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Cross-border Price Variations and its Causes

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Presentation Outline

- Rationale and Methodology
- Evidence of Price Difference
- Overview of Food Retail Supply
- Overview of Food Product Market
- Analysis of Price Differentials
- Conclusions

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Study Parameters

- Difference in prices of 8 selected food products between Nelspruit and Maputo
- Products:
  - Staple Food products: sugar, chicken, maize flour, tomato, cooking oil
  - Processed Food products: baked beans, tomato paste, tuna
- Prices for standardized specification of each product, in 3 cross-border supermarkets: SPAR, Shoprite, and Game

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Product Specifications

Food Product	Sub-Category	Unit of Measurement	Measurement
Sugar	Brown Sugar	Kilogram (Kg)	1
Chicken	Whole Frozen Chicken	Kilogram (Kg)	1.1
Maize Flour	White	Kilogram (Kg)	1
Tomato	Fresh Tomato	Kilogram (Kg)	1
Cooking Oil	Canola Oil	Liter (L)	1
Baked Beans	In tomato sauce	Gram (g)	410
Tomato Paste	Canned	Gram (g)	400
Tuna	Canned in vegetable oil	Gram (g)	170

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Price Difference, Inclusive of VAT

Product	Brand	Origin	Average Price in Maputo (in MT)	Average Price in Nelspruit (in MT)	Difference
		STAPLE FOOD PRODUCTS			
Chicken	SPAR	South Africa	**145.00**	**82.77**	**42.9%**
Tomato	ZZ2	South Africa	**67.00**	**55.17**	**17.7%**
Sugar	Sunny Brown	Swaziland	**53.33**	**27.57**	**48.3%**
Maize Flour	First Choice	South Africa	**37.50**	**22.00**	**41.3%**
	White Star	South Africa	**40.00**	**21.29**	**46.8%**
	Iwissa	South Africa	**24.80**	**20.74**	**16.4%**
Cooking Oil	Sunfoil	South Africa	**102.88**	**48.15**	**53.2%**
		PROCESSED FOOD PRODUCTS			
Tomato Paste	All Gold	South Africa	**73.02**	**41.25**	**43.5%**
	Miami	South Africa	**51.50**	**31.99**	**37.9%**
Baked Beans	Rhodes	South Africa	**39.14**	**23.72**	**39.4%**
Tuna	John West	South Africa	**92.00**	**53.47**	**41.9%**

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Price Difference, Exclusive of VAT

Product	Brand	Origin	Average Price in Maputo (in MT)	Average Price in Nelspruit (in MT)	Difference
STAPLE FOOD PRODUCTS					
Chicken	SPAR	South Africa	**123.93**	**72.61**	**41.4%**
Tomato	ZZ2	South Africa	**57.26**	**48.39**	**15.5%**
Sugar	Sunny Brown	Swaziland	**45.58**	**24.18**	**46.9%**
Maize Flour	First Choice	South Africa	**32.05**	**19.30**	**39.8%**
	White Star	South Africa	**34.19**	**18.68**	**45.4%**
	Iwissa	South Africa	**21.20**	**18.19**	**14.2%**
Cooking Oil	Sunfoil	South Africa	**87.93**	**42.24**	**52.0%**
PROCESSED FOOD PRODUCTS					
Tomato Paste	All Gold	South Africa	**62.41**	**36.18**	**42.0%**
	Miami	South Africa	**44.02**	**28.06**	**36.2%**
Baked Beans	Rhodes	South Africa	**33.45**	**20.81**	**37.8%**
Tuna	John West	South Africa	**78.63**	**46.90**	**40.4%**

Initial Observations

- Average retail price in Nelspruit lower for all products and all brands, even in the same supermarket chain
- Price differences for identical products as high as 53% (Sunfoil canola) and as low as 16% (Iwissa maize flour)
- Size of price difference does not appear to be related to whether the product is a staple commodity or is processed

