Introduction to Futures Markets

Nathan Smith

Extension Economist

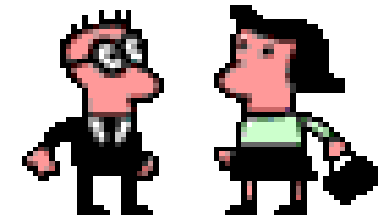
EFM February 18, 2025

MARKETS – What are they?

- Social organizations where the goal is exchange (goods and/or services)

MARKETING SYSTEM

- CASH (SPOT)MARKET
  - Unlimited sites
  - Individual negotiation,
  - Auctions,
  - Delivery of commodity
- FUTURES AND OPTIONS MARKET
  - Limited sites, exchanges
  - Risk Management
  - Few actual deliveries of commodity



EVOLUTION OF MARKETS

- Gifts
- Barter
- Cash markets (use money, such as arrowheads, shells, gold, etc.)
- Forward contracts
- Futures contracts
- Options & options on futures
- Other derivatives

FUTURES MARKET

- Definition: The buying and selling of standardized contracts for the future delivery of a commodity.

- Can use the Futures Market to establish a HEDGE position for a commodity

Futures Contracts

- A **futures contract** is an agreement between buyer and seller to deliver an asset (specified quantity and grade) at a certain time in the future for a price agreed to when the contract is first entered

- By contrast, in a **spot contract** there, is an agreement to buy or sell the asset immediately (or within a very short period of time)

- ***Standardization* is key** (only price can change)
  - Minimizes transaction costs of trading deferred delivery instrument
  - *Only* traded on approved exchanges

Futures Markets Working Definition

Markets in which prices are currently established for commodities that will be delivered at some time in the future.

FUTURES PRODUCTS

- FUTURES & OPTIONS
  - Pit-traded (open outcry)
  - Electronic
- Agricultural Commodities
- Financials
- Metals
- Energies
- Currencies

Futures Exchanges

- CME Group (www.cmegroup.com)
  - Chicago Board of Trade (CBOT) - Primary Grains Exchange
  - Chicago Merchantile Exchange (CME) – Primary Livestock Exchange
  - Commodity Exchange, Inc (COMEX) - Metals
  - New York Merchantile Exchange (NYMEX) - Energy
  - Kansas City Board of Trade (KCBT) (www.kcbt.com) - Hard Red Winter Wheat
- Intercontinental Exchange (ICE) (www.theice.com)
  - New York Board of Trade NYBOT - Cotton Exchange, OJ, Sugar, Cocoa, Milk, Cheese
- Minneapolis Grain Exchange (MGE) (www.mgex.com) - Hard Red Spring Wheat Index (HRSI), Hard Red Winter Wheat Index (HRWI), Soft Red Winter Wheat Index (SRWI), National Corn Index (NCI) and National Soybean Index (NSI)

