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PRICE VARIATIONS IN MOZAMBIQUE

FINAL REPORT

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Acronyms

AMA	Mozambican Association of Poultry Farmers
CIF	Cost, Insurance and Freight
CIM	Companhia industrial da Matola
CIMPAM	Companhia de Processamento Industrial de Milho
CPI	Consumer Price Index
CTA	*Confederação das Associações Económicas de Moçambique*
DNA	Distribuidora Nacional do Açúcar
DNSV	National Directorate of Veterinary Services
GCR	Global Competitiveness Report
GDP	Gross Domestic Product
MIC	Ministry of Industry and Trade
MOBEIRA	Moagem da Beira
ROE	Return on Equity
SADC	Southern African Development Community
SOCIMOL	Sociedade Comercial e Industrial de Moagem
UGC	Union of Agricultural and Livestock Cooperatives
USAID	United States Agency for International Development
USD	United States Dollar
VAT	Value Added Tax

Executive Summary

Since the end of the civil war in 1992 and subsequent liberalization policies and opening up of borders with South Africa, shoppers from Maputo have regularly made the 200 kilometer trip to Nelspruit to stock up on groceries, clothes, and other household needs. This is despite the fact that supermarkets of South African origin have opened shop in Maputo since the late 1990's offering similar varieties of products in Maputo and neighboring cities. Shoppers evidently find the additional cost of making the trip to Nelspruit and back to be cheaper than buying the commodities directly in Maputo. This is because prices for a wide range of commodities tend to be higher in Maputo than in Nelspruit, and in many instances, are significantly so.

This study presents an exploratory analysis of possible sources of the difference in prices between Maputo and Nelspruit. It focuses on eight commodities—sugar, chicken, tomato, maize flour, cooking oil, tomato paste, baked beans, and tuna. Of the eight commodities, five are staple products and three are processed goods. We present a brief overview of commodity markets to bring the price differential analysis in context as each of the eight commodities have differing market contexts in Mozambique and in South Africa. Specifically, we compare supermarket prices of these commodities in Nelspruit and Maputo—comparing the same brand of products sold in the same or comparable supermarkets in the two cities. We have picked three supermarkets that operate in both cities—Shoprite, SPAR, and Game—for the price comparison.

For analyzing the price differences for commodities imported from South Africa, we examine the difference in price in terms of observable factors such as border taxes, transportation costs, customs fees and delays, and derive estimates of the retail markup. In one instance—chicken—where there does not appear to be a supply chain relationship between South Africa and Mozambique, we build up prices in the two cities by comparing border taxes, transportation costs, custom fees and delays, and estimates of the retail markup for both Nelspruit and Maputo. However, we uncover inconsistencies between observed prices of chicken in Nelspruit and that obtained from calculating chicken prices using c.i.f. value of chicken imported from Brazil and applying import taxes.

The study finds that prices in Nelspruit are consistently lower for all brands of the eight commodities considered. Nominal price differences, inclusive of VAT, ranged from a low of about 16 percent for the Iwissa brand of maize flour to a high of 48 percent for the Sunny Brown brand of brown sugar produced in Swaziland. Exclusive of VAT these price differences were 14 percent and 47 percent, respectively. Prices were observed to be lower in Nelspruit, even for the same brand of commodity sold at the same supermarket in Maputo. The difference in prices did not seem to be related to whether the commodity is a staple product, or a processed good.

We also examined difference in prices between Maputo, Beira, and Nampula, using prices in Shoprite, which is the only department store that currently operates in all three cities. We find that there are no difference in prices of commodities between Beira and Nampula, except for the prices of tomatoes, which is the only seasonal commodity among the eight selected for this study. Prices between Maputo and Beira, and between Maputo and Nampula were observed to be different in most instances by the exact amount. Maputo prices were higher for all commodities,

except tomato and chicken. Prices in Maputo were higher from a range of 7 percent for Top Score maize flour to 40 percent for Sunny Brown sugar. In examining monthly price data for a few commodities, we found co-movements of prices of tomatoes between the three cities to be the most significant. However, even in the case of tomatoes, the pairwise correlation coefficient was observed to be less 65 percent. The price differentials themselves between the three cities were not as significant as they were between Nelspruit and Maputo.

Our analysis of the difference in prices between Nelspruit and Maputo finds that retail and wholesale markup constitutes the biggest element of the price differential for all commodities. Sales markup accounted for about 53 percent of the price difference in the case of maize flour to about 92 percent of the price difference in the case of tuna. Sales markup appears to be higher for processed goods than for staple commodities. This is likely due to several reasons. First, the profit margins for the five staple commodities chosen for this study are regulated under Decree 56/2011, which restricts maximum allowable margins for wholesalers and retailers each, for these commodities. Second, the domestic industry for processed goods is at its nascent stage, if not non-existent. Hence, imported processed foods are the only source of supply and hence, prices for these commodities are observed to be higher.

As information about retail markup is difficult to find (given its proprietary nature), we utilize the provisions on allowable profit margins for the case of sugar, tomato, maize flour, and cooking oil to unpack the retail markup for these commodities. Profit margins and operating costs thus estimated fully explain the price differences in all but two commodities—sugar and cooking oil, where residuals of 15 percent of the price difference and 10 percent respectively are due to factors other than import duties, custom fees, transport costs, profit margins, and operating costs. A summary of the price differential between Maputo and Nelspruit is show in Table A below.

Table A: 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

Source: Author's data collection and calculations

The analysis of price difference vary slightly for two commodities—tomatoes and chicken. Of the two supermarkets available for interviews for this study, Shoprite claimed to procure most of its tomatoes locally with direct contracts with farmers, while Game procures all of its fresh produce from South Africa. Import parity price for tomatoes offers a ceiling price for domestically produced tomatoes. For our analysis, we therefore use only the prices of tomatoes at Game in Maputo to analyze the difference in tomato prices in Maputo and Nelspruit. This is in contrast to

our analysis of other commodities, where we use average retail prices. In the case of chicken, the supply chain of Mozambican supermarket procurement system seems to be completely delinked from South Africa. As chicken feed is imported in both South Africa and Mozambique due to the high costs of chicken soy feed production in both countries, domestically produced chicken in South Africa is just as uncompetitive as Mozambican chicken. This is especially so when compared with prices of chicken imported from Brazil, which is one of the largest producers and exporters of soy. The price difference analysis for the case of chicken therefore follows the supply chain for imported chicken in both countries until it reaches the supermarkets in Nelspruit and Maputo. Calculating chicken prices this way in our analysis uncovers inconsistencies with observed prices in Nelspruit, which we discuss in the following sections.

Profit margins are being regulated by Decree 56/2011 for about twelve staple commodities in Mozambique, five of which—maize flour, sugar, tomatoes, chicken, and cooking oil—are included in our study. We observe high markups for these commodities as well. For commodities such as tomatoes and maize flour, which face competition from the domestic market, markups are slightly lower than the maximum wholesale and retail markups allowable by the Decree. For other commodities such as cooking oil, supermarkets are able to potentially apply the full markups allowed for warehouses and retailers, if their procurement systems are structured appropriately. The presence of high markups even for regulated commodities seems to suggest lack of enforcement of the Decree and interviews with MIC confirm that there is lack of capacity to effectively enforce the Decree, and penalize non-compliant retailers. There is also a question that the decree itself may be encouraging supermarkets to apply higher markups, being that the established ceilings appear to be in excess of industry norms.

High prices of commodities in Maputo also indicate other market conditions. For instance, in the case of sugar, the body representing sugar producers in Mozambique—DNA—is the sole importer of refined sugar into the country. This allows for uncompetitive behavior and resultant hikes in prices. Processed foods, for instance, have no competition from the domestic market as agro-processing and manufacturing industry in Mozambique is at its very nascent stage. Almost all of the processed foods, such as baked beans, tomato paste, and tuna, are imported. This allows supermarkets to charge a higher markup for these commodities, as these commodities are also generally consumed by high-income groups.

The case of maize flour points to other structural inefficiencies. First, the northern and central regions which are surplus maize producing zones export to neighboring countries like Malawi. This is while the southern zone is a net deficit zone for maize. Due to lack to transport infrastructure that can alleviate intra-country transportation costs, it is easier to export maize to neighboring countries than to transport to the southern zone where there is high demand. Second, there are reports of high costs of maize processing in Mozambique, compared with other African countries. While prices of maize grain are comparable, maize meal processed in the country tend to be much higher—pointing to a need to make the milling industry more competitive.

Finally, our study suggests a need for improvements in the country's business and regulatory environments. Problems in a country's business environment, such as high costs of getting credit, or paying taxes, invariably gets transmitted to the final price of a consumer good. In addition, as

will be discussed in the main text of this report, regulations and mandates that perpetuate market inefficiencies in order to protect an industry do so at the cost of the consumer.