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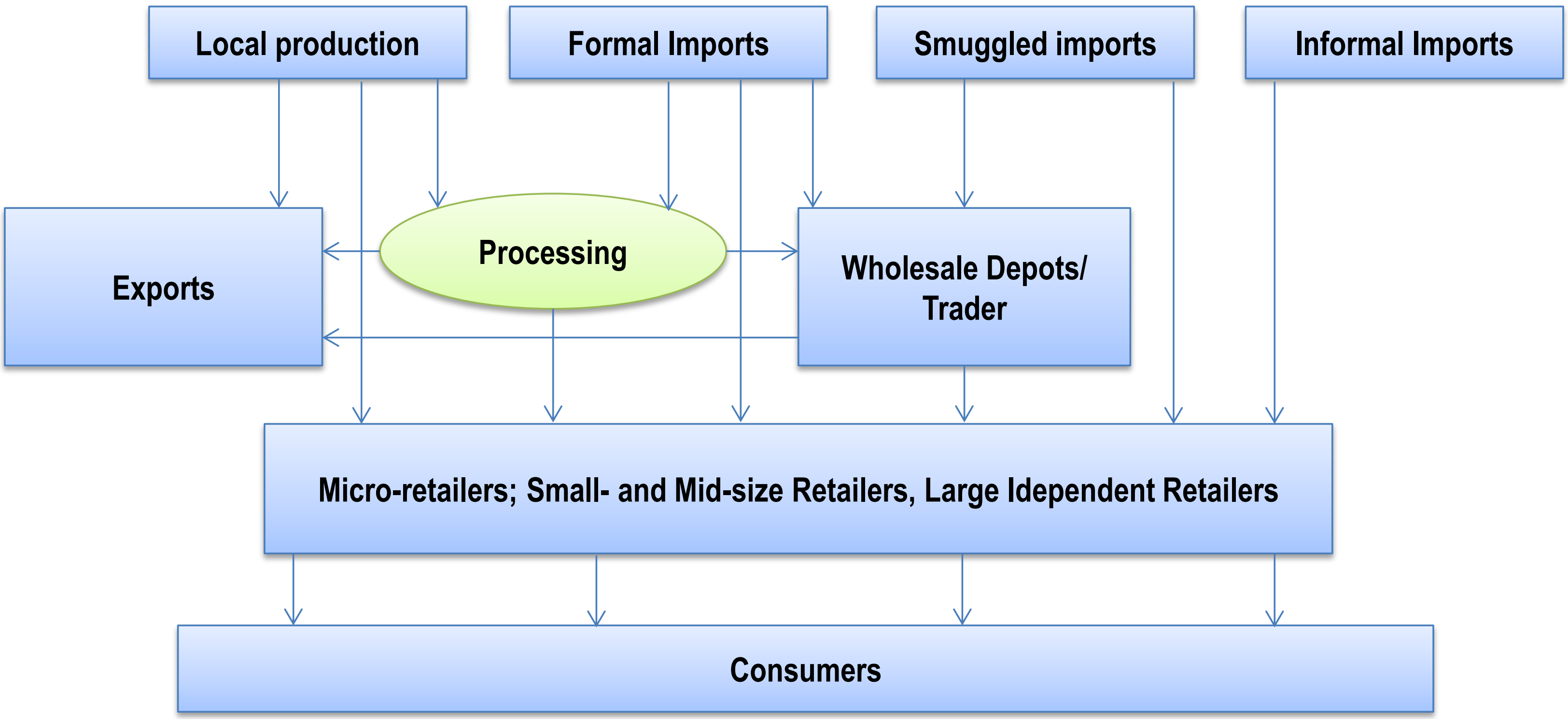
