

Using Futures to Hedge (Price Risk Management)

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Mountains & Minds

Pricing Alternatives

Pricing (marketing) is not about affecting your local price, it is about taking a good price when it is offered



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What You Can Do With Futures Info.

- Predict local cash price
- Calculate Basis information
- Get perspective on global view of commodity
- Reduce your price risk
 - Lock in a price for one or more commodities
 - Protect financial health
 - Avoid uncomfortable discussion with your lender and other business partners (spouse)
- Develop a sound marketing plan

Predicting Your Local Cash Price

- | | |
|--|---------------|
| • KCBT <u>Futures</u> | \$6.30 |
| • <u>Plus</u> HRW 11% Basis | \$- .58 |
| • <u>Minus</u> Trading cost per bushel | <u>\$.02</u> |
| • Estimated Local Cash Price | \$5.70 |
| | |
| • KCBT <u>Puts</u> Strike Price | \$6.30 |
| • <u>Plus</u> HRW 11% Basis | \$- .58 |
| • <u>Minus</u> Trading cost per bushel | \$.02 |
| • <u>Minus</u> Premium Cost for Put | <u>\$.40</u> |
| • Estimated Floor Price Using a Put | \$5.30 |

Basis is What Makes Futures Work

- Basis = Cash - Futures
 - What cash price minus what futures price
 - Local cash price for quality/grade of product
- Must know your local basis
- Adjusting Basis to your area
 - Local may be 100 miles or more away
 - Does this reflect “your local market?”

Terminology Can Be a Barrier to Using Futures & Options Markets

- Short and Long Positions
- Puts, Calls, Options
- Initial Margin, Maintenance Margin
- Margin calls
- Market Orders
- Bid, Ask
- Spreads, Fences, Straddles
- Hedger, Speculator

Equal and Opposite

- All transactions in a futures market requires two individuals
- For every Sell there is a Buy
- For every Short there is a Long
- For every individual seeking protection from an adverse price move (up or down) there is one or more individuals that believe prices will actually move in the opposite direction.
- Speculators provide liquidity for Hedger

True Hedger Perspective

- True hedger has equal and opposite positions in the futures and cash markets
 - Long cash then short futures
 - Producer selling grain or calves
 - Long futures then short cash
 - Feeder buying calves or grain as an input
- Objective is to reduce/eliminate risk of adverse price moves
 - Needs to find someone to take the risk

Short Futures (Sell = Short)

- **Sell** a futures contract
 - Protects against price declines
- Typically used by a producer of an end product
 - Grain, livestock
- Equal and opposite position in cash and futures
 - Long Calves, Short Feeder Futures
 - True Hedger

Long Futures (Buy = Long)

- **Buy** a futures contract
 - Protects against price increases
- Typically used by a consumer of an input in the production process
- Equal and opposite positions in cash and futures
 - Short calves, Long Feeder Futures
 - True Hedger

First Stage of Production

Long Commodity

- Has/Produces Commodity
- Farmer/Rancher
- Short Futures = Sell Futures Contract(s)
- Locks In Price
- Equal & Opposite
- True Hedger
-  Price **Decreases**

Second Stage of Production

Short Commodity

- Needs/Consumes Commodity
- Feeder/Miller/Etc.
- Long Futures = Buy Futures Contract(s)
- Locks in Price
- Equal & Opposite
- True Hedger
-  Price **Increases**


Take Position in Futures = **Locks In** a Price

- **Sell Futures = Short**
- Long cash, then Short Futures
 - Futures move lower
 - Make money in the futures
 - Cash price decreases
 - Futures move higher
 - Lose money in the futures
 - Margin calls
 - Cash price increases

- **Buy Futures = Long**
- Long Futures then Short Cash
 - Futures move higher
 - Make money in the futures
 - Cash price increases
 - Futures move lower
 - Lose money in the futures
 - Margin calls
 - Cash price decreases