CME Group

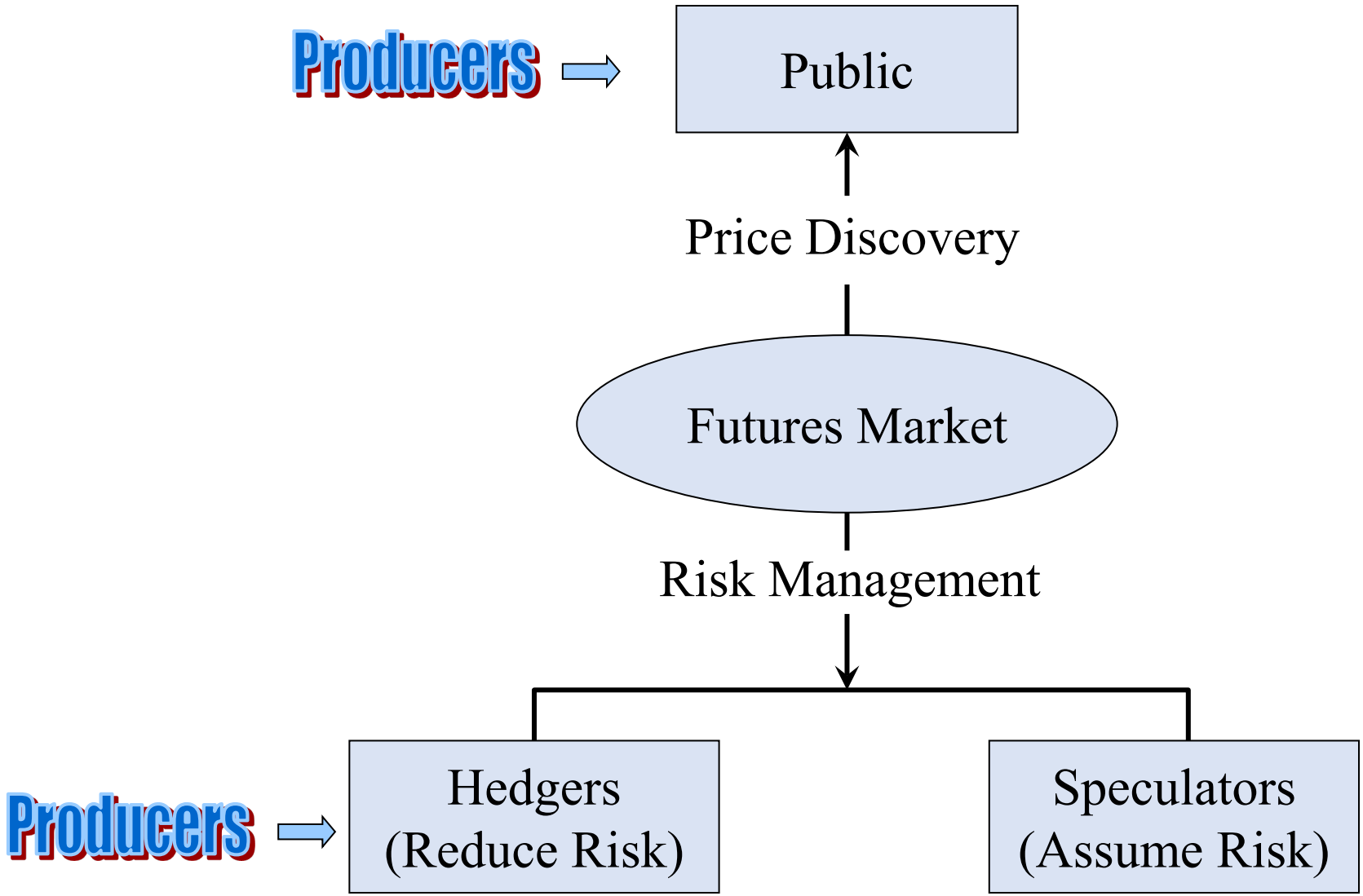
ECONOMIC FUNCTIONS OF FUTURES EXCHANGE (MARKET)