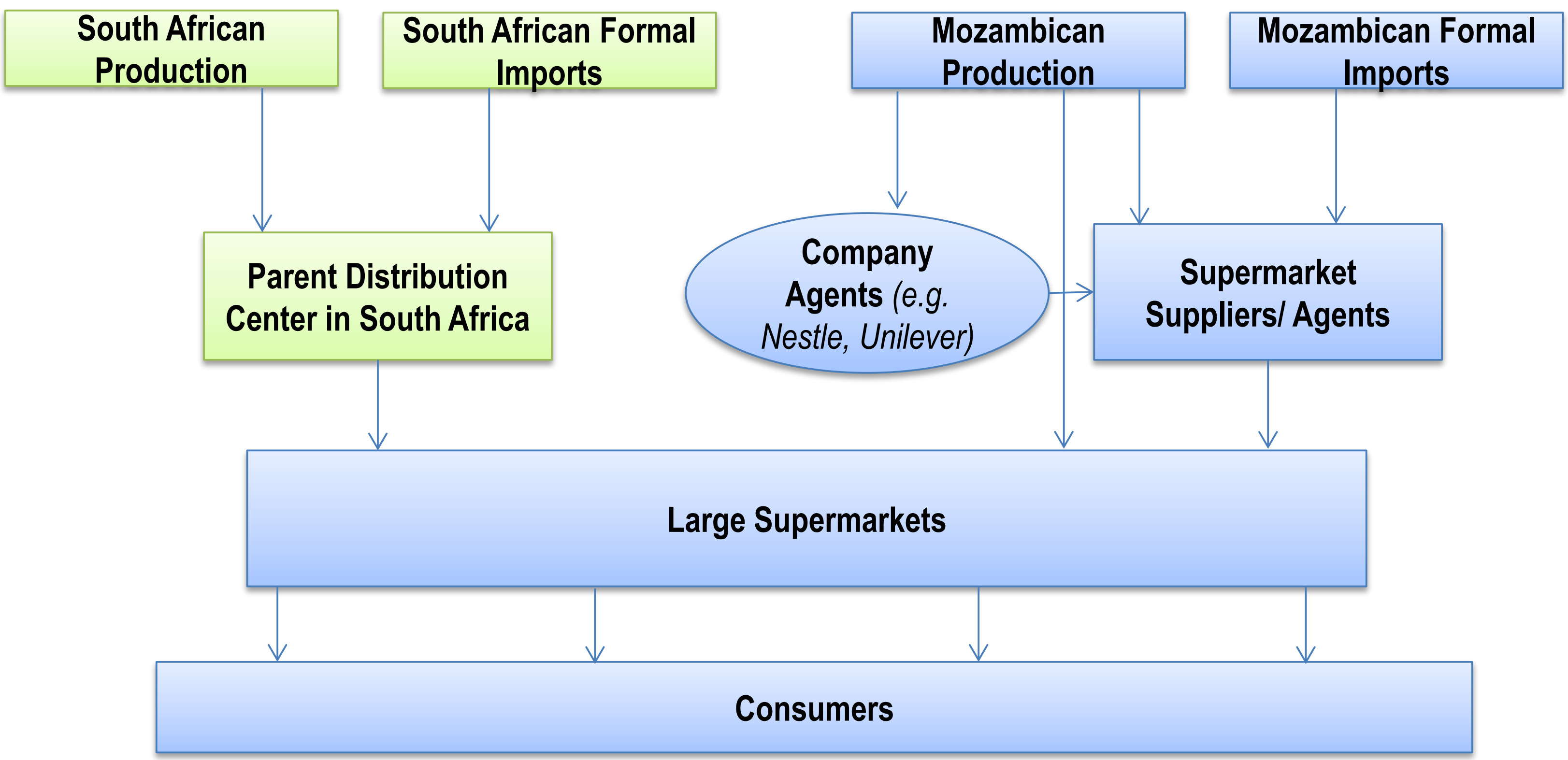
