



CME DELIVERY ECONOMICS
NGFA COUNTRY ELEVATOR CONFERENCE

DECEMBER 13, 2016

Convergence... CME Delivery Economics

- ✓ How does it really work?
- ✓ How can you rely on delivery economics to enhance rolling of hedges?
- ✓ How does a delivery elevator use spreads to manage basis risk?
- ✓ Delivery economics as a base to identify cash basis & spread opportunities?

The Basic Concept

- ✓ Convergence of cash & futures is a Core Principal of CME futures.
 - ✓ Futures are designed to reflect values in the cash market.
 - ✓ Concept applies to all grain products
 - ✓ We will focus on 2 commodities today...soybeans and wheat.
 - Soybeans to demonstrate how convergence works and the impact of grain flows outside the US
 - Wheat to demonstrate what happens when we don't have convergence
- ... Critical to a discussion of convergence and appropriate hedging strategies is the concept of “Grain Flows”

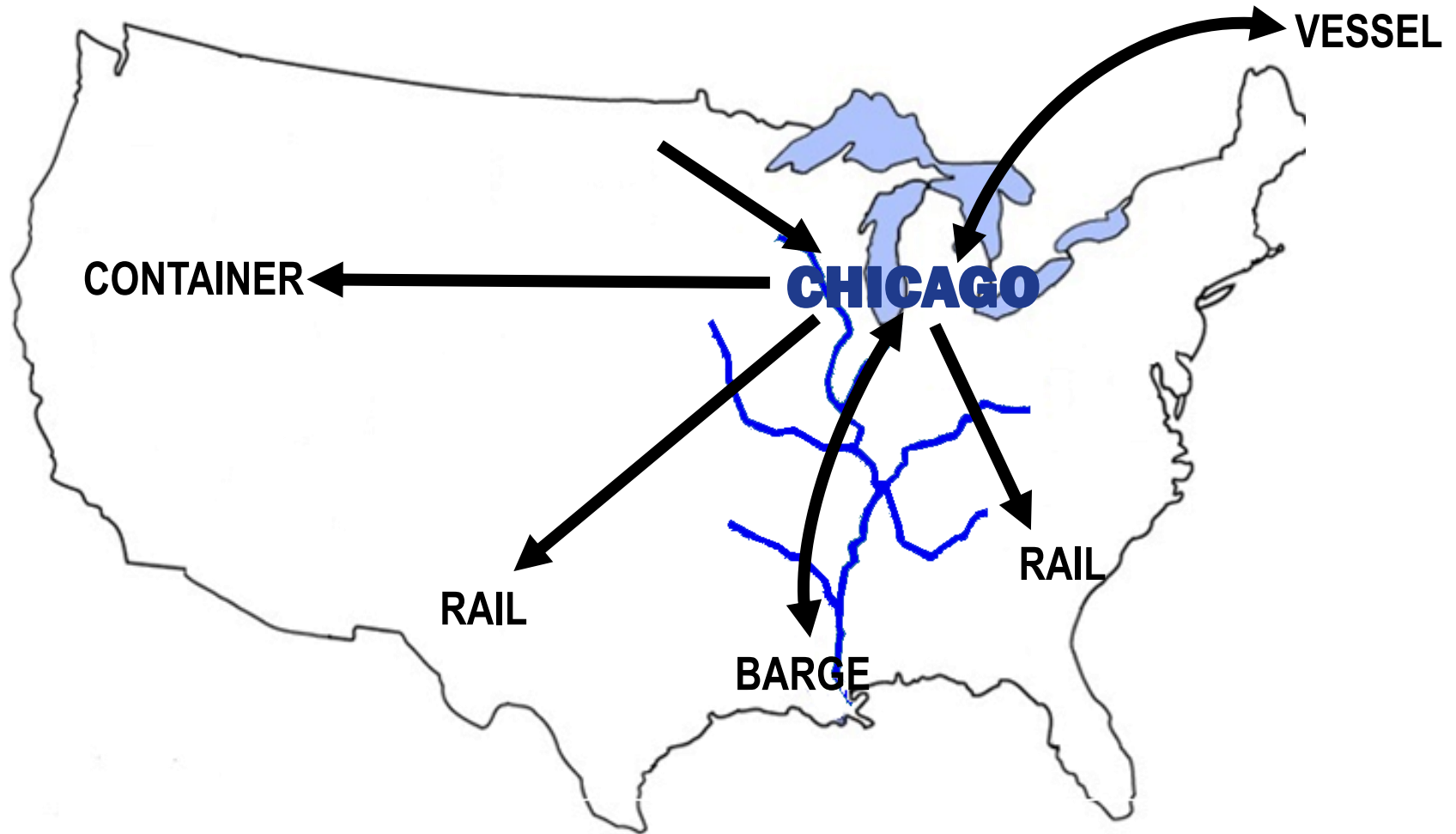
Nidera/CIRM Elevator B



- ❑ Built 1955
- ❑ Licensed Storage Capacity 11,470,000 bu
- ❑ Receives and ships all modes of transportation: truck, rail, barge, vessel and container
- ❑ Access to all Class I Railroads
- ❑ Regular for Delivery of corn, beans, wheat & oats at the CBOT
- ❑ The largest Delivery facility for corn & soybeans
- ❑ The last operating grain elevator in Chicago



Why did C_{hicago}BOT settle in Chicago?

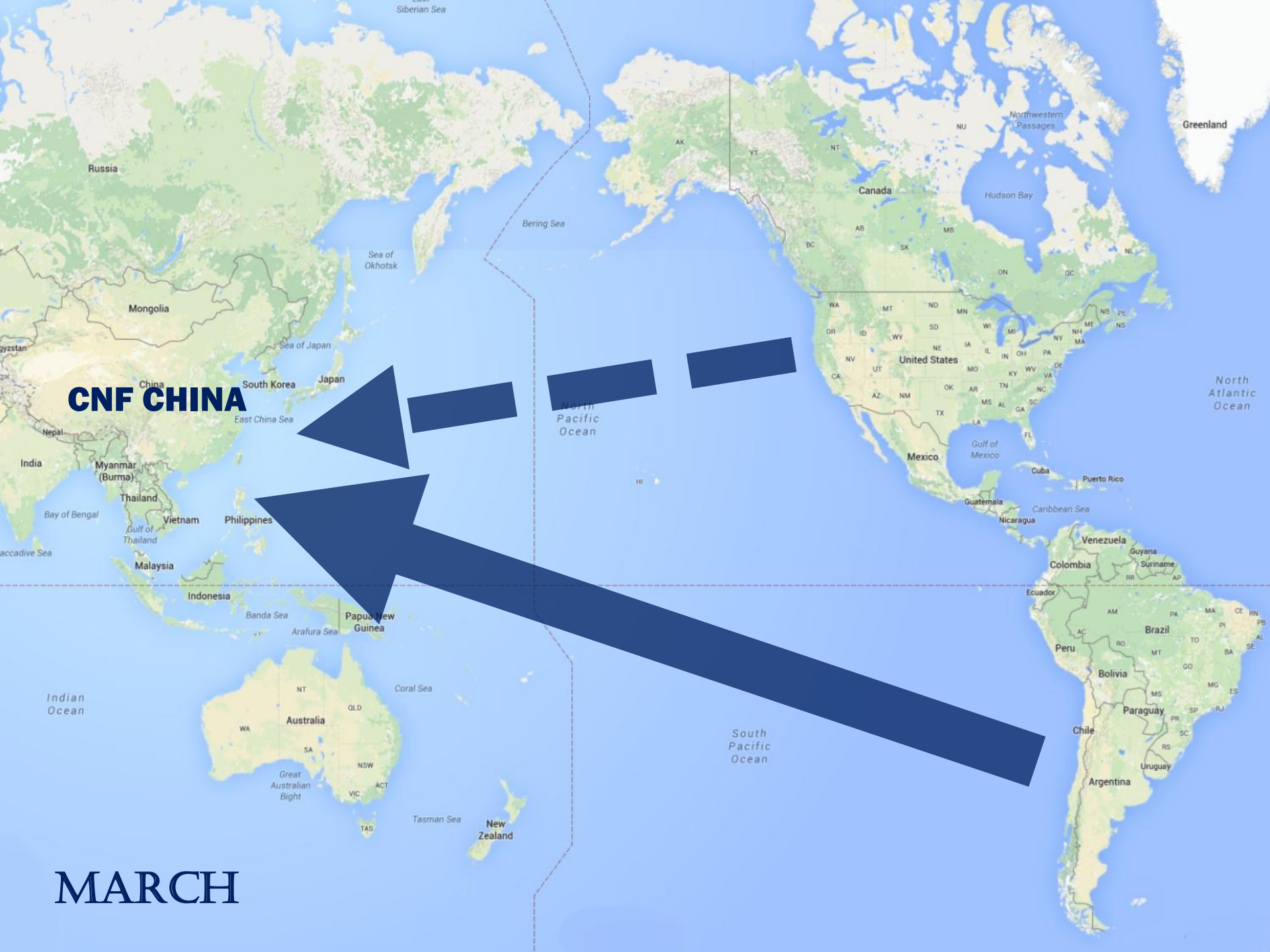


CONVERGENCE

WHAT DOES IT LOOKS LIKE WHEN IT WORKS?