1. Introduction

For over a decade, shoppers from Maputo have regularly trekked to the Riverside Mall and other shopping centers in the cross-border city Nelspruit in South Africa to buy basic commodities, such as tomatoes, chicken, furniture, clothes, and the like. Despite the cost of cross-border travel and a growing number of large retailers—mainly of South African origin—opening centers in Maputo, this shopping behavior is far from ending due to the persistence of cross-border price differences for the same or similar commodities. The volume of business for South African retailers from Mozambican customers has even prompted the South African Revenue Authority to set up VAT refund kiosks in the vicinity of the Nelspruit shopping centers.

The law of one price states that prices of the same commodity in different countries would be equal, when measured in the same currency, if there were no barriers to trade, no transport costs or border costs, and perfectly functioning markets. In practice, of course, price variations inevitably arise when goods move across borders due to trade and transport costs, barriers to trade, and possible market imperfections. It should be possible, though, to reasonably explain these price variations at the retail level by examining the costs incurred by retailers for importing goods from South Africa into Mozambique, possibly in combination with differences in operating costs, the cost of capital, and general costs of doing business in each country. Another factor may be differences in market power due to competitive conditions in each location.

Large price differences between South Africa and Mozambique—specifically between Nelspruit and Maputo—raise interesting questions for several reasons. First, the two cities are only about 200 kilometers apart; therefore, trade between these two cities presumably involves relatively low transportation costs. Second, a number of large retailers operating in Nelspruit also have outlets in Maputo and utilize similar, if the not the same, distribution networks, including the supply of many goods that are identical in the two markets. Third, a large number of informal cross-border traders, *mukheristas*, operate in Mozambique, who supply goods from Nelspruit to Maputo (among other trans-border cities), presumably helping to equalize prices by increasing supply responses and limiting market power for the larger retail chains. Fourth, in 2015, Mozambique will eliminate most of its tariffs for goods being traded with South Africa in compliance with the SADC protocol, so this cost factor should be disappearing. To the extent that price differences stem from lack of competition in the urban retail market in Mozambique, or systemic weakness in Mozambique's economic competitiveness, the country will have to ramp up its efforts to encourage competition, streamline the business environment, and boost the supply of competitively priced local production of basic foods.

This study presents an exploratory analysis of price variations on basic food products that are sold in large supermarkets that operate both in Nelspruit and in Maputo. We also examine price

differences between three major markets within Mozambique—Maputo, Beira, and Nampula. There are four main findings from this analysis. First, by collecting data on shelf prices for identical food products in both cities, the study confirms that price variations between the two cities are indeed large, ranging from 18% to 53%. Second, our cost estimates indicate that observable factors such as transportation and border costs (including the cost of border delays) account for less than half the observed price difference for every commodity examined; this implies that more than half of the price difference derives from markups at the retail, wholesale, or warehouse stage of the supply chain.[1] Third, the large markup component in the price difference raises serious questions about the competitive structure of the retail industry, inefficiencies in the market for these commodities, and the underlying costs of doing business in Mozambique. Finally, the analysis calls into question the efficacy and advisability of a decree issued in 2011 (*Decreto 56/2011*) that placed limits on wholesale and retail markups for basic foods, for the purpose of reducing food prices; it is even possible that the decree has had the effect of inviting markups to be higher than usual in the retail food industry, at the expense of consumers.

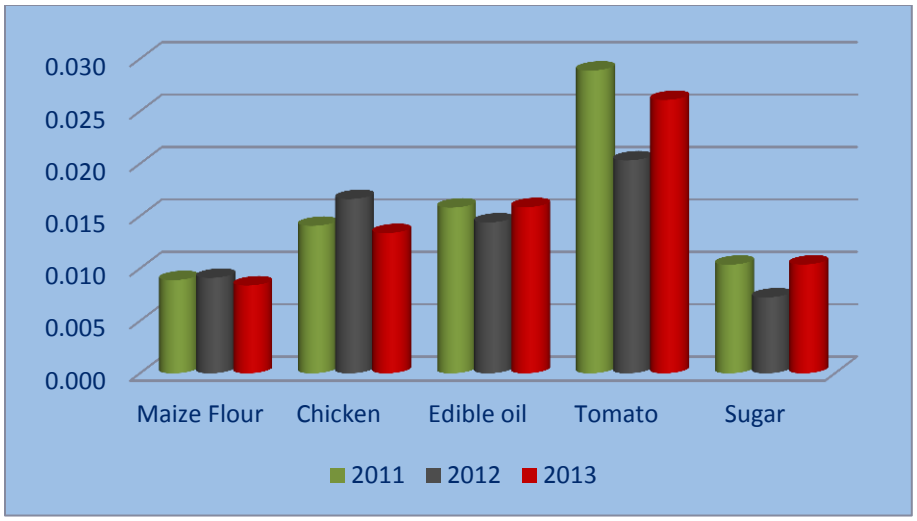
METHODOLOGICAL APPROACH

This study examines price differences between Nelspruit and Maputo for eight important food products, selected in consultation with USAID, CTA, Ministry of Industry and Trade (MIC), and the National Directorate of Customs. The eight products are: sugar, chicken, maize flour, tomato, edible oil, baked beans, tomato paste, and tuna. Of these, five are staple commodities and three are pre-processed foods. As illustrated in Figure 1, the five staple commodities constituted more than 7% of the total weightage of the average Consumer Price Index (CPI) of Maputo, Beira, and Nampula (MABENA) in 2013.[2]

Figure 1: Selected Staple Commodities Weightage in the MABENA CPI

[1] As explained in more detail below, our conclusions about the size of the markup are derived from estimates of other cost components that are observable. This was necessary because the study team had no access to proprietary data on operating costs or profit margins within the supermarket sector. Although the cost estimates have a margin of error, any plausible adjustments would not alter the basic picture as stated in the text.

[2] Food and non-alcoholic beverages in general constitute more than half of the country's consumer basket for the calculation of the CPI.



Source: National Institute of Statistics

To ensure comparability of price data across supermarkets and between cities, it was essential to collect data for products with identical specifications in each category, as summarized in Table 1 below. The study team collected price data for products with these specifications from direct observation on supermarket shelves in Maputo and Nelspruit, as well as in Beira and Nampula, within the course of one week in September, 2014. The analysis therefore focuses on a spatial comparison of supermarket prices at one point in time. It would be of great interest to obtain time-series data by repeating the analysis periodically, and at other points in the food supply cycle, in order to track changes in the cross-border price differentials.

For some commodities, such as tomato paste, and maize flour, a number of brands existed in both Nelspruit and Maputo with these specifications. For others, like chicken, the only common brand on supermarket shelves in both cities was Spar. We demonstrate price differences by brands for the eight commodities in the next section.

Table 1: Specifications of Food Products

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
Edible 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

The study analyzes prices of these products in three large retail supermarkets—Shoprite, Game, and SPAR. Although there are about ten supermarkets companies operating in Mozambique,

these three were selected because they operate both in Nelspruit and in Maputo. The study focuses particularly on urban supermarkets, rather than small retailers or informal markets in poorer areas. One may ask why. The urban population in Mozambique is steadily increasing, with an average annual growth of about 3.3% over the past decade. More than 30% of the total population is now urbanized.[3] In these in urban areas, large new supermarkets are the most dynamic segments of the retail food market, particularly for the growing middle class of skilled workers with incomes well above the minimum wage. Supermarket prices therefore have a significant influence on the cost of living for middle class families. If supermarket prices in Maputo exceed competitive norms, the higher price for food will thereby reduce the availability of disposable income for other types of expenditure and feed into higher labor costs for the business community.

Throughout Africa, large supermarkets are competing effectively against more traditional small-scale retailers by offering a combination of variety, convenience and quality. Where international chains are involved, the growth of large supermarkets has implications not only for small-scale retailers, but also for local farmers who cannot supply the volume or quality required in this new segment of the market. Understanding how supermarkets procure their supplies and determine prices can suggest strategies for assisting rural producers and small suppliers to organize and develop linkages into these supply networks.

The remainder of the paper is organized as follows. The next Section presents the evidence on price differences between Nelspruit and Maputo, as well as differences within Mozambique between Maputo, Beira and Nampula. Section 3 presents an overview of the Mozambican food retail sector, including supermarket procurement systems. Section 4 provides an overview of the eight commodity markets in Mozambique. Section 5 presents our attempt to disaggregate the price differences between Nelspruit and Maputo, by commodity. Other overarching considerations that may impact price differences are discussed in Section 6. The final section concludes with a summary of the analysis and possible recommendations for policy makers and other stakeholders.

