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# Macro developments in the China and Southeast Asia beef sector

Scott Waldron, Luong Pham, Dominic Smith, Phan Sy Hieu, Dong Xiaoxia, Colin Brown

**ACIAR Project**

**“Beef markets and trade in China and Southeast Asia”**

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**Asia  
Beef  
Network**

[www.asiabeefnetwork.com](http://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 forcecasting and running scenarios



Statistical analysis



Industry research / papers

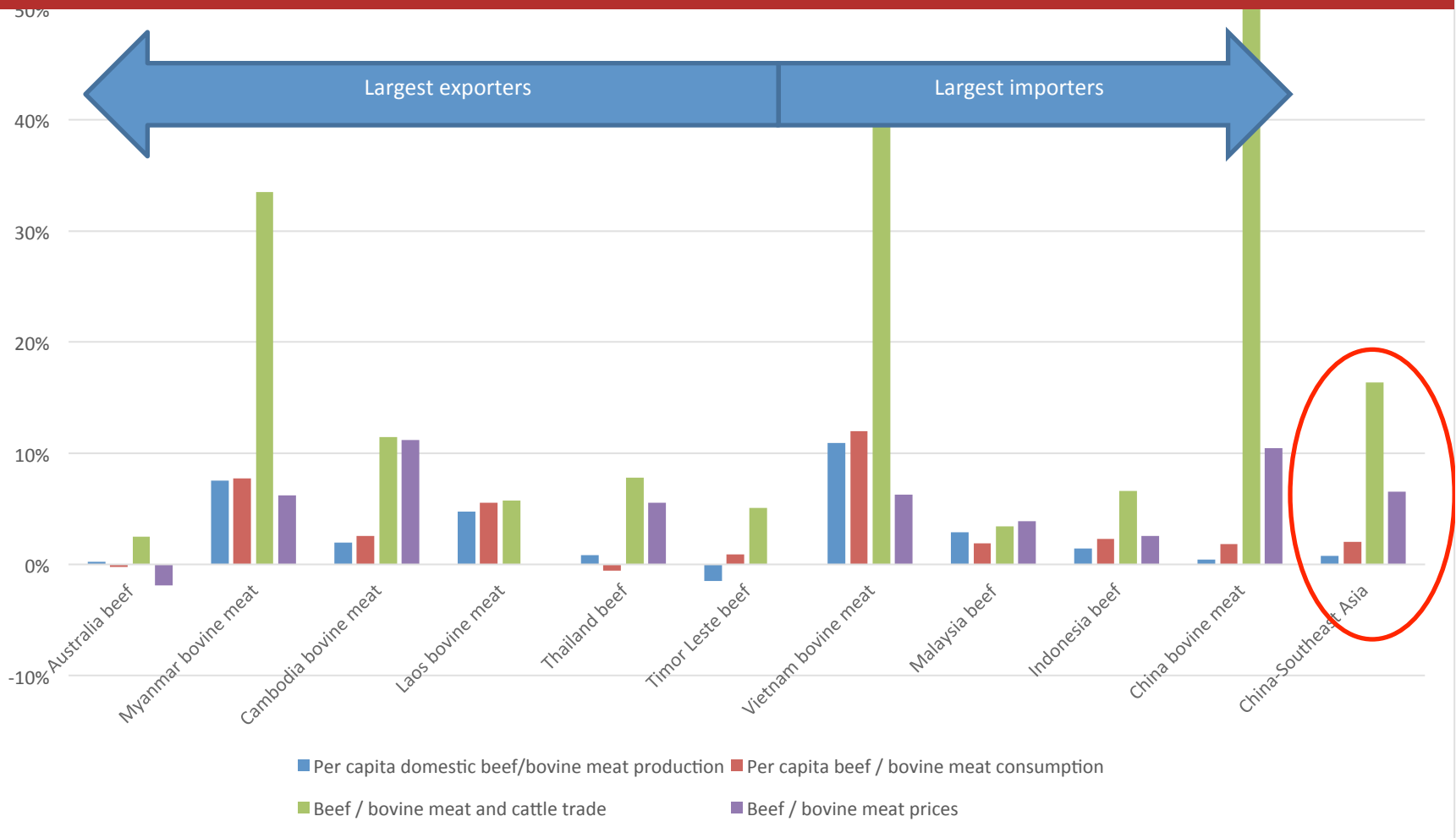
# International livestock revolution

- 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

# Combined aggregate indicators



Compound Annual Average Growth, 2000-2014

Source: various country data

