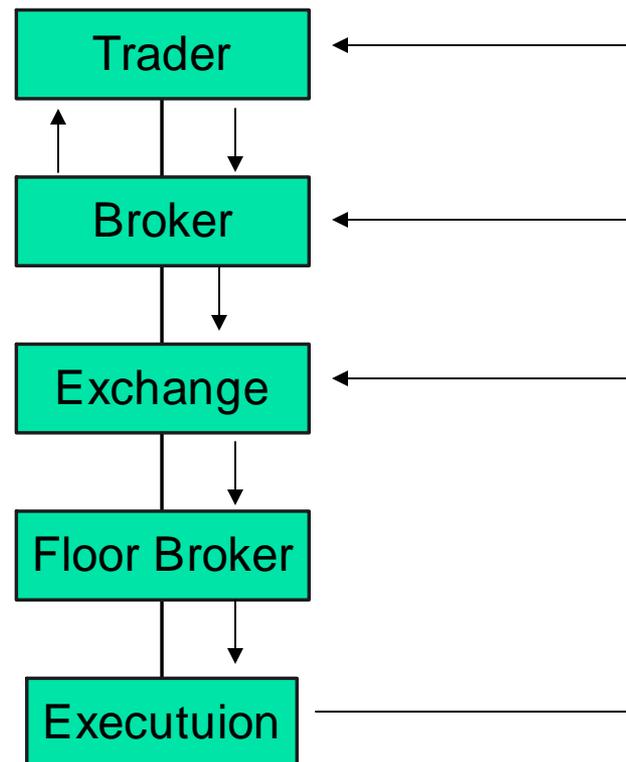
Who Trades Futures and Why

- Hedger
 - A trader who has a position (farmer), or will have a position (elevator), in the cash market
 - Wishes to transfer price risk to someone else
 - Establish an expected forward price for commodity
- Speculator
 - A trader who has no position in the cash market
 - Is trying to earn a profit buying and selling contracts
- Many more Speculators than Hedgers
 - Most Speculators lose money



How Trade is Conducted

Process of Trading Future Contracts



Trader places a buy/sell order with his/her broker by phone or Electronically.

Broker transmits order to Exchange in Chicago, New York, etc

Order is time stamped and sent To the "Floor" to be filled

Filled in the "pit" by open Outcry or electronically. The price is recorded, time stamped And reported to exchange, broker And trader

Information provided to the trader after the transaction

- Date of transaction
- Description of the transaction
- Price at which the transaction occurred
- Profit or loss from trade if closing (offsetting a position)
- Commission charges
- Account balance prior to the transaction
- Account balance after the transaction

The Accounting Process

- To trade in futures markets you must have an account with a brokerage firm and you must put up some “earnest money”
- This is known as Margin Money
- Margin Money is what insures that buyers and sellers of contracts will honor their contracts, it is to their financial advantage

Margin Money

- Initial Margins are charged for each contract traded (generally 5% of face value or less)
 - The minimum Initial Margin is set by the Exchanges,
 - Brokerage firms can charge more
 - The minimum will at least cover the amount a contract can change in one day
 - Live Cattle $\$.03/\text{lb} * 40,000 \text{ lb} = \$1,200$
 - Corn $\$.30/\text{bu} * 5,000 \text{ bu} = \$1,500$
- Maintenance Margin is the minimum amount per contract the trader can have in his/her account before receiving a “margin call.”
 - A call to place more money into the account to bring it back to the level of the Initial Margin
 - Occurs when the market moves against your position
 - Market moves higher for someone who sold a contract
 - Market move lower for someone who bought a contract
 - Failure to do so results in the trader being taken out of the market
 - Maintenance Margins are generally about 2/3 of the Initial Margin

Example Margin Accounting

Date	Price \$/cwt	Margin Action	Daily Change	Account Balance	
06/05/07	110.75	Sell 1 Sep FC, Initial Margin \$1500	\$1,500.00	\$1,500.00	
06/06/07	109.45	Maintenance Margin \$1,000	\$650.00	\$2,150.00	
06/07/07	108.75		\$350.00	\$2,500.00	
06/08/07	108.18		\$287.50	\$2,787.50	
06/11/07	107.55		\$312.50	\$3,100.00	
06/12/07	108.25		-\$350.00	\$2,750.00	
06/13/07	106.87		\$690.00	\$3,440.00	
06/14/07	107.75		-\$440.00	\$3,000.00	
06/15/07	107.35		\$200.00	\$3,200.00	
06/18/07	106.78		\$287.50	\$3,487.50	
06/19/07	108.57		-\$900.00	\$2,587.50	
06/20/07	108.40		\$87.50	\$2,675.00	
06/21/07	108.32		\$37.50	\$2,712.50	
06/22/07	108.68		-\$175.00	\$2,537.50	
06/25/07	109.00		-\$162.50	\$2,375.00	
06/26/07	108.25		\$375.00	\$2,750.00	
06/27/07	109.10		-\$425.00	\$2,325.00	
06/28/07	110.43		-\$662.50	\$1,662.50	
06/29/07	111.85	Margin Call	\$550.00	-\$712.50	\$1,500.00
07/02/07	111.80		\$25.00	\$1,525.00	
07/03/07	112.50		-\$350.00	\$1,175.00	
07/05/07	113.15	Margin Call	\$650.00	-\$325.00	\$1,500.00
07/06/07	115.28	Margin Call	\$1,062.50	-\$1,062.50	\$1,500.00
07/09/07	115.38	Buy 1 Sep FC (Offset Contract)		-\$50.00	\$1,450.00
		Receive	\$1,450.00		
		Net Loss in Futures Account	\$2,312.50	(\$3,763-\$1,450=\$2,313)	
		Loss also equal	(\$110.75-\$115.38)*500=\$2,313		