[3] World Development Indicators. Additionally, rural households in Mozambique depend to a large extent on "autoconsumption," consuming foods that they produce. Hence, the importance of the urban sector to the overall retail market for food is greater than would be suggested by the population data alone.

2. Evidence of Price Differences

Our direct observations of the supermarket shelf prices for each of the selected products confirms the existence of substantial cross-border price differences between Nelspruit and Maputo, and to a lesser degree between Maputo and the cities of Nampula and Beira within Mozambique. Between Nampula and Beira, prices are almost identical for most of the commodities examined here.

MAPUTO AND NELSPRUIT

The cross-border movement of goods between Nelspruit and Maputo by itself substantiates the existence of spatial arbitrage as traders buy in a low-price location (Nelspruit) and sell in a higher-priced location (Maputo). Due to the relatively short distance between the two cities, goods are hauled not only by formal traders and small-scale informal traders called *mukheristas*, but also by the average consumer for his/her individual household consumption. The existence of such trading implies that:

1. The price difference between Nelspruit and Maputo is greater than the full cost of transporting the commodity from one market to another (including a normal profit and compensation of risk for the trader);
2. The price difference is also large enough to cover other costs of trading, including import duties and applicable taxes or fees. In the case of the formal trader, this also includes opportunity costs of custom delays, compliance with sanitary and phytosanitary requirements, etc.;
3. For a typical consumer driving a Volkswagen Golf with a fuel efficiency of 8 liters per 100 kilometer, the average roundtrip cost to and from Nelspruit is estimated to be about MT 2,412 including vehicle wear and tear, but excluding time costs or any border charges.[4] The saving from buying goods across the border must be at least as much as the cost of this trip.

Table 2 presents the average shelf prices and price differences for the eight commodities selected for this study, inclusive of value added tax (VAT). The effect of having different VAT rates apply in the two countries is easily removed by calculating the shelf price *net* of VAT. Table 3 shows the price data with this adjustment for VAT.

Table 2: Average Price differences between Nelspruit and Maputo (*inclusive of VAT*)

[4] Data are from: http://www.numbeo.com/gas-prices/city_result.jsp?country=Mozambique&city=Maputo, accessed on 9 March, 2015.

Product	Brand	Origin	Average Price in Maputo (in MT)	Average Price in Nelspruit (in MT)[5]	Difference
STAPLE PRODUCTS					
Chicken	SPAR[6]	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 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%

Source: Authors' Data Collection

Table 3: Average Price differences between Nelspruit and Maputo (*net of VAT*)

Product	Brand	Origin	Average Price in Maputo (in MT)	Average Price in Nelspruit (in MT)	Difference
STAPLE PRODUCTS					
Chicken	SPAR[7]	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 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%

[5] Converted from South African Rand using the spot exchange rate on the day that data was collected (Friday, September 12, 2014)

[6] While the same brand chicken were available in both markets, Shoprite and Game only sell chicken imported from Brazil or locally produced in Mozambique, while in Nelspruit, only locally produced chicken were sold. As SPAR sells chicken of South African origin in both markets, only SPAR brand prices were compared.

[7] While the same brand chicken were available in both markets, Shoprite and Game only sell chicken imported from Brazil or locally produced in Mozambique, while in Nelspruit, only locally produced chicken were sold. As SPAR sells chicken of South African origin in both markets, only SPAR brand prices were compared.

Source: Authors' Data Collection

The average retail prices in Nelspruit are lower for all of the products and all of the brands. The difference in price (inclusive of VAT) for identical products is as high as 53% for the Sunfoil brand of canola oil, and as low as 16% for Iwissa maize flour. Price differences for near substitutes—in this case, different brands of the same product—are as high as 56% between All Gold tomato paste in Nelspruit and Miami tomato paste in Maputo. The price differences are slightly reduced when the VAT component is removed, because the tax rate is slightly higher in Mozambique (at 17%) than in South Africa (at 14%). The size of the price difference does not appear to be related to whether the product is a staple commodity or a processed food.

Two points in Table 3 warrant additional note. First, the average price difference for tomatoes (excluding VAT) is about 16%. However, the period during which our data was collected (September-October) marks peak tomato production season in Maputo. The price variance is likely to be significantly larger during other seasons. Second, the difference in average sugar prices is about 47%. This is despite the fact that Mozambique is a net sugar exporter, with a sugar trade balance exceeding USD 171 million in 2013.[8] One would expect, therefore, to see competitive sugar prices in Mozambique. The reason this is not so will be discussed in sections 4 and 5 below.

Table 4 below presents the price differences observed between the same supermarket chain in the two cities, for particular cases where identical items were found on the shelves. Without exception, we observe price differences across the border, even for cases such as SPAR, where the distribution network that supplies a supermarket in Nelspruit is the same one that supplies the retail store in Maputo. In part, this difference simply signals the added costs for moving goods across the border, but it may also point to large differences between Nelspruit and Maputo for operating costs such as electricity, water, building rental, labor costs, local taxes, as well as differences in financing costs and profit margins. The analysis in Section 5 attempts to distinguish between these cost factors.

Table 4: Price differences by Supermarket Chain, inclusive of VAT

Product	Brand	Origin	Shoprite	Game	SPAR
Chicken	SPAR	South Africa	-	-	41.4%
Tomato	ZZ2	South Africa	30%	-	-
Sugar	Sunny Brown	Swaziland	-	-	-
Maize Flour	First Choice	South Africa	-	-	-
	White Star	South Africa	-	56%	-
	Iwissa	South Africa	13%	-	-
Cooking Oil	Sunfoil Canola	South Africa	57%	30%	-
Tomato Paste	All Gold	South Africa	-	42%	32%

[8] International Trade Center, TradeMap Data (based on UN COMTRADE database)

Product	Brand	Origin	Shoprite	Game	SPAR
	Miami	South Africa	-	30%	-
Baked Beans	Rhodes	South Africa	56%	7%	-
Tuna	John West	South Africa	42%	-	-

Source: Authors' Data Collection

The blanks in this table indicate that a given supermarket chain operating in both Nelspruit and Maputo does not always stock the same brand of product in the two cities. Of the products that had the same brand in both Nelspruit and Maputo, the highest price difference observed was for Sunfoil canola oil, for which Shoprite's price in Maputo was 57 percent higher than in Nelspruit. The lowest price difference of 7 percent was in Game stores for the Rhodes brand of baked beans. In all cases, however, prices in Maputo exceed those in Nelspruit, reflecting at a minimum the added cost of transporting across the border.

MAPUTO, BEIRA, AND NAMPULA

Prices can also differ between regions of the same country due to transport costs, supply sources, demand conditions, operational costs, regional taxes, and customer incomes. For instance, the price of one liter of gasoline in Maputo averages about 51.48MT compared with 52.55MT in Beira and 56.59MT in Nampula. Similarly, the cost of basic monthly utilities (electricity, heating, water, garbage) for an 85 square meter apartment averages about 3,800MT in Maputo, compared with 3,120MT in Beira, and just 1,278.06MT in Nampula. The rental price for a one-bedroom apartment in Maputo city center averages about 37,250MT, while it costs about 21,033.33MT in Beira and 20,417.94 in Nampula.[9] Additionally, some goods are imported to Beira and Nampula via Maputo, while others are sourced to these cities from adjoining regions or from Zambia, Malawi, or even Asia.

The study examined supermarket prices for selected commodities in Maputo, Beira, and Nampula. Currently, Shoprite is the only large supermarket operating in all three cities. Table 5 presents the observed Shoprite prices, and the percentage differences between the cities, pairwise.

Table 5: Average Prices (in MzM) in Shoprite stores in Maputo, Beira and Nampula

Product	Brand	Maputo	Beira	Nampula	MAP/BEI	MAP/NAM	BEI/NAM
STAPLE PRODUCTS							
Chicken	Perdix	140.00		-	-	-	-
	Nacional	138.00	135.00	-	2%	-	-
	King Frango			130.00	-	-	-
Tomato	(Fresh)	59.00	25.00	32.00	136%	84%	-22%
Sugar	Nacional		37.00	37.00	-		0%
	Sunny Brown	42.00	59.00	59.00	-29%	-29%	0%
Maize Flour	Top Score	27.00	29.00	29.00	-7%	-7%	0%
	Super A1	22.00	26.00	26.00	-15%	-15%	0%

[9] Data from Cost of Living in Mozambique, as given at www.numbeo.com .