- **Price Discovery**
- **Risk Transfer**
- **Price Information**

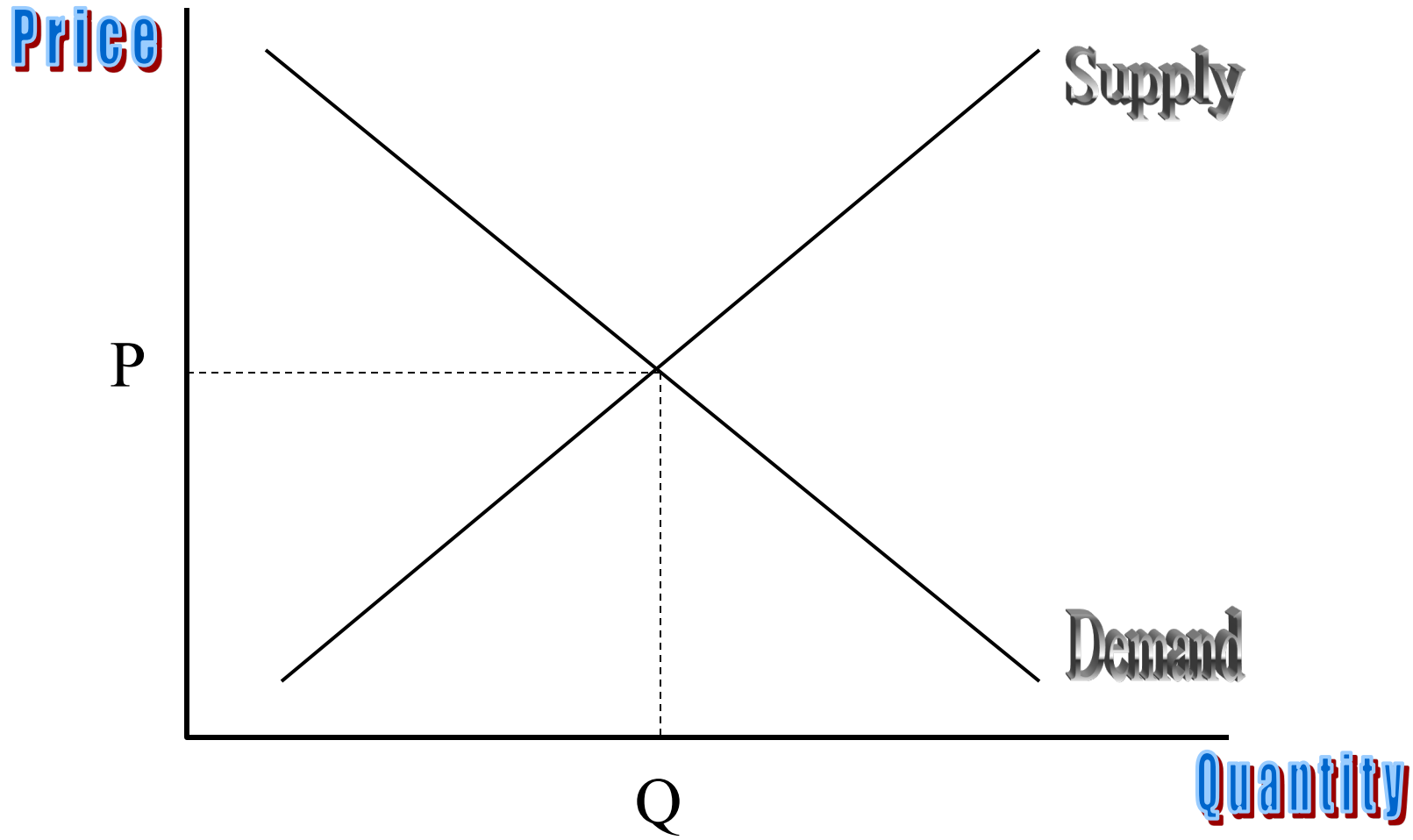
WHO USES FUTURES?

- **Observers**
- **Speculators** (large & small)
- **Hedgers**

ECONOMIC FUNCTIONS OF FUTURES



PRICE DISCOVERY



FUTURES CONTRACT

- A Firm and legally binding agreement – if hold to maturity
- To accept or make delivery of
- A specified *Quantity* and
- A specified *Quality* of a commodity
- To a specified *Place*
- In a specified *Time Period* in the future (i. e. “Futures”)
- For an agreed on *Price* determined by Public Auction either outcry or electronic

Trading Futures

- If Sell agreed to deliver, if Buy to receive
- If Buy at 1.00 and sell at 1.10, made or lost money?
- If Sell at 1.00 and buy back at 0.90, made or lost money?
- Since can either buy or sell, this is how can trade futures contracts without actual delivery – Can “offset” by assuming opposite position from initial.

Corn Dec '25 (ZCZ25)

473-2 **+0-2 (+0.05%)** 04:16 CT [CBOT]

473-0 x 62 473-2 x 5

CONTRACT SPECIFICATIONS for Tue, Feb 18th, 2025

Notes Alerts Watch Help

Barchart Symbol	ZC
Exchange Symbol	ZC
Contract	Corn
Exchange	CBOT
Tick Size	1/4 cent per bushel ($12.50 per contract)
Margin/Maintenance	$1,155/1,050
Daily Limit	30 cents per bushel ($1,500 per contract) Expanded limit 45 cents
Contract Size	5,000 bushels
Months	Mar, May, Jul, Sep, Dec (H, K, N, U, Z)
Trading Hours	7:00p.m. - 7:45a.m. and 8:30a.m. - 1:20p.m. (Settles 1:15p.m.) (Sun-Fri) CST
Value of One Futures Unit	$50
Value of One Options Unit	$50
Last Trading Day	The business day prior to the 15th calendar day of the contract month