First Stage of Production

Long Commodity

- Has/Produces Commodity
- Farmer/Rancher
- Short Futures = Sell Futures Contract(s)
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-  Price **Decreases**

Production

Second Stage of Production


Short Futures

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Marketing

First Stage of Production

Short Commodity

- Needs/Consumes Commodity
- Feeder/Miller/Etc.
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Production

Second Stage of Production

Long Futures

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 - Cash price increases
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Marketing

Mechanics of the Futures Market

- Futures price are set by daily trading in the specified commodity
- Exchange specifies:
 - The quantity and quality for each commodity traded
 - Price limits, ranges and ticks
 - Delivery points, times and days, if applicable
 - Hours, days, and months a contract is traded
 - Minimum initial and maintenance margins
- Exchanges provide contract specifications

Lock in Price - Futures Go Up

- | | |
|---|----------------|
| • Sell wheat futures contract, <u>lock in</u> | \$8.00 |
| • Expected basis at sale | -.56 |
| • Brokerage and Interest | <u>-.04</u> |
| • Projected Net Cash price at sale | \$7.40 |
| <u>At Harvest/Sale/Offset</u> | |
| • Purchase wheat futures contract | \$8.50 |
| • Cash price at sale | \$7.94 |
| • Loss per bushel on futures contract | <u>\$ -.50</u> |
| • Net Price realized (\$7.94 - .50 -.04) | \$7.40 |
| • Actual Basis (\$7.94 - \$8.50) | \$ -.56 |

Lock in Price - Futures Go Down

- **Sell** Feeder Cattle Contract for \$ 150.00
 - Expected Basis at sale \$ 6.00
 - Brokerage and Interest \$ -.20
 - Projected Net Cash price at sale \$ 155.80
- At Weaning/Sale/Offset
- **Purchase** Futures Contract \$ 145.00
 - Gain on futures of (\$150 - \$145) \$ 5.00
 - Cash price at sale time \$ 151.00
 - Net price received (\$151+\$5 -\$.20) \$ 155.80
-
- Actual Basis (\$151 - \$145) \$ 6.00



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Feeders (Steer Calves) Nov. 2015 In Feb. 2015

Commodity Exchange CME

Steers 5-6 Cwt in Billings	5-6 Cwt	6-7 Cwt	7-8 Cwt
Futures Price ¹	\$1.98	\$1.98	\$1.98
Avg. Basis ²	\$.17	\$.03	\$-.05
Predicted Local Cash Price	\$2.15	\$1.96	\$1.94
Basis Standard Dev.	\$.13	\$.04	\$.03
Price Range Forecast ³	\$2.02 – \$2.28	\$1.92 – \$2.00	\$1.91 – \$1.97

¹ November Feeder Contract for 2015 in Feb. 2015

² Billings Average November Basis for 2009 through 2014

³ Predicted Local Cash Price +/- one Standard Deviation of the basis = range of prices = (68% chance of price being in this range)



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MGE HRS Sept. 2015, In Sept. 2014

Commodity Exchange MGE

HRS – Billings	13%	14%	15%
Futures Price ¹	\$6.50	\$6.50	\$6.50
Avg. Basis ²	\$-.16	\$.19	\$.46
Predicted Local Cash Price	\$6.34	\$6.69	\$6.96
Basis Standard Dev.	\$.30	\$.24	\$.59
Price Range Forecast ³	\$6.04 – \$6.64	\$6.45 – \$6.93	\$6.37 – \$7.55

¹ In Sept. 2014 for Sept. 2015 Contract

² Billings Average Basis for 2000 through 2010

³ Predicted Local Cash Price +/- one Standard Deviation of the basis = range of prices = (68% chance of price being in this range)



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MGE HRS Sept. 2015 Projection, Feb. 4, 2015

Marketing is not about being able to affect your local price, it is about taking a good price when it is offered.