## 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

# Per capita supply

	Australia beef	Myanmar bovine meat	Cambodia bovine meat	Laos bovine meat	Thailand beef	Timor Leste beef	Vietnam bovine meat	Malaysia beef	Indonesia beef	China bovine meat	China & SE Asia
<b>Beef supply</b>											
Beef supply (kg/person 2014)	62.7	2.1	1.2	3.7	1.8	1.5	4.3	7.2	2.7	5.4	4.7
Annual growth 2000-2014 (%)	<b>-0.3%</b>	7.7%	2.6%	5.6%	-0.5%	0.9%	<b>12.0%</b>	1.9%	2.3%	<b>1.8%</b>	<b>1.9%</b>
<b>Demographics (annual growth 2000-2104)</b>											
Population growth	1.5%	0.8%	1.6%	1.6%	0.6%	2.3%	1.0%	1.8%	1.3%	0.5%	<b>0.7%</b>
Urbanisation rate	0.2%	1.5%	0.7%	4.1%	3.2%	1.9%	<b>2.1%</b>	1.3%	1.7%	<b>3.1%</b>	<b>2.8%</b>
GDP per capita	1.5%		6.0%	5.7%	3.5%	2.9%	<b>5.2%</b>	3.0%	4.0%	<b>9.2%</b>	<b>5.3%</b>

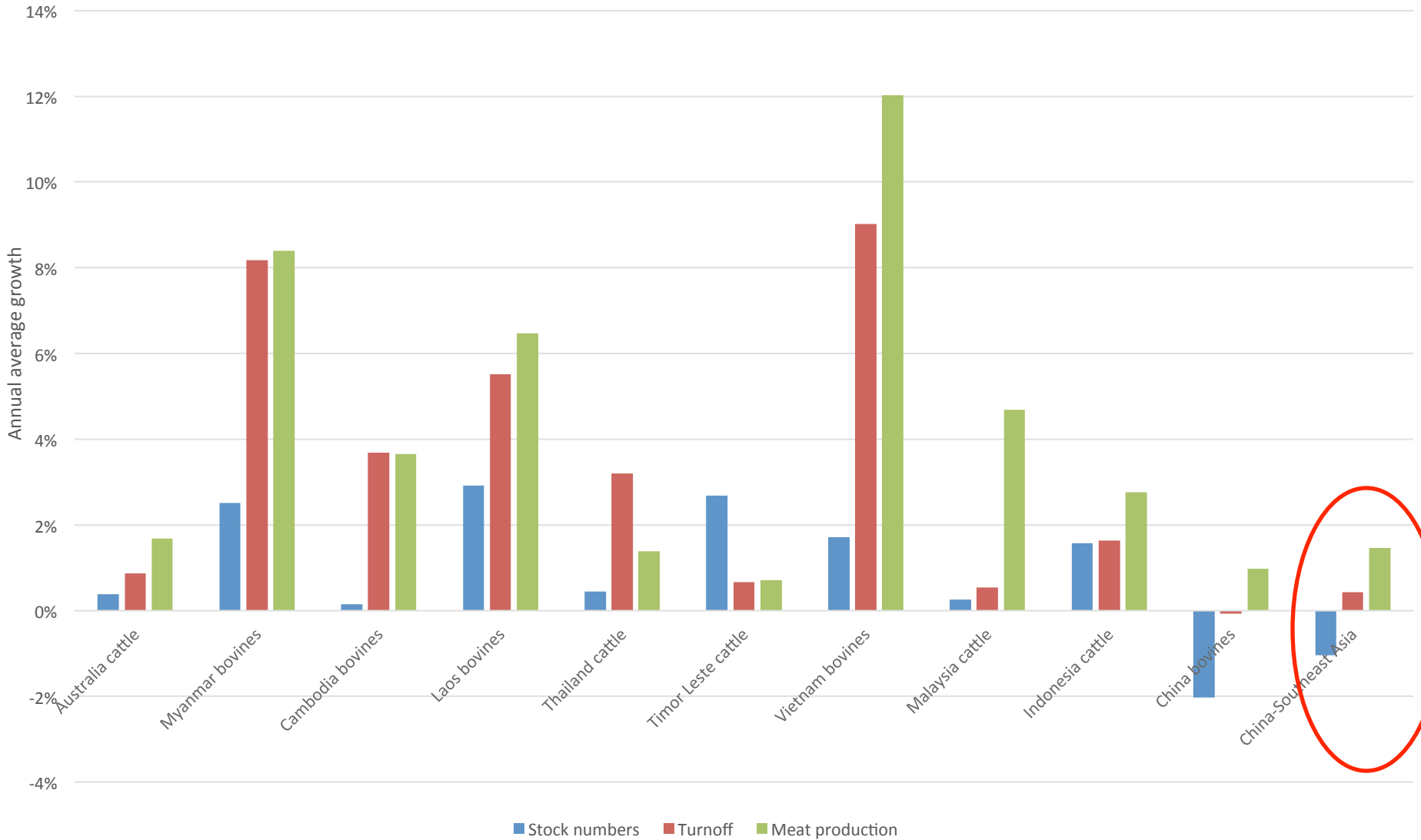
Per capita supply = domestic production (cwe) + net trade.