SOYBEAN CONVERGENCE





CNF CHINA

MARCH



CNF CHINA

APRIL



CNF CHINA

MAY



CNF CHINA

OCTOBER

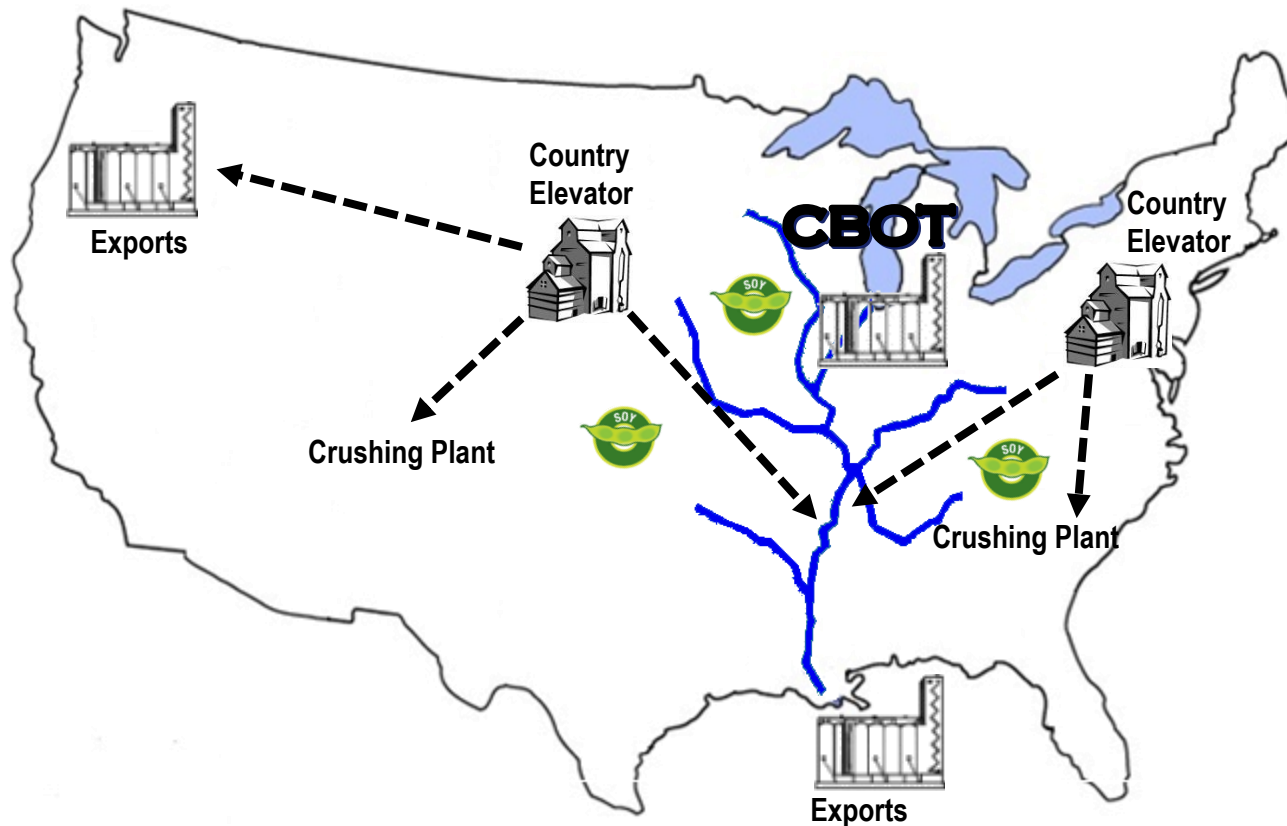


CNF CHINA

NOVEMBER

The Market is in Balance

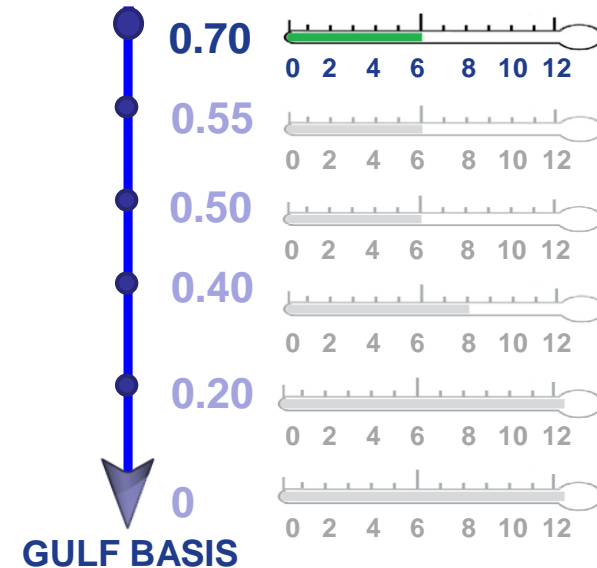
Supply & Demand are in equilibrium and grain flows from farmers to end users



CBOT SOYBEANS

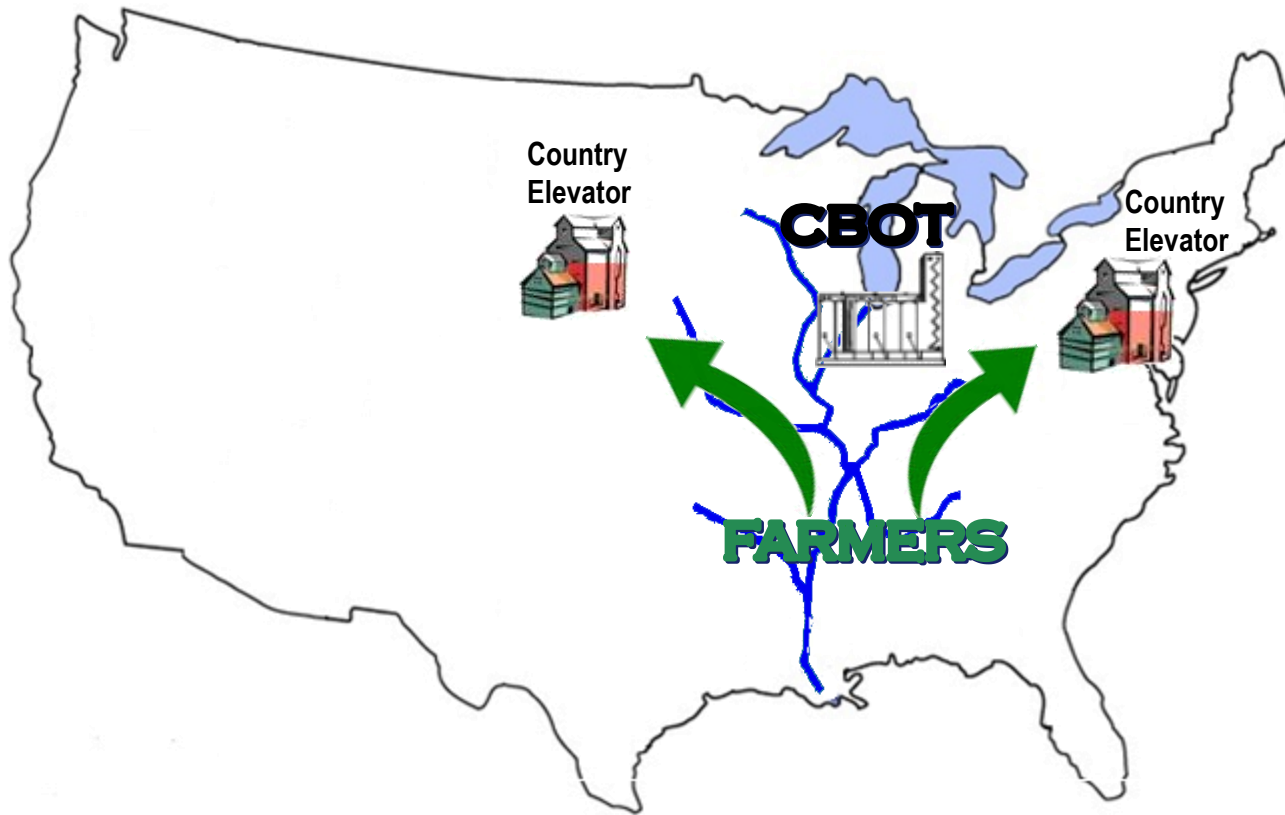
JAN	MAR	SPREAD
9.87	9.93	0.06

MARKET SPREAD



Supply exceeds Demand

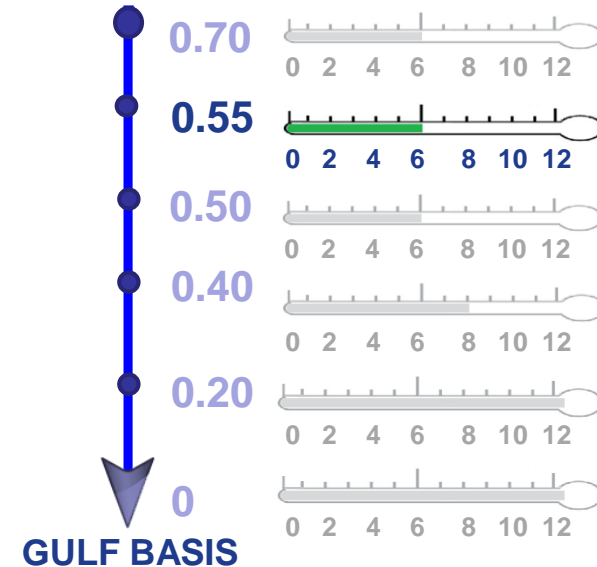
When this happens, the basis will weaken to direct surplus grain to storage



CBOT SOYBEANS

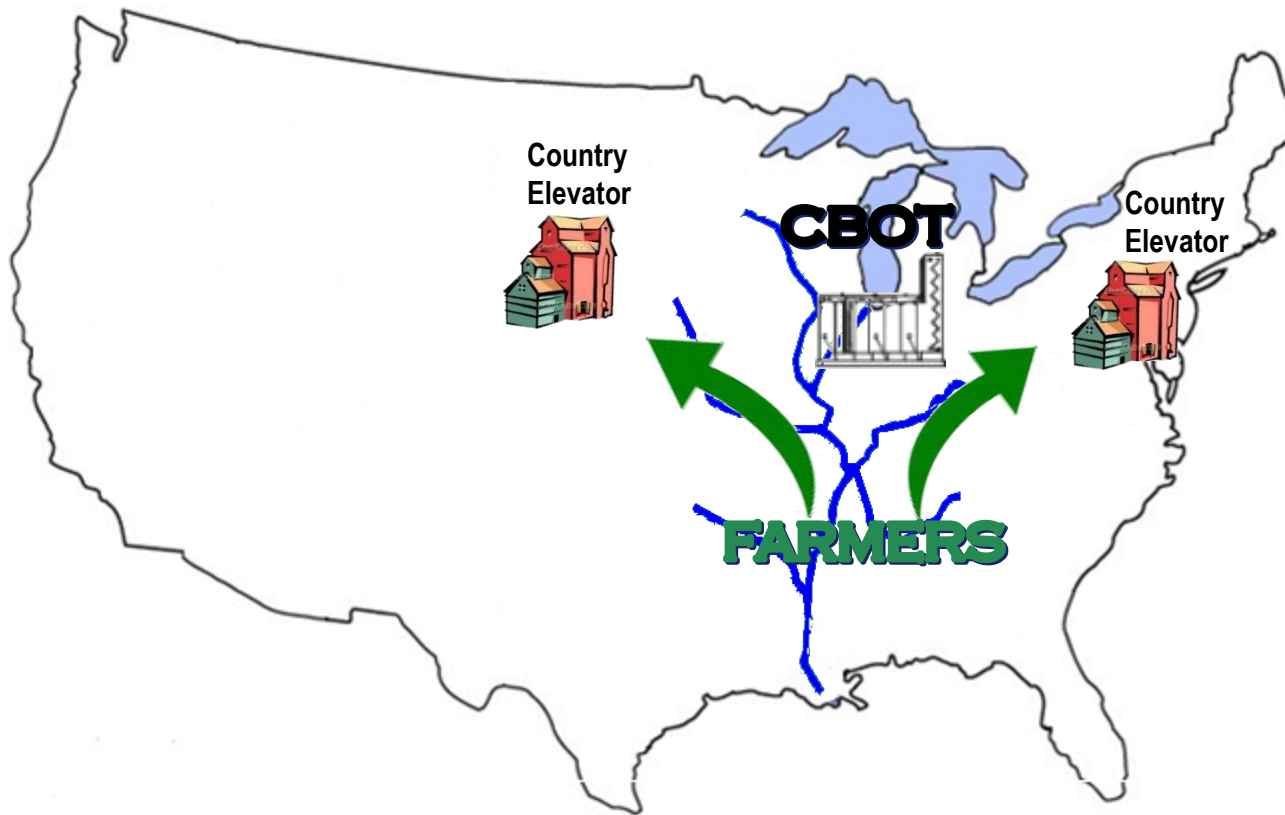
JAN	MAR	SPREAD
9.87	9.93	0.06

MARKET SPREAD



Basis Continues to Weaken

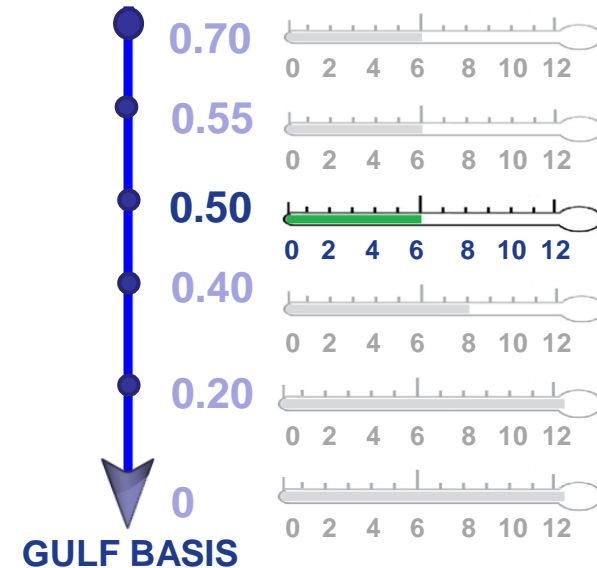
Grain continues to flow to storage until Country Elevators are full



