Futures and forward contracts are like options in that they specify the purchase or sale of some underlying security at some future date. The key difference is that in futures and forward contracts holders carry the obligation to go through with the agreed-upon transaction.

Forward - an agreement calling for a future delivery of an asset at an agreed-upon price.

Futures - similar to forward but feature formalized and standardized characteristics.

The futures contract calls for delivery of a commodity at a specified delivery or maturity date, for an agreed-upon price, called the futures price, to be paid at contract maturity.

Two positions in futures contracts:

1. **Long Position**
   Where the futures trader commits to purchasing the asset (buying the asset).

2. **Short Position**
   Where the futures trader commits to delivering the asset (selling the asset).

   Profit to Long = Spot price at maturity – Original Futures Price
   Profit to Short = Original Futures Price – Spot price at maturity.

**Example:**

Price of the corn in the market = 4.405 USD per bushel in May 2.
Agreed futures price = 4.355 USD per bushel

Maturity = May 2.

The long position trader earns a profit of 5 cents (0.05 USD) per bushel where he/she buys at 4.355 USD instead of 4.405 USD. On the other hand, the short position trader realizes a loss of 5 cents (0.05 USD) in this trading.
# CHAPTER 17. FUTURES MARKETS AND RISK MANAGEMENT

## TABLE 17.1
Sample of futures contracts

<table>
<thead>
<tr>
<th>Foreign Currencies</th>
<th>Agricultural</th>
<th>Metals and Energy</th>
<th>Interest Rate Futures</th>
<th>Equity Indexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>British pound</td>
<td>Corn</td>
<td>Copper</td>
<td>Eurodollars</td>
<td>Dow Jones Industrials</td>
</tr>
<tr>
<td>Canadian dollar</td>
<td>Oats</td>
<td>Aluminum</td>
<td>Euroyen</td>
<td>S&amp;P Midcap 400</td>
</tr>
<tr>
<td>Japanese yen</td>
<td>Soybeans</td>
<td>Gold</td>
<td>Euro-denominated bond</td>
<td>Nasdaq 100</td>
</tr>
<tr>
<td>Euro</td>
<td>Soybean meal</td>
<td>Platinum</td>
<td>Euroswiss</td>
<td>NYSE Index</td>
</tr>
<tr>
<td>Swiss franc</td>
<td>Soybean oil</td>
<td>Palladium</td>
<td>Sterling</td>
<td>Russell 2000 index</td>
</tr>
<tr>
<td>Australian dollar</td>
<td>Wheat</td>
<td>Silver</td>
<td>British gov’t bond</td>
<td>Nikkei 225 (Japanese)</td>
</tr>
<tr>
<td>Mexican peso</td>
<td>Barley</td>
<td>Crude oil</td>
<td>German gov’t bond</td>
<td>FTSE index (British)</td>
</tr>
<tr>
<td>Brazilian real</td>
<td>Flaxseed</td>
<td>Heating oil</td>
<td>Italian gov’t bond</td>
<td>CAC index (French)</td>
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<tr>
<td></td>
<td>Canola</td>
<td>Gas oil</td>
<td>Canadian gov’t bond</td>
<td>DAX index (German)</td>
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<tr>
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<td>Rye</td>
<td>Natural gas</td>
<td>Treasury bonds</td>
<td>All ordinary (Australian)</td>
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<tr>
<td></td>
<td>Cattle</td>
<td>Gasoline</td>
<td>Treasury notes</td>
<td>Toronto 35 (Canadian)</td>
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<td></td>
<td>Milk</td>
<td>Propane</td>
<td>Treasury bills</td>
<td>Titans 30 (Italian)</td>
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<td>Hogs</td>
<td>Commodity index</td>
<td>LIBOR</td>
<td>Dow Jones Euro STOXX 50</td>
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<td>Pork bellies</td>
<td>index</td>
<td>EURIBOR</td>
<td>Industry indexes, e.g.,</td>
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<td>Cocoa</td>
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<td>Municipal bond index</td>
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<td>Orange juice</td>
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<td>Sugar</td>
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</table>

## FIGURE 17.2
Profits to buyers and sellers of futures and options contracts.

A: Long futures position (buyer)  
B: Short futures position (seller)  
C: Buy a call option
Mechanics of Trading in Futures Markets

1. The Clearinghouse and Open Interest

The clearing house is established by exchanges to facilitate trading. It may interpose itself as an intermediary between two traders.

Once a trade is agreed to, the clearinghouse enters the picture. Rather than having the long and short traders hold contracts with each other, the clearinghouse becomes the seller of the contract for the long position and the buyer of the contract for the short position.

2. Marking to Market and the Margin Account

These are the daily settlement of obligations on future positions.

- The process by which profits / losses accrue to traders is called **marking to market**.
- The margin is a security account consisting of cash or near cash securities, such as Treasury Bills, that ensures the trader will be able to satisfy the obligations of the futures contract.
- Thus, a maintenance margin is established below which a trader’s margin may not fall. Reaching the maintenance margin triggers a margin call.

Example:

Price of the corn in the market= 4.405 USD per bushel in May 2.
Agreed futures price = 4.355 USD per bushel
Contract = 5000 bushels
Maturity = May 2.
Initial Required Margin = 10%
Maintenance Margin = 5%
Then,

5,000 x $4.355 = $ 21,775 (total value of the contract)

Margin account = $ 21,775 x 0.10 = $ 2,177.5

Maintenance Margin = $ 21,775 x 0.05 = $ 1,088.75

Initial margin is usually set between 5% and 15% of the total value of the contract.

So, if margin account falls below $ 1,088.75, then the trader will get a margin call.

**Convergence Property**

It is important to note that the futures price on the delivery date will equal the spot price of the commodity on that date. If not, then, there will be profit arbitraging. Thus, both must converge at maturity.

**Example:**

Agreed futures price: $12.10 per ounce for silver.

Today’s spot price: $12.10

Spot price at delivery: $12.21

Thus, by assumption, futures price should be also $12.21
Futures Market Strategies

1. Hedging and Speculation

A speculator uses a futures contract to profit from movements in futures prices, a hedger to protect against price movements.

If speculators believe prices will increase, they will take a long position for expected profits.

Hedgers, by contrast, use futures to insulate themselves against price movements. To hedge the total revenue derived from the sales, companies may enter a short position if prices are volatile and expected to decrease.

2. Basis Risk and Speculation

The basis is the difference between the futures price and the spot price. On the maturity date of a contract, the basis must be zero. If the asset and futures contract are held until maturity, the hedger bears no risk (Futures price = spot price). If the contract and asset
are to be liquidated early, the hedger bears basis risk. Speculators try to profit from the movements in the basis.