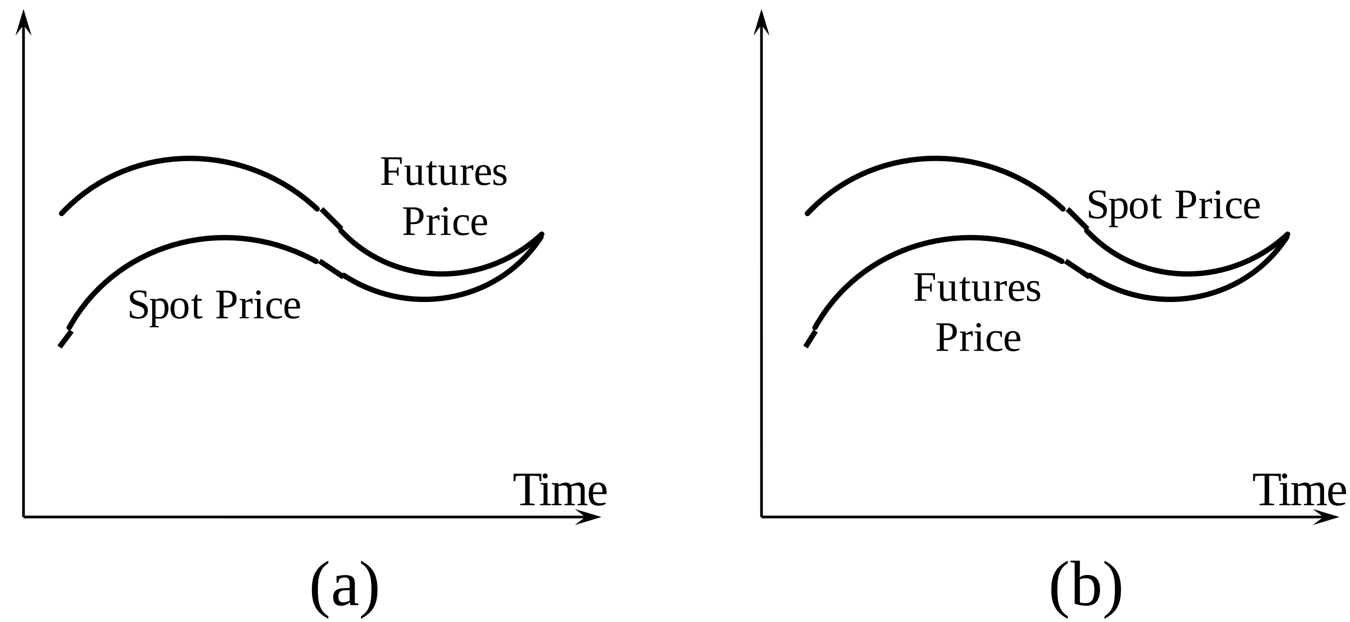
Chapter 2
Mechanics of Futures Markets

Futures Contracts

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

Convergence of Futures to Spot (Figure 2.1, page 26)



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

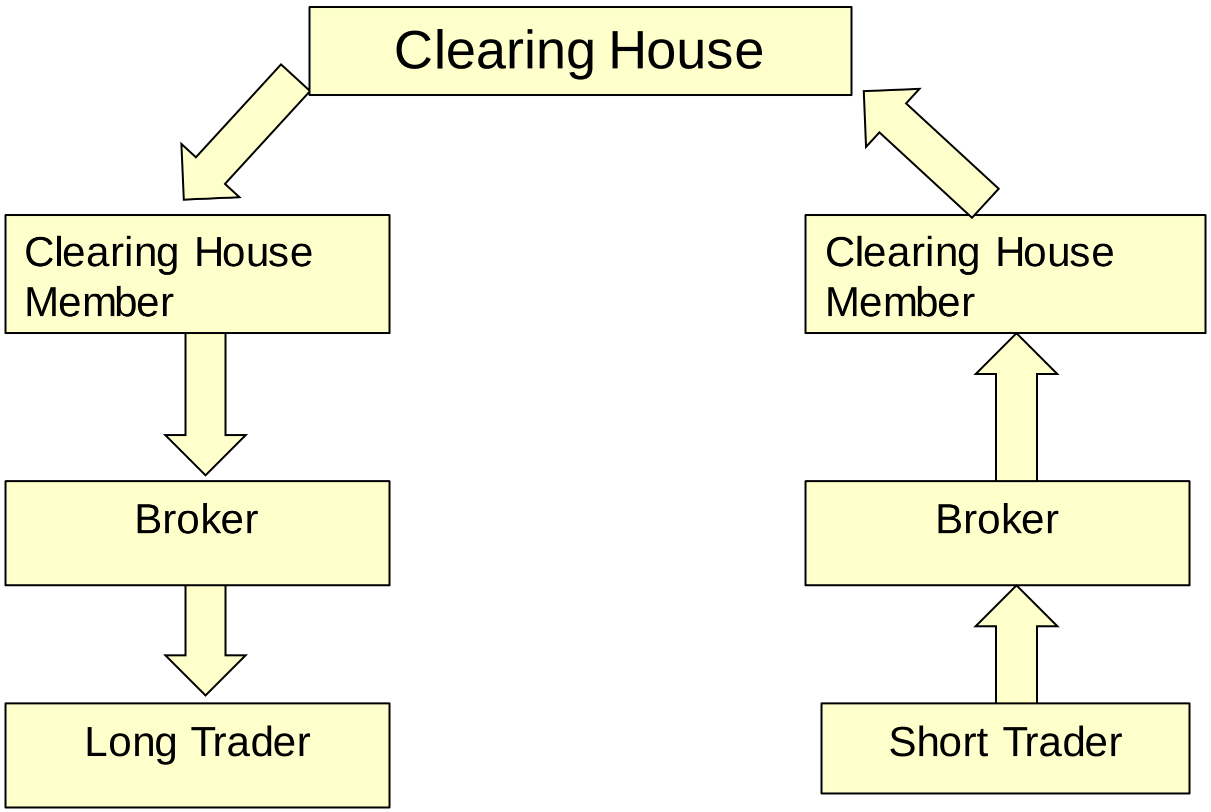
Example of a Futures Trade (page 27-29)