CONTRACT SPECIFICATIONS

Contract Symbol	CT
Contract Size	50,000 pounds net weight
Quotation	Cents and hundredths of a cent per pound
Contract Months	March, May, July, October, December
Minimum Price Movement	1/100 of a cent (one "point") per pound equivalent to $5.00 per contract.
Settlement	Physical Delivery
Daily Price Limit	Futures contracts are subject to a daily price limit that can range from 3 to 7 cents per pound. Please consult Rule 10.09 for details (Click here for Cotton Rules.pdf)
Deliverable Origins	US Origin only.
Delivery Points	Galveston, TX; Houston, TX; New Orleans, LA;. Memphis, TN; Greenville/Spartanburg, S.C (Effective with the Dec 2013 expiry, New Orleans is no longer a delivery point and Dallas/Ft. Worth, TX becomes a delivery point.)
Basis Grade	Quality : Strict Low Middling Staple Length: 1 2/32nd inc
First Notice Day	Five business days before the first delivery day of the spot contract month, which is the first business day of that month.
Last Trading Day	Seventeen business days from end of spot month.
Last Notice Day	Twelve business days from end of spot month.
Position Limits	Position Limit and Position Accountability information for all IFUS products can be found at https://www.theice.com/publicdocs/futures_us_reports /all/Futures_US_Position_Limits.pdf.

DELIVERY OF COMMODITY

- Seller or buyer obligated to deliver or receive delivery unless take an offsetting position to attain a net-zero position with the clearinghouse
- Ability to offset is key feature of futures trading
- Only 2-3% of all futures contracts actually result in physical delivery

FUTURES TERMINOLOGY

- **Short** Futures – to **sell** a futures contract
- **Long** Futures – to **buy** a futures contract
- **Basis** – difference between your local price and the price of a futures contract
- **Clearinghouse** – organization that clears trading activity and makes sure contracts are honored.
- **Commission** – fees paid to a broker for execution of an order
- **Margin** – deposit (earnest money) required by clearinghouse from buyer and seller to ensure the honor any financial liability

MARGIN MONEY

*** Good Faith Money Placed in Escrow**

*** Both Buyer and Seller**

*** Guards Against Default**

*** Assures Money Lost is on Deposit**

*** Is less for hedgers than speculators**

*** Varied by Commodity & Trader**

5-10%

SPECULATING

Assuming a position in either the *futures* or *cash* market trying to make money from the change in price.

HEDGING

Establishing an acceptable price for a commodity which is either owned or committed for production and will be deliverable at some point in time in the future.

If it is priced, it is hedged.

Hedgers combine cash market with futures market

HEDGING IS…..

ASSUME EQUAL

AND OPPOSITE

POSITIONS IN BOTH THE CASH AND FUTURES MARKETS.

Pre *Sell* (sell futures) for something will sell later

Pre *Buy* (buy futures) for something will buy later

BASIS

The relationship between our local cash market prices and futures market prices for the same quality and quantity of commodity.

Basis = Cash – Futures

Cash = Futures + Basis

Futures Settlements

Exchange	Commodity	Closing Settlement Prices (¢/bu) as of 2/14/2025						
CBOT	Corn	496.25 (Mar 25)	508.75 (May 25)	511.25 (Jul 25)	475.25 (Sep 25)	473.00 (Dec 25)	483.75 (Mar 26)	489.75 (May 26)
CBOT	Soybeans	1036.00 (Mar 25)	1052.75 (May 25)	1068.25 (Jul 25)	1065.50 (Aug 25)	1050.00 (Sep 25)	1052.00 (Nov 25)	1062.50 (Jan 26)
CBOT	Wheat	600.00 (Mar 25)	613.50 (May 25)	625.25 (Jul 25)	638.50 (Sep 25)	655.25 (Dec 25)	667.50 (Mar 26)	671.25 (May 26)
CBOT	White Oats	337.50 (Mar 25)	341.75 (May 25)	348.25 (Jul 25)	344.00 (Sep 25)	352.75 (Dec 25)	356.25 (Mar 26)	362.25 (May 26)
KCBT	Wheat	621.25 (Mar 25)	632.75 (May 25)	642.50 (Jul 25)	654.75 (Sep 25)	671.50 (Dec 25)	683.75 (Mar 26)	686.75 (May 26)
MGE	Wheat	633.50 (Mar 25)	649.25 (May 25)	661.50 (Jul 25)	672.00 (Sep 25)	686.25 (Dec 25)	695.50 (Mar 26)	698.75 (May 26)

