Managing Risk in DDG

19th Annual Distillers Grains Symposium
Sheraton Crown Center
Kansas City, MO

May 13th, 2015

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Atlas Commodity Markets Role

Atlas provides comprehensive physical and financial OTC pricing, liquidity, and transaction services.

- Atlas is a neutral intermediary, matching buyers and sellers at the best price.

- Our experience ensures we understand our clients’ business and can deliver the information they need to succeed.

- Our unbiased market position and exceptional market insight make it possible for our clients to transact on the most competitive terms.
Overview

Atlas Commodity Markets provides comprehensive physical and financial pricing, liquidity, and transaction services to traders of commodities and related products. Atlas is a neutral intermediary, matching buyers and sellers at the best price.

**Atlas Product Suite**
- Physical Ethanol
- Physical Biodiesel
- Physical Crude Oil
- OTC Ethanol Blocks and Options
- OTC Biodiesel Blocks and Options
- OTC Crude Oil Blocks and Options
- Physical Grains and Oilseeds
- Feed Ingredients and By-Products

**Services**
- Voice Brokerage Services
- Electronic Brokerage Services
- Transparency in all transactions
- Fast, efficient trade execution
- Quick information regarding order and market status
Atlas Presence

The Atlas Footprint

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Suite 203
Calgary, Alberta T2R 0A8
Phone: 587-332-1975

**Kansas City**
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Overland Park, KS 66210
Phone: 816.398.8508

**Chicago**
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Chicago, IL 60604
Phone: 312-854-0400

**Houston**
4203 Montrose Boulevard
Suite 650
Houston, Texas 77006
Phone: 713-574-5001
Background

• The product has changed
• The plant ownership has changed
• The science and understanding has changed
• The transportation has changed
• The customers have changed
• The value has changed
• The need has changed
**ETHANOL GROSS MARGIN**

*Estimated expenses including principal & interest, but before depreciation= $0.38/gal through 2011*

*Estimated expenses excluding principal, interest and depreciation; adding 4c corn oil revenue= $0.20/gal*

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*Gross Margin: Inputs: nearby corn futures/basis and nearby natural gas futures + 0.20 Outputs: DDGS 120% of cash corn) and ethanol nearby futures with the western corn belt @ -12 Chicago and eastern corn belt @ Chicago price. Margin reflects plants not extracting oil. **FOB MN off PNW or MN Ethanol Plant if markedly different.*
# Distillers’ Dried Grain Futures (DDG)

## Salient Features

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<tr>
<th>Feature</th>
<th>Details</th>
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<tr>
<td><strong>Trading Unit</strong></td>
<td>100 short tons</td>
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</table>
| **Deliverable Grades**                | Protein – Minimum 26%  
Fat – Minimum 8%  
Fiber – Maximum 12%  
Moisture – Maximum 11.5% |
| **Price Quotes**                      | U.S dollars and cents per short ton                                     |
| **Tick Size**                         | Ten cents ($0.10) per short ton ($10.00 per contract)                   |
| **Daily Price Limits**                | $20 per short ton ($2,000 per contract); expandable to $30 and $45     |
| **Contract Months**                   | All twelve calendar months.                                             |
| **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|
| **Storage Charges**                   | For those that take delivery but who do no load out distillers’ grains against delivered shipping certificates shall pay a daily storage charge of 8 cents per short ton per day |
| **Spec. Position Limits**             | 200 contracts net long or net short for the spot month. 1,000 contracts for any single contract month except for the spot month. 1,000 contracts for all contract months combined |
| **Reportable Limits**                 | 25 contracts                                                            |
| **Trading Hours (Electronic only)**   | 6:00 p.m. – 7:15 a.m. and 9:30 a.m. – 1:15 p.m. Central Time Sunday – Friday (CME Globex Platform) |
| **Commodity Code**                    | DDG                                                                     |
Sampling