CBOT SOYBEANS

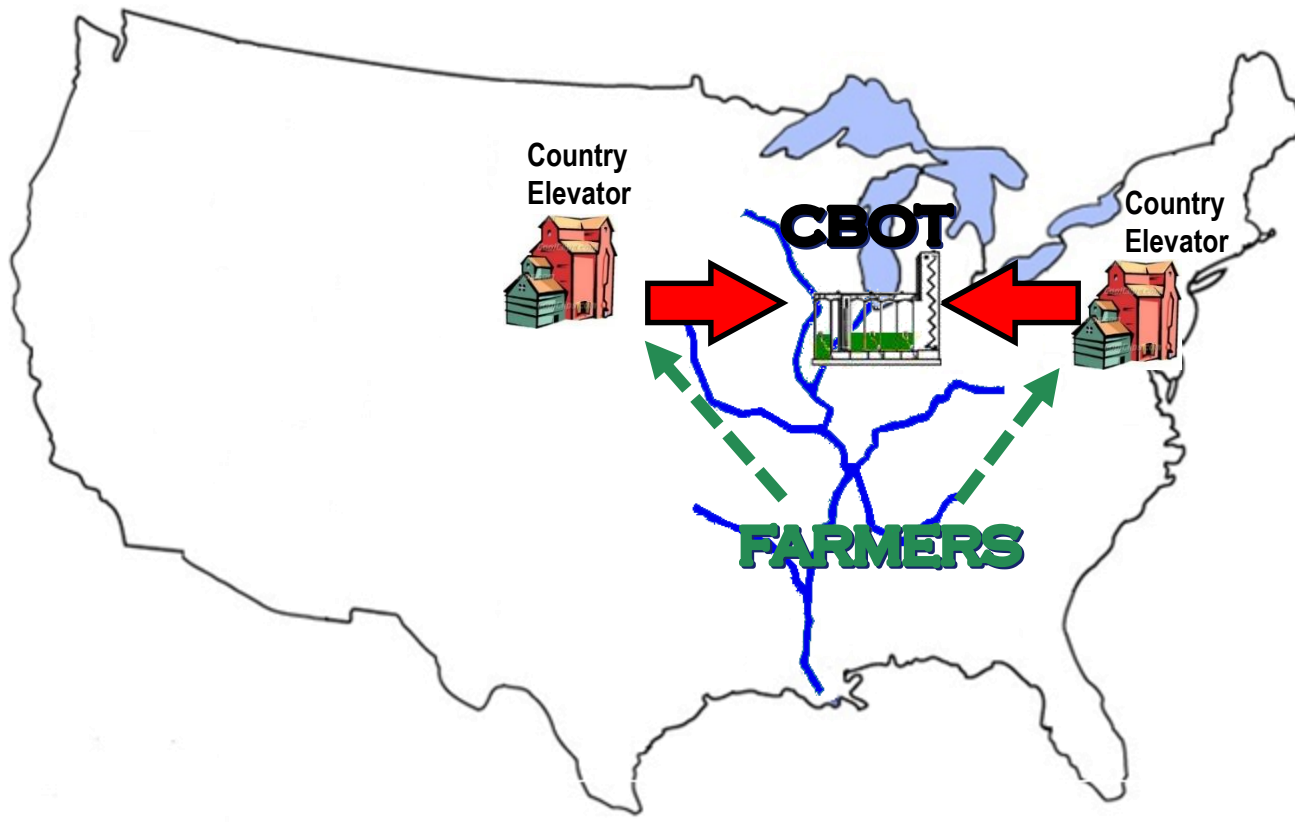
JAN	MAR	SPREAD
9.87	9.93	0.06

MARKET SPREAD



Selling Continues and Basis Falls Farther

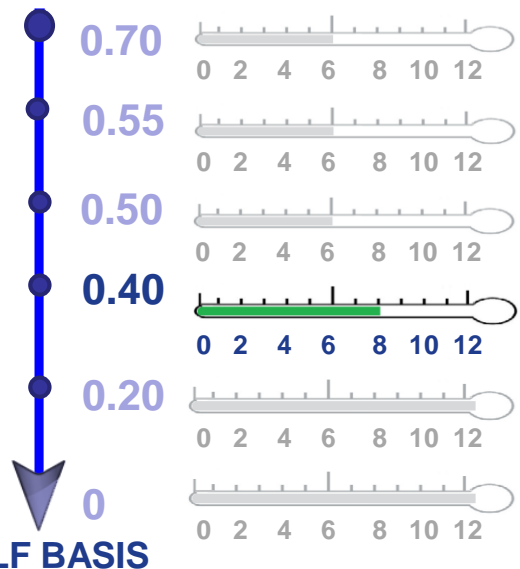
This will push grain to Delivery Elevators, causing nearby futures to fall and spreads to widen



CBOT SOYBEANS

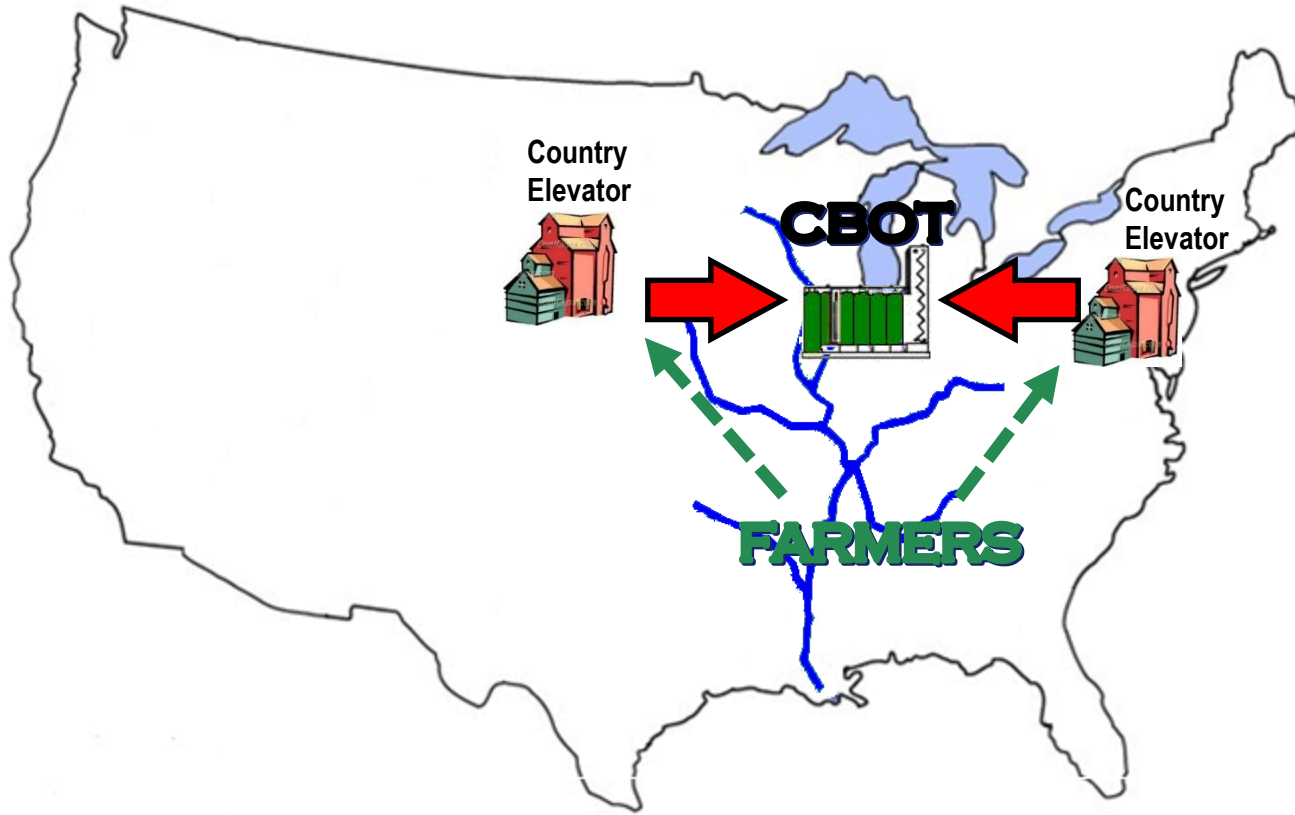
JAN	MAR	SPREAD
9.85	9.93	0.08

MARKET SPREAD



Selling Continues

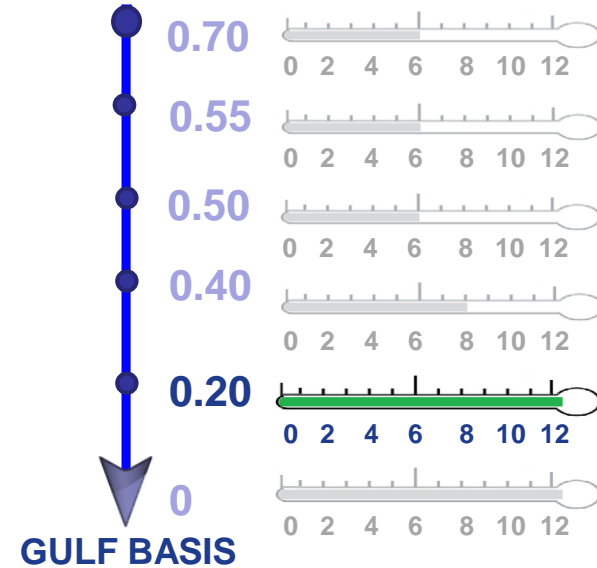
More grain flows to the delivery market, forcing the spread to **Full Carry**



CBOT SOYBEANS

JAN	MAR	SPREAD
9.81	9.93	0.12

MARKET SPREAD



Full Carry

$$\text{Full Carry} = \# \text{ Days} * \left[\left(\frac{\text{Interest}}{360} * \text{Futures Price} \right) + \text{Daily Storage} \right]$$

.1251

Days = Number of calendar days from 1st delivery day in the nearby contract to 1st delivery day in the contract following the nearby contract