Coarse

US #2 Yellow Corn (Bulk)

Country Elevators - Conventional

Region/Location	Sale Type	Basis (¢/Bu)	Basis Change	Price($/Bu)	Price Change	Average	Year Ago	Freight	Delivery	
Anderson, SC	Bid	70.00H	UNCH	5.6625	UP 0.0275	5.6625	4.6650	DLVD-T	Current	
Conway, SC	Bid	-5.00H	UNCH	4.9125	UP 0.0275	4.9125	4.0650	DLVD-T	Current	
Darlington, SC	Bid	55.00Z	UNCH	5.2800	UP 0.0025	5.2800		DLVD-T	Aug - Sep	New Crop
Kingstree, SC	Bid	-5.00H	UNCH	4.9125	UP 0.0275	4.9125	3.9650	DLVD-T	Current	
Lake City, SC	Bid	55.00Z	UNCH	5.2800	UP 0.0025	5.2800		DLVD-T	Aug - Sep	New Crop
Lynchburg, SC	Bid	-5.00H	UNCH	4.9125	UP 0.0275	4.9125	3.9650	DLVD-T	Current	
Nichols, SC	Bid	55.00Z	UNCH	5.2800	UP 0.0025	5.2800		DLVD-T	Aug - Sep	New Crop

Mills and Processors - Conventional

Region/Location	Sale Type	Basis (¢/Bu)	Basis Change	Price($/Bu)	Price Change	Average	Year Ago	Freight	Delivery
Batesburg, SC	Bid	75.00H	UNCH	5.7125	UP 0.0275	5.7125	4.8150	DLVD-T	Current

HOW TO TRADE FUTURES

- ON THE EXCHANGE FLOOR
  - >Purchase Membership
  - >Lease Membership

- OFF EXCHANGE
  - > Discount Broker
  - > Full Service Broker

- Broker is an agent who carries out orders of a hedger or speculator and belongs to firm with a seat on the Exchange.

TYPES OF ORDERS

- **Market Order** – to be filled as soon as possible.
- **Price Order** – fill at a certain price or better.
- **Stop Order** – also called “stop loss”, to offset a position when the market reaches a certain price level.

FUTURES MARGIN
(Financial Guarantee of Contract Performance)

- Performance Bond (Not a down payment)
- Required of Buyer and Seller
- Quoted in $/Contract
- Varies by Commodity
- Affected by Price Level and Volatility
- Initial vs. Maintenance

INITIAL VS MAINTENANCE MARGIN

- **Initial** - Amount of Capital required to begin trading the commodity.
- **Maintenance** - Amount of equity that must be maintained in margin account.

- Margin requirements are typically less than 5% of contract value.

CLEARINGHOUSE

- Facilitates the offsetting of futures contracts since they are standardized and interchangeable
- Enables trader who does not want to make or take delivery to trade the commodity
- Acts as 3rd party, substituting for the other party to a contract
- In reality, seller is selling to the Clearinghouse and buyer is buying from the Clearinghouse.

CLEARINGHOUSE

- Separate from Exchanges
- Establishes Daily Settlement Prices
- Adjusts Trading Accounts Daily
- Monitors Margins
- Facilitates Delivery Process
- Eliminates Counterparty Risk

LIQUIDATION OF FUTURES

- DELIVERY:
  - > If Long: Accept Delivery
  - > If Short: Make Delivery
- OFFSET:
  - >If Long: Sell Futures
  - >If Short: Buy Futures

Futures Prices Represent

- National and global supply and demand conditions and expectations.
- The value of a commodity at various delivery points
  - Corn (ZC) contracts represent the weighted average of delivery facilities registered with the CME group.

Intraday | Main View | Φ options quotes | flipcharts

Latest futures price quotes as of Tue, Feb 18th, 2025.