| Sampling | Any shipment testing 12.0% moisture or less based on the regular facility’s official sample at origin shall not be subject to rejection. Non-rejected shipments or when the owner’s analysis of the official sample exceeds 12.0% moisture, excess moisture claims between the parties may be settled with the shipment discounted 0.1% of the invoice price for each 0.1% moisture in excess of 11.5% from 11.5% to 12.5% and 0.25% of the invoice price for each 0.1% moisture in excess of 12.5%. Any shipment testing 12.3% fiber or less based on the regular facility’s official sample at origin shall not be subject to rejection. Non-rejected shipments or when the owner’s analysis of the official sample exceeds 12.3% fiber, excess fiber claims between the parties may be settled with the shipment discounted 0.1% of the invoice price for each 0.1% fiber in excess of 12.0%. Any shipment testing 7.8% fat or more on the regular facility’s official sample at origin shall not be subject to rejection. Non-rejected shipments or when the owner’s analysis of the official sample falls below 7.8% fat, deficient fat claims between the parties may be settled with the shipment discounted 0.1% of the invoice price for each 0.1% fat is below 8%. Any shipment testing 25.5% protein or more on the regular facility’s official sample at origin shall not be subject to rejection. Non-rejected shipments or when the owner’s analysis of the official sample falls below 25.5% protein, deficient protein claims between the parties may be settled with the shipment discounted 0.1% of the invoice price for each 0.1% protein is below 26%. |
## Distillers’ Dried Grain Futures (DDG) Delivery

<table>
<thead>
<tr>
<th>Delivery (load-out)</th>
<th>Each Regular delivery facility shall be associated with a particular rail junction with regular facilities east of the Mississippi River associated with Chicago and regular facilities west of the Mississippi River associated with Kansas City. The seller delivers Distillers’ Dried Grains, by rail, directly from the regular facility to the location specified by the buyer. The buyer pays the seller the public rail tariff from the rail junction location associated with the regular facility to the buyer’s location. The buyer may provide truck transportation at the seller’s delivery facility and load out distillers’ dried grains by truck and pay a $7.50 per short ton premium.</th>
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</thead>
<tbody>
<tr>
<td>Delivery Example</td>
<td>A regular facility in Just-Off-Ninety, SD, which will have Kansas City as its designated rail junction, delivers Distillers’ Dried Grains shipping certificates and a buyer in Dairyland, UT stops these certificates for load out. The Just-Off-Ninety facility (seller) will deliver the Distillers’ Grains to the buyer in Dairyland with the buyer paying the seller the public tariff from Kansas City, MO to Dairyland, UT. The distillers’ grains need not pass through Kansas City; they will move directly from Just-Off-Ninety to Dairyland. The basic idea is the seller is responsible for transportation to Kansas City and the buyer is responsible for transportation from Kansas City.</td>
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Ethanol “Crush” Market Conventions

Price Efficiency Ratio

- One bushel of corn yields 2.9 gallons of ethanol

Pricing

- Crush is expressed in cents per gallon
- \( \frac{\text{Price of ethanol calendar swap} - \text{Price of corn calendar swap}}{2.9} \)

Trade Terminology

- **Buy Crush**: Buy Ethanol Calendar Swap and Sell Corn Calendar Swap
- **Sell Crush**: Sell Ethanol Calendar Swap and Buy Corn Calendar Swap
Ethanol Crush Spread

The simple corn-ethanol board crush is a measure of the margin in ethanol production. It is the difference between the sales value of finished fuel ethanol and the input price of corn. It frequently trades in quarterly calendar strips.

- Ethanol is traded in dollars per gallon and corn in cents per bushel. A conversion of prices into equal units is necessary for comparison:

  One bushel of corn yields ~2.9 gallons of ethanol. The price of corn must be divided by 2.9 to convert it into a price comparable to ethanol. The converted corn price is then subtracted from the price of ethanol to obtain the crush.

### Q3 2015 Ethanol Crush

<table>
<thead>
<tr>
<th>CU- Chicago Ethanol Futures Contract</th>
<th>Date</th>
<th>July-15</th>
<th>Aug-15</th>
<th>Sep-15</th>
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<tbody>
<tr>
<td></td>
<td>5/11/2015</td>
<td>1.585</td>
<td>1.5525</td>
<td>1.52</td>
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<tr>
<th>C - Corn Futures</th>
<th>Date</th>
<th>July-15</th>
<th>Aug-15</th>
<th>Sep-15</th>
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<tbody>
<tr>
<td></td>
<td>5/11/2015</td>
<td>3.605</td>
<td>3.605</td>
<td>3.655</td>
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</tbody>
</table>

On May 11th, 2015 the Q3 2015 Ethanol Crush =

- Sum of 3 monthly Ethanol Swap Prices divided by 3 = (1.585 + 1.5525 + 1.52) / 3 = 1.553
- Less Sum of 3 Corn Future Prices divided by 3, divided by 2.9 = (3.605 + 3.605 + 3.655) / 3 / 2.9 = 1.248
- 1.553 – 1.248 = .305 $\leftarrow$ Ethanol Crush
For the past year Ethanol Crush been valued between .0134 and .3760.