57

Interest

0.02

Futures Price = Settlement price for the nearby contract

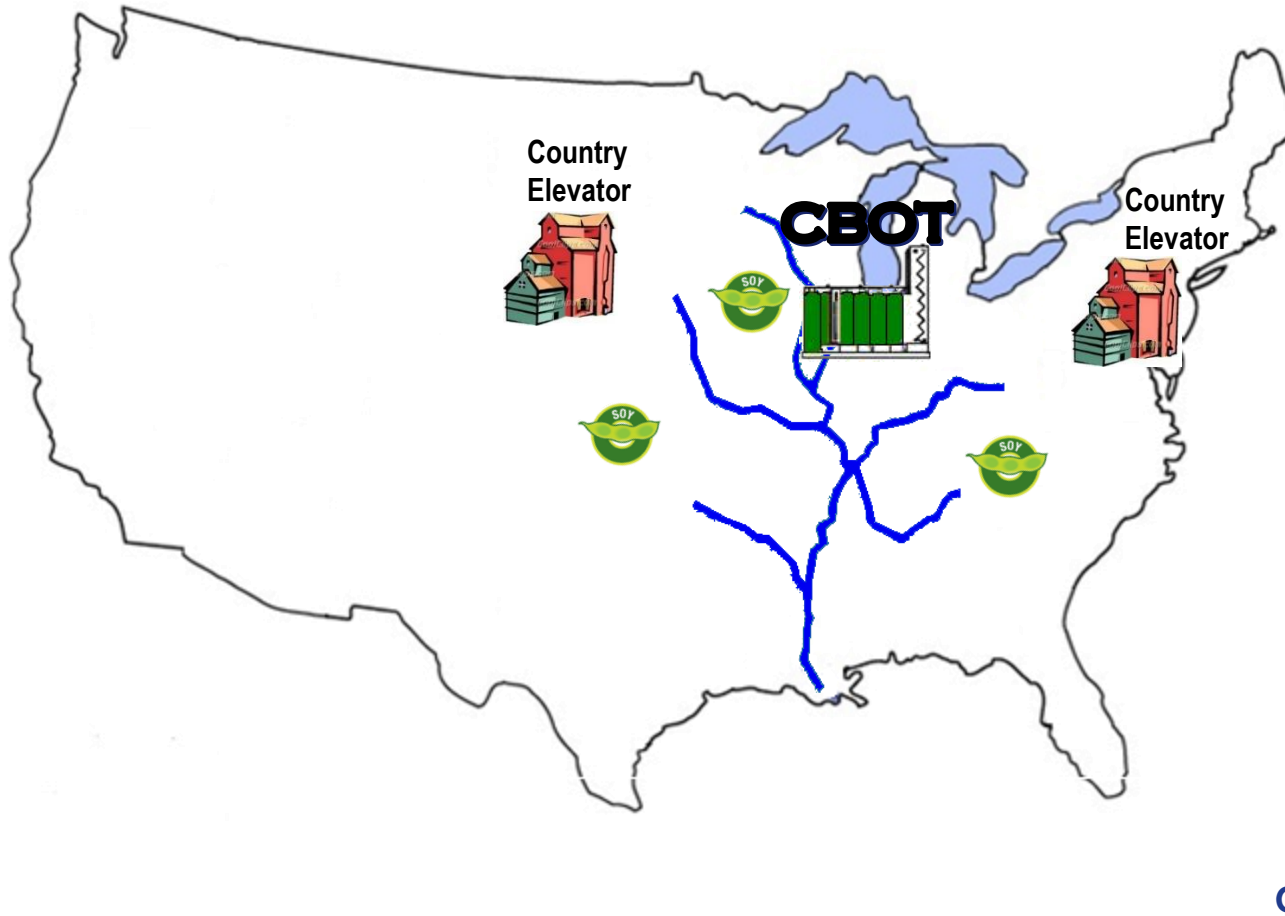
9.81

Daily Storage = Current daily premium charge

0.00165

Weak Basis & Full Carry Do Not Do Enough to Achieve Convergence

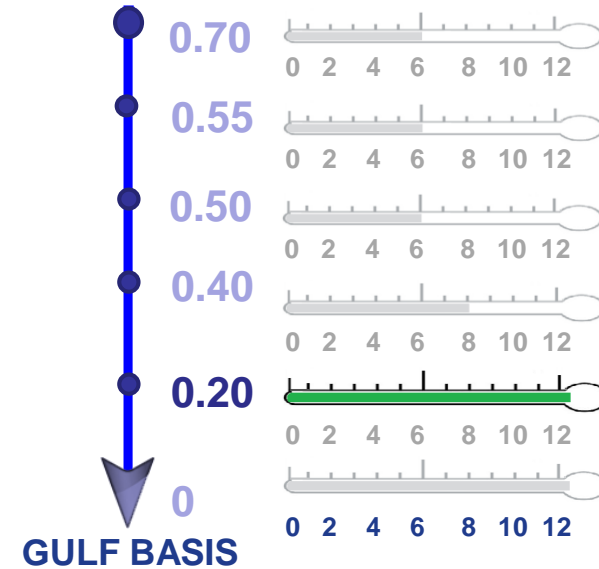
This is the Confirmation that futures are too high and must drop to restore balance



CBOT SOYBEANS

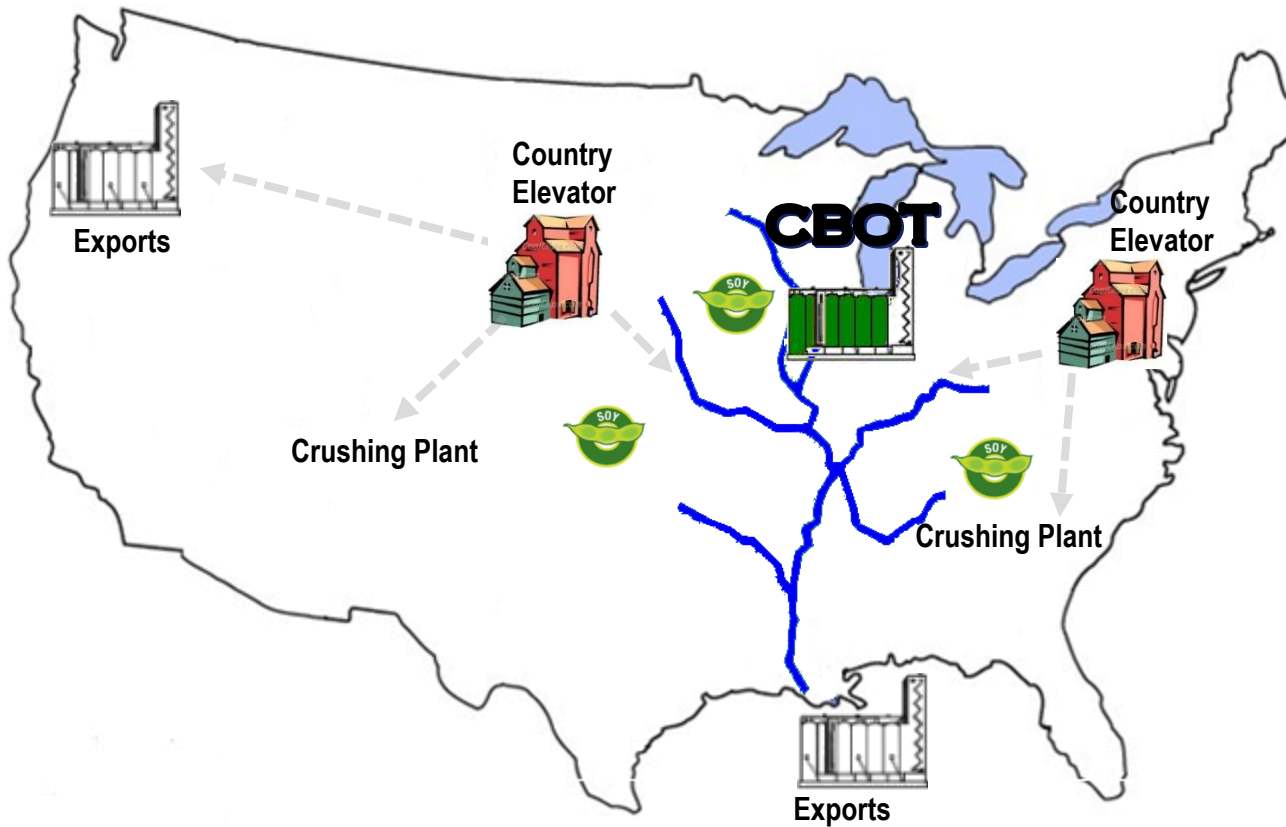
JAN	MAR	SPREAD
9.75	9.87	0.12

MARKET SPREAD



Drop in Futures Prices allow Prices to Restore Balance

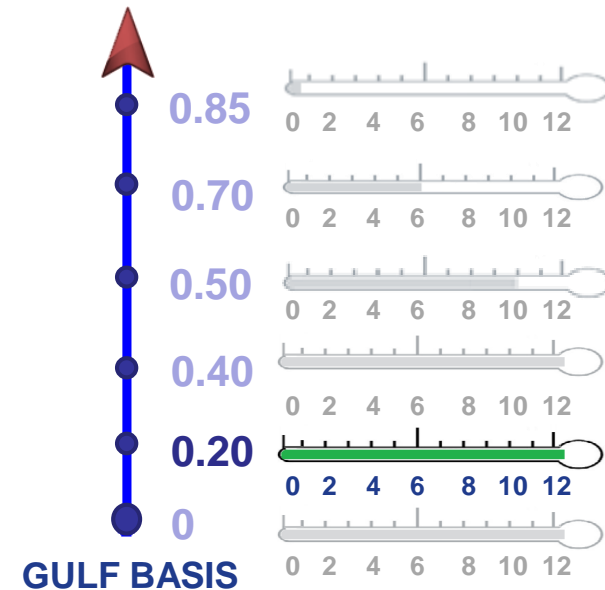
Country selling and consumer demand begin to move back towards equilibrium



CBOT SOYBEANS

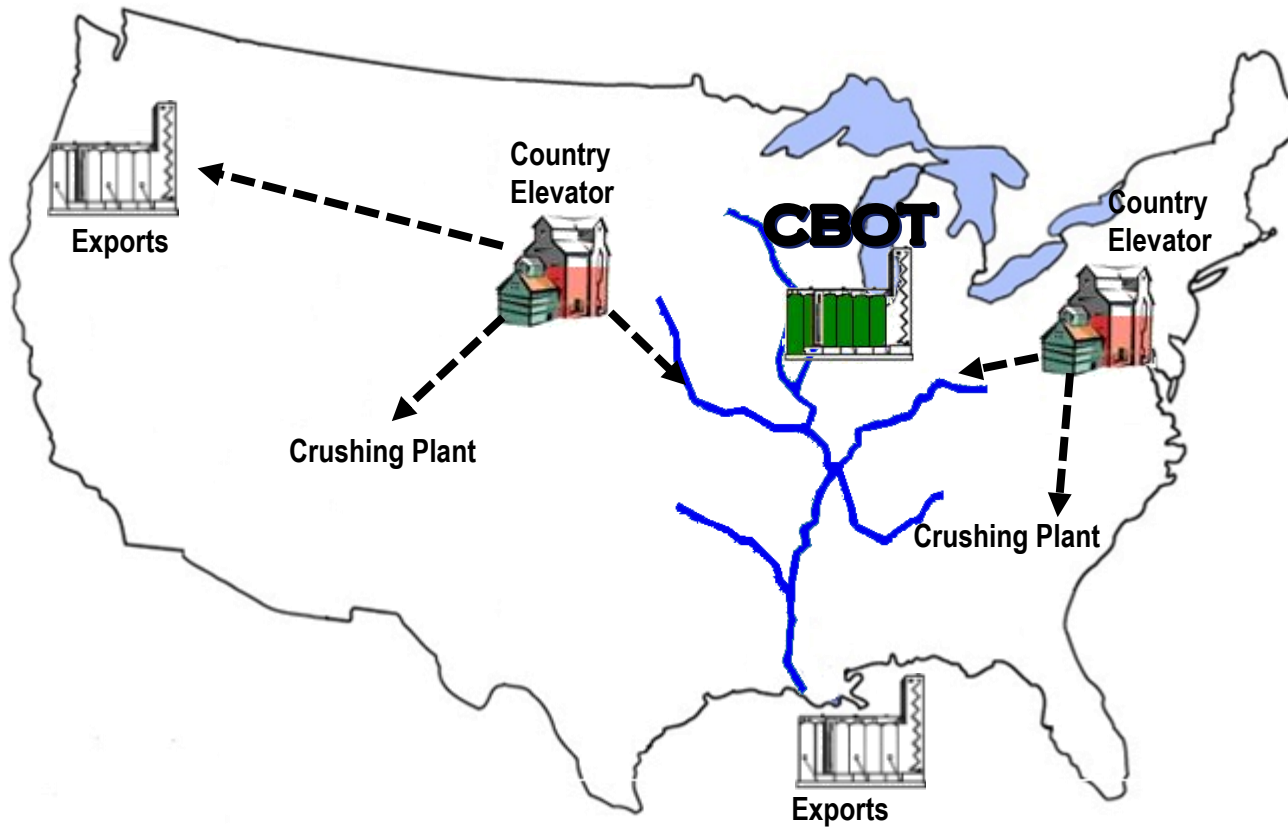
JAN	MAR	SPREAD
9.75	9.87	0.12

MARKET SPREAD



Consumer Demand Exceeds Selling

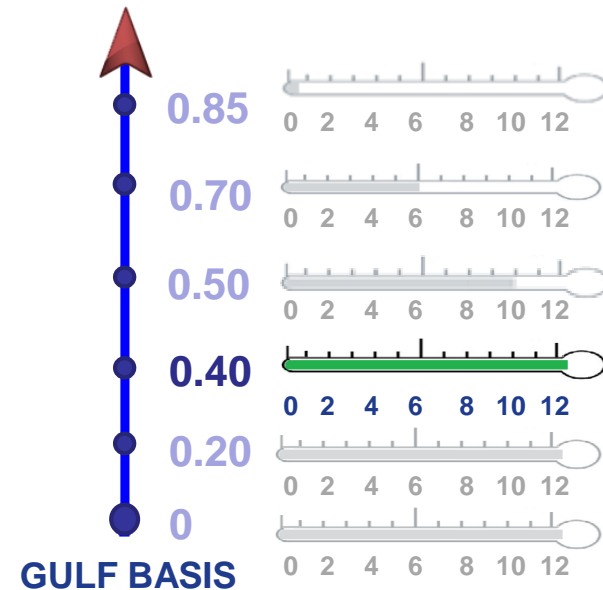
The basis level increases to entice draw down of country elevator stocks