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

# Production indicators

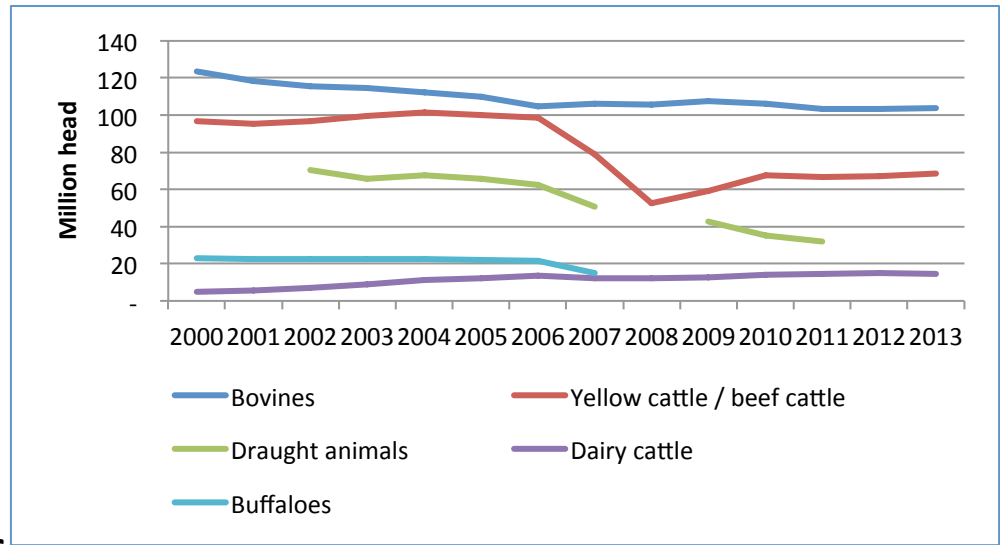


Average annual growth in cattle and beef production, 2000-2014

# Drivers in the production sector

## Lagged production responses / stock numbers

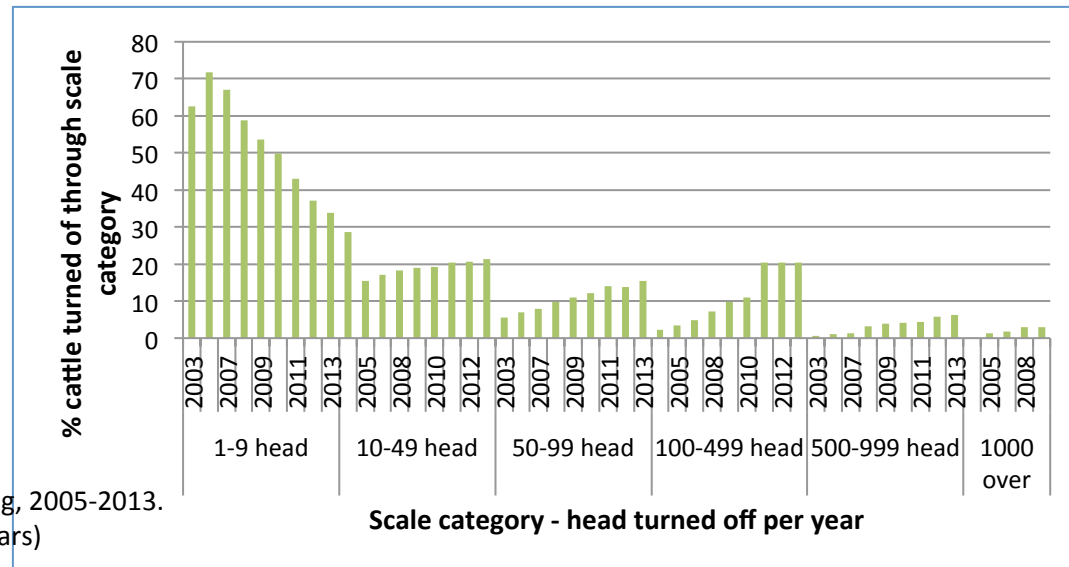
- Farm mechanisation / draught in some countries (China below, Myanmar)
  - Opportunity cost labour
  - Long cattle production cycles
- = Low S-side price elasticities



Composition of the Chinese bovine herd, 2000-2013.  
China Livestock Yearbook (various years)

- **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)