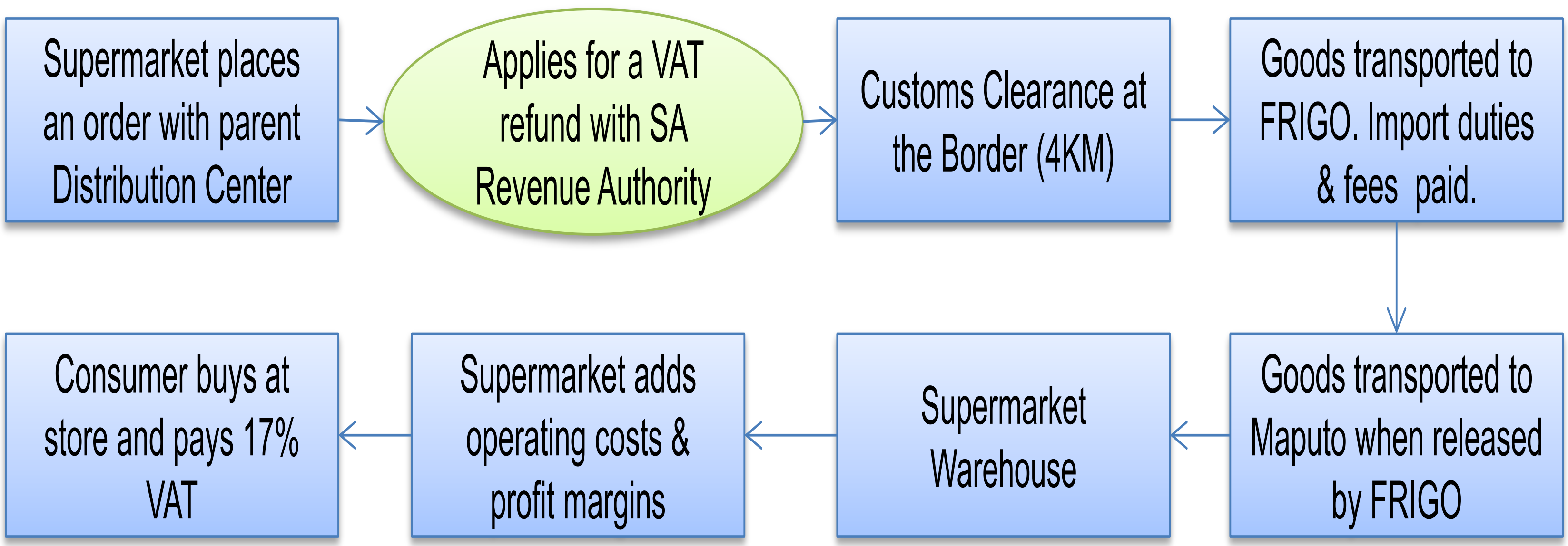
General Retail Supply Chain (Illustrative)