Commodity Exchange MGE

HRS – Billings	13%	13%	14%
Futures Price ¹	\$5.83	\$5.83	\$5.83
Avg. Basis ²	\$-.16	\$.19	\$.46
Predicted Local Cash - Feb. 2015	\$5.57	\$5.72	\$5.88
Predicted price - Sept. 2014	<u>\$6.34</u>	<u>\$6.69</u>	<u>\$6.96</u>
Marketing Gain/Loss	(\$.77)	(\$.97)	(\$1.08)

¹ Feb. 4, 2015 for Sept. 2015 Contract

² Billings Average Basis for 2000 through 2010



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The Broker/Speculator Role

- Buys something they don't want
- Sells something they don't have
- Has a seat on an Exchange they can't sit on and
- Facilitate trading for Hedgers
- Absolutely necessary to provide liquidity.

<u>Hedger</u>	<u>Interest</u>	<u>Speculator</u>	<u>Interest</u>
• Volatility	Y	• Volatility	Y
• Basis	Y	• Basis	NA
• Cash Markets	Y	• Cash Markets	NA
• Liquidity	Wants	• Liquidity	Provides/Wants
• Location	Basis	• Location	NA
• Time frame	Cycles	• Time frame	Varies
• Price Patterns	Y	• Price Patterns	Y
• Fundamentals	Y	• Fundamentals	Y

Mechanics of Selling or Buying

- Contact Broker and execute an “Order”
- Many different types of orders can be placed
- Type of order you put in will depend on your marketing strategy and your marketing plan

Sample of “Market Orders”

- **Market order (MKT)**
 - An order placed at any time during the trading session to immediately execute the entire order at the best available offer price (for buy orders) or bid price (for sell orders).
- **Market-if-touched (MIT)**
 - An order that automatically becomes a market order if the price is reached. An MIT order to buy becomes a limit order if and when the instrument trades at a specific or lower trigger price; an MIT order to sell becomes a limit order if and when the instrument trades at a specified or higher trigger price.
- **Market-on-close (MOC)**
 - An order submitted at any time within a trading session, but only executed on the close.
- **Market on open (MOO)**
 - A market order entered before an opening, to be executed immediately upon the open of the trading session.

Margin Accounting for Livestock

Basic Margin Accounting

Commodity Traded	Feeders	Initial margin per contract	\$3,000
Exchange Used	CME	Maintenance margin required	\$2,500
Contract Month Traded	Oct-13	Initial Position (Buy or Sell)	S
Number of Contracts Traded	2	Initial Margin Paid to Broker	\$6,000
Contract Size in Cwt, Bu, lbs, etc. (for one contract)	50,000	Date of Initial Position (M/D/Y)	12/3/2012
Initial contract price	\$1.5800		

<<< Shading means number is calculated/protected

Date	Current Price Quote	Previous Price Quote	Change From Previous Quote	X	Units Under Contract	=	Change in Margin From Last Quote	+	Previous Ending Margin Balance	=	Margin Account Balance	+	Margin Call Required	=	Final Margin Account Balance
12-Nov	\$1.1250	1.5800	\$ 0.4550		100,000	=	45,500.00	+	6,000.00	=	51,500.00	+	-	=	51,500.00
13-Jan	\$1.6400	1.1250	\$ (0.5150)		100,000	=	(51,500.00)	+	51,500.00	=	0.00	+	5,000.00	=	5,000.00
17-Jan	\$1.5900	1.6400	\$ 0.0500		100,000	=	5,000.00	+	5,000.00	=	10,000.00	+	-	=	10,000.00
28-Jan	\$1.6400	1.5900	\$ (0.0500)		100,000	=	(5,000.00)	+	10,000.00	=	5,000.00	+	-	=	5,000.00
2-Feb	\$1.5600	1.6400	\$ 0.0800		100,000	=	8,000.00	+	5,000.00	=	13,000.00	+	-	=	13,000.00
8-Mar	\$1.5400	1.5600	\$ 0.0200		100,000	=	2,000.00	+	13,000.00	=	15,000.00	+	-	=	15,000.00



