Relationships Between Cash, Futures and Options in Grain Markets

Using Risk to Profit Workshop

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Cash Markets and Prices

- **Buyers and Sellers are Focused on Exchange of the <u>Physical</u> <u>Commodity</u>**
- **Spot Market - <u>immediate</u> delivery at a specific location(s) at a stated price**
- **Forward Contract - <u>delayed</u> delivery to a specific location(s) at a stated price**
- **Examples of Cash Markets**
  - Local Elevators, Mills or Feedlots
  - River Elevators
  - Portland Grain Exchange

Both Spot and Forward Marketings Possible

Futures Markets and Prices

- Buyers and Sellers are Focused on Exchange of Futures <u>Contracts</u>
- An Extension of the <u>Forward</u> Cash Contract Market
- Futures Contracts are Transferable Agreements to make or take delivery of a standard quantity and quality of a commodity at a specified time and location
- A market offering many opportunities for temporary sale of commodities
- Temporary sale in that you buy your way out of the contract - offset

CASH FORWARD CONTRACT

Quantity	Negotiable
Quality	Negotiable
Delivery Time	Negotiable
Delivery Place	Negotiable
Price	Negotiable

VS.

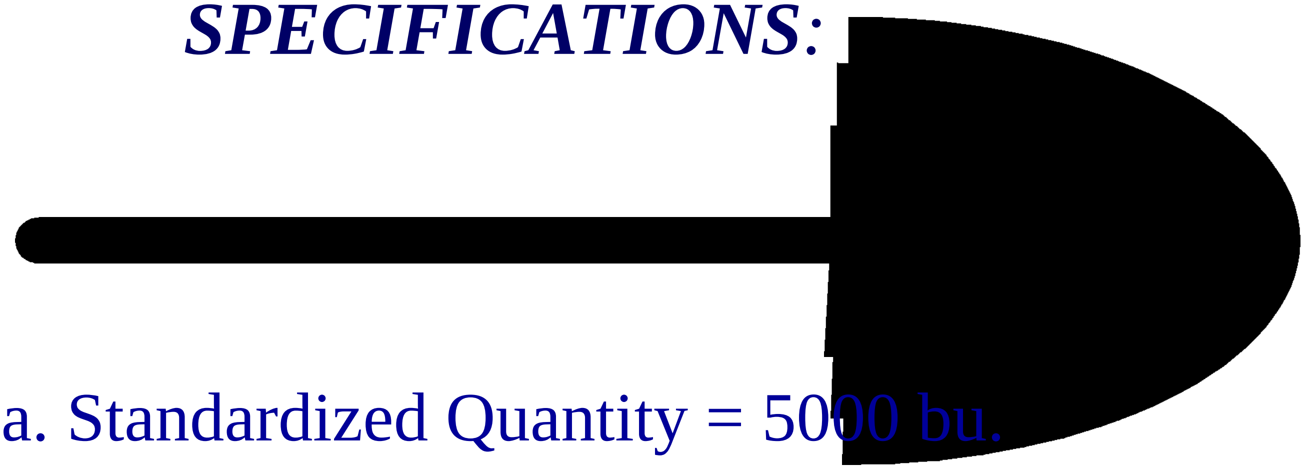
FUTURES CONTRACT

Quantity	Standard
Quality	Standard
Delivery Time	Standard
Delivery Place	Standard
Price	Negotiable

FUTURES CONTRACT

Legally binding agreement to make or accept delivery of a standardized quantity and quality of a commodity at a standardized time and place for a price agreed upon today in an organized futures exchange.

FUTURES CONTRACT SPECIFICATIONS:



a. Standardized Quantity = 5000 bu.

b. Standardized Quality

- Deliverable Grades
  1) CBT wheat
     - USDA #2 soft red winter
  2) MPLS white wheat
     - USDA #1 soft white
  3) KC wheat
     - USDA #2 hard red winter

FUTURES CONTRACT SPECIFICATIONS: CONT.

c. Specified Time

- Contract Months for wheat:

  July, Sept., Dec., March, May

d. Specified Location

- Delivery Point

  1) CBT wheat = Chicago or Toledo

  2) MPLS white wheat = Lower Columbia

FUTURES CONTRACTS (Additional Terminology)

Margin

- money deposited by all traders when entering the futures market to assure performance of all participants
- usually a small portion of the total contract value
- may receive margin calls if market moves against your position

