FUTURES

• Introduction
• Futures basics
  – Futures vs. forward and spot contracts
  – Example: Speculation with futures
  – Definitions
  – Basis
• Accounting issues
  – Margins, "marking-to-market"
• Trading procedures
• Uses of Futures
  – Obtain information
    • Spot price forecasts
    • Trading
      • Speculation
      • Hedging

FUTURES: INTRODUCTION

• Many possible arrangements to buy/sell commodities
  – Typical arrangements:
    • "Spot" contract: Agree now to buy/sell commodity now
      – Price, quality, and quantity established now
      – Commodity received/delivered now
      – Payment made/received now

FUTURES: INTRODUCTION

• Spot Contract

<table>
<thead>
<tr>
<th>Past</th>
<th>Now</th>
<th>Future</th>
</tr>
</thead>
</table>

- Establish price ("spot" price)
- Establish quantity
- Establish quality
- Receive/deliver commodity
- Make/receive payment
FUTURES: INTRODUCTION

• Many possible arrangements to buy/sell commodities
  – Typical arrangements:
    • “Spot” contract: Agree now to buy/sell commodity now
      – Price, quality, and quantity established now
      – Commodity received/delivered now
      – Payment made/received now
    • “Forward” and “Futures” contracts: Agree now to buy/sell commodity at some future date
      – Price, quality, quantity, and delivery date established now
      – Commodity received/delivered at future date
      – Payment made/received at future date

FUTURES: INTRODUCTION

• Forward and Futures Contracts

<table>
<thead>
<tr>
<th>Time</th>
<th>Past</th>
<th>Now</th>
<th>“Maturity” or “Expiration”</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish price</td>
<td></td>
<td></td>
<td>(“forward” / “futures” price)</td>
<td></td>
</tr>
<tr>
<td>Establish quantity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establish quality</td>
<td></td>
<td></td>
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</tr>
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<td>Establish delivery date</td>
<td></td>
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FUTURES VS. FORWARD CONTRACTS

• Need for forward/futures trading
  – Biological nature of agricultural production
    • Excess supply at harvest
    • Shortage in spring and summer
    • Producers need price forecast because prices not known when production decision is made
    • Processors need year around supply
**FUTURES VS. FORWARD CONTRACTS**

- **Forward Contract**
  - Highly specific agreement
  - Form (quantity, quality)
  - Time (delivery date)
  - Place (delivery location)

- **Futures Contract**
  - Standardized agreement with “focal” specifications
    - Form:
      - Quantity
        > Corn, wheat, soybeans: 5,000 bu/contract
        > Feeder Cattle: 50,000 lb live weight
        > Live Cattle: 40,000 lb live weight
        > Lean Hogs: 40,000 lb carcass weight
      - Quality
        > Soybeans: No. 2 Yellow at par
    - Time
      - Delivery date
        > Relatively few contract months (e.g., Jan., Mar., May, Jul., Aug., Sep., and Nov. for soybeans)
    - Place
      - Delivery location
        > Relatively few delivery locations

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**FUTURES VS. FORWARD CONTRACTS**

- **Corn futures contracts traded at CBOT:**
  - Quantity: 5,000 bu
  - Quality:
    - No. 2 Yellow at par
    - No. 1 yellow at 1 1/2 cents per bushel over contract price
    - No. 3 yellow at 1 1/2 cents per bushel under contract price
  - Contract Months: March, May, July, September, December
  - Last Trading Day: The business day prior to the 15th calendar day of the contract month.
  - Last Delivery Day: Second business day following the last trading day of the delivery month.
  - Trading Hours:
    - Open Auction: 9:30 a.m. - 1:15 p.m. Central Time, Mon.-Fri.
    - Electronic: 7:30 p.m. - 6:00 a.m. Central Time, Sun.-Fri.
    - Trading in expiring contracts closes at noon on the last trading day.
  - Delivery Points: Warehouses or shipping stations in
    - Chicago and Buena Harbor Switching District
    - Illinois Switching District
    - Lockport-Seneca Shipping District
    - Ottawa-Chillicothe Shipping District
    - Peoria-Pekin Shipping District
FUTURES VS. FORWARD CONTRACTS

• Forward Contracts
  – Traded “over the counter” (OTC)
  • Contracts traded in private
  • No need for brokers

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• Futures Contracts
  – Traded in organized Exchanges
  • Exchanges for agricultural commodities
    – CBOT (e.g., corn, soybeans, SRW wheat, soyoil, soymeal)
    – CME (e.g., feeder cattle, live cattle, lean hogs, milk, cheese, butter)
    – KCBT (e.g., HRW wheat)
    – MGEX (e.g., HRW wheat)
    – NYBOT (e.g., cotton, coffee, cocoa, sugar)
  • Contracts openly traded
    – Large amount of information represented and made public through offers/bids
  • Buyers and sellers represented by brokers in the Exchange
  • Highly competitive markets because there are many buyers and sellers