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Margin Accounting KCBT Example

Basic Margin Accounting

Commodity Traded	Wheat	Initial margin per contract	\$1,250
Exchange Used	KCBT	Maintenance margin required	\$1,000
Contract Month Traded	March	Initial Position (Buy or Sell)	S
Number of Contracts Traded	5	Initial Margin Paid to Broker	\$6,250
Contract Size in Cwt, Bu, lbs, etc. (for one contract)	5,000	Date of Initial Position	7/27/2010
Initial contract price Per Unit	\$7.3500		

Shading means number is calculated/protected

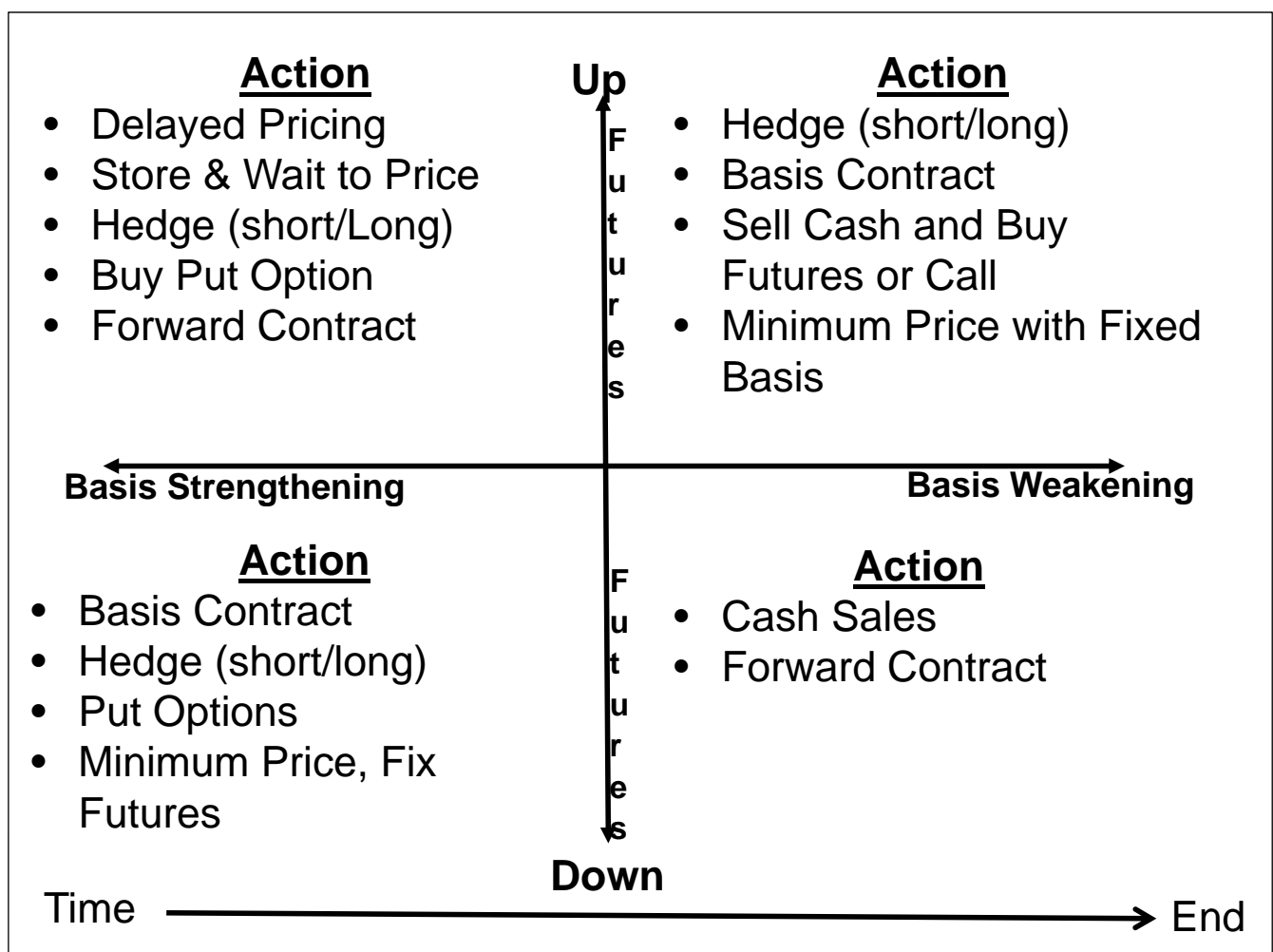
Date	Current Price Quote	Previous Price Quote	Change From Previous Quote	X	Units Under Contract	=	Change in Margin From Last Quote	+	Previous Ending Margin Balance	=	Margin Account Balance	+	Margin Call Required	=	Final Margin Account Balance
5-Aug	\$8.0000	7.3500	\$ (0.6500)		25,000	=	(16,250.00)	+	6,250.00	=	(10,000.00)	+	15,000.00	=	5,000.00
10-Aug	\$7.2000	8.0000	\$ 0.8000		25,000	=	20,000.00	+	5,000.00	=	25,000.00	+	-	=	25,000.00
25-Aug	\$7.3000	7.2000	\$ (0.1000)		25,000	=	(2,500.00)	+	25,000.00	=	22,500.00	+	-	=	22,500.00
10-Sep	\$7.8000	7.3000	\$ (0.5000)		25,000	=	(12,500.00)	+	22,500.00	=	10,000.00	+	-	=	10,000.00
30-Sep	\$7.0000	7.8000	\$ 0.8000		25,000	=	20,000.00	+	10,000.00	=	30,000.00	+	-	=	30,000.00
7-Oct	\$7.4000	7.0000	\$ (0.4000)		25,000	=	(10,000.00)	+	30,000.00	=	20,000.00	+	-	=	20,000.00
29-Oct	\$7.9000	7.4000	\$ (0.5000)		25,000	=	(12,500.00)	+	20,000.00	=	7,500.00	+	-	=	7,500.00
