Mechanics of Futures Markets

Chapter 2
Futures Contracts

- Available on a wide range of underlyings
- Exchange traded
- Specifications need to be defined:
  - What can be delivered,
  - Where it can be delivered, &
  - When it can be delivered
- Settled daily
Margins

- A margin is cash or marketable securities deposited by an investor with his or her broker.
- The balance in the margin account is adjusted to reflect daily settlement.
- Margins minimize the possibility of a loss through a default on a contract.
An investor takes a long position in 2 December gold futures contracts on June 5

- contract size is 100 oz.
- futures price is US$400
- margin requirement is US$2,000/contract (US$4,000 in total)
- maintenance margin is US$1,500/contract (US$3,000 in total)
## A Possible Outcome

**Table 2.1, Page 28**

<table>
<thead>
<tr>
<th>Day</th>
<th>Price (US$)</th>
<th>Daily Gain (Loss) (US$)</th>
<th>Cumulative Gain (Loss) (US$)</th>
<th>Account Balance (US$)</th>
<th>Margin Call (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Jun</td>
<td>400.00</td>
<td>4,000</td>
<td></td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td>13-Jun</td>
<td>393.30</td>
<td>(420) (1,340)</td>
<td>2,660 + 1,340 = 4,000</td>
<td>&lt; 3,000</td>
<td></td>
</tr>
<tr>
<td>19-Jun</td>
<td>387.00</td>
<td>(1,140) (2,600)</td>
<td>2,740 + 1,260 = 4,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-Jun</td>
<td>392.30</td>
<td>260 (1,540)</td>
<td>5,060</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Other Key Points About Futures

- They are settled daily
- Closing out a futures position involves entering into an offsetting trade
- Most contracts are closed out before maturity
Collateralization in OTC Markets

- It is becoming increasingly common for contracts to be collateralized in OTC markets.
- They are then similar to futures contracts in that they are settled regularly (e.g. every day or every week).
Futures Prices for Gold on Feb 4, 2004: Prices Increase with Maturity (Figure 2.2, page 35)

(a) Gold

![Graph showing the increase in futures prices for gold with maturity from Feb-04 to Dec-04.](image-url)
Futures Prices for Oil on February 4, 2004: Prices Decrease with Maturity (Figure 2.2, page 35)

(b) Brent Crude Oil

Contract Maturity Month

Futures Price ($ per barrel)
Delivery

- If a futures contract is not closed out before maturity, it is usually settled by delivering the assets underlying the contract. When there are alternatives about what is delivered, where it is delivered, and when it is delivered, the party with the short position chooses.

- A few contracts (for example, those on stock indices and Eurodollars) are settled in cash.
Some Terminology

- Open interest: the total number of contracts outstanding
  - equal to number of long positions or number of short positions
- Settlement price: the price just before the final bell each day
  - used for the daily settlement process
- Volume of trading: the number of trades in 1 day
Convergence of Futures to Spot

(Figure 2.1, page 26)
Questions

- When a new trade is completed what are the possible effects on the open interest?
- Can the volume of trading in a day be greater than the open interest?
Regulation of Futures

- Regulation is designed to protect the public interest
- Regulators try to prevent questionable trading practices by either individuals on the floor of the exchange or outside groups
Accounting & Tax

- Ideally hedging profits (losses) should be recognized at the same time as the losses (profits) on the item being hedged.
- Ideally profits and losses from speculation should be recognized on a mark-to-market basis.
- Roughly speaking, this is what the accounting and tax treatment of futures in the U.S. and many other countries attempts to achieve.
## Forward Contracts vs Futures

### TABLE 2.3 (p. 41)

<table>
<thead>
<tr>
<th>FORWARDS</th>
<th>FUTURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private contract between 2 parties</td>
<td>Exchange traded</td>
</tr>
<tr>
<td>Non-standard contract</td>
<td>Standard contract</td>
</tr>
<tr>
<td>Usually 1 specified delivery date</td>
<td>Range of delivery dates</td>
</tr>
<tr>
<td>Settled at end of contract</td>
<td>Settled daily</td>
</tr>
<tr>
<td>Delivery or final cash settlement usually occurs</td>
<td>Contract usually closed out prior to maturity</td>
</tr>
<tr>
<td>Some credit risk</td>
<td>Virtually no credit risk</td>
</tr>
</tbody>
</table>
Foreign Exchange Quotes

- Futures exchange rates are quoted as the number of USD per unit of the foreign currency.
- Forward exchange rates are quoted in the same way as spot exchange rates. This means that GBP, EUR, AUD, and NZD are quoted as USD per unit of foreign currency. Other currencies (e.g., CAD and JPY) are quoted as units of the foreign currency per USD.