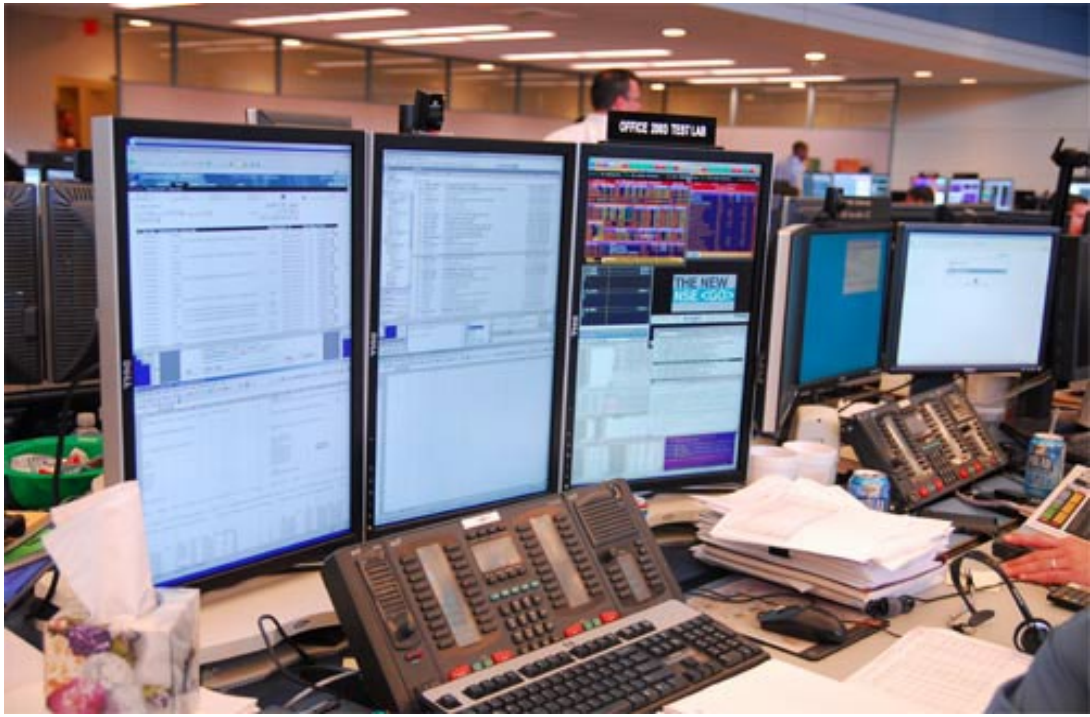
Contract	Last	Change	Open	High	Low	Previous	Volume	Open Int	Time
ZCY00 (Cash)	491-2s	+2-6	491-2	491-2	491-2	488-4	N/A	N/A	02/14/25
ZCH25 (Mar '25)	497-0	+0-6	496-2	498-4	493-2	496-2	19,735	369,697	06:50 CT
ZCK25 (May '25)	509-6	+1-0	508-0	511-0	505-4	508-6	13,326	726,295	06:49 CT
ZCN25 (Jul '25)	512-2	+1-0	510-0	513-4	508-2	511-2	7,557	408,959	06:49 CT
ZCU25 (Sep '25)	475-6	+0-4	474-2	476-4	473-4	475-2	3,124	216,470	06:50 CT
ZCZ25 (Dec '25)	473-2	+0-2	472-4	474-0	471-4	473-0	4,078	274,851	06:50 CT
ZCH26 (Mar '26)	483-4	-0-2	482-4	484-4	482-4	483-6	200	22,614	06:48 CT
ZCK26 (May '26)	490-2	+0-4	488-4	490-2	488-2	489-6	25	10,244	06:32 CT
ZCN26 (Jul '26)	492-2	+0-6	490-4	492-2	490-2	491-4	44	3,576	06:34 CT
ZCU26 (Sep '26)	470-0	+0-6	470-0	470-0	470-0	469-2	2	1,097	06:36 CT
ZCZ26 (Dec '26)	467-6	+0-6	466-0	467-6	465-4	467-0	115	11,079	06:36 CT
ZCH27 (Mar '27)	477-4s	+2-0	0-0	478-0	477-4	475-4	69	288	02/14/25
ZCK27 (May '27)	482-4s	+1-4	0-0	482-4	482-4	481-0	165	28	02/14/25
ZCN27 (Jul '27)	484-4s	+0-6	0-0	484-4	484-4	483-6	20	78	02/14/25
ZCU27 (Sep '27)	470-6s	+0-6	0-0	470-6	470-6	470-0	0	0	02/14/25
ZCZ27 (Dec '27)	460-2s	+1-6	460-0	460-2	459-6	458-4	4	522	02/14/25
ZCN28 (Jul '28)	477-2s	+1-6	0-0	477-2	477-2	475-4	0	0	02/14/25
ZCZ28 (Dec '28)	457-0s	+1-6	0-0	457-0	457-0	455-2	0	11	02/14/25