Cooking Oil	Fula (sunflower)	109.00	109.00	109.00	0%	0%	0%
	Sunfoil Canola	115.00	115.00	115.00	0%	0%	0%
PROCESSED PRODUCTS							
Tomato Paste	Primevera (400g)	29.00	29.00	29.00	0%	0%	0%
Baked Beans	Sunny	25.00	29.00	29.00	-14%	-14%	0%
Tuna	John West	85.00	99.00		-14%	-	-
	Ramirez (120g)	100.00	113.00	113.00	-12%	-12%	0%

Source: Authors' Data Collection

For four of the products—sugar, maize flour[10], baked beans, and tuna[11]—prices are lower in Maputo than in Beira or Nampula. The price of Sunny Brown brand of brown sugar was 29% higher in both Beira and Nampula than in Maputo. Prices of tomatoes were far higher in Maputo (by 136%) and in Beira (by 84%) than in Nampula. Two products, cooking oil and tomato paste, had the same price in all three cities. Maize flour was also less expensive in Maputo than in the other two cities, by 7% and 15%, depending on the brand.

Prices between Shoprite stores in Beira and that in Nampula were identical, except for tomatoes. This is the case even for commodities that originate from outside the country, implying either that additional transportation costs to Nampula are negligible or that Shoprite is willing to accept a lower margin on the sale of the products in Nampula. The large distance between Nampula and Beira indicates the latter as Shoprite's marketing strategy.

In addition to the observed price differences on the data of the field visits, we use the MIC-INFOCOM monthly time-series price data for staple commodities to determine whether there is any systematic price transmission between Maputo, Beira, and Nampula. We do this by analyzing the co-movement of monthly prices for domestically produced yellow sugar,[12] corn meal, tomato, frozen chicken, and imported cooking oil, over the period October 2012 to August 2014. Tomato prices have the strongest co-movement among the three cities.[13] But tomato is a highly seasonal product, so the co-movement is likely to reflect just seasonality. This is consistent with the observation that prices seem to jump during the October to January months (off-peak tomato season in Mozambique) and taper off afterwards. The price of chicken is strongly correlated between Beira and Nampula, but independent of the variation in prices in Maputo.[14] For other commodities, we do not find any significant price correlation between the three cities.[15]

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[10] Data for two brands of Maize flour—Top Score, and Super A1—were collected. Both were priced lower in Beira.

[11] Two brands—John West and Ramirez—of tuna were higher priced in Beira. Only Ramirez brand was shelved in Nampula, which was priced higher than in Maputo.

[12] Brown sugar is white sugar with molasses added to it. Yellow sugar is brown sugar with a low molasses content.

[13] Pairwise correlation coefficient of tomato prices between Maputo-Beira is 0.57; Maputo-Nampula is 0.62; and Beira-Nampula is 0.61.

[14] Pairwise correlation coefficient is 0.75 between Beira and Nampula for prices of chicken. The same for Maputo-Beira is -0.18 and for Maputo-Nampula is -0.35.

[15] Correlation coefficients for all other commodities for the three cities are less than 40 percent.

Repeating the analysis in terms of monthly percentage changes showed even less price correlation for all commodities in all three cities.

Aside from seasonal variations in the price of tomatoes, we conclude that there is limited co-movement in prices between the three cities. Also, the inter-urban price differences are relatively small for the target commodities, except sugar and fresh tomatoes. We therefore focus the remainder of the paper on analyzing the cross-border price differences between Nelspruit and Maputo.

3. Mozambique Food Retail Sector

Mozambique has experienced rapid growth averaging over 7% in the past decade,[16] thanks in large part to a steady increase in coal production, implementation of "mega projects" in infrastructure, and government budgetary expansion. As of mid-2014, the IMF projected acceleration to 8.3% growth in 2014, with increasing coal production and infrastructure construction.[17] Although this capital-intensive growth has not had a significant impact on employment, per capita income in Mozambique has steadily increased (in PPP terms) from about $727 in 2005 to $1,012 in 2013.[18] Per capita income has tripled since the end of the civil war, as Mozambique has been one of the fastest growing economies in the world.[19] Incomes in city centers, such as Maputo, are growing at rates well above the national average, since skilled workers are concentrated in urban areas.

Rich coal deposits in the country's western Tete province have attracted mining companies from around the globe, such as from Brazil, the United States, Italy, and China. Coal production has only recently begun, and much of the natural gas production is still at an exploration phase. As Mozambique's nascent coal mining and natural gas sectors attract increased foreign direct investment, demand in most service sectors—such as retail, financial services, real estate, and hospitality industries—is expected to progressively increase. Indeed, Figure 2 shows that commercial licensing for wholesalers, retailers and service providers is steadily increasing over the past few years, with the most rapid growth observed in the number of commercial licenses issued to retailers. According to data collected from MIC, roughly a third of the commercial licenses for retailers, more than 60 percent of the wholesale commercial licenses, and about 53 percent of the service provider licenses were issued in the city of Maputo. Maputo province, which excludes the city of Maputo, is where the largest numbers of licenses were issued (after the city of Maputo) for wholesalers, retailers, and service providers.

With the end of civil war in early 1990's—the peace accord was signed in 1992, and democratic elections held in 1994—Mozambique began to experience relative economic stability. As part of the introduction of liberalization policies and pro-foreign investment reforms, the retail sector was opened up to foreign investors. South African chain stores were the principal retail investors, as they looked to expand beyond their borders due to competition in South Africa cutting into profitability at home. For example, the 2004 company report for Shoprite—the largest retailer in South Africa—stated, "As Shoprite lost market share in South Africa to large competitors like

[16] Calculated from data available from the World Development Indicators database.

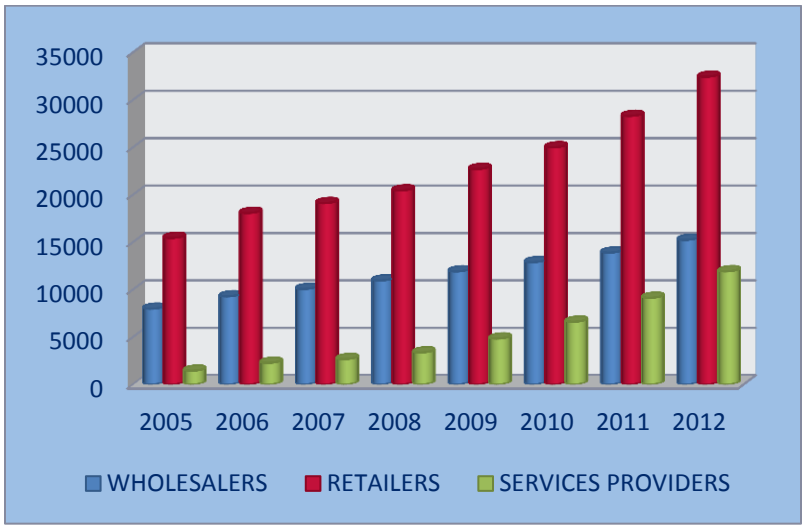
[17] Republic of Mozambique: Second Review Under the Policy Support Instrument and Request for Modification of Assessment Criteria; Staff Report; Debt Sustainability Analysis; Press Release; and Statement by the Executive Director for Republic of Mozambique, International Monetary Fund, 30 May 2014

[18] World Development Indicators. PPP = purchasing power parity.

[19] The Economist, 9 November 2013,

Pick 'n Pay and Spar's flexible, new 'action stores', Shoprite, along with other South African retailers like Game, Steers, Debonairs, Engen, ProFurn, the J D Group and Wimpy among others, has taken its excess cash and headed for the African countries north of South African borders, extending as far as Egypt in North Africa."[20].

Figure 2: Number of Commercial Licenses Issued in Mozambique



Source: Ministry of Industry and Trade

The increased investment in retail services has been a clear signal of an improved business climate in Mozambique, particularly reforms related to starting a business. Mozambique streamlined its business registration process and improved the time it takes to start a business from about 167 days in 2005 to just 13 days at present. The cost of starting a business was reduced from 112% of income per capita in 2004 to about 17%.[21] Even with the rapid expansion in the number of retail commercial licenses in the country, it must be noted that most represent small and medium retailers and their share in total retail turnover is probably not large enough to impact commodity prices.

Like other less developed regions, retailing in Southern Africa is highly diversified, ranging from informal street traders to small outlets with low turnover to larger shopping complexes.[22] The food retail sector in Mozambique is characterized by three distinct groups of retailers:

1. **Micro-Retailers, or "Mom and Pop" Shops**. These establishments serve a small local community, often generating just enough profit to run their operations and sustain their owners. These shops operate largely in the informal sector; many are unlicensed and

[20] www.shoprite.co.za

[21] World Bank Doing Business Indicators

[22] Findlay (1990)

unregistered. The target consumer group for these shops are generally the poor—both in urban and rural areas. These retailers normally procure from wholesalers and/or *mukheristas*.

