

# **Competitiveness, competition and regional value chains in agro-processing: the development of poultry across South Africa, Botswana, Zimbabwe and Zambia**

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# Overview

- Aggregate data misses important country and sectoral dynamics
  - Market structure
  - Intermediate products and intra-firm trade
  - Technology and learning
  - Transport costs and demand factors
  - Impact of industrial policies and NTBs
- Studies being done with regional partners – building shared understanding of the challenges across countries from the outset

# Poultry & animal feed: overview

- Largest source of protein; urbanization leading to shift to commercially produced poultry
- Main input costs are animal feed from soya and maize
- Key input: breeding stock licenced from multinationals
- Linkages and coordination from agriculture through levels of production and processing
- Investments in scale production for efficient production
- Productivity:
  - feed conversion ratio depends on breed & expertise
  - slaughtering & packaging
  - scale
- Final products: fresh and frozen poultry products
- Frozen poultry competing with deep sea imports

# Poultry: trade and competitiveness

- Large regional trade deficit in both poultry and animal feed production
  - Mainly due to South Africa's trade deficits (poultry ~ -\$274 million/ 22% of consumption in volume terms (Brazil/Europe); oilcake ~ -\$153 million (Argentina); imports of soybeans + oilcake ~\$584 million
- There is great potential for agricultural production of main inputs in the region
  - Zambia is a net exporter of maize (\$198 million); and since 2012/13 also a net exporter of soybeans, and some oilcake.
  - Zambia animal feed component exports 2015 (\$251 million)

# Poultry VC: multiple levels of production; investment in capabilities; large TNCs at different levels

1

## Vertical integration matters



There is entry

..but at discrete levels

Can this ever create **effective** rivals?

2

## Firms need patient capital



Long path from input to final consumer good

Concentrated, branded, consumer goods markets with longstanding relationships between incumbents

Requires **industrial policy** approach that

- Invests in capabilities
- Takes a value-chain approach to funding
- Coordinates along value-chain
- Regional in scope

# Cost build-up shows significance of different inputs and where market power resides

Item	South Africa		Zambia	
	2012	2015	2012	2015*
Feed cost, kg	0.54	0.39	0.58	0.39
Feed conversion ratio	1.67	1.54	1.67	1.65
Size of bird	1.8	1.8	1.8	1.8
Feed cost per broiler	1.61	1.08	1.74	1.16
Day-old-chicks	0.37	0.38	0.85	0.52
Other costs in broiler production	0.24	0.24	0.25	0.15
*Live chicken (1.8 kg) cost	2.22	1.70	2.84	1.83
*Live chicken (1.8 kg) price	2.64	2.02	3.90	2.44
Live chicken cost per kg	1.23	0.95	1.58	1.02
Abattoir cost / processing per kg	0.29	0.29	0.30	0.30
Processed chicken, per kg, cost	1.52	1.24	1.88	1.32
Processed chicken, per kg, producer price	1.64	1.33	3.01	2.11
Brining levels	30%	30%	0%	0%
Producer price, per kg adjusted for brining	2.13	1.73	3.01	2.11
Fresh poultry producer price (portions)	2.88			
Processed chicken, per kg, retail price (frozen portions)	2.93			

Significant reduction, but still high

Large mark-up  
Market power?