Supermarket Supply Chain (Illustrative)



Supermarket Procurement Route (Illustrative)



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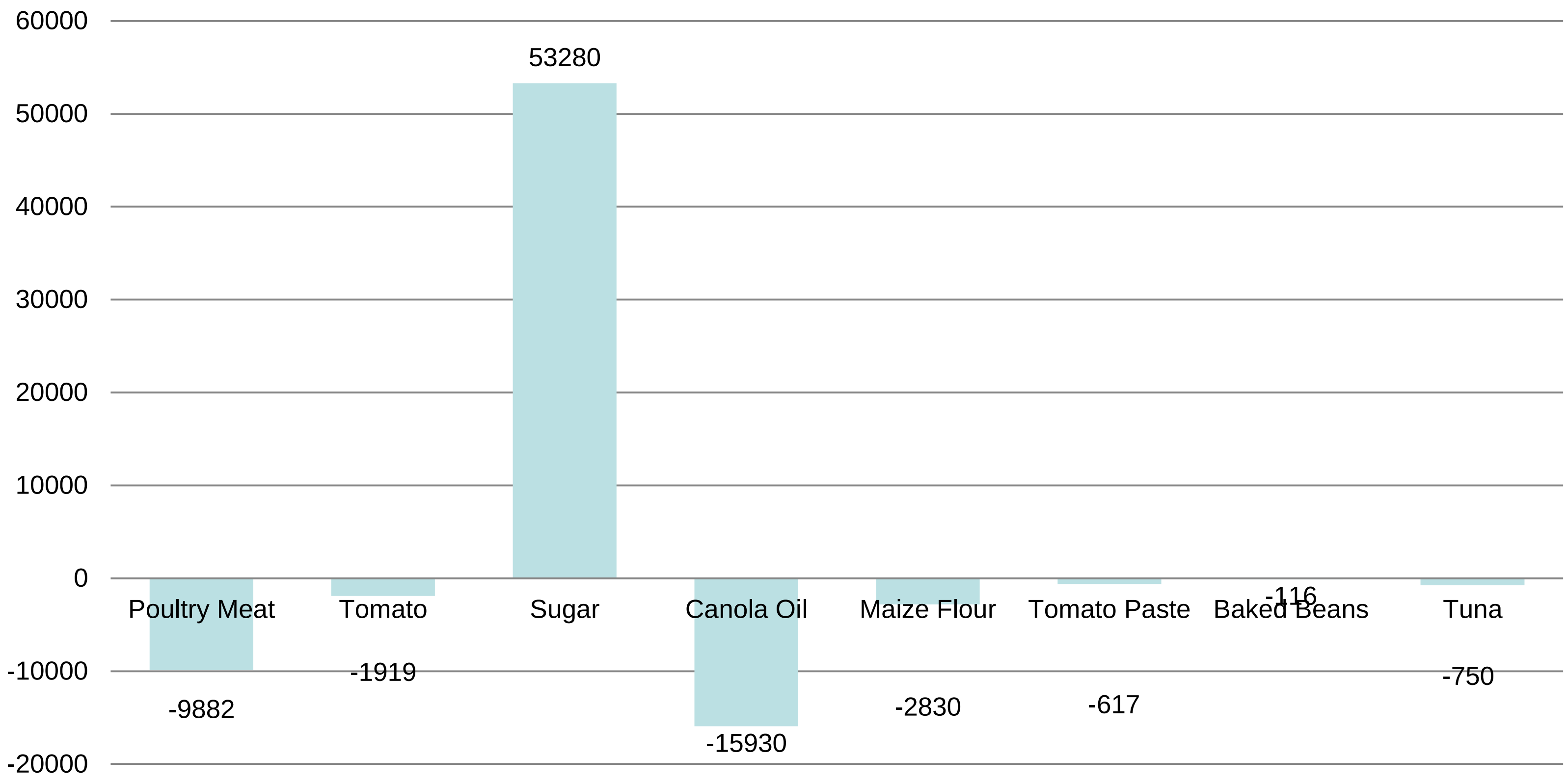
Average Trade Balance (2004-2013), USD



Sugar

- Rapid increasing in production, mainly due to expansion of area under cultivation
- Four major sugar companies; DNA has sole responsibility for imports and exports
- Mozambique is net exporter of unrefined sugar, but imports white refined sugar mainly from SA in “toll-refining”
- Import surtax exists, currently set to zero
- Majority of sugar consumed here is brown sugar
- Supermarkets either procure locally or import via SA distributors

Maize Flour

- Important part of Mozambican diet
- Central & North regions produce surplus; South has maize deficit during off-peak seasons, relying on imports from SA
- Maize production increasing but not enough to meet demand
- Maize grain imported and processed to maize flour. Earlier studies find evidence of high milling costs
- Most maize flour in supermarkets is imported

Chicken

- Consumption exceeds production; central region is largest producer
- Supermarkets in Maputo procure locally or import from Brazil
- SA also imports frozen chickens from Brazil with an 82% tariff
- Chickens from Brazil are highly competitive due to very low feed costs in Brazil
- SA chicken production not viable source of imports: high production costs and high import tariffs
- Interviews reveal informal quotas on chicken imports