2. **Small- and Medium retailers**. The Indian diaspora played a major role in development of the retail sector in Mozambique. These retailers are often registered and licensed but vary in size from a small "mom and pop" establishment to fairly large retail outlets that offer more variety and convenience. These retailers cater primarily to the lower and middle-class consumers, and tend to be concentrated in urban areas. These retailers normally procure from wholesalers and/or *mukheristas*. They are increasingly in competition with large supermarkets and hypermarkets, since the arrival of the first South African supermarkets in the late 1990's.
3. **Large Supermarkets and Hypermarkets**. These supermarkets—mainly South African in origin—bring brand value and enjoy economies of scale in their operations. They offer consumers an attractive combination of variety, quality, convenience, in order to compete with other, smaller retailers, who previously dominated the market.[23] Their primary clientele include the burgeoning middle-class with access to more disposable income. These retailers tend to have their own centralized procurement systems, with standards placed on such things as quality, volume, consistency, packaging, and safety. Due to the scale of procurement, supermarkets all over Africa are playing a critical role in development through linkages, or lack thereof, with local small-scale local food producers. This group of retailers is the focus of the current study.

Mozambique presents an ample market for retail expansion. Maputo, the country's largest retail market, is undergoing rapid transformation with many new construction projects currently underway. Many retailers are capitalizing on this opportunity by collaborating with property developers to open outlets connected with mall developments, shopping complexes and even residential developments. Every major retailer and consumer goods company has started to expand into the rest of country while trying to expand market share within the capital. For instance, the food retail giant, Shoprite, plans to open about 4 additional outlets in various cities of Mozambique in the next year, and Game is planning to open another outlet at Matola in 2015. The extractive industries in Tete province also make that area an obvious choice for expansion. Many large retailers are viewing the entire country as a potential investment opportunity. Some retailers have also started applying innovative technology for outreach and sales. Facebook, for example, is becoming a powerful new sales channel for major retailers serving as a means to advertise promotional prices, new arrivals, and a platform to connect directly with customers.

As many retailers enter the business, increased competitive pressure will drive them to invest heavily in operational efficiency, improving customer service, and quality of products offered, in addition to competitive prices. This means increased investments in technology and logistics, automated systems and kiosks, among other things. So far though, the retail food market in

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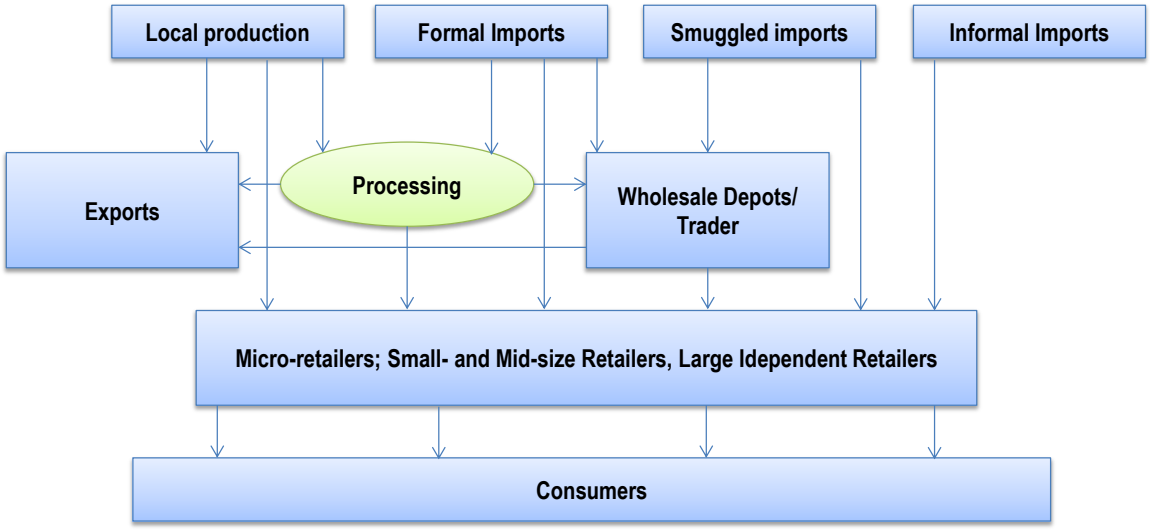
[23] Weatherspoon, et. al. (2003), p. 3.

Mozambique —particularly the supermarket sector—remains far from perfectly competitive. Only 10 supermarket companies currently operate in the country, and they are heavily concentrated in a few major cities.

GENERAL RETAIL SUPPLY CHAIN

The commodities supply chain connects three main sectors: primary producers, food processors, and distribution networks (wholesale and retail). To varying degrees, the eight food products selected for this study pass through a series of intermediate steps before they reach the shelf for sale to consumers. Examination of the respective supply chains is essential to understanding how prices are formed via different nodes, where interactions between firms take place, and where different regulations may have an impact. In the next section of this report, we will look into each commodity in detail. Here, we start with a broad overview of how retail supply chains work in Mozambique, followed by a look at the supermarket supply chain in particular. Figure 3 illustrates a simple retail supply chain.

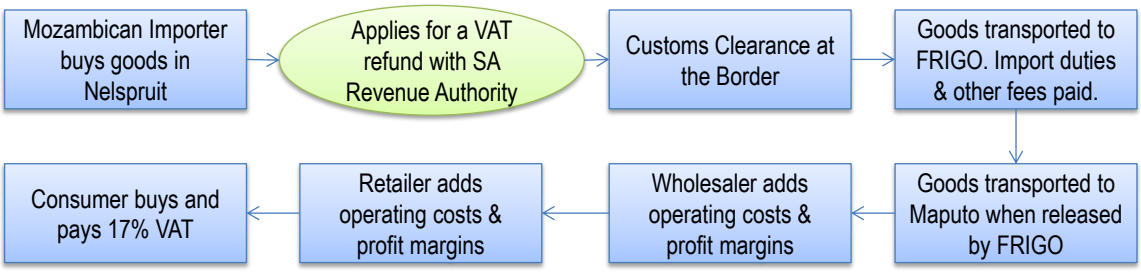
Figure 3: Simple Illustration of General Retail Supply Chains in Mozambique



While simplistic, the figure shows that products may pass from the producer or importer to the consumer through various channels. It also shows the various nodes at which costs may be added to the final product. Importantly, the costs involved at each stage of the supply chain may be affected by public policies and regulations.

Focusing on imported goods, for our study of pricing differences between Nelspruit to Maputo, Figure 4 depicts the steps involved in importing goods from South Africa and the various costs associated with such imports.

Figure 4: Importing Goods from Nelspruit to Maputo



The final supermarket price for a food product imported to Maputo from South Africa starts with the procurement price at a distribution center in Nelspruit, and incorporates additional costs, as illustrated above, for transportation and insurance, import duties, and delays at the border, as well as margins for operating costs and profits for the wholesaler or warehouse operator and the retailer. These margins, in turn, reflect the costs of doing business in Maputo, including the cost of property, labor, equipment, financing, electricity and other utilities, and compliance with a host of government regulations and requirements. The margins can also reflect pricing power due to the highly concentrated character of the supermarket subsector, and, of course, local demand conditions among the clientele for each supermarket location.

To be more specific, when goods arrive by truck at the border for entry into Mozambique, clearance for shipments that exceed USD500 in value takes place at FRIGO. From the border at Ressano Garcia, where the truck driver presents the customs document, goods are transported to FRIGO offices about 80 km from the border.[24] Depending on the type of cargo, trucks may be transported under customs control to avoid freight being offloaded on the way. In FRIGO, trucks can be offloaded and made to wait for the custom clearance to be completed. These border delays add to the transport costs that are passed on to consumers. Once goods are cleared from customs, further transportation and storage costs are added on for delivery to Maputo. As noted above, the final price also includes operating costs and profit margins at the wholesale or warehouse level, and corresponding retail markups. At the point of sale, the customer also pays the 17% Value Added Tax (VAT) for all commodities, other than maize flour which is zero rated under the VAT schedule.[25]

Of course some of these costs are not incurred by smugglers and informal traders, such as *mukheristas*, who evade customs duties and VAT at the border. They arguably pay an implicit tax in the form of bribes to Customs officers. They also avoid delays at customs Frigo while goods are being inspected and released. Since the quantity of imports for an individual *mukherista* is

[24] Starting on 20 September 2014, a new Frigo was started about 4 kilometers from the border with the aim to reduce import processing time. Currently, goods go through the "4KM" Frigo, but also stop at the old Frigo to be cleared.

