What are the institutions related to futures, options, and other (commodity) markets?

Institutions are who, what, where, when, and they explain some of the why.

They are the players and the rules of the game.
They are the paperwork.
They are how business is done.
They are the language that people with experience speak.

They are often the most important things when it comes to understanding a market – or complexity of markets – and in determining how well those markets function.

They are the things that someone familiar with commodity market knows. They are the things that the “student” (and I am a student of markets) needs to learn and show professional interest.

This section of material should be studied with an eye towards accomplishing these things.
What is a futures contract?

A Futures Contract is a legal contractual obligation between two parties to buy and sell a specific commodity at some time period in the future (or the cash equivalent). The contract is traded at a futures exchange.

An Option Contract is usually an option to buy or sell a futures contract. It is the right but not the obligation to hold a futures contract position.

A Derivative is a financial instrument the value of which is derived from some other asset.

Question: Are futures contracts derivatives? Are options?

Answer: The value of a, for example, live cattle futures contract is derived from the value of fed cattle – and the value of a live cattle option is derived from the value of a live cattle futures contract. So?...
Futures contracts are standardized agreements.

<table>
<thead>
<tr>
<th>Specified in the contract:</th>
<th>Example:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific commodity</td>
<td>Live Cattle Contract</td>
</tr>
<tr>
<td>Specific quantity</td>
<td>40,000 lbs. (±5%)</td>
</tr>
<tr>
<td>Specific quality</td>
<td>Steers (&amp; Heifers), YG 3, 60% Ch 40% SI, weight limits avg &amp; ind, hot yield 63% ...</td>
</tr>
<tr>
<td>Specific location</td>
<td>Wray, CO, Worthing, SD, Columbus, Norfolk, North Platte, Ogallala, NE; Dodge City, Pratt, Syracuse, KS; Guymon, Texhoma, OK; Amarillo, Tulia, TX; and Clovis, NM – Approved packing plants...</td>
</tr>
<tr>
<td>Specific time</td>
<td>FEB, APR, JUN, AUG, OCT, DEC</td>
</tr>
<tr>
<td>Position:</td>
<td>Trader decides</td>
</tr>
<tr>
<td>Buy (long) or Sell (short)</td>
<td></td>
</tr>
<tr>
<td>Specific price</td>
<td>Trader bids, asks, and takes...</td>
</tr>
</tbody>
</table>

The list is not exhaustive. Take a look at the CME Rulebook...

Opportunity for independent research (OIR): find the CME Rulebook online and find the specifications for contracts – do the same for other exchanges.
Reported market prices are those which buyer and sellers enter into freely.

ex) DEC17 Corn on CBOT 8/23 @ 10:14 AM CT

<table>
<thead>
<tr>
<th></th>
<th>Open</th>
<th>High</th>
<th>Low</th>
<th>Last</th>
<th>Settle</th>
<th>XXX’0 ⇔ even XXX’2 ⇔ ¼ XXX’4 ⇔ ½ XXX’6 ⇔ ¾</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>360’2</td>
<td>362’6</td>
<td>360’2</td>
<td>358’0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>8:30AM</td>
<td></td>
<td></td>
<td></td>
<td>1:45PM</td>
<td></td>
</tr>
</tbody>
</table>

See exchange website for prices and times. Find it.

Why are the prices at these levels? If more people want to buy (sell) more of the commodity at the current price than want to sell (buy), then the market price increases (decreases).

The market corrects imbalances of supply and demand.

This is a critical point: A price cannot be “too” high or “too” low – there were two parties willing to trade at all discovered prices. Someone benefits and someone loses if the price rises. Someone benefits and someone loses if the price falls.
Basic Supply and Demand Ideas: more on “too” high or low prices.

What happens if market prices are too high? The Q supplied is greater than Q demanded and what builds?

What happens if market prices are too low? The Q supplied is less than Q demanded and what occurs?

There is periodic talk in the media and by policymakers – and this is remains true since the financial crisis – about “speculators” causing high prices (or low prices). Is this accurate? Do we see large surpluses being built (or shortages occurring in markets with too-low prices)? With energy, metals, crops, or livestock?
**Futures Exchanges are businesses whose purpose is to facilitate organized, regulated, and legal trade in futures contracts.**