Tomato

- Seasonal production in Moz. by small-holder farmers
- Reliance on imports from SA -- 75% of tomatoes exported from SA in 2012 went to Mozambique.
- Cold storage is an issue here
- Reports of cross-border speculators pushing up prices (e.g. in March/April 2012)
- Some supermarkets (Shoprite) buy locally, while others (Game) import via SA distributors

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Cooking Oil

- Imports account for over 80% of domestic demand
- Rising imports from Malaysia, Argentina, Brazil, but SA remains an important trade partner
- Limited financial and storage capacity of oil refineries
- Supermarkets sell oil produced locally as well as imported

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Processed Goods (Baked Beans, Tuna, Tomato Paste)

- Almost all processed goods available in Mozambique are imported
- Food processing industry relatively undeveloped here
- Processed goods consumed mainly by urban higher-income groups
- SA is a major source of imports: large companies involved in food processing and packaging

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Basic concepts

- Market analysis indicates that imports are the source of supply at the margin
- Prices determined by:
  - Supply costs (product procurement, distribution, operating costs and labor productivity
  - Profit margins and cost of capital
  - Local demand factors
  - Market structure (degree of competition)
- Supply conditions affected by border costs, business environment, business risks, infrastructure, taxes…

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The quantitative analysis of price differences

- Start with retail shelf prices, excluding VAT
- From price in Nelspruit, estimate price at distribution center in SA
- Estimate costs for importing to Maputo: transport, insurance, customs, border delays…
- Estimate mark-ups in Maputo
  - For staple products, Decree 26/2011 used to calculate *allowable* operating costs and profit margins
  - For other products, mark-ups derived as residual
- Also examined cost elements affecting mark-ups, such as rents, wages, electricity

Decree 56/2011 Maximum Allowable Profit Margins

Commodity	Wholesaler	Retailer
Frozen Chicken	12%	25%
Fish	12%	25%
Beans	10%	20%
Rice	10%	20%
Maize Flour	10%	20%
Wheat Flour	10%	20%
Cooking Oil	10%	20%
Sugar	10%	20%
Tomato	10%	25%
Onion	10%	25%
Potatoes	10%	25%
Eggs	12%	25%

Sources of data

- Supermarket shelf prices obtained directly in the field
- No access to proprietary data on supermarket costs or mark-ups
- Drew on data from external sources, and from interviews, e.g., days of delay at customs, shipping costs…
- Assumptions required to cover data gaps, e.g. retail operating costs in Nelspruit

→ *Estimates are exploratory, not decisive*

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Difference in Maize Flour Prices

	In MT	As a % of difference
Average retail price of maize flour in Nelspruit	21.29	
Estimated average distribution center price in Nelspruit, net of VAT	16.02	
Average retail price of maize flour in Maputo, net of VAT	34.19	
Difference in average price of maize flour	18.16	
Of which:		100%
Transport Cost for Shipment	2.90	16%
Border Taxes	1.89	10%
Cost of delays at 4KM border	0.17	1%
FRIGO Scanning, Parking & Handling	0.72	4%
Additional Transport Costs due to Delays	2.80	15%
Wholesale and Retail Markup	9.69	53%
Of which:		
Allowance for wholesale operational costs (Decree 56/2011)	1.22	7%
Wholesale Profit Margin (per Decree 56/2011)	2.57	14%
Allowance for retail operational costs (as per Decree 56/2011)	1.98	11%
Retail Profit Margin (per Decree 56/2011)	6.06	
Retail Profit Margin (observed)	3.91	22%
Other price determinants (unexplained residual)	0.00	0%

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Difference in Sugar Prices

	In MT	As a % of difference
Average retail price of sugar in Nelspruit	27.57	
Estimated average distribution center price in Nelspruit, net of VAT	20.75	
Average retail price of sugar in Maputo, net of VAT	45.58	
Difference in average price of sugar	24.83	
Of which:		100%
Transport Cost for Shipment	2.90	12%
Border Taxes	0.71	3%
Sugar Surtax	0.00	0%
Cost of delays at 4KM border	0.17	1%
FRIGO Scanning, Parking & Handling	0.86	3%
Additional Transport Costs due to Delays	2.80	11%
Wholesale and Retail Markup	17.40	70%
Of which:		
Allowance for wholesale operational costs (Decree 56/2011)	1.41	6%
Wholesale Profit Margin (per Decree 56/2011)	2.96	12%
Allowance for retail operational costs (Decree 56/2011)	2.28	9%
Retail Profit Margin (per Decree 56/2011)	6.97	28%
Other price determinants (unexplained residual)	3.78	15%