Electronic Trading

- Traditionally, futures contracts were traded using the open outcry system where traders physically meet on the floor of the exchange
- Commodities floor trading have been replaced by electronic trading where a computer matches buyers and sellers

Open Outcry System

Electronic Trading



FUTURES MARKET DISADVANTAGES

1. **Complex, hard to understand**
2. **Margin money**
3. **Not an exact price**
3. **Must price in minimum quantities**
4. **Setting Min. or Max. appeals to most strategies more**

MOST OF YOU WILL NOT WANT TO USE BUT IF UNDERSTAND, WILL BE BETTER RISK MANAGERS/MARKETER. ALL OTHER ALTERNATIVES BASED ON FUTURES!

FUTURES MARKET ADVANTAGES

1. **Potential Better Price than contracts.**
2. **Increased Flexibility. You will always find a buyer to purchase your futures market contract. You will always find a seller when you want to purchase a futures market contract.**
3. **You give yourself time. With a hedge you can lock in a price for as long as 18 months.**
4. **You may benefit from basis gain if basis moves in you favor.**
5. **May be only forward pricing option available.**

HEDGING EXAMPLE

Date	Cash	Futures	Basis

HEDGING EXAMPLE
Sell Soybeans at Harvest

Date	Cash	Futures	Basis
June 1		Nov. =11.00	
(?)			

HEDGING EXAMPLE
Pre-selling

Date	Cash	Futures	Basis
June 1		Nov. = 11.00	
	-1.00		
	(expected)		

HEDGING EXAMPLE
Pre-selling

Date	Cash	Futures	Basis
June 1		Nov. =11.00	
	-1.00		
Exp. Hedge Price For Sell Nov. @ 11.00-1.00 Basis= $10.00			(expected)

HEDGING EXAMPLE
Pre-selling

Date	Cash	Futures	Basis
June 1		Nov. =11.00	-
1.00			
	(expected)		
Exp. Price =			
11.00 – 1.00= 10.00			

If acceptable – ***Sell*** one ***Nov.*** contract.

We are now hedged!

HEDGING EXAMPLE
Pre-selling

Date	Cash	Futures	Basis
June 1		Sell Nov @11.00	- 1.00
Nov. 1		**Nov. = 9.00**	

What is the cash price likely to be?

HEDGING EXAMPLE
Pre-selling

Date	Cash	Futures	Basis
June 1		Nov. =11.00	-1.00
Nov. 1		**Nov. = 9.00**	

What is the cash price likely to be?

If we did a good job of predicting the basis, then cash price should be near

$9.00 - 1.00 = $8.00

HEDGING EXAMPLE
Pre-selling

Date	Cash	Futures	Basis
June 1		Nov.=11.00	- 1.00
Nov 1		**Nov. = 9.00**	
Cash = $8.00		**Actual Basis =**	**-1.00**

How did the hedge work out?