<table>
<thead>
<tr>
<th>Exchanges</th>
<th>Commodities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chicago</strong></td>
<td></td>
</tr>
<tr>
<td>Chicago Board of Trade (CBT)</td>
<td>Corn, Soybeans, SB Oil, SB Meal, Oats, Wheat (Soft Red Winter), Rice, T-Bonds and T-Notes, DJIA Index, Pollution Permits... Options</td>
</tr>
<tr>
<td>(CBOE)</td>
<td></td>
</tr>
<tr>
<td>Merged with CME to form CME Group.</td>
<td></td>
</tr>
<tr>
<td>Mid-American Commodity Exchange (MCE)</td>
<td>CBT 5000 bu. ➔ MCE 1000 bu.</td>
</tr>
<tr>
<td>Closed in 2001 but contracts remain...</td>
<td>CME 40,000 lbs. ➔ MCE 20,000 lbs.</td>
</tr>
<tr>
<td>Mini-contracts on CME and CBOT contracts.</td>
<td></td>
</tr>
<tr>
<td>Chicago Mercantile Exchange (CME)</td>
<td>Feeder Cattle, Live Cattle, Lean Hogs, Pork Bellies, Lumber, Dairy Products...</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>(IMM) International Monetary Market</td>
<td>Foreign Currency (Australian $, Canadian $, Pound, Swiss Franc, Yen, Peso, Euro), T-Bills, Fed Reserve Funds, Eurodollar</td>
</tr>
<tr>
<td>(IOM) Index and Option Market</td>
<td>S&amp;P 500 Index, Nikkei 225 Stock Index, NASDAQ 100, Russell 2000, GSCI Options</td>
</tr>
<tr>
<td>Operates virtual 24-hour market GlobeX</td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td></td>
</tr>
<tr>
<td>NY Mercantile Exchange (NYMEX – CME Group)</td>
<td>Oil (Crude, Heating, Gasoline), Gas (Natural, Propane), Electricity,...</td>
</tr>
<tr>
<td>NY Commodity Exchange (COMEX – CME Group)</td>
<td>Gold, Silver, Platinum, Copper,... Metals futures and options</td>
</tr>
<tr>
<td>Institution</td>
<td>Commodities</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>NY Board of Trade</td>
<td></td>
</tr>
<tr>
<td><strong>NY Cotton Exchange (NYCE)</strong></td>
<td>Cotton Potatoes</td>
</tr>
<tr>
<td><strong>Citrus Associates</strong></td>
<td>Frozen Concentrated Orange Juice</td>
</tr>
<tr>
<td><strong>Financial Instruments Exchange (FINEX)</strong></td>
<td>European and US Dollar Indices and Interest Rates</td>
</tr>
<tr>
<td><strong>NY Futures Exchange (NYFE)</strong></td>
<td>NY Stock Exchange Index and CRB/Bridge Indices</td>
</tr>
<tr>
<td>Became Intercontinental Exchange (ICE)</td>
<td></td>
</tr>
<tr>
<td>Coffee, Sugar, and Cocoa Exchange (CSCE)</td>
<td>plus Dairy Products</td>
</tr>
<tr>
<td>Merged with NYFE and is part of ICE</td>
<td></td>
</tr>
</tbody>
</table>
### Other “Locations”

<table>
<thead>
<tr>
<th>Location</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kansas City Board of Trade (KCBT – electronic only) CME Group…</td>
<td>Wheat (Hard Red Winter), Western Natural Gas, Value Line Stock Index</td>
</tr>
<tr>
<td>Minneapolis Grain Exchange (MGE – electronic only) Products traded on GlobeX</td>
<td>Spring and White Wheats</td>
</tr>
<tr>
<td>Winnipeg Commodity Exchange (WPG) Subsidiary of ICE</td>
<td>Barley, Flaxseed, Rye, Canola, Spring Wheat (traded in Canadian $)</td>
</tr>
</tbody>
</table>

London, Bonn, Paris, Sydney, Hong Kong, Tokyo, Singapore, ...  
All-Electronic Exchanges (e.g., ICE, LIFFE, Eurex, ...).

But in the U.S. it’s CME Group and ICE.

Over-the-Counter Markets... Read WSJ articles about OTC and speculators.  
Question: What's the over-the-counter market that caused a lot of problems?  

OIR: Find links to major exchanges.
The Function of Futures Exchanges

1) Provide the physical facilities and electronic systems for trading.
2) Provide communication between trading location and outside world.
3) Provide procedures for processing of trades.
4) Write viable futures contracts.
5) Establish trading rules and standards of business conduct.
6) Supervise and enforce rules and standards.
7) Settle disputes. (???)
8) Guarantee financial performance through operation of a clearinghouse.
9) Collect and disseminate market information to the public.
10) Facilitate members making money.

The Futures Exchanges are responsible for financial and business integrity of members and contracts.
Business History of Futures Markets

When was trading in futures contracts introduced?
Commodity futures contracts are not a new concept – neither are exchanges and neither are contracts...