Commission

- fee paid to broker for executing a trade in the futures market
- based on “round-turn” or entry and exit of a contract
- varies by broker ($30 and up per contract)

ALTERNATIVES IN TRADING FUTURES

1. Buy a Futures Contract(s)

   - "long" position
   - have a <u>commitment</u> to receive delivery
   - can offset commitment at some point

2. Sell a Futures Contract(s)

   - "short" position
   - have a <u>commitment</u> to make delivery
   - can offset commitment at some point

NOTE: entering short or long means you have an obligation (open position) and a margin is required

3. Deliver or <u>Offset</u> (cover) an open position

   a. "long" - sell same futures contract at current price

   b. "short" - buy same futures contract at current price

LIQUIDATION OF FUTURES

1. DELIVERY

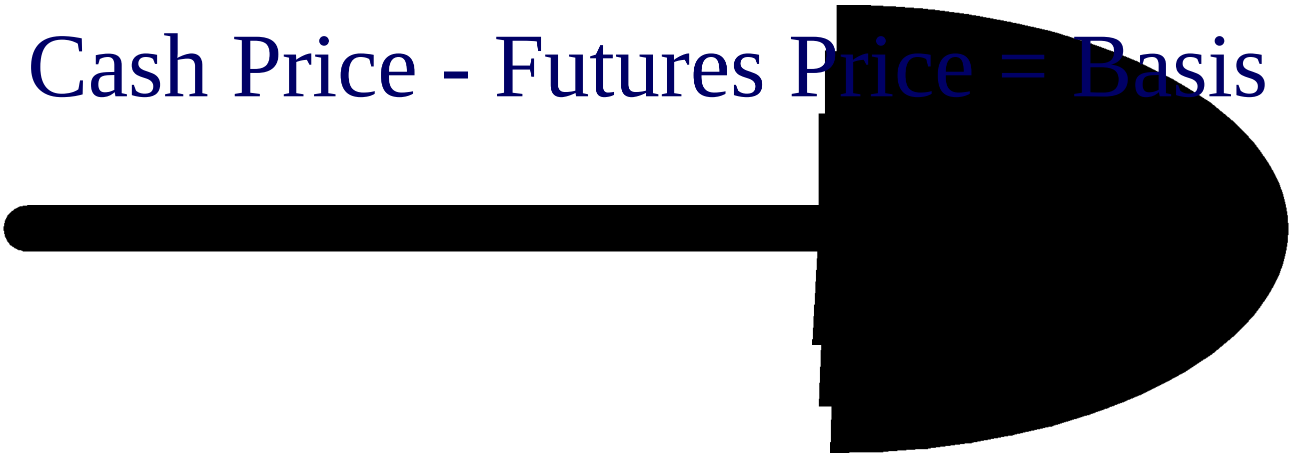
- **If Long ↔ Accept Delivery**
- **If Short ↔ Make Delivery**

2. OFFSET

- **If Long ↔ Sell Contract**
- **If Short ↔ Buy Contract**

BASIS

Cash Price - Futures Price = Basis



- Is the relationship Between A Local Cash Market And The Futures Market.
- Can Be Negative Or Positive
- Is Relatively Stable And Predictable