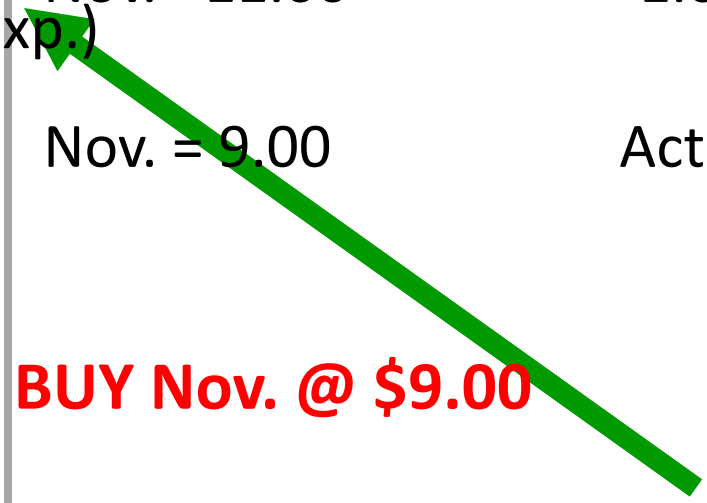
HEDGING EXAMPLE
Pre-selling

Date	Cash	Futures	Basis
June 1	Hedge Price = 10.00	Sell Nov.= 11.00 (Exp.)	-1.00 Exp.
Nov 1		Nov. = 9.00	Actual Basis = -1.00
	Sell cash @ $8.00	**BUY Nov. @ $9.00**	

Sell Nov. @ $11.00
Buy Nov. @ $9.00 Futures
***gain* =$2.00**

HEDGING EXAMPLE
Pre-selling

Date	Cash	Futures	Basis
June 1	Hedge Price = 10.00	Sell Nov.= 11.00 (Exp.)	-1.00 Exp.
Nov 1		Nov. = 9.00	Actual Basis = -1.00



Sell cash @ $8.00 **BUY Nov. @ $9.00**

Net Price of $8.00 CASH + $2.00 FUT. Gain = $10.00!

Futures Gain Offset Cash Loss!

HEDGING EXAMPLE

Pre-selling

What if Futures Prices Go Up?

Date	Cash	Futures	Basis
June 1	Hedge Price = 10.00	Sell Nov.= 11.00	-1.00 Exp. (Exp.)
Nov 1	**Sell cash @ $12.00**	Nov. = 13.00 **BUY Nov. @ $13.00**	Actual Basis = -1.00

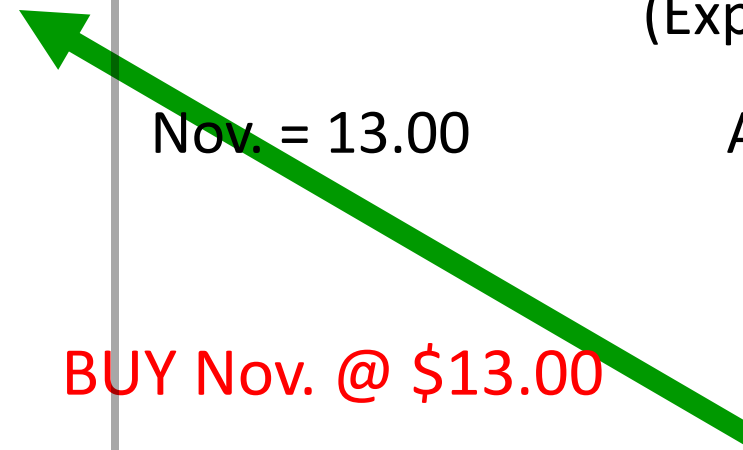
Sell Nov. @ $11.00
Buy Nov. @ $13.00
Futures LOSS = $2.00

HEDGING EXAMPLE

Pre-selling

What if Futures Prices Go Up?

Date	Cash	Futures	Basis
June 1		Sell	
	Hedge Price = 10.00	Nov.= 11.00	-1.00 Exp. (Exp.)
Nov 1		Nov. = 13.00	Actual Basis = -1.00
	Sell cash @ $12.00	BUY Nov. @ $13.00	



Net Price of $12.00 Cash - $2.00 Fut. Loss = $10.00!

$2.00 Futures Loss Offsets Cash Gain

Is this a Good Hedge?

HEDGING EXAMPLE
Pre-selling

What Happens the Basis is Different than Expected?

Date	Cash	Futures	Basis
June 1	Hedge Price = 10.00	Sell Nov.= 11.00 (Exp.)	-1.00 Exp.
Nov 1		Nov. = 13.00	Actual Basis = -0.50
	Sell cash @ $12.50	**BUY Nov. @ $13.00**	
	Net Price = $12.50	**- $2.00 = $10.50**	

Missed Expected Hedge Price by
Difference in Expected and Actual Basis = +0.50