- Osaka, Japan: “Rice Trade Book” 1679
  first bona fide futures contract

- Royal Exchange, London 1570
  place (rules and regulations), protection, services (bank, inspection, storage)

- Courts of Champagne, France 1114
  “lettre de faire”

Cash markets ➔ Forward contracts ➔ Standardized forward contracts or futures contracts.

A natural progression in the development of places, rules, and institutions of trade including contract law.
What causes development of futures markets?
Industrialization, specialization, and financial growth in an economy.

1848 Chicago Board of Trade opened as a cash market
1851 “to arrive” corn contract ➔ 1865 “futures contract”
1870 NY Cotton Exchange traded cotton futures contracts
1882 CSCE of NY traded futures contracts
1919 CME formed from the Chicago Butter and Egg Board
1933 COMEX (copper, tin, silver, rubber, hide, silk futures)

1960s  Livestock
1970s  Petroleum, Currencies
1980s  Options, Debt Instruments
1990s  Stock Indices
2000s  Electricity, Weather, and Single-Stock Futures
2010s  Virtual and continuous trading
2020s?

OIR: What are the new contracts around the world?

Electronic trading is the standard...
For-profit companies are the norm and mergers...
Cash or “On-the-Spot” Markets
Private exchange with different characteristics between 2 parties.

evolved into

Forward Contracts
Private contracts with different characteristics between 2 parties – to be fulfilled at a later date – allowed business planning.

evolved into

Futures Contracts
Standardized forward contracts exchangeable between many traders – improved trading opportunities and liquidity.

(What’s next is bundles of futures contracts and/or cash market transactions.)

Most transactions (in terms of $) in market economies are contractual agreements. The Uniform Commercial Code (UCC) treatment of contractual agreements is the most important part of business law.
Why do individuals trade futures?

1) Facilitates merchandising and business
   • forward buy or sell when desired
   • lock-in profits or limit losses
   • manage risk

   ex) Grain merchandiser
   Foreign country approaches merchandiser to buy grain. What to offer?
       Risk of price changes in the future?
   Farmer approaches merchandiser to sell grain. What to bid?
       Risk of price changes?

   (More on pages 16-20.)

2) Speculation
   Transferable contracts are conducive to speculation. Speculation is a valuable
   service in a market economy. Speculation cannot have a lasting impact equilibrium
   price levels. Liquidity and less long-run variability – maybe more short-run volatility.
Some more definitions

Speculator: Someone who trades futures looking for profits in price changes. They do not handle the physical commodity.
- Scalpers: trade small price fluctuations and make market liquidity.
- Day Traders: trade within day holding no positions overnight.
- Position Traders: long-term trading based on economic outlook.

Hedger: Someone who trades futures to manage risk and/or establish profits. They handle the physical commodity. (Their true objectives may be complex, but they trade to facilitate merchandising and business planning.)

Why is this important? Because you will hear and read these terms used.
You are a grain merchandiser & there’s no futures market

Farmer-Seller calls…  Foreign-Buyer calls…

But what if?  But what if?

Typical Port Price: $6.00  $6.00

Marketing Costs: $1.00  $1.00

Typical Farm Price: $5.00  $5.00

So make adjustments to your bid and offer based on the but-what-if.
Suppose you merchandise grain: you purchase from farmers in the local region and sell to foreign buyers via a port facility. It is two months before harvest and the bids and offers below are for the coming harvest. Suppose the typical price at harvest is $5.00/bu. Suppose your economic costs to get grain from farmers to the port is $1.00/bu and that “cost” includes a target rate of return set by your company.

Suppose there’s no futures market...

**What price would you bid a farmer wanting to contract grain for harvest?**

$5.00? Suppose the port market price is $6.00 when you sell the grain delivered on the contract by the farmers. Next, what if the foreign grain market is $4.00 (or $8.00) when you need to sell?

**What price would you offer a foreign buyer wanting to contract grain for harvest?**

$5.00? Suppose the local market price is $5.00 when you purchase grain from farmers to deliver on the contract with the foreign buyer. Next, what if the local grain market is $7.00 (or $3.00) when you need to buy?

Now, adjust the bid/ask prices to better the chance of making money. And determine what your margin is? (Sell price less buy price less cost.) The best thing to do is line up the buyer with sellers needed as soon as possible.
Now suppose there’s a futures market, the prices are for grain in your country in the market the farmers use, and harvest contract @ $5.00...

What price would you bid the farmer wanting to contract? $5.00? And hedge it.
   (You own grain so do you need to buy or sell to protect that asset?)
   What if the port market went to $4.00 (or $8.00)?