CBOT SOYBEANS

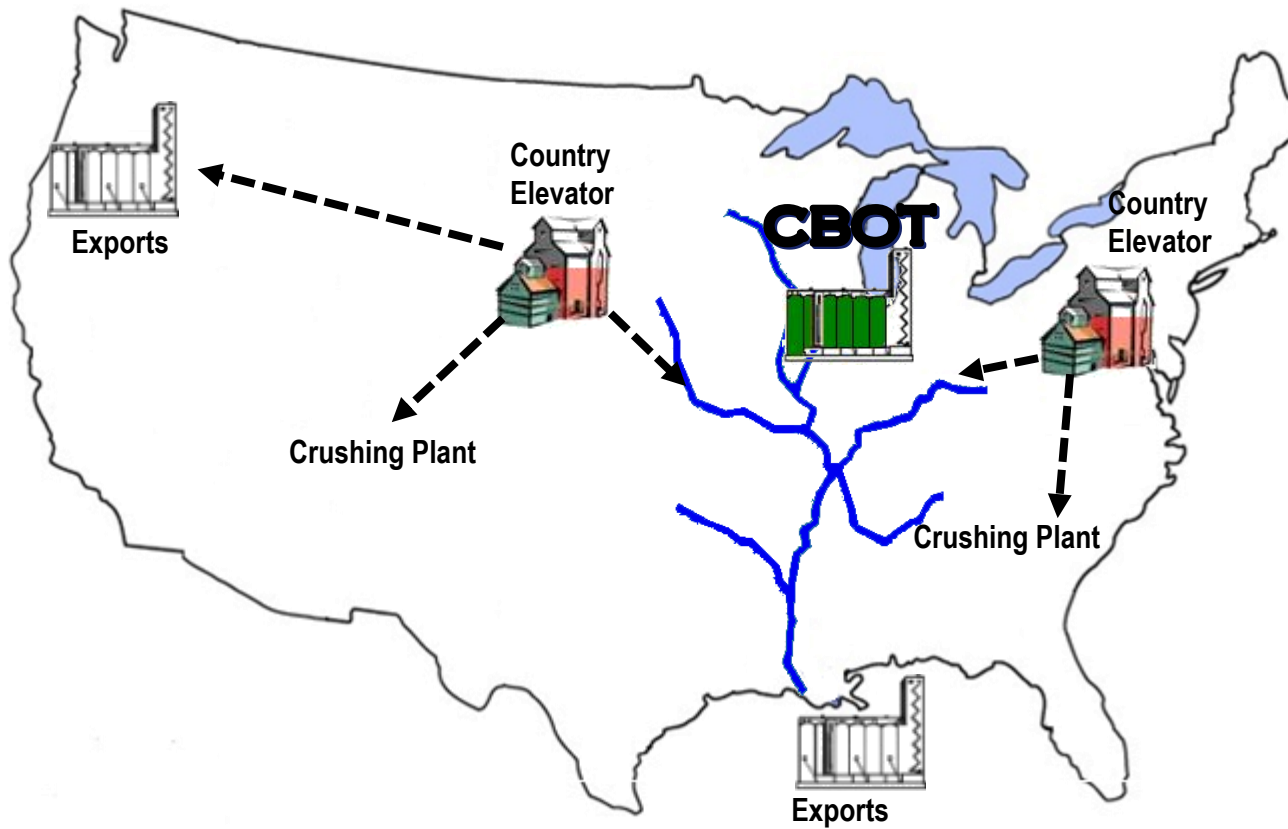
JAN	MAR	SPREAD
9.75	9.87	0.12

MARKET SPREAD



Basis Increases to Continue Draw Down of Stocks

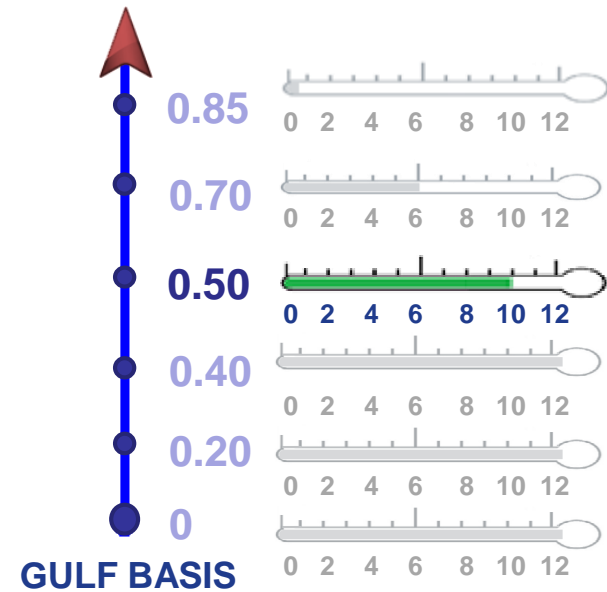
Elevators roll hedges to lock in the storage revenue, causing the spread to narrow



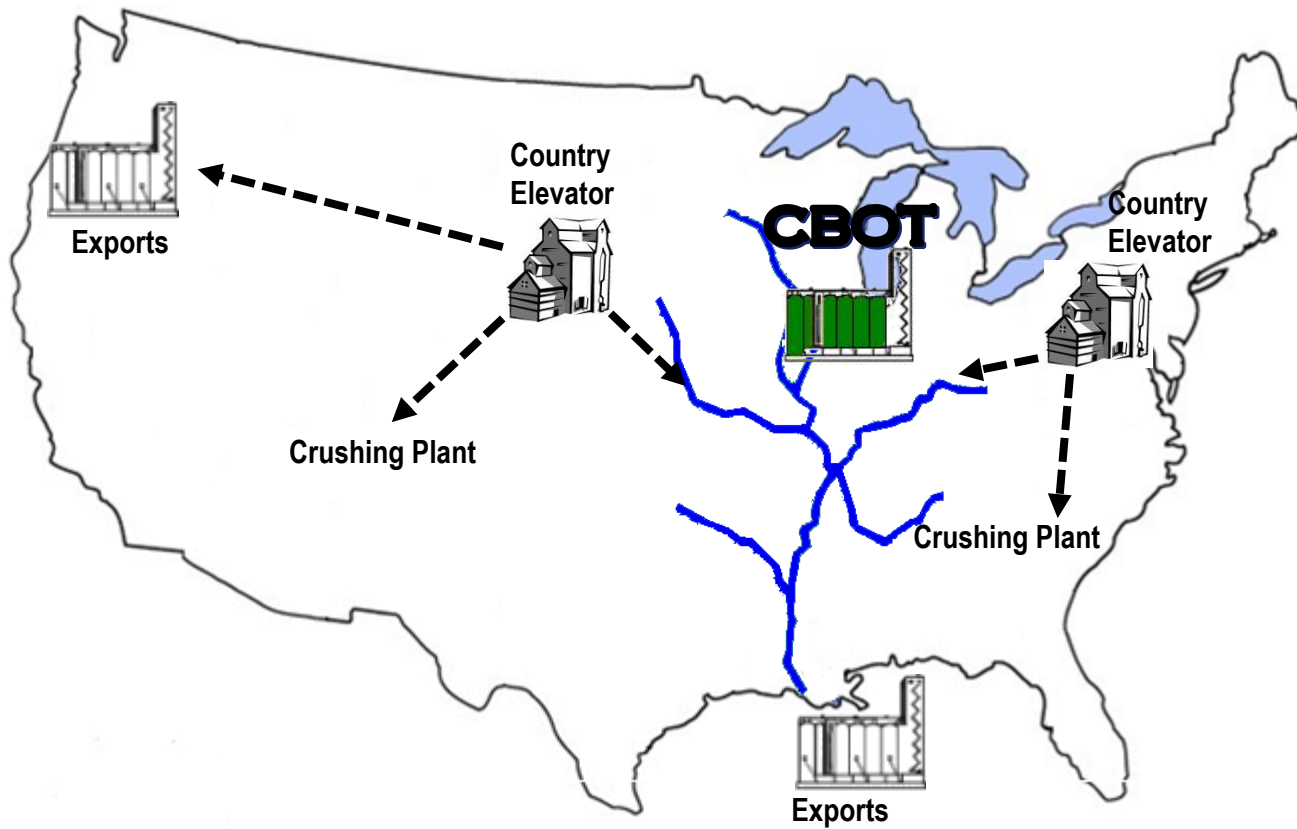
CBOT SOYBEANS

JAN	MAR	SPREAD
9.77	9.87	0.10

MARKET SPREAD



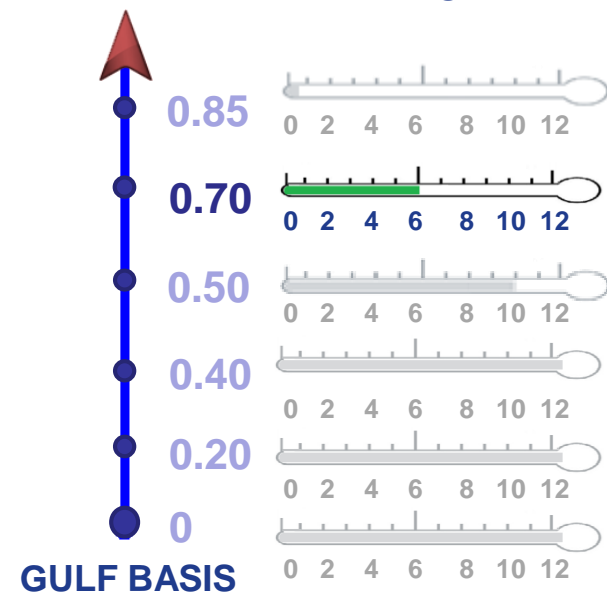
Basis Pushes Higher & Spread Continues to Narrow