- An investor takes a long position in 2 December gold futures contracts on June 5
  - contract size is 100 oz.
  - futures price is US$1250
  - initial margin requirement is US$6,000/contract (US$12,000 in total)
  - maintenance margin is US$4,500/contract (US$9,000 in total)

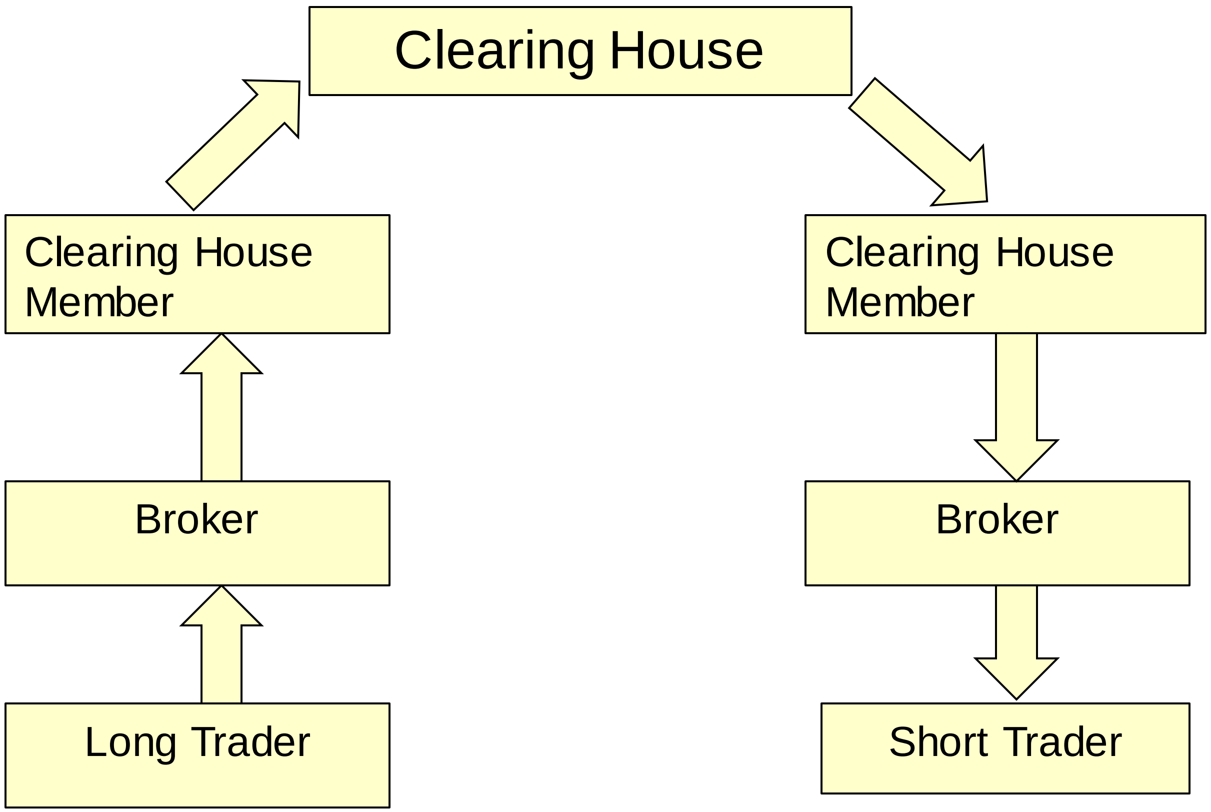
A Possible Outcome *(Table 2.1, page 28)*

