Macro developments in the China and Southeast Asia beef sector

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ACIAR Project
“Beef markets and trade in China and Southeast Asia”

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www.asiabeefnetwork.com
Rationale

- Dramatic change in the regional beef sector over last 20 years
  - Economic growth – consumption
  - Beef prices
  - Production
  - Trade – informal and informal

- With wide-ranging implications
  - For export countries (Australia, Mekong)
  - For import countries (China, Indonesia, Vietnam)
  - 20 million small-holders, cattle traders, butchers, beef retailers in the region

- Important to (properly) understand the picture, drivers, dynamics, future & impacts. Project doing this through

  Implications for small-holders

  Trade modelling (SPEM) – for forecasting and running scenarios

  Statistical analysis

  Industry research / papers
International livestock revolution

- ILR as an entry point

- Tenants of ILR
  - Demand driven revolution – of the developing world

- Delgado et al. (1999)
  - Initially forecast that increasing demand in developing countries would be met by local supply, with little increase in trade or prices

- Subsequent studies show and forecast:
  - Demand has outstripped supply, leading to increased prices and trade
Contribution of project

- More disaggregated focus on:
  - Cattle and beef
  - The China - Southeast Asia - Australia region
  - National and sub-national level analysis
  - Diverse countries (Myanmar to China to Malaysia)

- Incorporates:
  - Detailed data from project network / country partners
  - Revisions of production data
  - Informal trade flows

- Findings
  - Confirms the trends of ILR (D>S, increased trade and prices)
  - But finds that the S-D gap, trade volumes & prices have increased faster than ILR literature
  - Based on 2014 data
Compound aggregate indicators

China–Southeast Asia

- 0.8% increase per capita beef production
- 1.9% increase “consumption” (per capita beef supply)
- 16% increase in trade
- 6.5% increase in price

Source: various country data
<table>
<thead>
<tr>
<th>Country</th>
<th>Australia beef</th>
<th>Myanmar bovine meat</th>
<th>Cambodia bovine meat</th>
<th>Laos bovine meat</th>
<th>Thailand beef</th>
<th>Timor Leste beef</th>
<th>Vietnam bovine meat</th>
<th>Malaysia beef</th>
<th>Indonesia beef</th>
<th>China bovine meat</th>
<th>China &amp; SE Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef supply (kg/person 2014)</td>
<td>62.7</td>
<td>2.1</td>
<td>1.2</td>
<td>3.7</td>
<td>1.8</td>
<td>1.5</td>
<td>4.3</td>
<td>7.2</td>
<td>2.7</td>
<td>5.4</td>
<td>4.7</td>
</tr>
<tr>
<td>Annual growth 2000-2014 (%)</td>
<td>-0.3%</td>
<td>7.7%</td>
<td>2.6%</td>
<td>5.6%</td>
<td>-0.5%</td>
<td>0.9%</td>
<td><strong>12.0%</strong></td>
<td>1.9%</td>
<td>2.3%</td>
<td><strong>1.8%</strong></td>
<td>1.9%</td>
</tr>
</tbody>
</table>

**Demographics (annual growth 2000-2104)**

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Population growth</th>
<th>Urbanisation rate</th>
<th>GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>1.5%</td>
<td>0.2%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Myanmar</td>
<td>0.8%</td>
<td>1.5%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Cambodia</td>
<td>1.6%</td>
<td>0.7%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Laos</td>
<td>1.6%</td>
<td>4.1%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Thailand</td>
<td>0.6%</td>
<td>3.2%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Timor Leste</td>
<td>2.3%</td>
<td>1.9%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>1.8%</td>
<td>2.1%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1.3%</td>
<td>1.3%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.3%</td>
<td>1.7%</td>
<td>4.0%</td>
</tr>
<tr>
<td>China &amp; SE Asia</td>
<td>0.5%</td>
<td>3.1%</td>
<td>9.2%</td>
</tr>
</tbody>
</table>

**Per capita supply**

Per capita supply = domestic production (cwe) + net trade.

**Project data** + United Nations Population Division, World Bank Development Indicators

Countries – Vietnam high growth, China growth large agg effect, Aust plateau
Drivers – population growth modest effect, compared to urbanisation and incomes
Average annual growth in cattle and beef production, 2000-2014
Drivers in the production sector

Lagged production responses / stock numbers
- Farm mechanisation / draught in some countries (China below, Myanmar)
- Opportunity cost labour
- Long cattle production cycles
  = Low S-side price elasticities

- But increased slaughter numbers, beef production
- Productivity (turnoff rate, carcass weight)
- Commercialisation (e.g. China)

(But in most countries / regions:
More continuity than change in production structures)
The informal trade:

- Two-thirds of beef traded is through informal markets, especially the “grey trade” into China (>1 million tonnes/year)
- 60% of live cattle trade is formal (Indonesia, Vietnam, Malaysia), but large informal trade (China, Mekong, Timor)
Source: China Livestock Yearbook; Ministry of Agriculture; (Vietnam) Ministry of Agricultural and Rural Development; Australian Bureau of Statistics

<table>
<thead>
<tr>
<th>Period</th>
<th>Hanoi loin (VND10,000)</th>
<th>Jakarta generic (Rp10,000)</th>
<th>Beijing generic (Rmb)</th>
<th>Australia retail ($)</th>
<th>Jakarta chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2014</td>
<td></td>
<td>1.3%</td>
<td>8.3%</td>
<td>-0.5%</td>
<td>-0.4%</td>
</tr>
<tr>
<td>2007-2014</td>
<td>8.1%</td>
<td>2.6%</td>
<td>10.6%</td>
<td>-2.2%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Compounded real annual av price change by period

Shows:
- Spikes
- Integration
Price integration between China and Vietnam

An increase of 10% in Beijing beef prices is followed by an increase of 2% in Hanoi within 2 periods (6 months), then moves to equilibrium

Source: Dong Xiaoxia (CAAAS); China Livestock Yearbook; Ministry of Agriculture; (Vietnam)
Conclusions

• Gaps between consumption and production and the magnitude of trade higher than documented / forecast. Due to:
  • Statistical methods (statistical revisions & incorporation of informal trade)
  • Factors particular to the period (2014) / region (dynamic)

• Which may not necessarily be ongoing or replicated
  • Peak consumption tapering in major importers (China and Vietnam)
  • Supply-side constraints in major exporters (Australia and Myanmar)
  • Liberal trade policies can change

• Multiple scenarios

• Next steps
  • Incorporation into modelling, forecasting, simulations
  • Implications for small-holders

• Comments welcome on
  • Methods
  • What stands out
  • Scenarios to model
  • Anything else