Building U.S. Agricultural Exports: One BRIC at a Time
Economic Growth and Meat Consumption

2010 Real Per Capita GDP (Constant US dollars)

2007 Protein Consumption from Meat (grams/capita/day)

United States, Brazil, Russia, China, India

Economic Growth and Meat Consumption

Meat consumption increases with a 1% increase in household budgets.

- Low-income nation: 0.78%
- Middle-income nation: 0.64%
- High-income nation: 0.36%

Rising incomes boost the demand for protein and processed food.

Packaged Foods Share of Food Spending

- High income nations: >50%
- Middle-income nations: roughly 25%

2005 Annual Spending on Soft Drinks

- High income nations: $144 per person
- Middle-income nations: $33 per person

2005 Annual Spending on Fast Food

- High income nations: $191 per person
- Middle-income nations: $15 per person

Source: IMF and FAO

Source: USDA
Fulfilling Global Food Needs

Stages of Agricultural Growth

Stage 1: Import Food to Satisfy Demand
Stage 2: Expand Protein Production
  - Shrinks Meat Imports
  - Grain Imports Remain High
Stage 3: Expand Crop Production
Stage 4: Export Protein and Crops
Is Brazil the model for other BRIC nations?

**Stage 1: 1960s to 1980s**
- **Real Per Capita GDP**
  - 1960: $1,537 USD
  - 1980: $5,110 USD

**Stage 2: 1990s**
- **Corn and Soybean Imports: 5-yr avg.**
  - 1990: 632 (1000 MT)
  - 2000: 2053 (1000 MT)

**Stage 3: 2000s**
- **Corn and Soybean Acre Growth**
  - 1990s: 1.5% per year
  - 2000s: 3.5% per year

**Stage 4: Today**
- Since 2000, meat exports up 247%

*Source: USDA*
Is Russia transitioning to Stage 3?

**Russian Meat Consumption and Imports**

- **Percent of consumption**  
- **Million metric tons**

**After collapsing in the 1990s, meat production is rising.**

- 2000: 3.3 MMT
- 2005: 3.8 MMT
- 2010: 5.7 MMT
- 2012: 6.2 MMT

**Source:** USDA

**Since 2006, ...**

- **Corn and soybean imports down 63%**
- **Corn and soybean production up 33%**

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**Federal Reserve Bank of Kansas City – Omaha Branch**
**Regional, Public, Community Affairs Division**

www.kansascityfed.org/omaha
With rising meat production and surging crop imports, China is quickly moving through Stage 2.

After slowing in 2011, China’s meat production is rebounding. Up 30% since 2000.

Since 2000, ...
- Pork production has risen 30%.
- Poultry production has risen 48%.

With surging feed demand, soybean imports doubled since 2006. And, corn imports are on the rise.

Source: USDA
Will India follow the same path?

With stronger incomes, protein demand is rising. Still, India is a low income nation.

*(Annual per capita GDP is $1,454)*

A decade of growth at 10% per year leaves India as a low-income country.

Will meat demand rise with higher incomes?
Will Rising Incomes in BRIC nations boost US Agricultural Exports?

**Who is most likely to benefit from rising incomes in BRIC nations?**

- Rising livestock production in BRIC countries could limit meat exports.
- BRIC nations are boosting pork and poultry production, not beef.
- Increased livestock production could spur crop and feed imports.

**U.S. Livestock and Meat Exports to BRIC Nations**

<table>
<thead>
<tr>
<th>Year</th>
<th>Thousand MT (annual average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-94</td>
<td>50</td>
</tr>
<tr>
<td>1995-99</td>
<td>100</td>
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<td>2000-04</td>
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<tr>
<td>2005-09</td>
<td>300</td>
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<tr>
<td>2010-11</td>
<td>450</td>
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</tbody>
</table>

Source: USDA

**Share of U.S. Exports to BRIC Nations**

- **1990-94:** 2.2% of Livestock & Meat Exports
- **2010-11:** 8.1% of Livestock & Meat Exports

- **1990-94:** 2.1% of Oilseed Exports
- **2010-11:** 44.5% of Oilseed Exports
Technology and water will shape global competitiveness in agriculture.

Technological innovations (genetics and production practices) will be needed to boost efficiency.

Water efficiency will be a necessity. Agriculture uses 70% of the world’s freshwater.

Between 2002 and 2009, world freshwater withdrawals rose 36%.

- India’s freshwater withdrawals rose 24%
- Agriculture accounts for 90% of India’s freshwater withdrawals

Calculations based on USDA data

Source: World Bank
Conclusions

- Rising incomes will boost BRIC protein consumption.
- How this demand is satisfied will depend on the stage of agricultural development?
  
  Brazil – a major agricultural competitor  
  Russia– building a livestock sector  
  China – enhancing crop and livestock production  
  India – economic growth is needed

- While BRIC nations want more proteins and processed foods, the best export opportunities could be feed grains.
- Technology and water will determine the competitiveness of global agricultural systems and U.S. agricultural exports.