Quarterly Ethanol Crush Strips

Q3 2015 Crush
Accessing Cleared OTC Markets

To Access CME cleared OTC products one must have a clearing account and be an eligible contract participant.

- Setup RAV (Risk Account Value) Manager.
- Contact the clearing or risk staff person at your clearing member firm and request that your clearing account be added to RAV.
- Have your clearing firm authorize brokers to enter trades for clearing on your behalf.
- You will then be given permission for any markets you wish to clear.
Trading The Corn-Ethanol-DDG Crush Margin

- Hedge Your Production Margin
- Auto-spread or Leg
- Common Quantities
  - 2 Corn; 1 Ethanol; 1 DDG
  - 7 Corn; 3 Ethanol; 3 DDG
  - 33 Corn; 16 Ethanol; 14 DDG
- \( (\text{DDG Price} \times 0.0085) + (\text{Ethanol Price} \times 2.8) - \text{Corn Price} \)
- Assumes 1 Bushel of Corn Produces 2.8 Gallons of Ethanol and 17 Pounds of DDGs
Corn-Ethanol-DDG Crush Margin Example

- March Corn $3.59/bushel; April Ethanol $1.76/gallon; April DDGs $105/ton
  - Buy 33 March Corn @ $3.59
  - Sell 16 April Ethanol @ $1.76
  - Sell 14 April DDGs @ $105
- Board Crush Margin
  - \((105 \times 0.0085) + (1.76 \times 2.8) - 3.59 \approx 2.23\) bushel
Corn-Ethanol-DDG Crush Margin Example

• Later, March Corn $3.66/bushel; April Ethanol $1.73/gallon; April DDGs $100/ton
  • Offset (Sell) 33 March Corn @ $3.66
  • Offset (Buy) 16 April Ethanol @ $1.73
  • Offset (Buy) 14 April DDGs @ $100

• Actual (Realized) Board Crush Margin
  • \((100 \times 0.0085) + (1.73 \times 2.8) − 3.66 = $2.034/\text{bushel}\)
  • $2.23/\text{bushel} − $2.034/\text{bushel} = $0.196/\text{bushel}
  • $0.196/\text{bushel} \times 165,000 \text{ bushels} = $32,340
Quality Specifications

- Protein Minimum [26] 27 Percent
- Fat Minimum [8] 6 Percent
- Fiber Maximum [12] 9 Percent
- Moisture Maximum [11.5] 12 Percent
- Color Minimum 48

Questions:
- Does this reflect current market? Can this be merchandised?
- Are quality deficiency claims sufficient? (1-to-1 for Protein, Fat, and Fiber and 1-to-1 for Moisture claims to 12.5% [13%] Moisture and 2.5-to-1 for Moisture claims above 12.5% [13%] Moisture)
Delivery Terms – Soybean Meal
Delivery Territories

- Northern: -$2.50
- E. Iowa: -$2.00
- Northeast: +$2.00
- MidSouth: +$9.50
- Missouri: +3.50
- Central: Par
Automatic Adjustment Mechanism

• Year-End Adjustment Ratio Greater Than 2 – Delivery Differential Discounted $0.50 per ton

• Year-End Adjustment Ratio Less Than 0.5 – Delivery Differential Increased $0.50 per ton

• New Delivery Differentials Announced in September and Take Effect in January
Previous Load-Out Specifications Challenges

- Regular facilities west of the Mississippi River associated with Council Bluffs, IA
- Regular facilities east of the Mississippi River associated with Chicago, IL
- Buyer with a western shipping certificate specifies a delivery location and pays the regular facility the public tariff to that delivery location from Council Bluffs
- Buyer with an eastern shipping certificate specifies a delivery location and pays the regular facility the public tariff to that delivery location from Chicago
Load-Out Feedback

• Redesign the contract along the lines of Soybean Meal.
  • Define Delivery Territories
  • Product Delivered at Approved Facility at Contract Defined Price Differentials
  • Buyer Places Transportation or Arranges with Warehouse

• Maintain the existing contract, but simplify by eliminating the eastern delivery option.