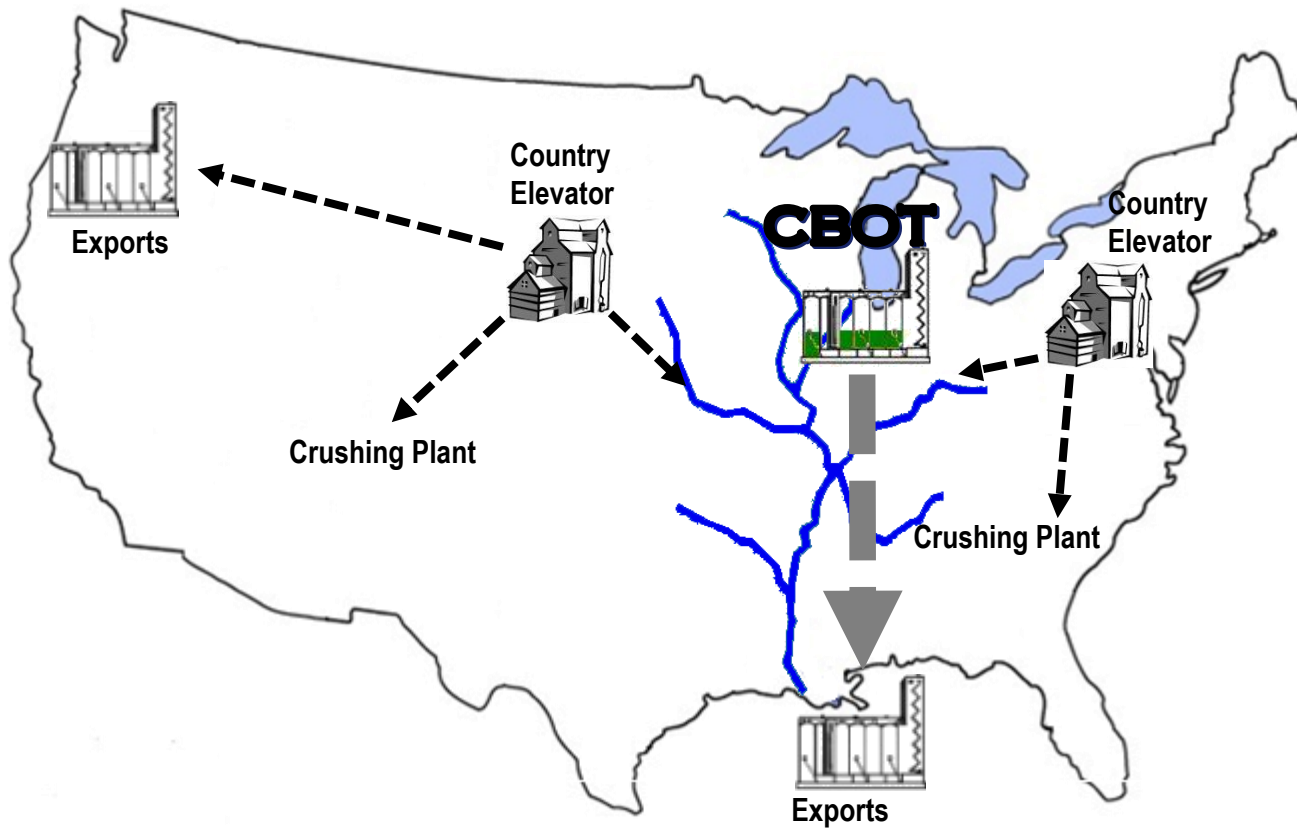
CBOT SOYBEANS

JAN	MAR	SPREAD
9.81	9.87	0.06

MARKET SPREAD



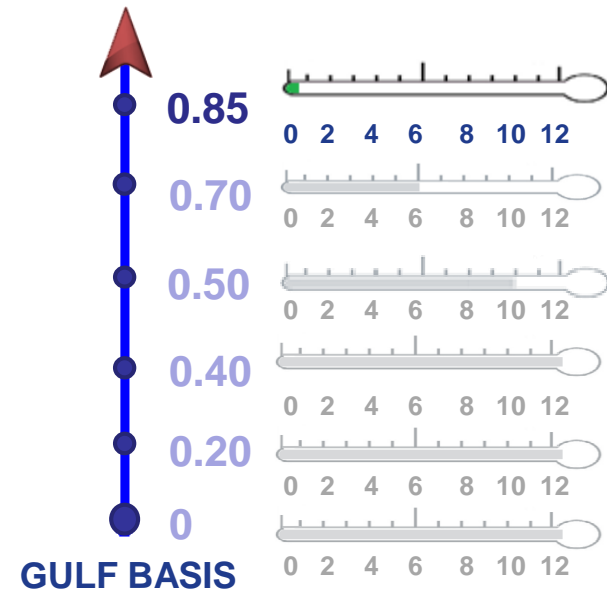
Higher Basis Creates Incentive to Draw Grain from CBOT Delivery Elevators & Spreads Narrow



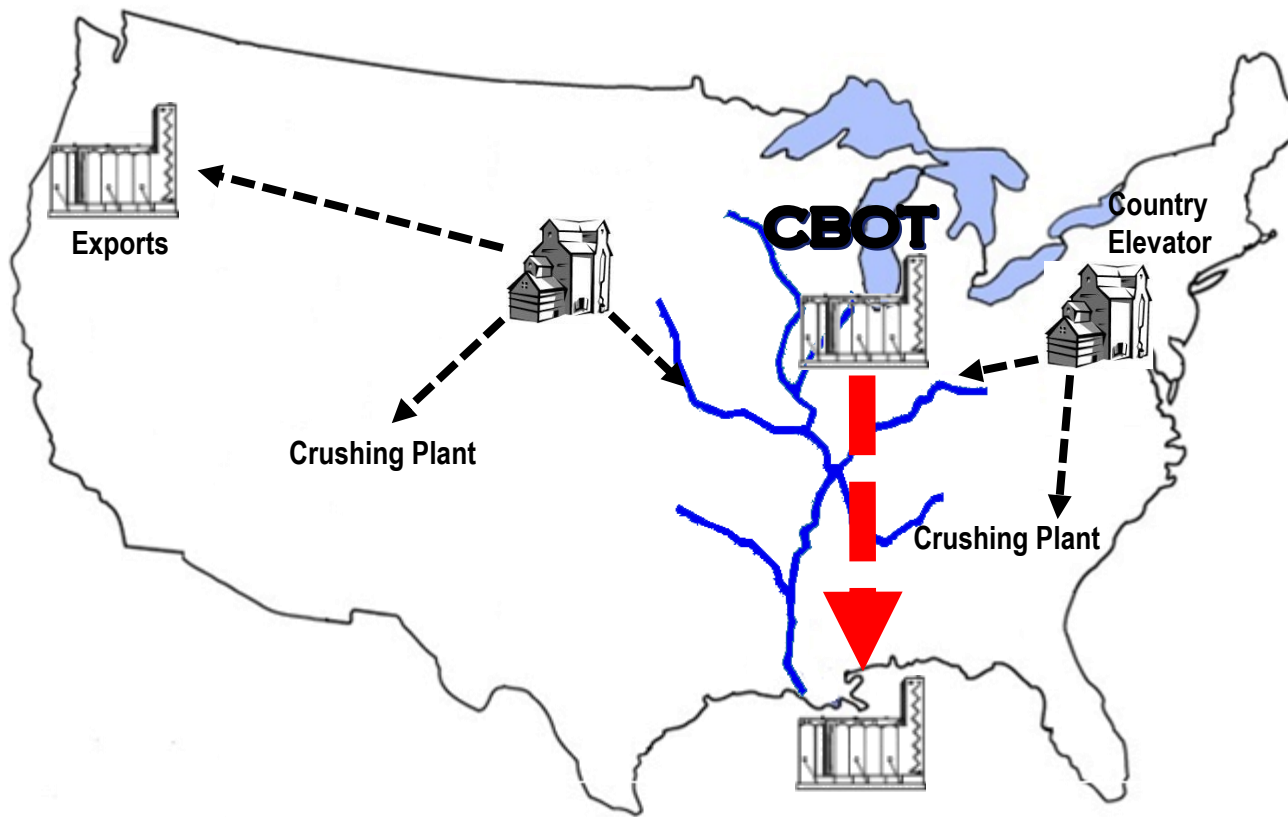
CBOT SOYBEANS

JAN	MAR	SPREAD
9.87	9.87	0

MARKET SPREAD



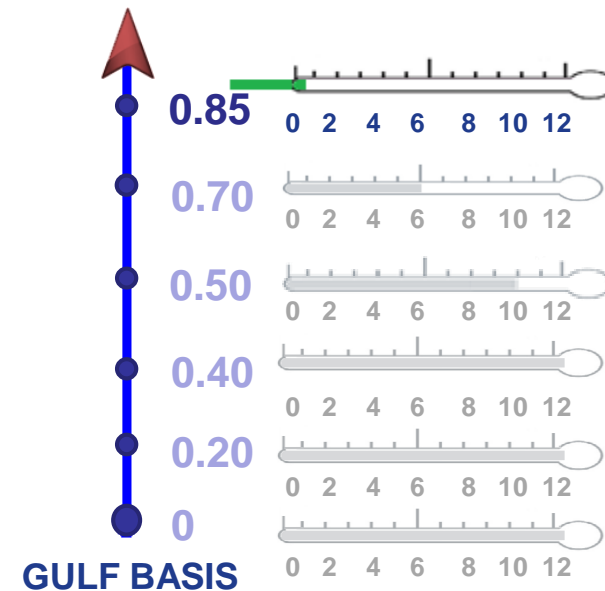
Spreads Invert to Provide Disincentive to Store Grain...All elevators should empty



