Effects of Transportation on Competitiveness of US Agriculture

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Can We Compete For Growing World Markets?

Competitiveness is:

- Ability to produce profitably for prices expected
- Returns must cover variable costs
  - And, some part of fixed cost over longer-term
- Ag investment competes with other capital uses
  - So, returns relative to investment requirements is important
    - Often small return on small investment
    - May be more attractive than larger return on large investment
- Ag investment competition is crop/use specific
  - Investment opportunities in each crop compete
    - Corn vs soybeans vs cotton vs wheat, etc.
    - Idling land is competing use—value from intrinsic beauty, etc.
Two Primary Questions:

1) What level of resources are attracted by market mix?
   - How much land, capital, labor, etc.
   - Do expectations stimulate development of additional land?

2) How are/will resources allocated among crops?
   - Relative returns to land/management is driver
     - Highest expected returns stimulate investment/production(exports
   - Land allocation is key
     - Largely determines production
     - Production intensity varies little in response to economics
   - What affects relative returns?
What Affects Returns?

- **Physical productivity**
  - Yields; quality of land; amount, reliability of rainfall
  - Production technology; genetics; capital equipment; management

- **World & domestic supply/demand**
  - Key differences among crops drive returns

- **External Factors**
  - Infrastructure and cost of transportation & handling
    - Transport costs come off the bottom line
  - Market access/duties
    - Regional/bilateral agreements shift competitive position
  - Exchange rates (producers outside US)
    - Exports sales are in $US
  - Government support

- **Note:** Land costs not mentioned
  - Reflect – not determine returns
# Soybean Export Market Indicative Returns, 2000

<table>
<thead>
<tr>
<th></th>
<th>Argentina</th>
<th>Brazil</th>
<th>United States</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Santa Fe</td>
<td>Parana</td>
<td>MG</td>
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<tr>
<td><strong>Price at Rotterdam ($/bu)</strong></td>
<td></td>
<td></td>
<td>$5.95</td>
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<tr>
<td>Ocean Freight ($/bu)</td>
<td>0.49</td>
<td>0.57</td>
<td>0.57</td>
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<tr>
<td>Internal Handling/Transport</td>
<td>0.81</td>
<td>0.85</td>
<td>1.34</td>
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<tr>
<td>Variable Cost of Production</td>
<td>1.90</td>
<td>2.78</td>
<td>3.17</td>
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<tr>
<td><strong>Net Return to Land &amp; Management</strong></td>
<td>2.75</td>
<td>1.75</td>
<td>0.87</td>
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</table>

**Efficiency Index**

<table>
<thead>
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<tbody>
<tr>
<td>Ocean Freight ($/bu)</td>
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<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Internal Handling/Transport</td>
<td>14</td>
<td>14</td>
<td>23</td>
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<tr>
<td>Variable Cost of Production</td>
<td>32</td>
<td>47</td>
<td>53</td>
</tr>
<tr>
<td><strong>Net Return to Land &amp; Management</strong></td>
<td>46</td>
<td>29</td>
<td>15</td>
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</tbody>
</table>
Argentine Net Returns to Land & Management

$ per ha return to land & management in Argentina

- Corn
- Sunseed
- Soybeans
- Wheat

Years: 1991 to 2001
Exchange Rates—Soybean Example

Price in Local Currencies, US & Brazil

United States

Brazil
Ocean Rate Structure—to Europe

- Determined by distance
  - US simply closer
    - Gulf to Europe 4,829 mi
    - Brazil to Europe 5,471 mi
    - Arg to Europe 6,373 mi
- Reflects competition
  - Grains/oilseeds about 15%
  - Competition with:
    - Oil
    - Coal
    - Iron ore
    - Other
- Recent trend is higher
Japan About Twice as Far—
PNW Has Major Location Advantage
River Rates Reflect Competition, Costs

St. Louis
Illinois River
US Crops Losing Competitiveness?

- Declining North American share no threat by itself
  - All available land resources now in use at profitable returns
  - More factors affect US markets than for competitors
    - Ethanol production boosts corn market competition
    - Processors competing more advantageously for product
      - More high-valued exports
  - Land, other factor prices strong/rising
    - Even without government support
- But, could reflect declining US participation if:
  - Net returns favor non-export crops
  - Infrastructure declines increase export costs
  - Currency shifts continue to favor competitors
  - Government programs favor other crops, or idle land
Observations

- Trade importance not adequately understood
  - Export sales more than twice government support
  - Export taxes – tariffs on US goods now $20 bil annually

- Any potential decline in trade is immediate threat to $1.8 trillion structure
  - E.g., $15 bil trade decline over five years could diminish sector assets by at least $200 bil
  - Transport access & costs especially important
    - Major impact on “bottom line”
    - Affect net returns
    - Affect competition for resources
Expectations for Competitiveness

- Land availability drives SA competitiveness
  - Feasible to develop resources in response to
    - Relatively high returns (stimulated by weak currency)
  - Technology growth
  - Lower North American variable costs are large advantage
  - Corn, soybean productivity major competitiveness driver

- World market structure very important
  - E.g., China likely will continue to attempt to boost soybeans
  - US better equipped to sell high-transport using crops
    - More than 3 times the tonnage of corn per acre, vs soy, wheat
    - More efficient US transportation system protects that efficiency

- What other competitive factors?
  - Capital availability in LA—Cost of developing land
  - Continued currency advantage?
  - Continued investment in US transportation system
    - Could weaken US technology advantage
  - Big unknown—LA domestic livestock, feed demand
Sparks Companies, Inc.

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Sparks: Who We Are

– Food and Agriculture Consulting Firm
  – 125 people
  – Offices
    – Memphis, Washington, Winnipeg, Beijing, Buenos Aires

– Provide—
  • Price risk management to >400 commercial clients
  • General consulting services
    – Including development activities for USAID, World Bank
  • Publish more than a dozen periodic reports/newsletters
    – Range
      • Commodities
      • Transportation
      • Weather
      • Energy
      • Agricultural policy
  • Training
    – Ag managers
    – Merchandisers, etc