Institute of Ag Professionals

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Managing Competitive Advantage in a Global Grain Market

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Wells Fargo

December 2013
Key questions

1. What is corn worth?
2. Why is corn worth that?
3. Who gets what share?
4. What differentiates the producers?
5. What’s your “play”
Not a “normal” time series

Annual Corn Prices

Source: USDA, Wells Fargo
Looking at “changes”

Logarithm of National Corn Prices
101 years of data

0.7 equals a doubling of value
Everything is connected.

We just can’t see how.
Why there are always cycles

NAFTA Economy

NAFTA Agriculture

Global Agriculture

Global Economy
No Escaping the Loops

Where the Economic Growth is

-3% -2% -1% 0% 1% 2% 3% 4% 5%

World less USA
USA

What’s driving it? Implications?

Net Exports as Percentage of Production

- Beef
- Pork
- Broilers
- Dairy
Question your assumptions

- Global demand growth
  - Population
  - GDP
  - Diet

- Global supply growth
  - Acreage
  - Productivity
  - Trade barriers

- Policy shocks
The global numbers are huge

Global Growth Factors

Real GDP in Billions of USD
Population in Millions


10 20 30 40 50 60

1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000


10 20 30 40 50 60

1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000
The rate of change is a challenge.
Average growth has not changed

Global Real GDP Change

Pct Chg
Big numbers all around

Millions of MTs

Global Grain Production

Grain in millions of MT

The market cycles

Global Grain Production

Kilograms Global Grain Production

Kg per Capita

Performance = Realized potential

So who has the resources?
Production is resource dependent

Grain/Oilseed Production v. Per Capita

Argentina

The exporters

Russia

Brazil

EU

India

China

US

kg / per capita

000s MTs
Who has the acreage

Global Grain Acreage (incl rice)
What’s wrong with this picture?

Global Grain Yields (incl rice)

- Metric tons per hectare
- East Asia
- EU
- FSU
- North America
- South America
- ROW

Chart showing trends in global grain yields from 1960 to 2010.
Biggest threat?

All the marginal producers in the world
Simultaneous supply v. demand

So what is corn really worth?
This will end “badly”
# US Supply and Demand Estimates

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<th>05/06</th>
<th>06/07</th>
<th>07/08</th>
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<td>1.1</td>
<td>1.0</td>
<td>0.8</td>
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</table>
This is a policy shock

Feed, Seed and Industrial

KG Per Capita

- North America
- World less NA
A single loop ... from a subsystem

Livestock -> Corn -> Ethanol -> Gasoline -> Crude Oil

Global Grain

Nat Gas
Bio-fuel issues

- Ethanol to corn pricing
  - Weekly feedback loop is breaking down
  - Corn to alternative crop pricing
  - Livestock to feed pricing

- Gasoline demand
  - Relatively high priced gasoline is changing demand
  - Long-term technological factors at work

- Total substitution
They aren’t great forecasters

52 Week Gasoline Distributions

Millions of barrels per day

Jan-01 Jan-03 Jan-05 Jan-07 Jan-09 Jan-11 Jan-13
We need exports to hit the #

Ethanol Usage and Production in Billions of Bushels

- Black line: Annualized corn in
- Red line: Annualized corn out
This transformation is done

US Gasoline Distributions

Source: EIA, Wells Fargo Ag Industries
Unique opportunity?

Monthly Net Ethanol Exports

000s of barrels

Positive = exports
Negative = imports
The exports/imports matter

Keep Track of Your Competition

ICE 11 Contract / gallon
IA Spot Corn / gallon
Marketing issues

- **Ethanol**
  - Stagnant growth
  - Loses price leader status

- **Feed markets will resume their leader status**
  - Who is the lead protein?
  - Cattle remains a disaster
  - Export focus is very problematic

- **Exports need to be “reopened”**
The Wal*Mart Effect

US Net Trade in Agriculture, Fish/Forestry

In Billions USD

- Total US
- China/Hong Kong

2007 2008 2009 2010 2011 2012 2013 fcst

33
Exchange rates matter

China/USD Inflation Adjusted Exchange Rate

- 1990: 8.19
- 1992:
- 1994: 5.80
- 1996: 5.80
- 1998: 5.80
- 2000: 5.80
- 2002: 5.80
- 2004: 5.80
- 2006: 5.80
- 2008: 5.80
- 2010: 5.80
- 2012: 5.80
### US Agricultural Exports to China/Hong Kong in Millions of USD

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<td>596</td>
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<td>2,249</td>
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<td>402</td>
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<td>232</td>
<td>186</td>
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<td>5</td>
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<td>79</td>
<td>143</td>
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<td>116</td>
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<td>Consumer Processed Vegetables</td>
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<td>Consumer Wine &amp; Beer</td>
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<td>Consumer Meat Products NESOI</td>
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<td>112</td>
<td>151</td>
<td>159</td>
<td>153</td>
<td>124</td>
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<td>Other</td>
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<td>317</td>
<td>348</td>
<td>385</td>
<td>450</td>
<td>481</td>
<td>618</td>
<td>716</td>
<td>827</td>
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<td>22,429</td>
<td>25,427</td>
<td>32,208</td>
<td>24,418</td>
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So what?