BASIS COMPONENTS

AGRICULTURAL COMMODITIES

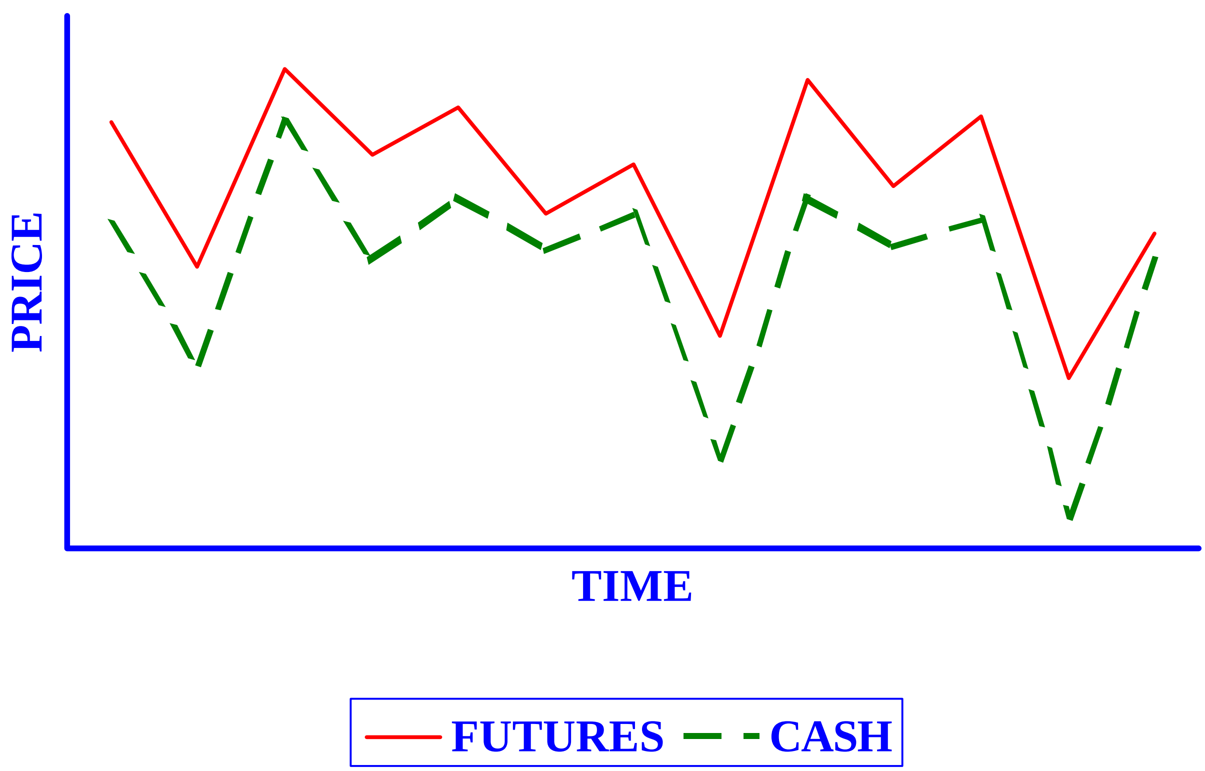
- Storage (Insurance & Interest)
- Transportation
- Local Supply and Demand

BASIS

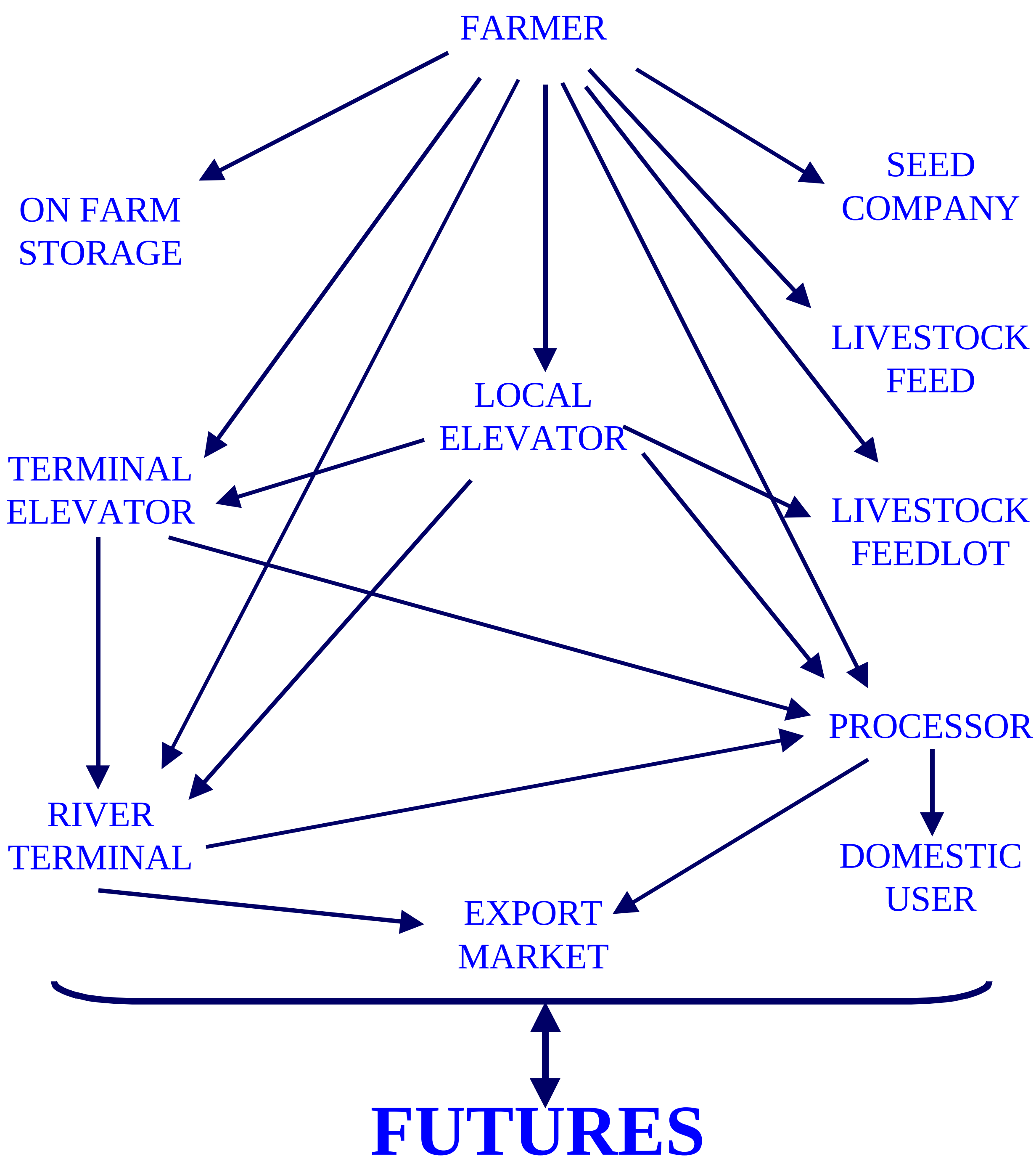
I. Difference Between Cash and Futures
   A. Cash quotes in reference to futures
   B. Over Under
II. Normal Relationships
   A. Cash approaches futures at maturity
   B. Futures prices reflect carrying charges
   C. Futures and Cash prices move up and down together
III. Basis Reflects Local Conditions
   A. More predictable
   B. Historical basis data is readily available