FUTURES VS. FORWARD CONTRACTS

• Forward Contracts
  – Traded “over the counter” (OTC)
    • Regulated by state or federal commerce laws
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• Forward Contracts
  – Traded “over the counter” (OTC)
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• Futures Contracts
  – Traded in organized Exchanges
    • Heavily regulated: Three tiers of regulation
      – Commodity Futures Trading Commission
      – National Futures Association
      – Self-regulation by Exchanges

FUTURES VS. FORWARD CONTRACTS

• Forward Contracts
  – Traded “over the counter” (OTC)
    • No guarantor
    • Security deposits may be made to guarantee transaction

• Futures Contracts
  – Traded in organized Exchanges
    • Transactions guaranteed by Exchange
    • Both buyers and sellers must make security deposits (“margins”) with the Exchange
    • Exchange acts as a clearinghouse
FUTURES VS. FORWARD CONTRACTS

• **Forward Contracts**

  - Commodity must be delivered/received, unless counterparty agrees to re-negotiate.

• **Futures Contracts**

  - Commodity need not be delivered/received
  - To avoid delivery/receipt, simply offset contract by buying/selling back before maturity
FUTURES VS. FORWARD CONTRACTS

• Futures Contracts:
  -- Avoiding Receipt:

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FUTURES VS. FORWARD CONTRACTS

• Forward Contracts
  -- Usually, commodity delivered/received
  -- Very “illiquid”
**FUTURES VS. FORWARD CONTRACTS**

- **Forward Contracts**
  - Usually, commodity delivered/received
  - Very “illiquid”

- **Futures Contracts**
  - Usually, commodity not delivered/received
  - A small percentage of contracts traded ends up in delivery/receipt of commodity
  - Some contracts (e.g., CME's feeder cattle and lean hog contracts) do not even provide for physical delivery; they have “cash settlement”
  - Very “liquid”

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**FUTURES: SPECULATION EXAMPLE**

- Suppose CBOT July 2005 wheat futures price is $3.45/bu on March 7, 2005
- A person strongly believes that futures prices will fall (“bearish” expectations)
- The person may want to “speculate” (i.e., trade so as to profit if prices move in the expected direction)

**Trading strategy for bearish speculator:**
1. Go “short” (i.e., sell) now at $3.45/bu
2. “Offset” (i.e., buy back) sometime before July 2005 (hopefully, at a lower price)
FUTURES: SPECULATION EXAMPLE

• Correct forecast scenario

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<td>Sell July Wheat</td>
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<td>May 20</td>
<td>Buy back July</td>
<td>@ $3.11/bu</td>
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FUTURES GAIN

$0.34/bu

(minus broker commission ~ $0.01/bu)

FUTURES: SPECULATION EXAMPLE

• Incorrect forecast scenario

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FUTURES LOSS

(-$0.28/bu)

(minus broker commission ~ $0.01/bu)

FUTURES: DEFINITIONS

• HEDGERS
  - Producers or users of commodity
  - Willing to make or take physical delivery
  - Use futures to protect against unfavorable price movements

• SPECULATORS
  - Have no use for physical commodity
  - Not willing to make or take physical delivery
  - Buy or sell futures in an attempt to profit from price movements
  - Add liquidity to the market
FUTURES: DEFINITIONS

BEARISH

BULLISH

FUTURES: DEFINITIONS

• “Opening” vs. “closing” a “position”
• “Long” vs. “short”

FUTURES: DEFINITIONS

• Bearish speculator:

Time

Now

Maturity

No futures “position”

“Short” futures “position”

Sell futures contract

“Open” a “short” futures “position”

“Make” a promise
FUTURES: DEFINITIONS

• Bearish speculator:

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<td>No futures “position”</td>
<td>“Short” futures “position”</td>
<td>No futures “position”</td>
</tr>
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</table>

  - Sell futures contract
  - “Open” a “short” futures “position”
  - “Make” a promise
  - “Close” the “short” position
  - “Offset” the promise

FUTURES: DEFINITIONS

• Bullish speculator:

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</tr>
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<tbody>
<tr>
<td>No futures “position”</td>
<td>“Long” futures “position”</td>
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  - Buy futures contract
  - “Open” a “long” futures “position”
  - “Make” a promise
  - “Close” the “long” position
  - “Offset” the promise