What price would you offer the foreign buyer wanting to contract? $6.00? And hedge it.
   (You need to own grain so do you need to buy or sell to protect that asset?)
   What if the local market went to $7.00 (or $3.00)?

Now, what’s your margin?
   (Is the market more efficient? Efficient means the most service for least cost.)

And lift any hedges once you cover grain sales with grain purchases.

Without a futures market: Capital needed? Risk? Volume of business?
With a futures market: Less. Less. & More. Market efficiency?

(Work these examples. Start with the price at harvest being the typical price – $5 at the farm and $6 at the port – and then examine the margin if each price increases and then decreases $2.00.)
More details:

- Farmers approach the merchandiser and want to sell grain for delivery after harvest and merchandiser agrees to buy at a given price.
- 175,000 bushels.
- Who owns the grain? Who needs to sell grain? What direction does the market need to move for the asset to lose value?

- Foreign buyer approaches the merchandiser and wants to buy grain and merchandiser agrees to sell at a given price.
- 675,000 bushels.
- Merchandiser net long (bought but not sold) or net short (sold but not bought)? How much? What direction does the market need to move for the “asset” or transaction to lose value?
Answers:

- **Long** 175,000 bushels cash grain.
- Merchandiser owns and has not sold.
- If the market price drops the cash grain loses value.
- **Hedge by selling** in futures.

- Long 175,000 bushels and short 675,000 bushels so – **net short** 500,000 bushels.
- Merchandiser owns some grain and has promised to deliver grain but has promised more than owns.
- If the market price rises the transaction loses value.
- **Hedge by buying** in futures.

*Details are important…*
Short Example of the Trading Process

Trader

Anyone who stands to gain or lose.

Broker or Account Executive

Manages trader’s commodity account and works for a Futures Commission Merchant or brokerage house.

Exchange Member

Owns or works for someone who owns a Seat on the Exchange and is a Clearing Firm Member

Trade Executed

(Between Exchange Members)
Clearinghouse

A corporation associated with each exchange which is responsible for settling trading accounts, clearing trades, and collecting and maintaining margins.

Clearinghouse assumes the opposite side of all trades.
- guarantees performance on contracts
- offsetting a position removes obligation
- errors are addressed quickly (???)

Clearinghouse “marks to market” all open positions and requires margin money from clearing firm members holding positions.

This is one of the differences between Futures Contracts and Forward Contracts.
During the day: Trader A sells to Trader B – then Trader B sells to Trader C – then Trader C sells to Traders D. Sellers are obliged to deliver product and receive $. Buyers are obliged to pay $ and receive product.

Trader A  
(New Orleans)  
Trader B  
(London)  
Clearinghouse  
Trader D  
(New Delhi)  
Trader C  
(Singapore)

but at the end of the day
- Trader A and Trader D have obligations with the clearinghouse to make and take delivery.
- Trader B and Trader C have no obligations with the clearinghouse and have no position.

This is one difference between Futures Contracts and Forward Contracts. Do forward contracts have a clearinghouse? If not then how is performance guaranteed?
Who regulates the futures industry?

1. Each Exchange is self-regulated. Board of Governors, Oversight Committees,...


3. Financial Industry Regulatory Authority (FINRA): Registration and qualification. Also includes: Training and testing.


6. Federal Reserve Bank (Fed)

OIR: Examine the websites and see if there’s anything interesting related to class or to agriculture. (There has been...)
**Futures Industry Professionals**

**Futures Commission Merchant (FCM):** An individual or organization that solicits or accepts futures orders from customers and that carries futures accounts for customers. Registered with CFTC.

**Associated Person (AP):** Anyone associated with a FCM that is involved in solicitation or acceptance of customer orders.

**Introducing Broker (IB):** An independent agent who works with one or more FCM and AP handling futures orders.

**Commodity Trading Advisor (CTA):** Someone who gives futures trading advice for compensation.

**Commodity Pool Operator (CPO):** Like a CTA with ability to make trading decisions with customer funds.

**Testing and licensing for each by the FINRA and regulation by the CFTC.**
Commodity Accounts and Margins

1. Customer Account Agreement: Customer personal and financial data provided to broker. (Broker initiated.)

2. Risk Disclosure Statement: Customer signs document recognizing, “there is some risk in trading futures.” (Broker initiated.)