7-Nov	\$8.1500	7.9000	\$ (0.2500)		25,000	=	(6,250.00)	+	7,500.00	=	1,250.00	+	3,750.00	=	5,000.00
20-Nov	\$7.1500	8.1500	\$ 1.0000		25,000	=	25,000.00	+	5,000.00	=	30,000.00	+	-	=	30,000.00
1-Dec	\$8.0000	7.1500	\$ (0.8500)		25,000	=	(21,250.00)	+	30,000.00	=	8,750.00	+	-	=	8,750.00



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Cost of Production

- Should you estimate your costs of production
- Yes, But..... reduce emphasis
- Should be part of your marketing plan
- Cost of production provides you with your Break-even costs necessary to cover
 - Operating Costs (Variable Costs)
 - Ownership Costs (Fixed Costs)
- It should NOT be the only criteria used as to when you lock in a price



Contract Specs for Each Exchange

- CME

<http://www.cmegroup.com/market-regulation/rulebook/>

- CBOT

<http://www.cmegroup.com/market-regulation/rulebook/>

- KCBT

<http://www.advantagefutures.com/education/market-knowledge-center/contract-specs/>

- MGE

http://www.mgex.com/contract_specs.html

Using Available Tools

- What marketing tools are available to you?
- What are the tradeoffs between price flexibility and price risk in the marketing alternatives utilized.
- How comfortable are you (and your marketing team) with using the various tools available
- Marketing team includes yourself, spouse, lender, partners, etc.

Questions

Web Address to Download Files

<http://rightrisk.org/presentations>