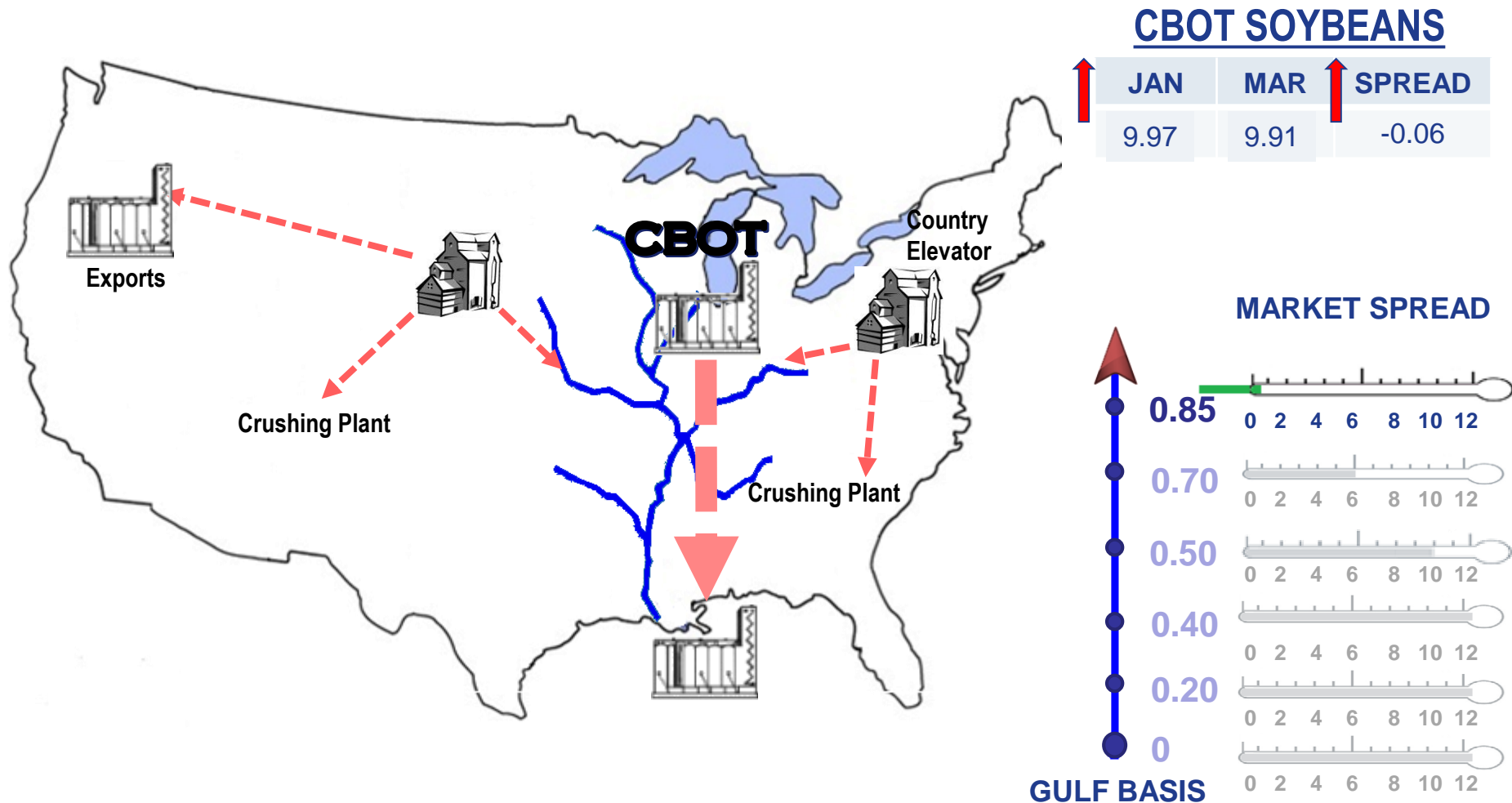
CBOT SOYBEANS

JAN	MAR	SPREAD
9.93	9.87	-0.06

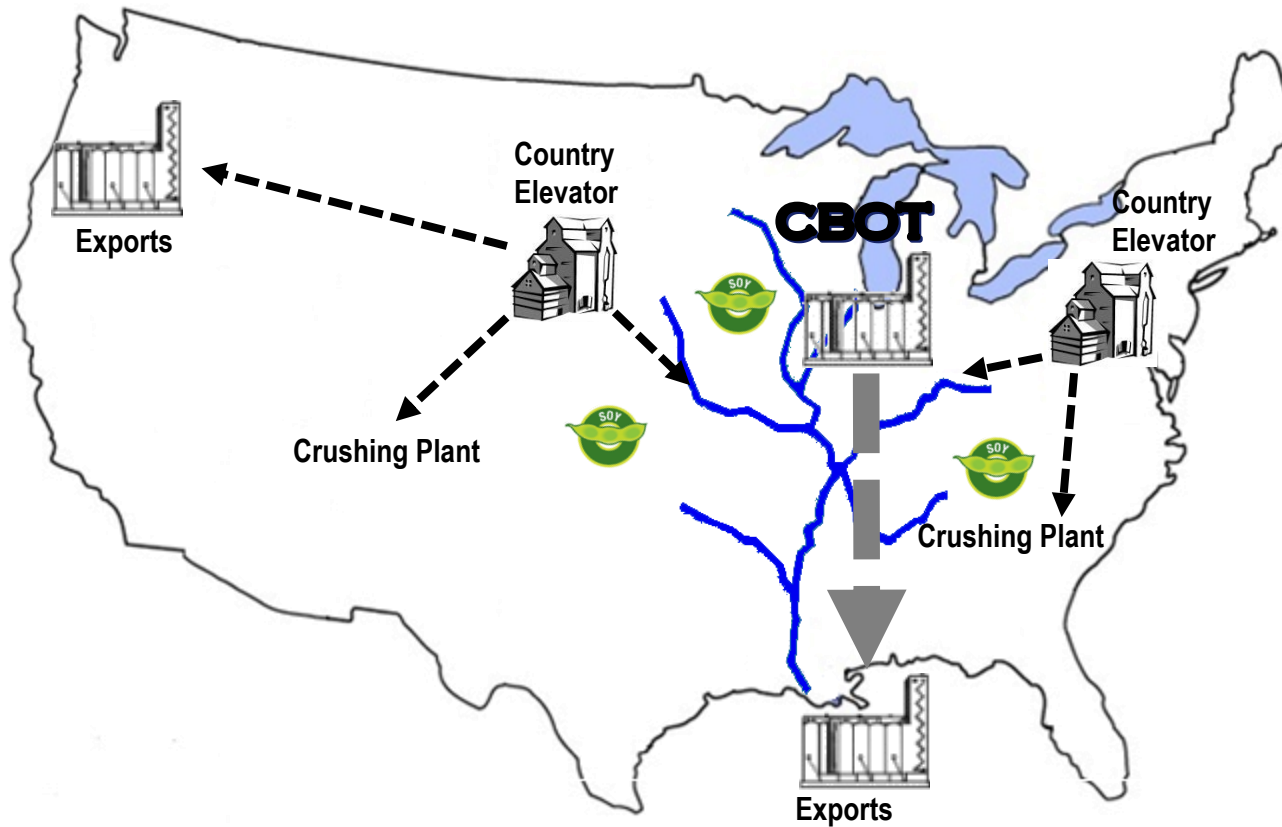
MARKET SPREAD



If demand stays strong, futures will increase across the board to draw remaining supplies or slow demand



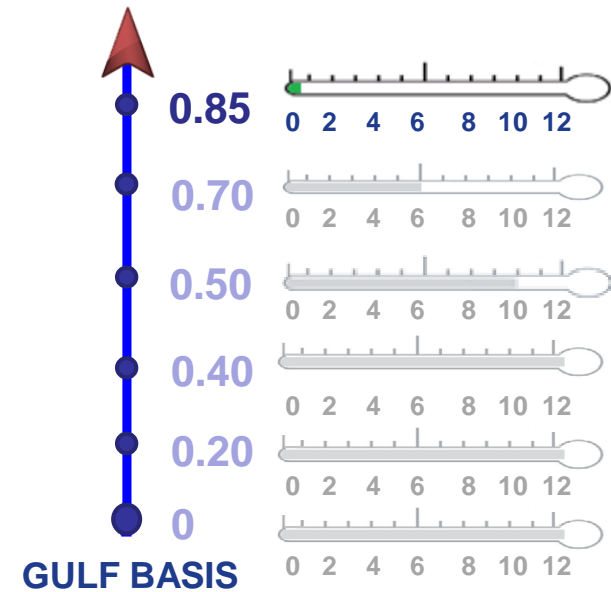
Eventually Market Restores Balance between Buyers and Sellers



CBOT SOYBEANS

JAN	MAR	SPREAD
9.91	9.91	0.00

MARKET SPREAD



THE WHEAT MARKET IN 2010...

NO CONVERGENCE



In a Normal Market...with a Large Surplus

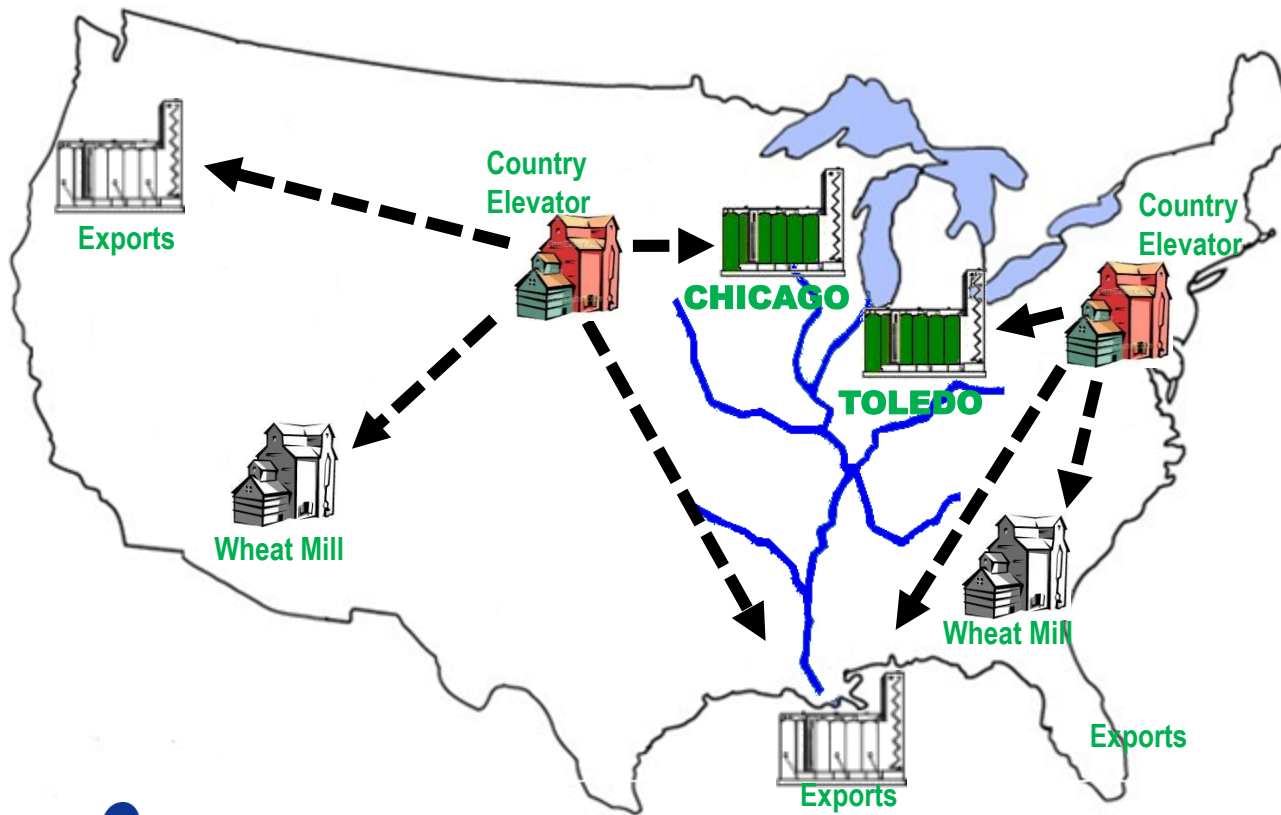
Futures prices would reflect this reality

- ✓ Elevators are full
- ✓ Premiums are below delivery
- ✓ Spreads move to Full Carry

Futures are expected to weaken!

JUL	SEP
\$4.60	\$4.75

Basis price: +0

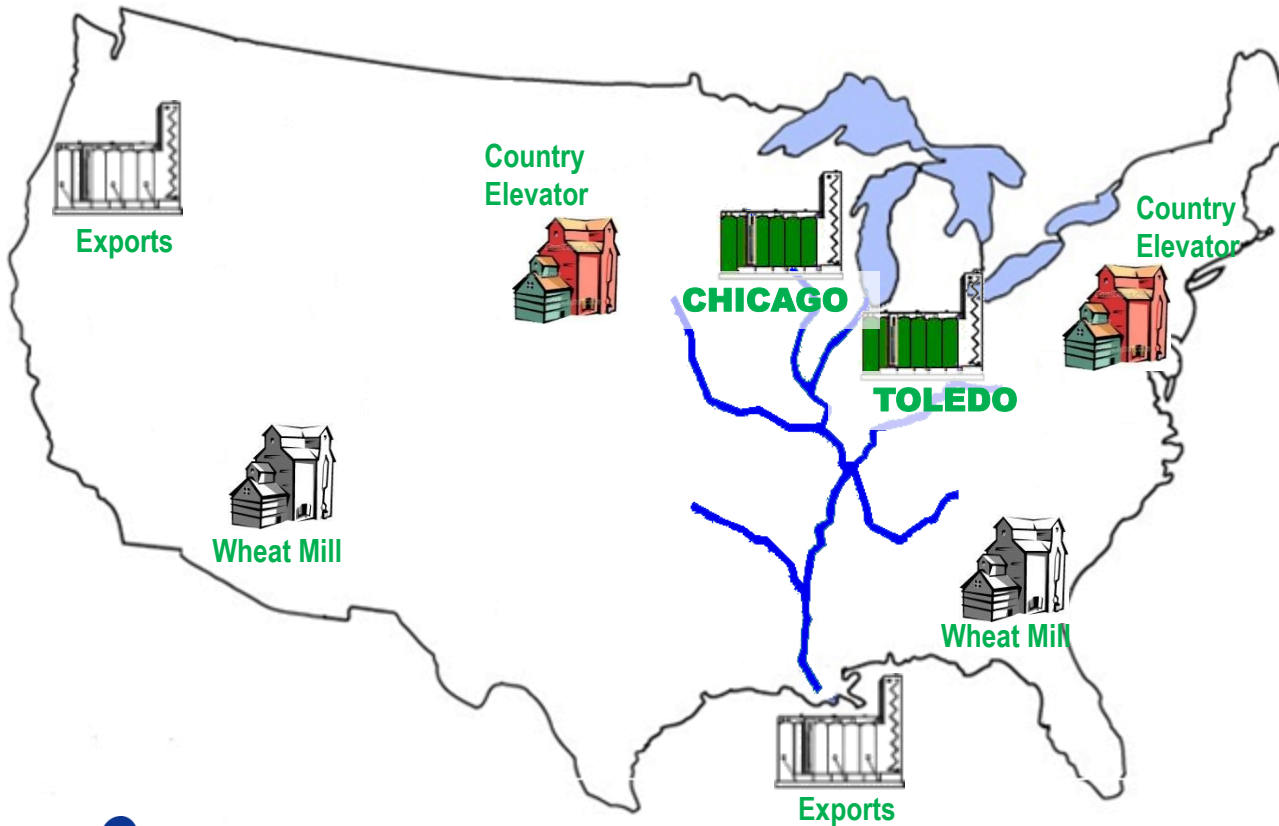


But in the wheat market, prices were distorted

Futures trended higher and the basis dropped to offset the increase.