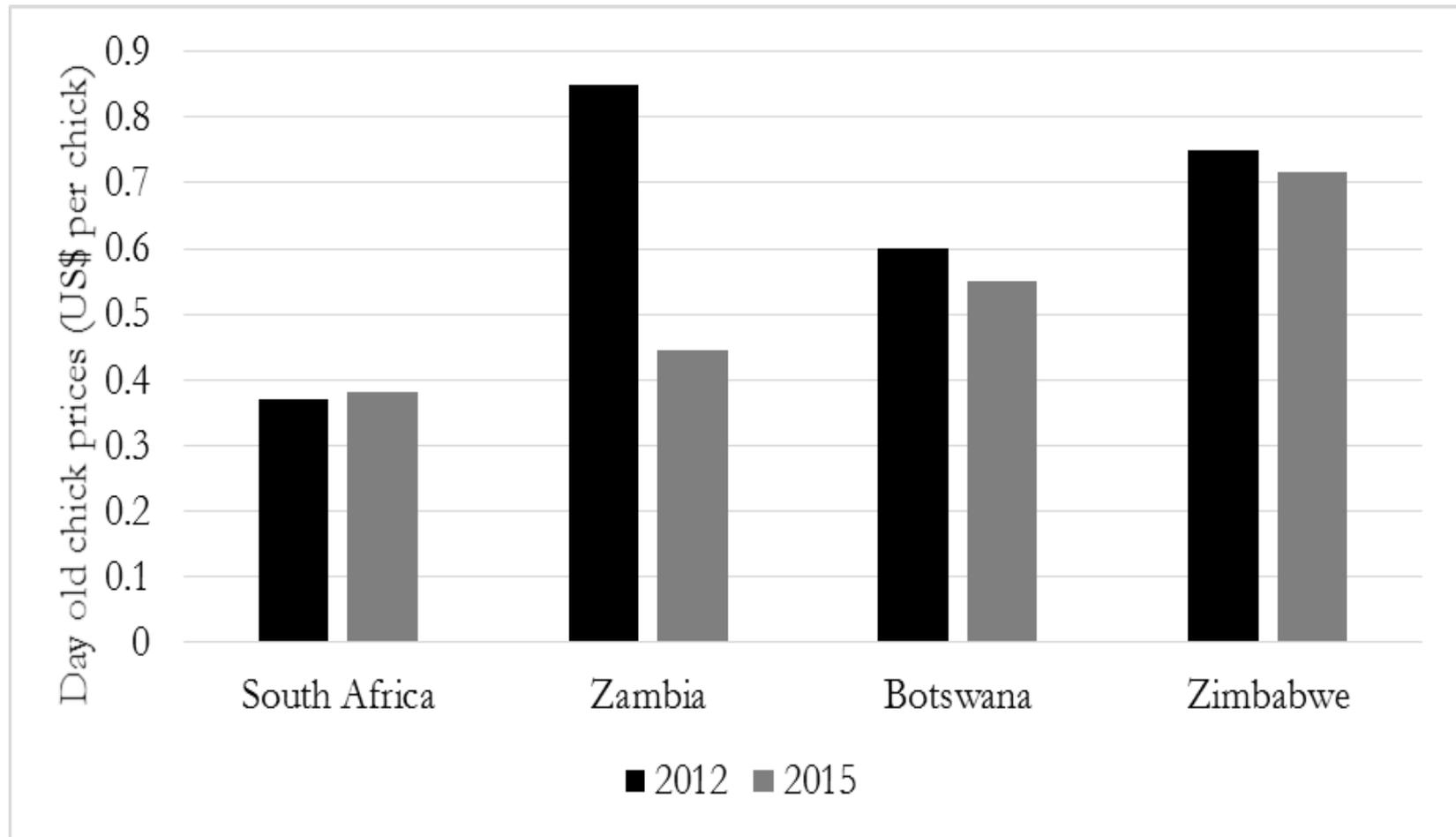
Source: Bagopi et al (2014), Ncube et al., 2016a, and Samboko et al (2016).

Note: \* Data for Zambia have been adjusted from 1,5Kg to 1,8Kg, abattoir processing costs and the profit margin has been assumed to be constant since 2012.