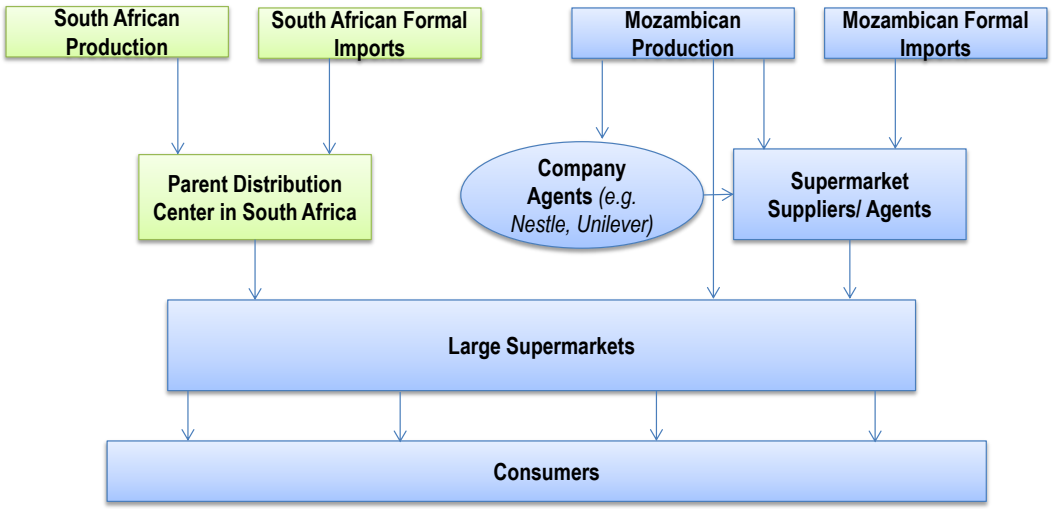
[25] "Helping you navigate Africa's VAT landscape: Overview of VAT in Africa 2011" PwC report.

low, he or she can also transport goods to Maputo relatively cheaply by using public transportation or sharing costs with other traders. Although goods supplied by *mukheristas* may therefore be relatively cheaper, they lack the volume and consistency required by larger retailers, and come with risks associated with trading informally.

SUPERMARKET PROCUREMENT SYSTEM

Large supermarket chains have their own supply networks and procurement systems. Although literature in this area, particularly for Mozambique, is thin. Based on our interviews with distributors and managers, however, Figure 5 illustrates in general terms how large supermarkets in Maputo (with parent companies in South Africa) procure their goods.

Figure 5: Stylized Illustration of Supermarket Supply Chain in Mozambique

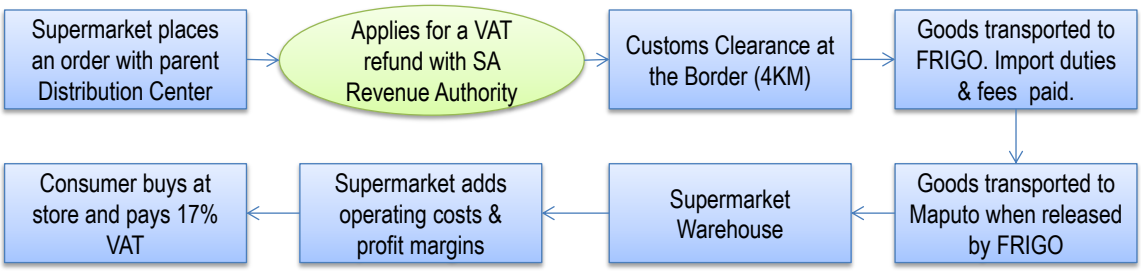


These supermarkets have parent distribution centers in Nelspruit, Johannesburg, or Durban, from which the bulk of their supplies originate. The distribution centers cater to supermarkets in South Africa as well as in Mozambique, and supply goods that are produced in South Africa and those which are imported into South Africa. Supermarkets in Mozambique also procure supplies from Mozambican producers. For instance, Game procures chicken from Mozambican agents during peak times (November-December), but imports them directly from Brazil during the off-season. The Mozambican agents obtain supplies either directly from local producers (such as *Nacional*) or through distributors and wholesalers. In addition, national representatives of some multi-national companies, such as Nestle, Unilever, and others cater their products to supermarkets directly in Mozambique. Whether goods are imported from South Africa or procured locally varies by supermarket and by commodity. Game, for instance, does not procure any of its fruits and vegetables locally. Shoprite, on the other hand, has direct contracts with at least 15 farm producers for tomatoes that supply about 3 tons of tomatoes per week to the 7 Shoprite stores in the country's South zone.

Large supermarkets do not procure directly from informal traders or wholesalers. When procuring locally, they either buy from producers directly (Shoprite and tomato producers) or through Mozambican agents. Their procurement prices, therefore, are presumably higher than prices of

other small retailers who get a large part of their supplies from informal traders in Mozambique. We will review the procurement channels and prices for each commodity separately in the next section. For procuring from the parent company's distribution center in South Africa, large supermarkets follow similar importing channels as other retailers in Mozambique, as illustrated in Figure 6 below.

Figure 6: Supermarkets Procuring Goods from SA Distribution Center to Maputo



Based on our interviews, the trucks that deliver supplies from South Africa spend about three to five days at the border. The delays at the 4KM border facility are caused by several factors, including the sheer volume of vehicles crossing the border, systemic malfunctions, paperwork delays, and unavailability of key signatories. Once cleared from the 4KM border, trucks may pass through Frigo near Maputo as quickly as one day. However, if selected for inspection, they can remain at Frigo for another day or two. Importers can apply for a special authorization for perishable goods, such as dairy, fruits and vegetables, to clear the 4KM border and Frigo within one day; in this case, clearance of paperwork can proceed after the perishables have been delivered to their final destination.

Some supermarkets such as Shoprite have warehousing facility, where goods arrive for dispatch to its various stores. Other supermarkets have the goods delivered straight to their stores after customs clearance, with inventories being stored on-site as needed. Storage facility is a constraint for the supermarkets, since the costs for establishing storage facilities in Maputo are steep due to high real estate and rental costs; the latter can be as much as four times higher than in Nelspruit (see table 17 in section 5). Also, theft and power outages are common, creating relatively higher rates of stock shrinkage. In some cases, the supermarkets have chosen to procure goods from local agents to cuts down on storage costs.

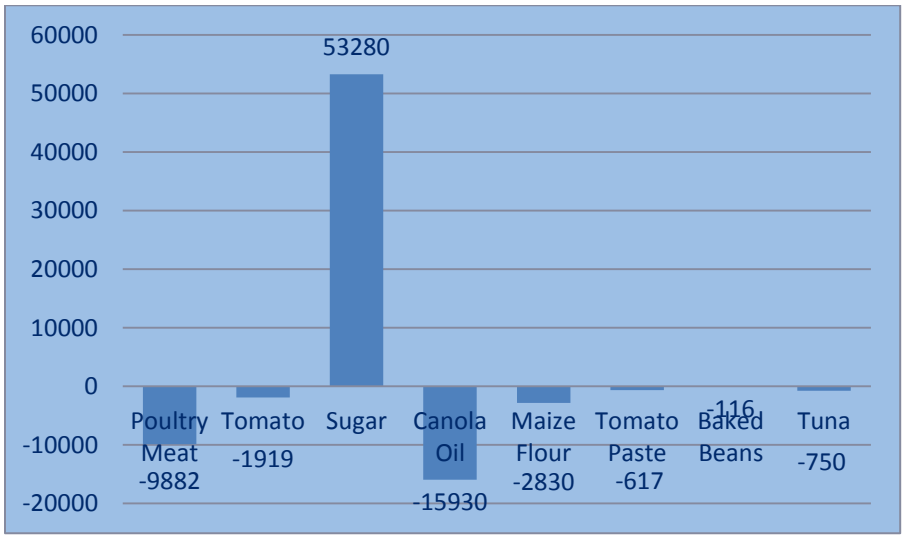
Of course, the supermarkets in Nelspruit also incur transportation and handling costs to move goods from their own distribution centers to the retail outlets, as well as customs charges for any imported goods (such as frozen chickens from Brazil). They also have to cover their own operating costs and profit margins. Only the differential between these costs and margins in Nelspruit versus Maputo enters into consideration for explaining the difference in retail prices for identical goods in the two cities.

Also, it must be recognized that the cost of getting goods from a distribution center in Nelspruit to the retail shelf in Maputo is only relevant in cases involving products for which imports from South Africa are the marginal source of supply for supermarkets in Maputo. If this is not the case, then the analysis of the price variance has to focus on other factors, as discussed below in Section 4 and 5.