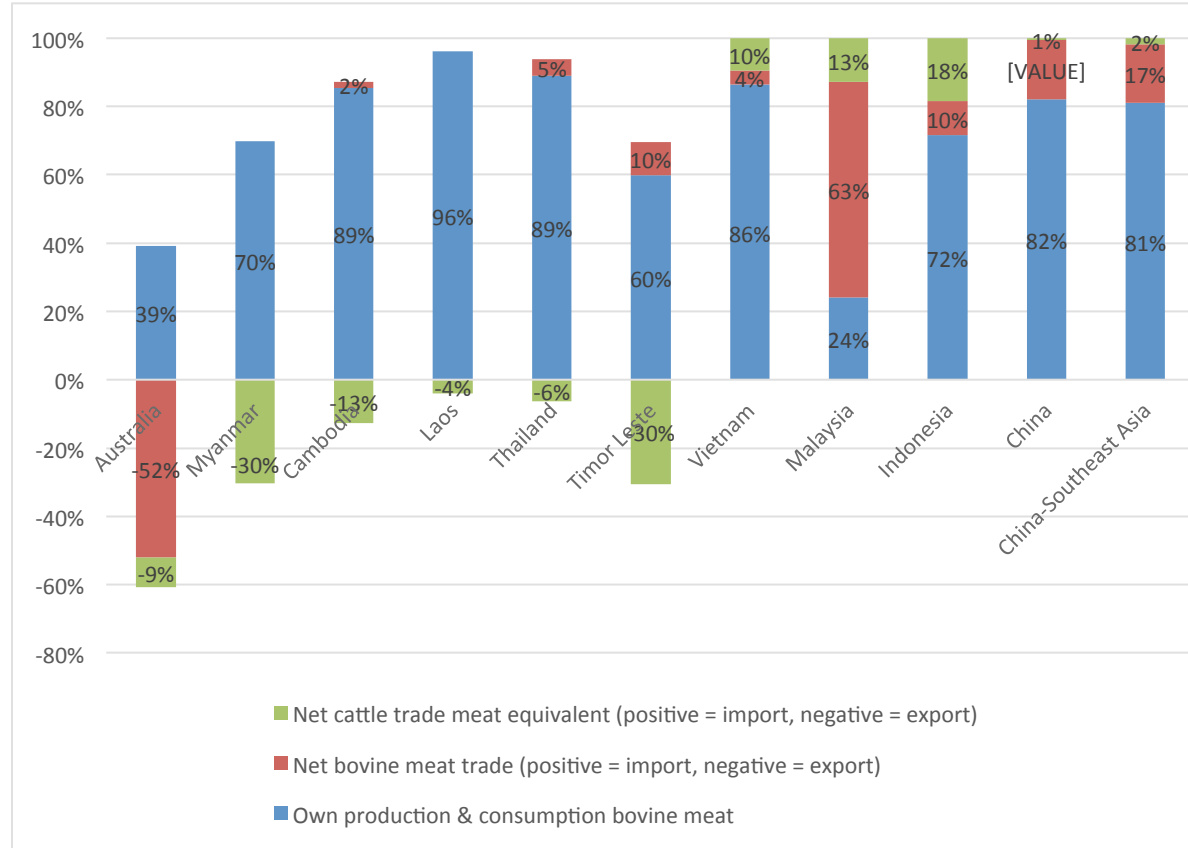


Scale of cattle production in Shandong, 2005-2013.  
China Livestock Yearbook (various years)



# Trade

	Net cattle & beef trade 2014	Annual growth 2000-2014
	000 tonnes cwe	%
Australia	-1,579	2%
Myanmar	-52	33%
Cambodia	-3	11%
Laos	-2	6%
Thailand	1	8%
Timor Leste	-1	5%
Vietnam	49	43%
Malaysia	162	3%
Indonesia	198	7%
China	1,330	55%
China-SE Asia	1,679	16%