JUL	SEP
\$5.05	\$5.20

Basis price: -40



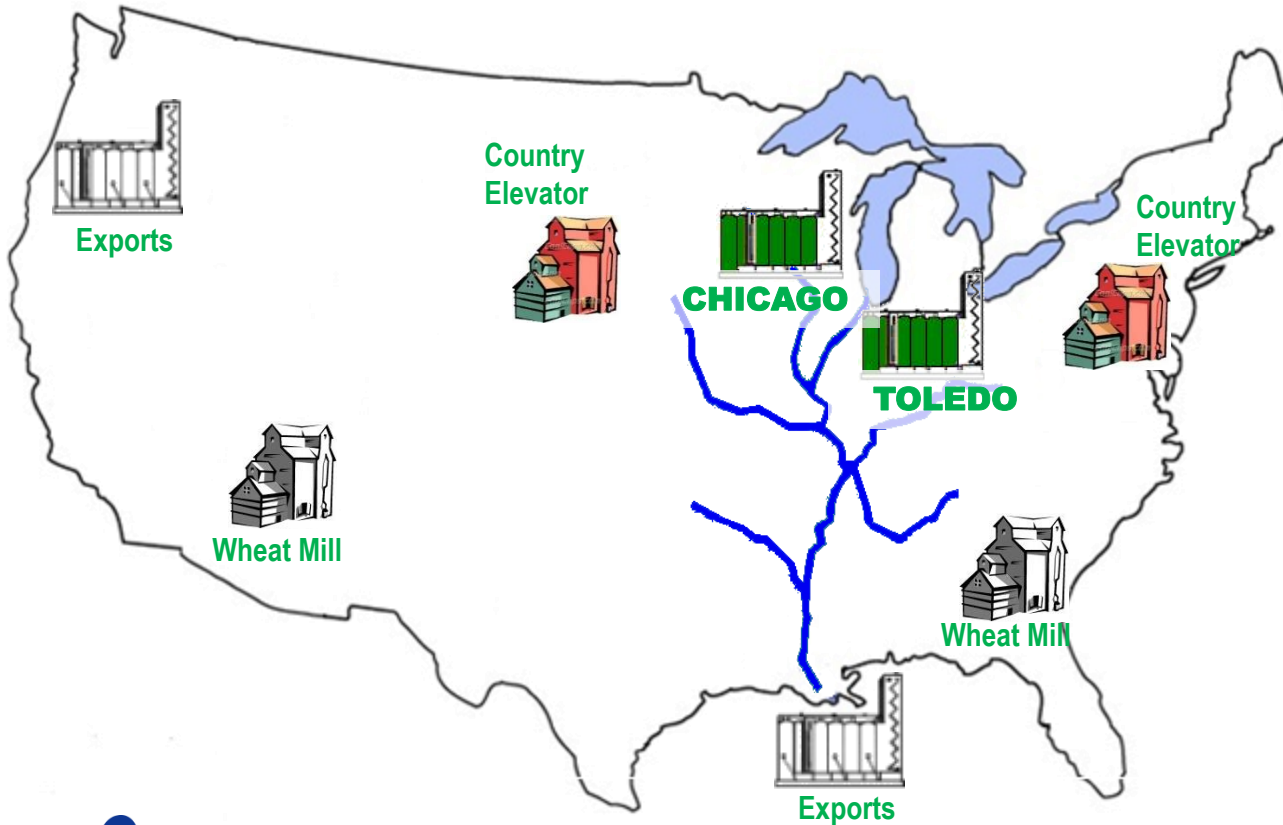
There was NO CONVERGENCE.

Futures continued to climb higher and the basis dropped sharply to keep physical prices at fair value for buyer and seller.

The situation was out of control!

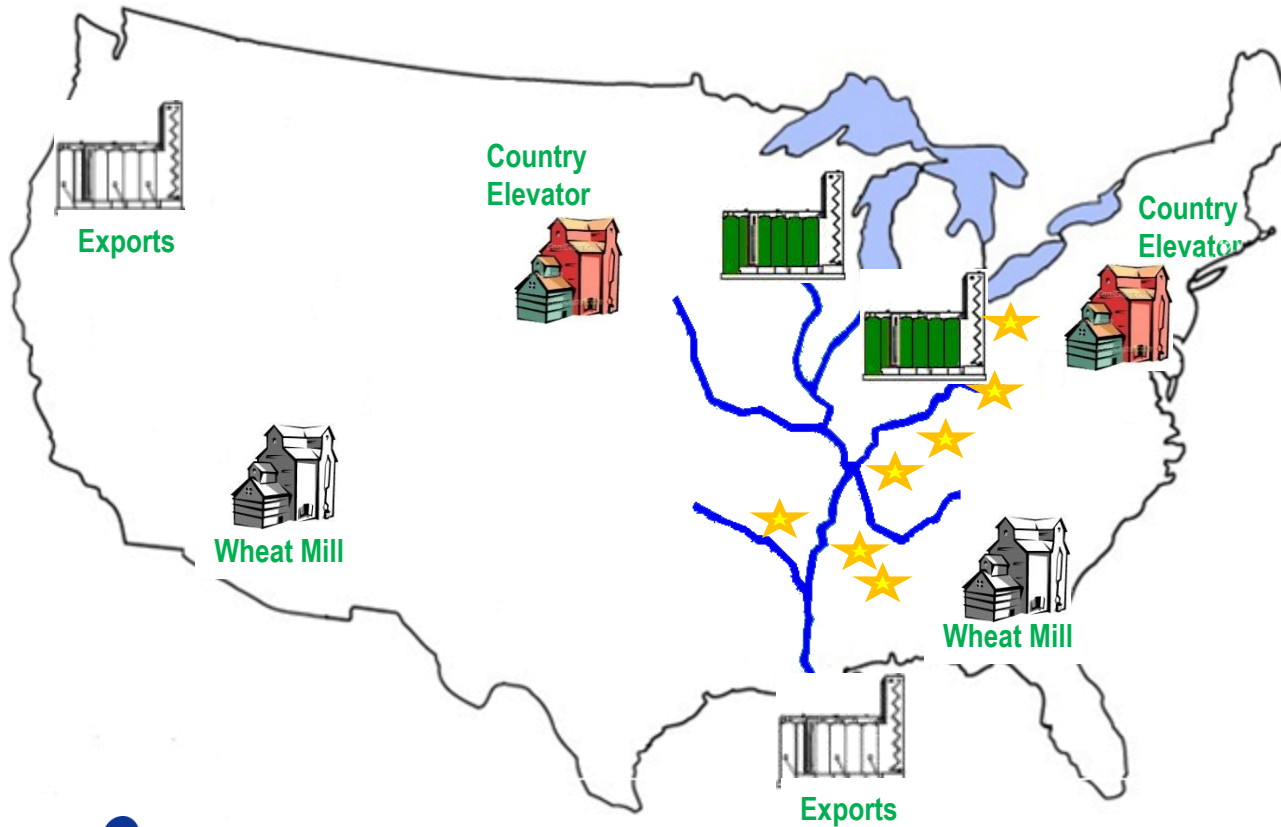
	JUL	SEP	
↑	\$5.64	\$5.83	↑

Basis price: -150 ↓



The CME Responded

- ✓ Adds more delivery elevators
- ✓ Adds variable storage rates



Basic Delivery Process

- ✓ A grain facility “regular for delivery” can tender shipping certificates against short hedges.
- ✓ Facility notifies the CME during the expiration period “Intention” to deliver.
- ✓ Delivery Facility must present collateral “WHR or Letter of Credit.”
- ✓ CME allocates deliveries to “oldest futures long” the next day “Notice Day.”
- ✓ Facility receives payment and begins earning storage the next day “Payment Day.”
- ✓ Facility must load upon receipt of loading instructions from the long holder.
- ✓ Facility must load “registered capacity” 3 days after instructions received.
- ✓ Long holder provides transportation and pays all loading costs.

What is Delivery Value?

Instore Value +/- Location differential +/- Quality differential + Execution Costs

- ✓ Load-out Fee
- ✓ Origin Inspection & Weighing
- ✓ Storage
- ✓ Destination Weighing
- ✓ Shrink

Delivery Calculation

	Wheat	Beans	Corn
Instore	\$0.00	\$0.00	\$0.00
Quality Differential	\$0.00	\$0.06	\$0.00
Location Differential	\$0.00	\$0.00	\$0.00
Execution Costs			
Load-out Fee	\$0.060	\$0.060	\$0.060
Origin Weighing & Inspection	\$0.025	\$0.020	\$0.020
Storage	\$0.026*	\$0.012	\$0.012
Interest	\$0.002	\$0.004	\$0.001
Shrink	\$0.010	\$0.016	\$0.009
Destination Weighing	\$0.005	\$0.005	\$0.005
Value Fob Origin	\$0.128	\$0.176	\$0.107
Barge Freight	\$0.450	\$0.450	\$0.420
CIF Nola Value	\$0.578	\$0.626	\$0.527
Current CIF NOLA Market	\$0.550	\$0.420	\$0.440
Variables			
Commodity Price	\$4.0675	\$10.4775	\$3.605
Number of Days to Load	7	7	7
Daily Storage Rate	\$18.25*	\$8.25	\$8.25
Interest Rate	2.00%	2.00%	2.00%
Shrink	0.25%	0.25%	0.25%
Destination Weighing	\$300	\$300	\$300
Chicago Barge Freight	260%	260%	260%



* Current Variable Storage Rate for Wheat

Range of Delivery Values Beans

	Nidera	Low	High
Instore	\$0.00	\$0.00	\$0.00
Quality Differential	\$0.06	\$0.06	\$0.06
Location Differential	\$0.00	\$0.00	\$0.00

Execution Costs

Load-out Fee	\$0.060	\$0.060	\$0.060
Origin Weighing & Inspection	\$0.020	\$0.015	\$0.040
Storage	\$0.012	\$0.005	\$0.017
Interest	\$0.006	\$0.002	\$0.011
Shrink	\$0.026	\$0.013	\$0.041
Destination Weighing	\$0.005	\$0.005	\$0.010
Value Fob Origin	\$0.189	\$0.160	\$0.238
Barge Freight	\$0.450	\$0.450	\$0.450
CIF Nola Value	\$0.639	\$0.610	\$0.688

Variables

	Nidera	Low	High
Commodity Price	\$10.00	\$10.00	\$10.00
Number of Days to Load	7	3	10
Daily Storage Rate	\$8.25	\$8.25	\$8.25
Interest Rate	2.75%	1.75%	3.75%
Shrink	0.25%	0.13%	0.39%
Destination Weighing	\$300	\$300	\$550
Chicago Barge Freight	260%	260%	260%

How can a country elevator rely on delivery economics to enhance rolling of hedges?

- ✓ Same Principals apply, but without the guarantee of delivery.
- ✓ Requires understanding basic economics of a Delivery facility.
- ✓ Comparing cash premiums to CME delivery.
- ✓ Following daily & weekly reports issued by CME Registrar

Uses of CME delivery economics

to identify cash basis & spread opportunities

- ✓ Basis and Spread relationships remain dependable; even for wheat.
- ✓ If you are worried about basis risk, CME spreads are a reliable hedge.
- ✓ Bear spread if cash is below delivery AND spreads are not near full carry.
- ✓ Bull spread if cash is at delivery AND spreads are near full carry.
- ✓ Bull spreads can be a hedge against storage income for a country elevator.
- ✓ Bear spreads can be a hedge against transportation shortages.

The image shows a stone relief sculpture on a building facade. It features two figures in robes, a central eagle with wings spread, and a large circular clock face with Roman numerals. The text "Thank You!" is overlaid in blue.

**Thank
You!**