Months Traded and Why

- Liquidity – Needs to be enough people interested in trading futures with a particular delivery (maturity) month. (wish to avoid “thin” markets)
 - Volatility
 - Volumes moving in cash market
 - Example: Few feeder cattle moving in July but many more in September and October (hedging opportunities)

Commodity Futures and Price Discovery

- Futures markets bring together thousands of persons with different ideas about what commodities are actually worth (especially in the future)
 - Futures markets are anticipatory markets
- These people negotiate what they believe are “fair” or acceptable prices
- The result is an ever changing price that is the “consensus” of people trading contracts at that moment in time based on available information and expectations

2009 July Wheat (KW) Price Discovery

- Prices Changed because of
 - changing crop conditions
 - general economy
 - expected exports
 - other crop prices



Source: Data Transmission Network



Importance of Futures Markets in Price Discovery

- Futures prices are easily and quickly assessable worldwide
- They represent an “efficient” forecast for prices in the futures
- They are used extensively to discover price in cash markets (may be most important function)

Source of Futures Quotes

10 Minute Delayed Quotes Available Directly From the Exchanges



<http://www.cmegroup.com>



<http://www.kcibt.com>



<http://www.mgex.com>

Links to Specific Contracts and to the Exchanges

<http://cattlemarketanalysis.org/futures.html>



Example Futures Quote

Source: CME Group

LIVE CATTLE FUTURES

Quotes | Contract Specifications | Performance Bonds / Margins | Product Calendar | Resources

Trade Date: 8/15/2009

Quotes | Time & Sales | Volume | Settlements

Globex Futures | Open Outcry Futures | Market Data is delayed at least 10 minutes

View Spread Quotes | Turn Auto-refresh OFF | About this Report

Month	Charts	Last	Change	Prior Settle	Open	High	Low	Volume	Hi / Lo Limit	Updated
Aug 2009 OPT		84.500 a	-0.150	84.650	84.050	84.650	83.600	1521	87.650 81.650	4:54:28 PM CST 8/14/2009
Oct 2009 OPT		88.525 a	-0.025	88.550	88.200	88.650	87.650	7641	91.550 85.550	4:54:28 PM CST 8/14/2009
Dec 2009 OPT		87.900 a	-0.150	88.050	87.900	88.250	87.375	2392	91.050 85.050	4:54:28 PM CST 8/14/2009
Feb 2010 OPT		88.400 a	+0.025	88.375	88.400	88.750	87.925	801	91.375 85.375	4:54:28 PM CST 8/14/2009
Apr 2010 OPT		90.350 a	-0.050	90.400	90.150	90.750	89.875	989	93.400 87.400	4:54:28 PM CST 8/14/2009
Jun 2010 OPT		87.400	-0.075	87.475	87.175	87.600	86.900	262	90.475 84.475	4:54:28 PM CST 8/14/2009
Aug 2010 OPT		88.100 a	-0.100	88.200	87.750	88.000	87.500	104	91.200 85.200	4:54:28 PM CST 8/14/2009
Oct 2010 OPT		91.300 a	-0.200	91.500	90.850	91.300	90.850	40	94.500 88.500	4:54:28 PM CST 8/14/2009
Dec 2010 OPT		91.000 s	-	91.500	-	-	-	-	94.500 88.500	4:54:28 PM CST 8/14/2009
Feb 2011 OPT		-	-	-	-	-	-	-	-	-

Icon Key: OPT Options Price Chart Volume Chart

Market data explanation/disclaimer

Futures Roll in Price Discovery

- Suppose an Iowa farmer looks at the Nov Soybean and Dec Corn contracts in the spring and decides, based on his cost, that Soybeans will be more profitable
- He will plan to plant more Soybeans and less Corn
- If his costs are similar to many farmers, than many farmers will begin to make the same decision
- The market will receive this information and assume a larger Soybean crop and a smaller Corn crop
 - Dec Corn Futures Prices will increase
 - Nov Soybean Futures Prices will decrease
- The market will reach an equilibrium where the optimal corn and soybeans are planted to match expected demand

Summary

- This lesson was a brief overview of the futures markets
 - What a contract is
 - How a trade is conducted
 - Margin Money
 - The roll of futures in price discover
- The next two lessons cover
 - Basis - The relationship of cash prices and futures market prices
 - Hedging - How to use the futures market to offset risk and establish a forward price