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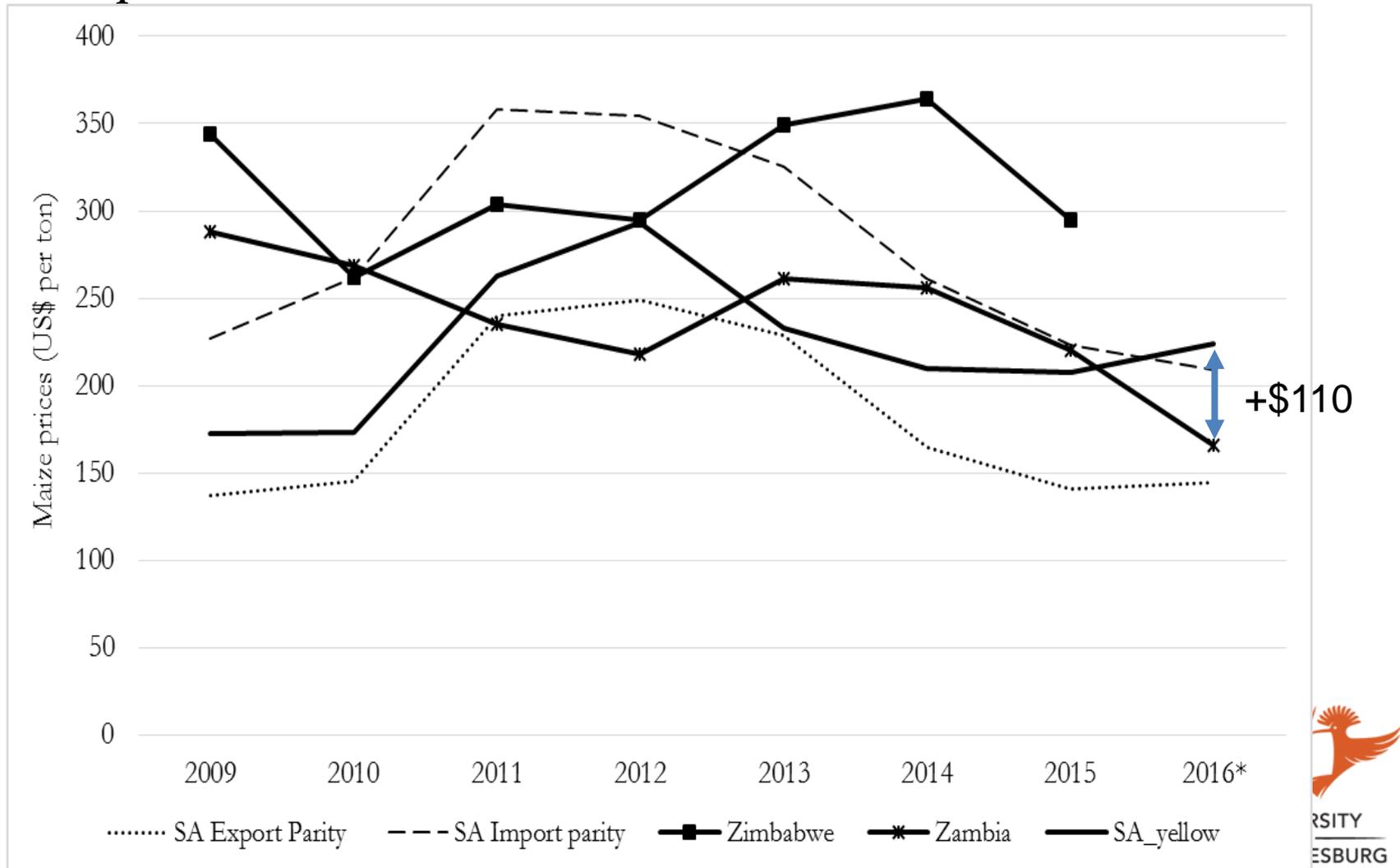
# Inputs: Impact of competition and investment on day-old chick prices in Zambia



# Prices of main inputs reducing in Zambia, but high transport costs and NTBs still limit trade

- Zambia 2016 exported maize to SA, but restricted by policies

## Maize prices



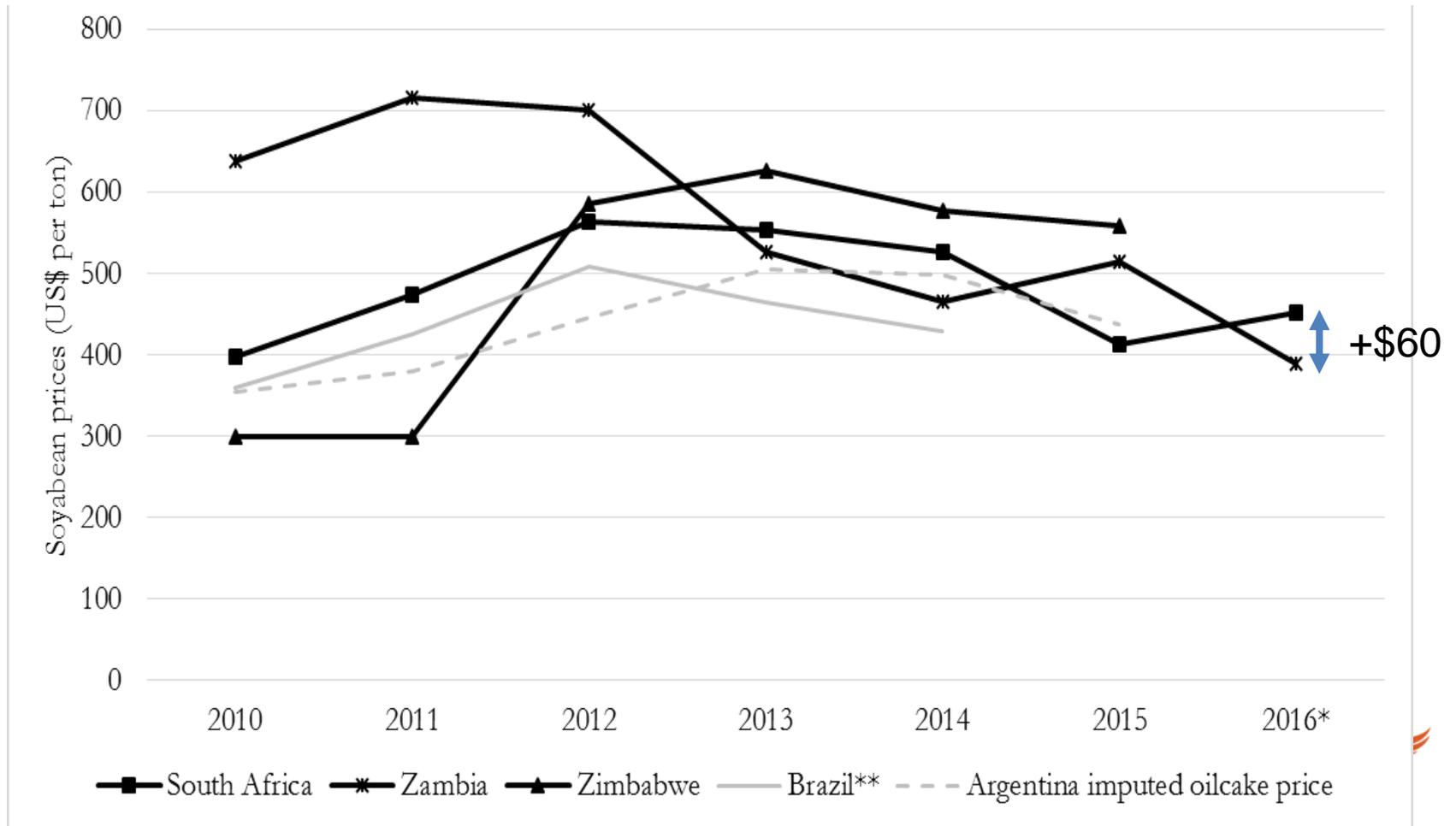
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Source: FAO (2015); SAFEX; Zambia National Farmers Union; Stockfeed Manufacturers' Association). The 2016 prices are up to September 2015 and July 2016 for Zambia and South Africa; Data for 2015 was updated from SAFEX

