



EXTENSION

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The Nuts and Bolts of Futures Markets¹

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Importance of Futures Market

The futures market, like any market, serves as a medium of exchange. In an equity market people buy and sell shares of stock. In a futures market, people buy and sell contracts for commodities and financial instruments (collectively called “commodities” in this paper). The major difference between the two markets is that when investors buy stocks, they become owners in the company, and when investors buy futures contracts, they enter into an agreement to deliver or receive delivery of a commodity at some predetermined time in the future. They can, but need not, become owners of the commodities they trade.

The trades in futures markets set world prices for these commodities. The commodities themselves include in rough order of importance:

1. Interest rates, composed mainly of Treasuries, Eurodollars, Fed Fund Rates, LIBOR, and Euro currency spreads like the Euro Yen.
2. Petroleum products, which include Crude Oil, Gasoline, Natural Gas, and Heating Oil.
3. Stock indexes trade the Dow, the S & P 500, and the Mid-Cap 400, the Russell 2000, Nasdaq indices, and foreign indices such as the Nikkei, the Dax, and FTSE.

4. Currency consists of major currencies such as the Yen, Deutsche Mark, Pound, French and Swiss Franc, Canadian and Australian dollar, and the Peso.
5. Precious metals such as Gold, Silver, Platinum, and Palladium.
6. The agriculture sector, including all major row crops and animal industries as well as major commodities such as sugar, cocoa, coffee, and fiber. Interestingly, agriculture was the major group in futures markets until the early 1970s when financials started and quickly dominated futures trading.

Daily trade in Chicago alone, the main center for futures markets in America, runs into billions of dollars. Yet EUREX of Germany and Switzerland has 40 percent more trading volume than the largest Chicago exchange (Chicago Mercantile Exchange). Futures are huge markets, totally dwarfing the far better known equity markets such as the New York Stock Exchange. Monthly futures trading in the world is measured in trillions of dollars. So it is somewhat surprising that most individuals are both unaware and uninformed about these markets.

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The Nuts and Bolts of Futures Markets

Futures markets exist because they provide huge benefits to a great many firms and people. Yet only two types of traders use them, namely hedgers and speculators. Hedgers use the futures market as a price insurance policy and supply the commodity to the market. Speculators use it like the equity market as a source of capital gains and provide the capital and hence the liquidity. The market needs both for operation. The two groups are like the two blades of a pair of scissors. Both blades cut equally if the tool works. Likewise the market cannot function properly without a lot of hedging and speculating. The more there is, the deeper the market and the smaller the price differences among trades. The smaller these are, the better the market is for the final consumer, which is us.

Futures Terminology

Inevitably, there is some terminology to learn. Futures cannot be understood without knowing the terminology. For example, traveling in Quebec is enhanced by speaking at least some French. The same argument applies here. Futures terminology includes:

- **Underlying:** The commodity that makes up the subject matter of the futures contract. A futures contract is a derivative instrument, meaning it gets its value from something else. The “something else” is the underlying. For example, the underlying for the corn contract is 5,000 bushels of corn, and the underlying for the corn option is the corn contract.
- **Hedge:** To take a position in both futures and cash markets. This is done solely to reduce risk of price movement in the cash market. For example, a corn farmer wants to *sell* cash corn in his local market. To get a price that will mature, he *buys* the futures contract to sell corn at about the same time as he takes his cash corn to the market. In market terminology, he *short futures*.
- **Cash Market:** The physical commodity market in which everyone normally trades. For example, buyers and sellers gather at markets to buy and sell corn; bankers buy and sell interest rates or currencies; oil producers and refiners agree on crude oil prices; mutual funds buy and sell stock indices; local, national, and foreign governments

purchase Treasuries; and so on, all in everyday cash markets.

- **Spot Market:** Refers to the terms of delivery, rather than to the terms of payment. A spot transaction can involve cash or credit. But because it is a cash market transaction, the cash price paid for the good is often called the “spot price”. And spot usually means the current or today's price.
- **Speculators:** Buyers and sellers of commodities, with the sole intention of making money and realizing capital gains. Many of the best are pit traders in the exchanges and are called locals. They do not produce, nor do they intend to take delivery of the commodities they trade.
- **Long:** A person who promises to receive a commodity in the future is said to be "long" in the market. For example, a buyer of corn that will be received six months hence has a long position in corn. Realize that this individual can be either a hedger or a speculator.
- **Short:** A person who promises to sell something in the future is said to be "short" in the market. The same privisos apply as in the above definition.
- **Futures Contract:** This is the unit that is actually traded in futures markets. All the commodities are traded in contracts. Each contract is unique to that commodity in terms of size, delivery date, and quality. It is a legally binding document that obligates the owner to deliver or receive delivery of a specific quantity and quality of that commodity at a specific time and place. For example, corn is traded in contracts of 5,000 bushels of #2 yellow corn and the municipal bond contract is \$1,000 times the Bond Buyer Municipal Bond Index.
- **Volume:** The daily volume of the market is the number of contracts that traded hands on that day. Interestingly, fewer than one percent of contracts are actually delivered; 99 percent of contracts are offset before delivery. This shows that futures markets are not delivery markets but

risk reduction and profit seeking markets. This is what makes the markets liquid and highly efficient.