4. Overview of Commodity Markets

The eight commodities selected for this study—sugar, maize flour, chicken, tomatoes, cooking oil, baked beans, tomato paste, and tuna—operate with supply chains that differ from one another in terms of their structures and dynamics. The extent of these differences—as well as their commonalities—has implications for the size of the retail price differential between Maputo and Nelspruit. For instance, Mozambique is a net importer of all of the commodities except sugar (See Figure 7), which is a large net export product. Maize, in contrast, is produced in surplus in the country's central and north zones, but the South is a maize-deficit region due to lack of commercial integration with the rest of the country. The volume of demand in the south contributes to the country being a net importer of maize. Also, the government has provided certain incentives for the production of some commodities but not others.

Figure 7: Average Trade Balance of Selected Commodities (2004-2013), USD



Source: International Trade Center, TradeMap Data (based on UN COMTRADE database)

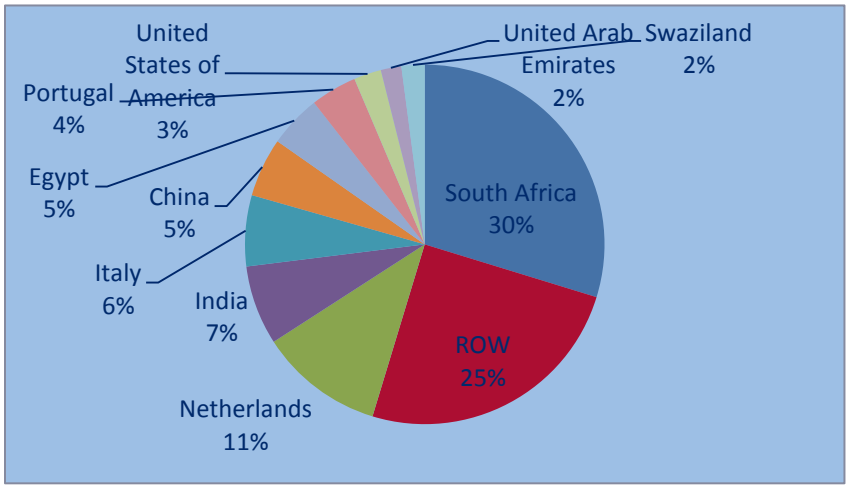
Despite changes in Mozambique's trade patterns over the past decade, South Africa remains Mozambique's most important bilateral trade partner. In 2003, a quarter of Mozambique's total trade was with South Africa, and remained at about 30 percent a decade later in 2013 (Figure 8). During the same period, trade with Netherlands fell from 26 percent to just 11 percent, while trade with China and India grew from 2 percent and 3 percent respectively to 5 percent and 7 percent, respectively.

Exports to South Africa accounted roughly a third of Mozambique's total exports in 2013, and imports from South Africa comprised about 22 percent of the country's total imports.[26] Excluding

[26] International Trade Center, TradeMap Data (based on UN COMTRADE database)

mineral fuels, oils, and distillation products, South Africa accounted for nearly 42 percent of imports to Mozambique in 2013. South Africa is an important import source for all eight commodities selected for this study. Even in the case of sugar, where Mozambique is a net exporter, the majority of imports of refined white sugar come from South Africa. Furthermore, South Africa is the country of origin for most of the specific brands used in this study (see Tables 2 and 3, above).

Figure 8: Mozambique's Major Trade Partners, 2013 (Exports plus Imports)



Source: International Trade Center, TradeMap Data (based on UN COMTRADE database)

In this section, we review each of the eight commodity markets in Mozambique and unravel elements contributing to the price differences between Maputo and Nelspruit for each one.

SUGAR

Between 1992 and 2012, after the end of the civil war, the area under cane cultivation in Mozambique tripled, reaching 45,000 hectares; total sugar output has grown even more rapidly, increasing more than seven-fold during this period.[27] Much of the increase represents a rebound from the crisis period, following the introduction of policies to support the domestic sugar industry by restricting imports. Sugar cane and raw sugar are now an important export commodity; in the last three years, sugar exports averaged about US$144 million, compared to just US$14 million a decade ago.[28] This makes sugar the second most important export crop in Mozambique, after tobacco. The sugar industry is also the second largest source of wage employment, after the public sector.

The increase in sugar production has been driven largely by the increase in area of cultivation, due to rehabilitation of the country's four major sugar companies, each with their own plantations

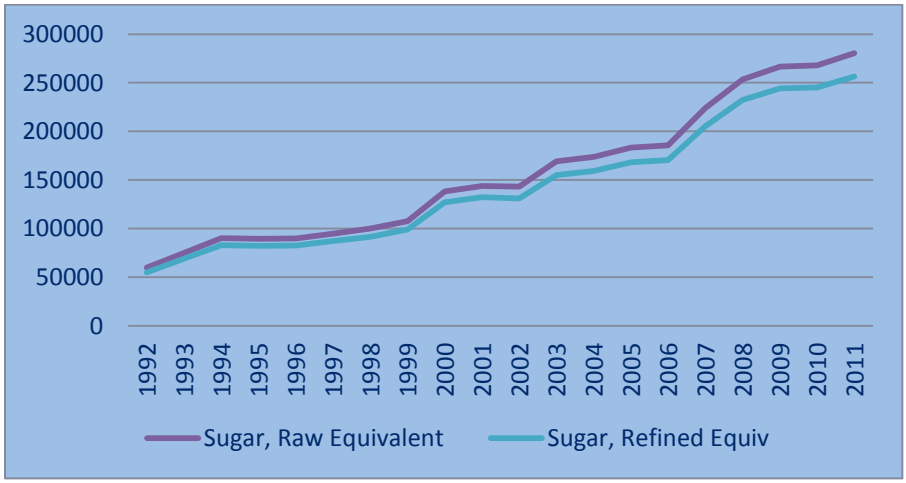
[27] FAOSTAT Production Database

[28] International Trade Center, TradeMap Data (based on UN COMTRADE database)

and mills. These companies—Marromeu, and Mafambisse (in Sofala province), and Xinavane, and Maragra (in Maputo province)—are majority privately owned. The Mozambique government owns less than 25% each in Mafambisse, Marrameu, and Xinavane. Of the four, foreign direct investments, particularly from South Africa, have favored those companies located in the vicinity of Maputo due to infrastructural convenience and ease of trading across the border to South Africa. As a result, the share of production in Mafambisse, located in the Beira corridor, has fallen substantially, and that of Xinavane in Maputo Province has increased. Together, the four companies produce more than 95% of the sugar in Mozambique.[29] Paralleling the increase in production, consumption of sugar—both raw and refined—has also increased in Mozambique (see Figure 9). Consumption of brown unrefined sugar is dominant, followed by refined white sugar, imported primarily from South Africa and consumed by few urban consumers.

Mozambique is a net sugar exporter, primarily of raw unrefined sugar. However, refined white sugar is almost entirely imported from South Africa—about 15,500 tons in 2013 out of a total import of 20,400 tons—since the low volume of demand for white sugar in Mozambique does not justify investments in refining facilities for the Mozambican sugar mills. In fact, it is cost effective for Mozambican sugar companies to import refined white sugar from South Africa under what is called the "toll refining" arrangement, where Mozambique exports raw sugar to South Africa in exchange for white refined sugar at a payment of $80 per tonne. These round-trip imports are allocated to commercial uses, and exempt from VAT.

Figure 9: Sugar Consumption in Mozambique since the end of civil war



Source: FAOSTAT Database

In common with most sugar-producing countries, including those in the region, the sugar industry in Mozambique has been protected and subsidized; it is also a highly concentrated industry, with just the four major players that have vertically-integrated production, refining, and distribution

[29] MAFAP-SPAAA (2013)

networks. In fact, two of the largest operations are owned by the same South African parent company. Sugar production and distribution both for domestic consumption and exports are controlled by DNA, [30] the National Sugar Distributor, which also imports the majority of refined sugar. In addition to protection afforded by import restrictions and a price floor, the industry has been moderately subsidized via Decree No. 4/2002, which exempts producers from the payment of VAT regarding the production, distribution and any kind of investment related to the sugar sector (though VAT is still paid by consumers at the retail level).

The industry has also benefited greatly from protection in the form of a variable surtax on raw and processed sugar, which applies on top of the basic duty of 7.5% (for imports from non-SADC countries) or 3% (for imports from SADC countries). The surtax is reviewed and set on a monthly basis, and depends on the differences between the Mozambican minimum prices (US$385/tonne for raw sugar and US$450/tonne for processed sugar) and a world market reference price expressed in c.i.f. value.[31] For instance, Order of Service No. 002/DGA/2008 of 28 January 2008 set the applicable reference prices per ton for raw (US$347.18) and processed sugar (US$388.09), and the associated surtaxes on raw sugar (10%) and processed sugar (15%).[32] However, the current reference prices per ton of raw and processed sugar are higher than the Mozambican minimum prices of sugar. Hence, the surtax is currently zero.