- **Anticipation v. Forecast**
  - Operations need forecasts
    - Short-term
    - No feedback
  - Management needs scenarios

- **Global agricultural investment**
  - Competitive
  - Comparative

- **What’s the “difference maker”**
What’s the individual’s role

Huge gap in US producers.

Why?
Key Assertions

- **Wide spread in farming performance**
  - Gaps persist
  - Bottom performers exit

- **Marketing is not a competitive advantage**
  - Averages out over time
  - Underestimate trading costs

- **Production cost is a competitive advantage**
  - Agronomic skills vary
  - Asset discipline matter
Corn farming returns: Stack ranked

Profits B4 Tax / Total Assets

- 75th Percentile
- Median
- 25th Percentile

Percent

Income = (Revenue/bu. – cost/bu.) * bushels

1. No one is a better marketer
2. Some are much better producers
3. Income is a flow
4. Wealth is a stock
5. There is no wealth without income
Market

You
You can’t out market the “market”

1. Trading costs add up
2. You are “outside” the information loop
   1. They get it first
   2. You trade second hand
3. You have a built-in “bias”
   1. You are not an expert because you grow it
   2. You want “it” to go up and only up
4. Managing “cash basis” is the one true competitive factor
### Average Sales Value

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<th>Year</th>
<th>Low Profit 20%</th>
<th>High Profit 20%</th>
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<td>$ 1.77</td>
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<td>1999</td>
<td>$ 1.73</td>
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<td>$ 2.00</td>
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<td>2005</td>
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<td>2006</td>
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<td>2007</td>
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<td>2008</td>
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<td>2010</td>
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<td>$ 4.48</td>
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<tr>
<td>2011</td>
<td>$ 5.70</td>
<td>$ 5.73</td>
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<td>2012</td>
<td>$ 6.46</td>
<td>$ 6.39</td>
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</table>
MN cash rent: No one is a better marketer

Market Price for Corn Sold

- Low profit quartile
- High profit quartile
You can out produce the “market”

1. **Agronomic skills**
   1. The only true “economies of scale”
   2. Managing complexity
   3. Constantly changing

2. **Adopt and adapt = “farmer’s R&D”**
   1. It’s a process
   2. Cost and benefit

3. **Asset discipline**
   1. Not a question of timing
   2. Simple not easy
   3. Opportunities change with prices
Not everyone is a good manager

MN Cash Rent Corn: Total Cost / Bushel

- Low Profit
- High Profit
Who gets crushed in a down cycle?

- Low Profit cost
- High Profit cost
- Low profit sales
- High profit sales

Legend:
- Black circle: Low Profit cost
- Red square: High Profit cost
- Green line: Low profit sales
- Blue line: High profit sales

Timeline:
- 1997
- 2002
- 2007
- 2012

Graph showing trends in profit, cost, and sales over time.
Production functions

- All companies use the same three things
  - Labor
  - Capital
  - Management

- Labor and capital
  - Substitutes
  - Complements

- Purchased inputs = embedded technology
## Indiana Corn Variable Costs for Avg Quality Land in Corn/Soybean rotation

<table>
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<tr>
<th>Avg Corn Sold</th>
<th>Year</th>
<th>Fertilizer</th>
<th>Seed</th>
<th>Pesticides</th>
<th>Fuel</th>
<th>Machinery repairs</th>
<th>Hauling</th>
<th>Interest</th>
<th>Insurance &amp; Misc</th>
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<td>$ 2.00</td>
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<td>9</td>
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<td>$ 3.17</td>
<td>2006</td>
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<td>$ 4.39</td>
<td>2007</td>
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Indiana Corn Variable Costs for Avg Quality Land in Corn/Soybean rotation

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<th>Avg Corn Sold</th>
<th>Year</th>
<th>Fertilizer</th>
<th>Seed</th>
<th>Pesticides</th>
<th>Fuel</th>
<th>Machinery repairs</th>
<th>Hauling</th>
<th>Interest</th>
<th>Insurance &amp; Misc</th>
<th>In Bushels</th>
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</table>
It’s about bushels not acres

- You get paid by the bushel
  - Don’t confuse acres and bushels
  - Relative yield

- Your success is your average cost

- Average depends on marginal
  - Everything fixed now
  - Everything variable tomorrow

- Adopt and adapt is a learning process