CASH - FUTURES RELATIONSHIP

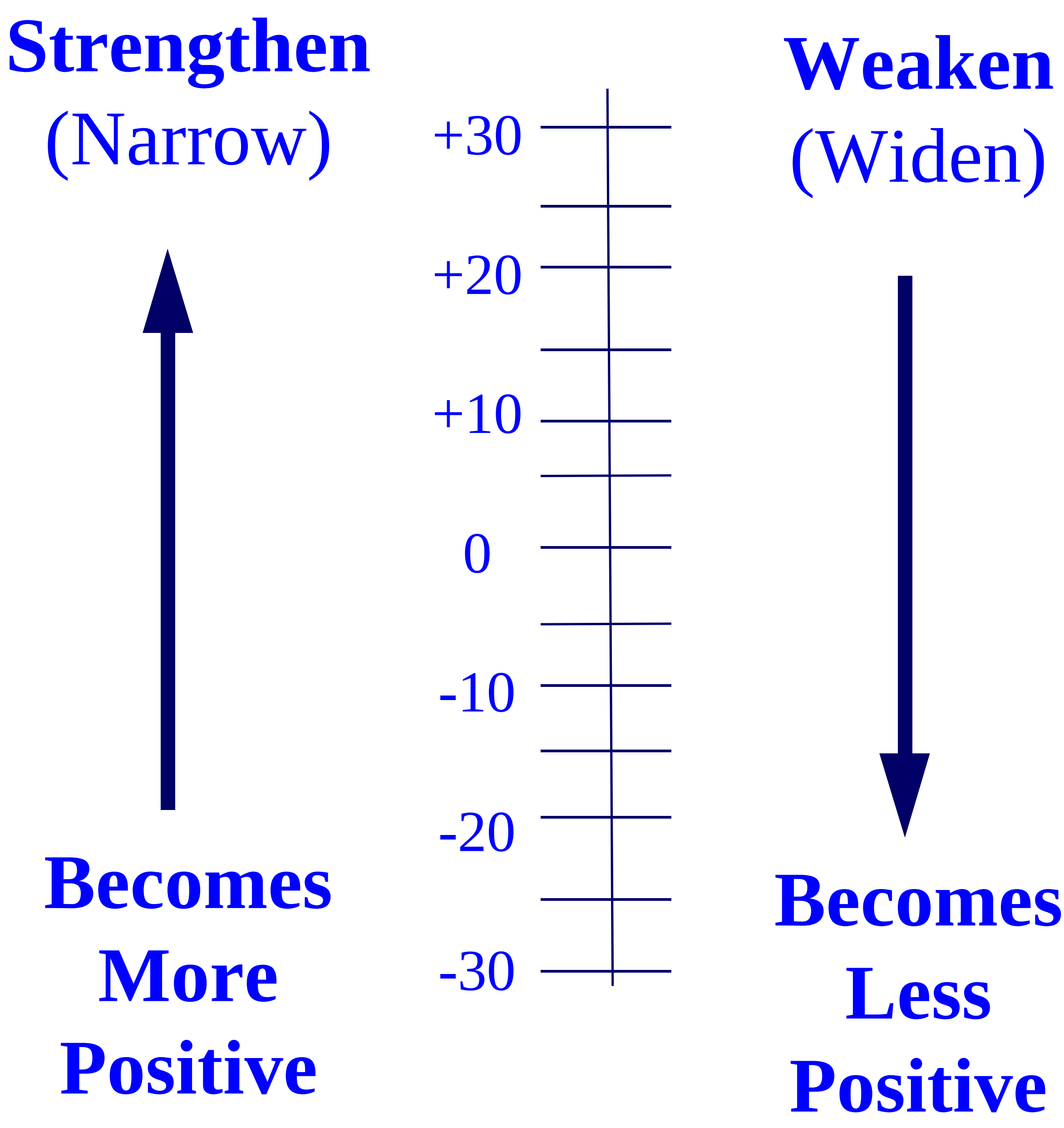
- Cash And Futures Prices Move Together In The Same General Direction.
- Affected By The Same Economic Factors.