Day	Trade Price ($)	Settle Price ($)	Daily Gain ($)	Cumul. Gain ($)	Margin Balance ($)	Margin Call ($)
1	1,250.00				12,000	
1		1,241.00	−1,800	− 1,800	10,200	
2		1,238.30	−540	−2,340	9,660	
…..		…..	…..	…..	……	
6		1,236.20	−780	−2,760	9,240	
7		1,229.90	−1,260	−4,020	7,980	4,020
8		1,230.80	180	−3,840	12,180	
…..		…..	…..	…..	……	
16	1,226.90		780	−4,620	15,180	

Margin Cash Flows When Futures Price Increases



Margin Cash Flows When Futures Price Decreases



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 one day

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

Crude Oil Trading on May 26, 2010

	Open	High	Low	Settle	Change	Volume	Open Int
Jul 2010	70.06	71.70	69.21	71.51	2.76	6,315	388,902
Aug 2010	71.25	72.77	70.42	72.54	2.44	3,746	115,305
Dec 2010	74.00	75.34	73.17	75.23	2.19	5,055	196,033
Dec 2011	77.01	78.59	76.51	78.53	2.00	4,175	100,674
Dec 2012	78.50	80.21	78.50	80.18	1.86	1,258	70,126

Collateralization in OTC Markets

- It is becoming increasingly common for transactions to be collateralized in OTC markets
- Consider transactions between companies A and B
- These might be be governed by an ISDA Master agreement with a credit support annex (CSA)
- The CSA might require A to post collateral with B equal to the value to B of its outstanding transactions with B when this value is positive.

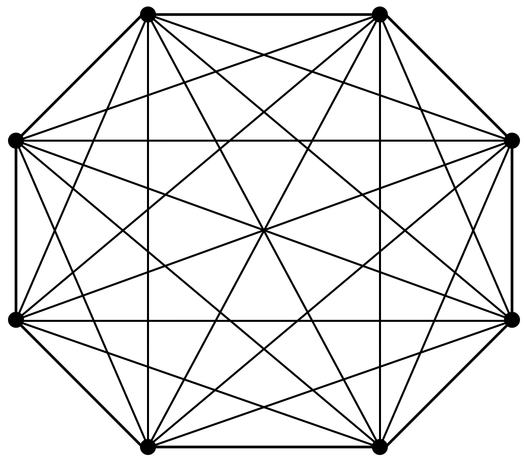
Collateralization in OTC Markets *continued*

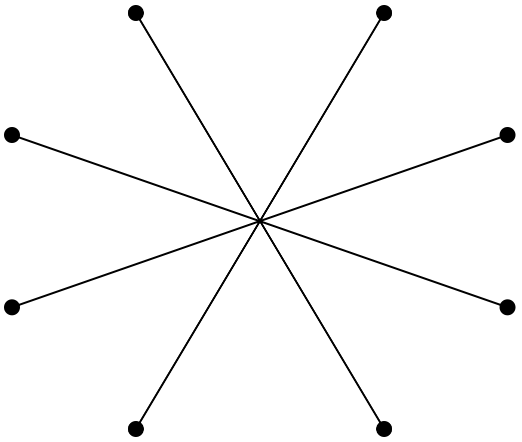
- If A defaults, B is entitled to take possession of the collateral
- The transactions are not settled daily and interest is paid on cash collateral
- See Business Snapshot 2.2 for how collateralization affected Long Term Capital Management when there was a “flight to quality” in 2008.

Clearing Houses and OTC Markets

- Traditionally transactions have been cleared bilaterally in OTC markets
- Following the 2007-2009 crisis, the has been a requirement for most standardized OTC derivatives transactions to be cleared centrally though clearing houses.

Bilateral Clearing vs Central Clearing House





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

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?

Types of Orders

- Limit
- Stop-loss
- Stop-limit
- Market-if touched
- Discretionary
- Time of day
- Open
- Fill or kill

Regulation of Futures

- In the US, the regulation of futures markets is primarily the responsibility of the Commodity Futures and Trading Commission (CFTC)
- Regulators try to protect the public interest and prevent questionable trading practices

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 attempt to achieve

Forward Contracts vs Futures Contracts (Table 2.3, page 41)

FORWARDS	FUTURES
Private contract between 2 parties	Exchange traded
Non-standard contract	Standard contract
Usually 1 specified delivery date	Range of delivery dates
Settled at end of contract	Settled daily
Delivery or final cash settlement usually occurs	Contract usually closed out prior to maturity
Some credit risk	Virtually no credit risk

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.