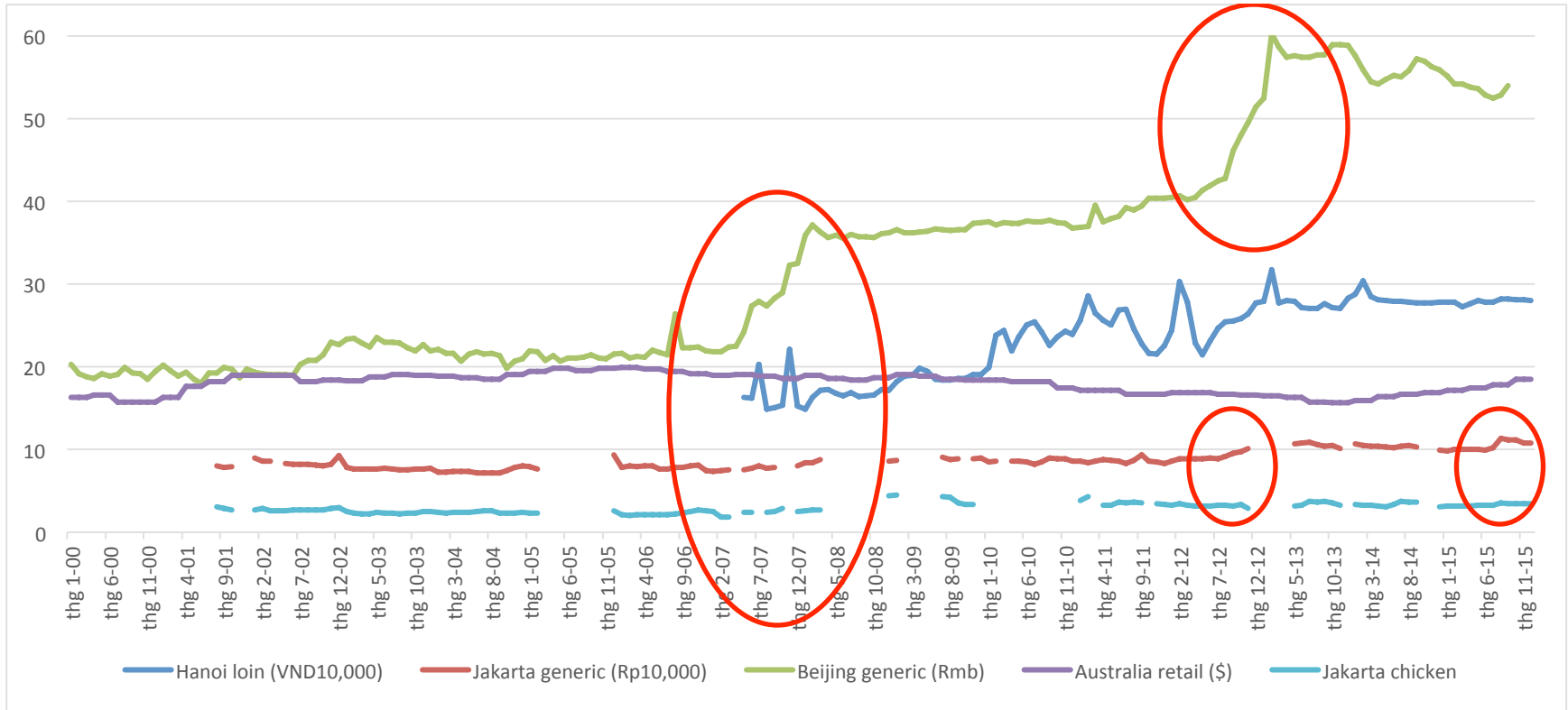


Trade as a proportion of domestic production/consumption

## 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)

# Prices



## Real beef prices in local currency units, 2000-2015. (2015=100).

Source: China Livestock Yearbook; Ministry of Agriculture; (Vietnam) Ministry of Agricultural and Rural Development; Australian Bureau of Statistics