U.S. GRAIN FLOW CHART



BASIS MOVEMENT



Basis Is Fairly Repetitive And Predictable Therefore:

FUTURES PRICE
+ EXPECTED BASIS

EXPECTED SELLING PRICE*

*Does Not Include Commissions

HEDGING

- Initiation of a position in the futures market that is intended as a temporary substitute for the sale or purchase of the actual commodity at a later date.
- Use of futures markets to lock in a purchase or selling price now even though the physical purchase or sale won't occur until later.

SHORT HEDGE
(Selling Hedge)

- Intends To Sell Cash (Physical) Commodity In The Future.

- Initiates A Short Futures Position As A Temporary Substitute For A Later Cash Market Sale.

- Price Risk ↓

HEDGING EXAMPLE
Short Hedge (Wheat Producer)

1. Mid Jan - Grain producer will harvest 30,000 bu. of wheat in August. Plans to sell about Aug. 15.

2. Evaluate expected hedge price using Chi Sep wheat futures contract:

	"Appropriate" futures price	=	335
+	Expected basis (local)	=	-10 (under)
-	Cost of hedging	=	- 2
=	Expected hedge price	=	323 cents/bu.

3. Compare hedge to other alternatives:

   - cash forward; price with options; don't price

   - decides to hedge 20,000 bu. (67% of prod.)
     = sell 4 Sep (5000 bu. each) at 335
   - expected hedge price = 323 cents/bu.

WHEAT HEDGE OUTCOME
Mid Aug. and Price Increases

A. Local price increases to 350 cents/bu.

Cash Market	Futures Market	Actual Basis
Sell wheat	Sold at 335	
at 350	(offset) Buy at 360	-10
	Loss = 25 cents/bu.	

Outcome

Cash Price = 350
Loss on Futures = 25 (-)
Cost of Hedge = 2 (-)

Net Price = 323 cents/bu.

WHEAT HEDGE OUTCOME
Mid Aug. and Price Decreases

B. Local price decreases to 260 cents/bu.

Cash Market		Futures Market	Actual Basis
Sell wheat		Sold at 335	
at 260	(offset)	Buy at 270	-10
		gain = 65 cents/bu.	

Outcome

Cash Price = 260
Gain on Futures = 65 (+)
Cost of Hedge = 2 (-)

Net Price = 323 cents/bu.

Forward Contracts vs. Futures Contracts

Forward Contracts:

Binding agreement to deliver commodities at a specified price in the future - **must deliver**

Disadvantages

1. **Elevator** places a pre-harvest hedge for the farmer in return for a **service charge** which is included as a discount in the price offered

2. **Less flexibility - cannot be offset** in the same manner as a hedge