3. Customer Agreement: Rights and duties of FCM. (Broker initiated.)

4. Security Agreement: Roles of trader, FCM, and banker. (Trader or lender initiated.)
Accounting and Margins

Trading example

<table>
<thead>
<tr>
<th>date</th>
<th>Price</th>
<th>Quantity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/11</td>
<td>Sell AUG LC @ $114.50/cwt.</td>
<td>× 40,000 lbs.</td>
<td>= $45,800</td>
</tr>
<tr>
<td>7/21</td>
<td>Buy AUG LC @ $117.00/cwt.</td>
<td>× 40,000 lbs.</td>
<td>= $46,800</td>
</tr>
<tr>
<td></td>
<td>-$2.50/cwt.</td>
<td>× 40,000 lbs.</td>
<td>= -$1,000</td>
</tr>
</tbody>
</table>

First, you must understand the mechanics. Second, how much money would you have the trader set aside? 1) If you were responsible for the financial integrity of the transaction, and 2) if you wanted more people to trade.

The answer to 1) is a lot and to 2) is a little. So there is a tradeoff.

Let’s think about this problem more, the money at risk is the value of the price change ($1,000), not the value of the contract (approximately $46,000).

So, a trader must deposit money in a Commodity Account or Futures Account with a broker. Money within this account is set aside to cover potential losses of trades, i.e., margin requirements.
Minimum margin requirements are set by each exchange clearinghouse. Levels enforced on traders are determined by individual brokerage houses. Levels depend on:

1) brokerage house (size and diversification)
2) hedge or speculative account
3) commodity (contract value and volatility).

Initial Margin: Margin required per contract before a trader can buy or sell a futures contract. Initial deposit into the maintenance account. (5-15% of value)

Maintenance Margin: If maintenance account allocated to a specific trade falls below the maintenance margin level, the trader receives a margin call. (50-75% of initial margin)

Margin Call: Money used to maintain a futures position when the market is moving against that position.

Work an example from handout...

Proposed changes to margining after Financial Crisis.
Let’s talk about the physical trading process:

Steps in the Open Outcry Trading Process
1) Trader records order.
2) Call order to account exec.
3) Account exec time stamps order.
4) Account exec calls order to exchange floor – or enters into e-system.
5) Exchange clerk time stamps order – not needed for e-system.
6) Runner carries order to the pit – not needed for e-system.
7) Broker-to-broker trade via Open Outcry – or matched in e-system.
   (Price, Quantity, Time, & Opposite recorded)
8) Filled order returned to runner.
9) Runner returns order to exchange desk clerk.
10) 5)-1)

Elapsed time: 30 seconds to 3 minutes.

Oh, but wait! There isn’t any physical trading of commodities anymore.
Some open outcry equity index and options markets.
The above example is for a Market Order (i.e., trade immediately at the prevailing market price).

Price (Limit) Orders (i.e., buy or sell with price instructions) are alternatives to market orders and are held in the order cue until the price instructions can be followed.

The legitimate prices at which contracts can be traded are the lowest offer (sell price) and highest bid (buy price).

ex) other offers (to sell) are higher ↑
   offer  115.02½
   115.00 last trade
   bid    114.97½
   other bids (to buy) are lower ↓
Let’s talk about the electronic trading process:

**Electronic Trading Example**

<table>
<thead>
<tr>
<th>Offers (to sell)</th>
<th>Price Instructions</th>
<th>Trader and # Contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>…</td>
<td></td>
</tr>
<tr>
<td></td>
<td>115.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>115.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>115.02½</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A – 75</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B – 50</td>
<td>C – 25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D – 25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E – 50</td>
</tr>
<tr>
<td>Bids (to buy)</td>
<td>114.97½</td>
<td></td>
</tr>
<tr>
<td></td>
<td>114.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>114.90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>V – 25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W – 50</td>
<td>X – 25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y – 25</td>
</tr>
<tr>
<td></td>
<td>Z – 80</td>
<td></td>
</tr>
</tbody>
</table>

- What’s the Bid/Ask (or Offer) Spread?
- If a Market Order to Buy 100 hits the queue then what will be the price(s) of the trade that is reported? (E sells 50 @? and B sells 50 to the buyer @?)
- If a Market Order to Sell 50 hits the queue then what will be the price of the trade that is reported? (V buys 25 and W buys 25 and has a bid of 25 remaining unless...)
The physical or person-to-person trading process has been replaced by the electronic order matching process. It is more efficient – no people and no errors. (But: Market depth? And impact of Flash-Traders? Or complex orders?)

It’s time to pull things together.

What kind of market do you see? The structure of the market – the underlying characteristics – determines the kind of market.

It’s in your microeconomics textbook.

What are the basic characteristics or structure or assumptions needed to achieve this kind of market?

How do the futures market characteristics match with these underlying assumptions? Or what about the futures market satisfies these assumptions?

(These are not rhetorical questions. They have answers. And you may see them again.)