• Explore Cash Settlement
# Unique Features of OTC Ag Swaps

- **Access to Grain and Oilseed markets during non-Globex trading hours**
- **No daily price limit constraints**
- **Non-aggregation of calendar swap and futures positions for position limit purposes**
- **Transactions privately negotiated or via Swap Execution Facility (SEF)**
# Futures vs. CME Cleared Swaps

<table>
<thead>
<tr>
<th>Futures</th>
<th>Swaps</th>
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<tbody>
<tr>
<td>Forward Price Instruments</td>
<td>Forward Price Instruments</td>
</tr>
<tr>
<td>CME Counter Party to Every Transaction</td>
<td>CME Counter Party to Every Transaction</td>
</tr>
<tr>
<td>Daily Settled and Margined</td>
<td>Daily Settled and Margined</td>
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<tr>
<td>Highly Standardized</td>
<td>Standardized but Greater Design Flexibility</td>
</tr>
<tr>
<td>Final Settlement Physical or Financial</td>
<td>Final Settlement Financial</td>
</tr>
<tr>
<td>Transacted via Central Order Book</td>
<td>Transacted Privately or via SEF</td>
</tr>
<tr>
<td>Buy Futures (Long)</td>
<td>Pay Fixed Rate</td>
</tr>
<tr>
<td>Sell Futures (Short)</td>
<td>Pay Floating Rate</td>
</tr>
<tr>
<td>Eligible for EFP and EFR</td>
<td>Eligible for EFP and EFR</td>
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</tbody>
</table>

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Market Demographics

Who Uses Agricultural Swaps?

- Grain Merchants
- Agriculture Commodity Processors
- Ethanol Producers
- Energy Companies
- Banks
- Hedge Funds
- Commodity Index Providers
Applications for Ag Swaps

Price Discovery/Risk Management
- Non-Globex Hours
- Limit Move Days
- Regular Trading Hours

Liquidity Sourcing

Management of Ethanol Margins “Crush”

Trading at Settlement (TAS)

Intra-Commodity Spread Trades

Exchange for Risk (EFR)
Potential Future Swap Products

Predicated by Markets Needs and Wants....

<table>
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<tr>
<th>Examples</th>
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<tbody>
<tr>
<td>DDG</td>
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<tr>
<td>Gulf Basis Swap</td>
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<tr>
<td>Barrier Options on Swaps</td>
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<tr>
<td>Beef Cut-out Swap</td>
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<tr>
<td>PNW Basis Swap</td>
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<tr>
<td>Same Day Options on Swaps</td>
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</tbody>
</table>

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Corn, Wheat, and Soybean Calendar Swap Contract Specifications Cont.

| Termination of Clearing/Expiration Date | The last business day of the month preceding the month of the calendar swap.  
  • Example: May calendar swap will expire on the last business day in April |
<table>
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<tbody>
<tr>
<td>Daily Settlement</td>
<td>Settled to the corresponding futures contract closest to but not before the calendar swap month</td>
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</table>
| Final Settlement                       | During the last month a calendar swap is listed, daily settlement is a running of the cumulative average of the settlement prices for the corresponding futures contract.  
  Cash settlement.  
  • Example: the final settlement for a May Corn Calendar Swap is the average of daily settlement prices for the May Corn futures contract during the month of April. |
<p>| Clearing Code                          | Corn Calendar Swap: CCS; Wheat Calendar Swap: WCS; Soybean Calendar Swap: SNS |</p>
<table>
<thead>
<tr>
<th>Contract Size</th>
<th>5,000 Bushels</th>
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</thead>
<tbody>
<tr>
<td>Price Quotation</td>
<td>Cents and quarter cents per bushel</td>
</tr>
<tr>
<td>Minimum Price Fluctuation</td>
<td>One quarter of one cent ($0.0025) per bushel</td>
</tr>
<tr>
<td>Clearing Hours</td>
<td>CME ClearPort clearing is available from 5:00 p.m. Sunday through 4:15 p.m. Central Time, Friday. There is a 45-minute break between 4:15 p.m. and 5:00 p.m. Central Time on Mondays through Thursdays</td>
</tr>
<tr>
<td>Contract Months</td>
<td>Calendar swaps are listed for all 12 calendar months with the corresponding futures contract being the contract closest to the swap’s expiration date</td>
</tr>
</tbody>
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# Corn (CCS), Wheat (WCS), Soybean (SNS) Calendar Swap “Crib Sheet”

<table>
<thead>
<tr>
<th>Month of Risk Exposure</th>
<th>Jan</th>
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<td>Corn Calendar Swap</td>
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<td>Futures contract to which swap settlement is indexed</td>
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<td>Wheat Calendar Swap</td>
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<td>Soybean Calendar Swap</td>
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<td>Ethanol Forward Month Swap</td>
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“Transact with confidence. Transact with Atlas.”
Contact Information

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