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Price Build-up for Imported Frozen Chicken

	Maputo	Nelspruit
FOB Value of 1.1 Kg of Whole Frozen Chicken (USD)	1.97	1.97
Freight and Insurance Costs to Durban (USD)	0.51	0.51
Est. CIF Value of 1.1 Kg of Whole Frozen Chicken at Durban (USD)	2.48	2.48
Est. CIF Value of 1.1 Kg of Whole Frozen Chicken at Durban (MT)	74.33	74.33
Import Duties for chickens entering South Africa (via Durban)	0.00	61.70
Custom fees and cost of delays at port in Durban	1.86	3.72
Transportation from Durban, by sea to Maputo and by road to Nelspruit	0.10	1.86
Est. CIF Value of 1.1 Kg of Whole Frozen Chicken at Maputo (MT)	76.29	N/A
Import Duties (Maputo)	7.63	0.00
Custom fees and cost of delays (Maputo)	0.68	0.00
Warehouse operating costs (as allowable by Decree 56/2011)	4.23	3.54
Warehouse markup (as allowable by Decree 56/2011)	10.66	3.63
Retail operating costs (as allowable by Decree 56/2011)	6.96	3.72
Retail markup (as allowable by Decree 56/2011)	26.61	3.81
Final retail price (from price buildup)	133.07	156.30
Observed average retail price, exclusive of VAT	123.93	72.61
Unexplained difference	-9.13	-83.70
Unexplained difference (as a percentage of observed prices)	-7%	-115%

Summary of Price Differential

Commodity	Observed Price Differential (in MT)	Proportion of Price Differential		
		Moving goods to Maputo	Wholesale & retail markups	Unaccounted Residual
Sugar	24.83	30%	55%	15%
Maize Flour	18.16	47%	53%	0%
Chicken	51.33	-	-	-
Tomato	24.61	35%	65%	0%
Cooking Oil	34.50	29%	61%	10%
Baked Beans	15.60	19%	81%	N/A
Tomato Paste	31.36	11%	89%	N/A
Tuna	38.39	8%	92%	N/A

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Observations from Analysis

- In nearly all cases, the estimated retail and wholesale markup is the main source of price differential
- Sales markup is higher for processed products
- Even for staple foods, markups account for at least 50 percent of the observed price differences
- Among staple food products, sugar appears to have the highest retail markup differential—accounting for about 70% of the difference in prices

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Broader issues

- Address infrastructure gaps to connect production regions to consumption markets (e.g. for maize)
- Promote greater competition (e.g. in the case of processed foods, sugar)
- Continue pursuing business environment reforms
- Development of effective links between supermarkets and local producers

Needed Focus for Price Reduction in Maputo

- Enforceability of Decree 56/2011
- Address loopholes permitting retailers to structure procurement systems to maximize mark-ups
- Improve capacity within MIC and other governing agency to collect and analyze market data
- Reconsider the allowable margins specified in *Decreto 56/2011*
- Revisit import restrictions

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Harbinger of price reductions?

- SADC Trade Protocol 2015
- Harmonization of the 4KM border and FRIGO near Maputo
- Further improvements in business environment

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Areas for further research

- Study the chicken-sector pricing puzzles!
- Examine the viability and effectiveness of Decree 56/2011
- Revisit analysis of price differences with more detailed data on cost structure
- Further study on price differences within Mozambique, including differences between supermarkets and smaller food shops
- Evaluate economic impact of price controls and import restrictions

Thank you!
Obrigado!