Shows:

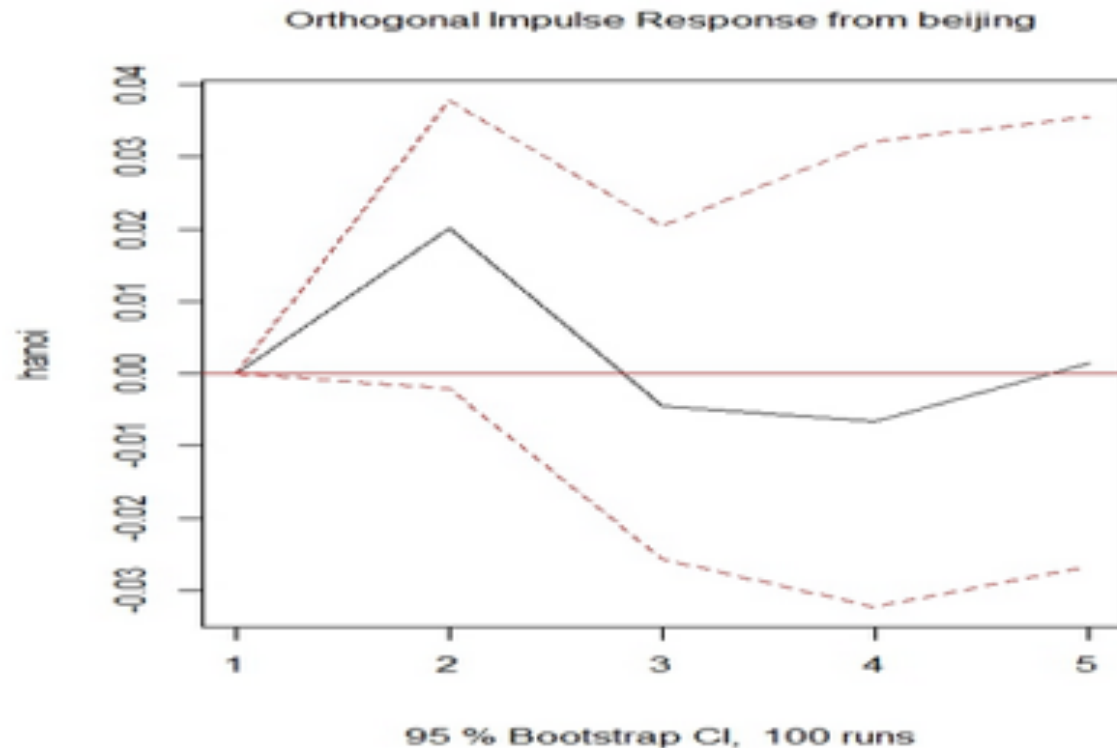
- Spikes
- Integration

	Hanoi loin	Jakarta generic	Beijing generic	Australia retail	Jakarta chicken
2000-2014		1.3%	8.3%	-0.5%	-0.4%
2007-2014	8.1%	2.6%	10.6%	-2.2%	3.2%

**Compounded real annual av price change by period**

# 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