# Soybean prices

## Key points:

- Cheaper for SA to import from Argentina than transport via road from Zambia
- To replace deep sea imports, price of beans in Zambia drop by ~\$50, and/or transport drop from \$100/t to \$50/t [a competitive price if borders are efficient and NB in line with current Harare – Maputo levels]



Sources: FAOSTAT for Brazil, Zambia and Zimbabwe. SAGIS for South Africa (Randfontein); Trademap for Argentina imputation.

Note: The 2016 prices are up to September for both Zambia and South Africa; Data for South Africa and Zambia was updated from SAFEX and Zambia Farmers Union website respectively. The price from Zambia National Farmers Union is an average of the Central province converted at \$1=ZMW10.1

# Regional value chain for poultry?

- Animal feed and poultry *in the region* dominated by large, vertically integrated firms, with multinational interests
- Large co-ordinated investments
  - Three main companies: Rainbow, Astral, CBH
  - Coordinated investments into the poultry value chain in Zambia → ramped up production of animal feed (quadrupled in five years), day old chicks (DOC prices down by 47%)
  - Companies leveraging investments in one country to benefit those in another
    - Rainbow and Zamchick (Rainbow now exited JV); agreement with Shoprite in Zambia
    - CBH grandparent operations in Zambia supply Botswana, and other markets;
    - NatChicks (Astral) supplying fertilized eggs into Zimbabwe etc)
- Regional value chain?
  - Build competitive inputs supply, coordination and linkages to ensure compete v deep sea imports in Gauteng

# Growing regional value chain?

- Main input costs: investment in commercial agriculture
  - Fertilizer
  - Scale (irrigation, seed etc)
  - Volatility of prices; intra-regional protection
- Large SA-based firms making investments across the region
- Zambia indeed becoming more competitive (soya, DOC)
- But: maize prices inflated by local policies; overland transport costs inhibit Zambian exports to region
- Could Zambia meet the region's demand?
  - Production of soybeans increased (2011: ~110 000 tons; 2015: ~225 000 tons (IAPRI); crushing projected increase to 400 000 tons
  - In contrast, 65% of broiler production carried out by small-scale producers → more coordination would be req'd to reach scale
  - Also, small players carry risk of not being able to keep up with production due to rising costs



# Cross-cutting insights and implications

- Stepwise qualitative change in regional integration has occurred, at different levels from supermarkets and back into value chains
- Potential for collaboration for deep sea import replacement
- Transport costs remain big challenge
  - E.g. \$110/t Lusaka to Gauteng for bulk in 2014 (undermines competitiveness of Zambia feed)
  - Seamless transport (as if within same country) would reduce this significantly to around \$40/t (delays at borders cost \$20/t per day of delay)
- Challenges with diversification of regional economies
- Challenges with policy incoherence between countries
- Poor institutional collaboration across region
- Experience and theory indicates bi-lateral cooperation with better chance of success than pan-regional initiatives