History of the Futures Market

In 1851, Midwest grain traders and affluent Chicago businessmen established the Chicago Board of Trade (CBOT) on Chicago's Water Street. The CBOT's purpose was to maintain a commercial exchange; to promote uniformity and equity in trade; to acquire and make available valuable economic information; and to settle disputes by arbitration among merchants, warehouses, and traders to eliminate as many law suits as possible (Ferris, 1988).

The exchange's function grew and soon became a risk management tool for farmers and input consumers. As time went forward, additional commodities were added to the exchange, and new exchanges were founded to house additional commodities. The advent of the computer age has led to greater efficiency in the markets. As a result, more accurate price discovery has occurred, perhaps the best in the world.

The Exchange and the Clearing House

Each exchange provides the facilities for traders to buy and sell commodities, referee and record these trades, and simultaneously provide the resulting prices throughout the world continuously. The U.S. exchanges are self-policing and have never reneged on a trade. Trade conduct and efficiency are roles of the clearing house. A clearing house is an institution that monitors all the transactions of the exchange. It appoints a physical location for delivery and reception to occur. It acts as arbitrator on behalf of an exchange. It listens to traders' grievances and metes out decisions based on the facts provided. All decisions made by the clearing house are binding, and the traders grant this authority to the clearing house as part of every trade. Most important of all, it is a long for every short and a short for every long, thereby guaranteeing each trade made in the exchange.

The two main types of exchanges are "open outcry" (physical building) and "electronic"

(computer). In an *open outcry exchange* (e.g., CBOT), there is a physical building with a trading floor that has "pits". Each pit is designated for a single commodity that is traded at the exchange. The pits are large octagonal structures on the floor of the exchange that are lined with steps/stairs. The stairs are located around the entire interior of the pits. The pits are designed so that all traders can see one another. All trading must take place within the pit and during the trading hours set for each commodity by the exchange.

There is one pit for every commodity (mostly) and all of its contract dates. Each level of steps within a pit helps to identify the contract date on which a trader wishes to deal. Thus September corn is traded in one area and December corn in another. Hand gestures and shouting between traders help to communicate price and quantity of the contracts being traded. All traders can thus see and hear what other traders are doing even where there are several hundred traders like the Eurodollar pit.

At the end of the trading day, all trades are compiled and every sell order must be matched up with a corresponding buy order. In the terminology of the exchange, every "short" must have a "long". Outside the pits, a great deal of activity takes place. Brokerage officials take the orders, runners relay the order information to the traders in the pits, and trading referees watch over the exchange to ensure that fair-trading occurs.

On the other hand, the *electronic exchange* occurs via the Internet, not in the physical environment of a pit. Like the *open outcry exchange*, only members are allowed to trade on the *electronic exchange*. Memberships are limited and can be bought and sold. While a corporation cannot buy an *electronic exchange* membership, it can financially back an individual's membership requirements.

The *electronic exchange* has a cost advantage over the *open outcry exchange* because it does not require a huge physical space for trading to occur (e.g., the Chicago Board of Trade takes up more than two city blocks of space). An *electronic exchange* requires a much more modest space, leading to considerable cost savings, which can be passed on to brokers and other users. This cost reduction provides

an additional incentive to traders to get involved in the market.

Traders

The two types of traders in the futures exchange are "hedgers" and "speculators". Hedgers include traders such as bankers; mutual funds; pension portfolios; currency dealers; brokerage houses; and the agricultural industry, including retailers and processors. Hedgers use the futures market to guarantee the future prices of products. Their goal is to reduce the risk of owning commodities that might have adverse price movements. Most hedgers rely on brokers to execute their trades.

Speculators have no desire to deliver or take delivery of the commodity. Their objective is simply to make money, nothing else. They practice the ancient art of arbitrage. They take advantage of price differences, and in so doing they turn a profit.

The two types of traders have a synergistic relationship. One cannot exist without the other. The hedger provides the physical commodity, and the speculator provides the capital to the market.

Illustrating a Trade

The simplest example of a trade is probably a farming one:

- It is March and a farmer (hedger) plans to plant corn in April and wants to protect the value of his investment in purchasing the necessary inputs by obtaining a profitable price for the harvest corn in November.
- He wants to bolster the spot price by realizing gains in the futures market. Therefore, he contacts his broker in March and instructs the broker to short the number of December contracts that he thinks he will harvest, or a lower amount to guard against any crop failure. The December contract is the nearest contract to his harvest. He believes that the futures price in March of a December contract is higher than the contract price will be closer to maturity.
- The broker then calls the exchange representative and instructs him to sell a certain

number of December corn contracts at or above an agreed price that the hedger supplied.

- The exchange representative then hands the market order to a runner. The runner then takes the order to the corn pit and hands it to their trader.
- The trader then finds a buyer at or around the price for which the hedger is willing to short and motions his intent. Since the trader is trying to sell, he will make a motion with his palms out towards the pit, indicating that he wishes to short the commodity. Another trader will see that someone wishes to short, and if the trader agrees on the price, he will make a motion with his hands like an inward wave to buy.
- The trader, who was acting on the hedger's behalf, gives the runner a confirmation of the trade. The runner takes this information back to the brokerage representative, who then contacts the brokerage. The broker calls the hedger to confirm the trade.

Typically, his whole process can be completed in five minutes.

Final Remarks

These are the essential "nuts and bolts" of futures markets. This paper is intended solely to provide a brief but fairly comprehensive synopsis of futures.

References

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