Our interviews with two supermarkets confirmed that most of the sugar sold in Mozambique is brown sugar, and that refined white sugar is predominantly imported from South Africa. The supermarkets procure brown sugar domestically but also import small quantities of brown sugar via their supply chains in South Africa. Domestic procurement of brown sugar is through an intermediary or a supply agent. The supermarkets do not have direct contracts with Mozambican sugar producers.

MAIZE FLOUR

Maize is one of the most important staple foods in Mozambique, along with rice, beans and millet. It is particularly important for the rural population where subsistence farmers produce maize primarily for consumption. Spending on wheat products and rice is a much larger portion of the consumption basket for urban consumers than spending on maize.[33] Nonetheless, maize

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[30] Distribuidora Nacional do Açúcar – DNA

[31] Ministerial Diploma No. 56/2001 of 30 March 2001 sets out the mechanism. Reference from International Trade Administration Commission of South Africa, Trade Policy Review, WT/TPR/S/209

[32] Reference from International Trade Administration Commission of South Africa, Trade Policy Review, WT/TPR/S/209

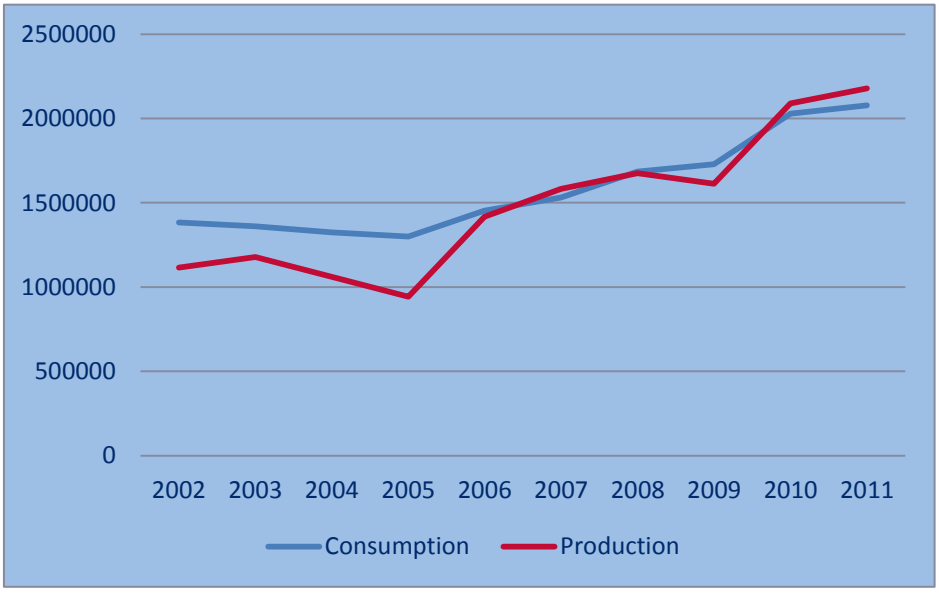
[33] "Maize shares in total food expenditure in urban Maputo province are 2.4%, compared to 7.4% for rice and 15.5% for wheat. The maize share rises outside of Maputo, to 14.5% in other southern provinces and 40% in the Center." Tschirley and Abdula (2007), page x, from data given on page 13.

(typically in the form of maize flour) has traditionally been an important part of the Mozambican diet—supplying about 470kcal/capita in a day.[34]

Nearly all regions of the country produce maize, albeit mainly by smallholders using minimal technology or improved seeds—primarily for subsistence. The country's central and northern regions (Nampula, Zambezia, Tete, Manica, and Sofala) produce a maize surplus, which is generally exported during peak seasons to neighboring countries such as Malawi, Tanzania, and Zimbabwe. During off seasons, these regions import maize from Malawi and other neighboring countries. Due to the close trade ties to Malawi for maize, maize prices in the north and central regions tend to be closely tied to Malawian prices.[35]

Because of weak infrastructural links within the country, surplus maize from the north and central zones is not transported to urban centers in the south, notably to Maputo. The Southern region—most notably the Gaza province which has favorable agro-climatic conditions, a well-developed irrigation system, and close proximity to Mozambique's biggest market (Maputo)—produces maize but not nearly enough to meet demand. The south, therefore, mainly imports maize, mostly from South Africa. This is despite the fact that the gap between production and consumption of maize at the national level has been narrowing in recent years, as depicted in Figure 10 below.[36] As a whole, Mozambique imported about 11% of its maize food consumption requirements, and exported about 2% of its maize production in 2011.

Figure 10: Trend in Maize production and consumption in Mozmabique



Source: FAOSTAT Database

[34] FAOSTAT Database (2011)

[35] MAFAP SPAAA (March 2013)

[36] Consumption here includes consumption as food, seeds, feed, and wastage.

Although maize production in Mozambique has increased, productivity levels remain very low. Maize yield averages 1 ton per hectare, compared to an average of 3.6 tons per hectare for the other southern African countries.[37] It is estimated that only about 20 percent of domestic maize production is marketed.[38] For the country to reach maize self-sufficiency, improvements are needed not only in productivity on the farm, but also improved market linkages. Even with maize self-sufficiency at the national level, however, the Maputo region may well continue to rely heavily on imports from South Africa. Breaking this link to the South African market would require major improvements in local maize yields and large reductions in north-south transportation costs.

Maize price movements generally conform to seasonal patterns, with prices declining with the beginning of the harvest in April, followed by a period of relative stability before rising from July onwards, as household stocks dwindle and demand for market supplies strengthen. Regionally, there exist distinct variations in price levels indicating limited market integration, high transport costs as well as reflecting differences in regional maize production. Despite the relatively higher prices observed in the south ranging from MT28.50/kg to MT30.00/kg in 2014, price fluctuations in the north are slightly larger with a range from MT23.10 to MT25.75 per kg.[39]

SOCIMOL (Sociedade Comercial e Industrial de Moagem), and CIM (Companhia industrial da Matola) in Maputo, MOBEIRA (Moagem da Beira) in Beira and CIMPAM (Companhia de Processamento Industrial de Milho) in Nampula are the main maize processors in Mozambique. A relatively open trade regime incentivizes the importation of maize grain from South Africa for the purpose of milling the grain for maize flour. Lower grain prices in South Africa and relatively expensive transportation costs within Mozambique make South African maize, particularly white maize, more competitive for the millers than locally produced grain. In addition, unreliability of local production and inability to meet quality standards such as packaging and conservation has resulted in the country's largest millers relying on imports for the majority of their maize processing for human consumption and animal feed.

A study conducted by the Ministry of Agriculture and Rural Development in 2007[40] asked why maize meal prices in Mozambique were significantly and persistently higher than in Zambia or Kenya, even though maize grain prices were comparable. It found that typical margins between wholesale prices for maize grain and retail prices for breakfast meal were around US$125 to US$150 per ton in both Zambia and Kenya, while this margin in Mozambique was about US$390 per ton. The report suggests that milling costs would have to be about 2.5 times higher in Mozambique to explain the observed difference. This may partly be explained by policy

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[37] Calculated from FAOSTAT Database (2013).

[38] MAFAP SPAAA (March 2013)

[39] INFOCOM-MIC Database

[40] "Toward improved marketing and trade policies to promote household food security in central and southern Mozambique: 2007 update" Tschirley, D. and Abdula, D. Research Report No. 62 E, September 2007

differences between Mozambique, Zambia, and Kenya, but to a large extent the difference is likely to reflect the fact that the local milling industry is heavily concentrated with a few large players with little competition. Also, unlike Zambia and Kenya, there is little competition from small-scale hammer mills. The cost of milling therefore appears to be a significant element in the local procurement price for maize meal, and hence the shelf price of the product in Maputo.

Since 2010, the maize milling companies have benefited from effective subsidies in the form of a 10 percent reduction of electricity price per kilowatt-hour, which was introduced to incentivize domestic industries that use electricity for food production.[41]

Across the border, in South Africa, there are no subsidies or any form of direct financial aid to maize farmers. Yet South Africa is the main maize producer in the SADC region, with exports of the grain going mainly to Japan, Iran, Kenya and Venezuela. Other important markets are Zimbabwe, Zambia and Malaysia. Processed maize products are exported mainly to Mozambique, Angola and Zambia.

In general, supermarkets in Mozambique procure a substantial amount of maize flour from outside Mozambique. For instance, Shoprite procures roughly about 60 percent of its maize flour locally and imports the rest from South Africa. Game procures most of its maize flour from South Africa. For maize flour procured domestically, supermarkets have contracts with companies such as Topsco, rather than direct contracts with farmers.

CHICKEN

More than half the meat consumed in Mozambique is pig meat, estimated at 52% in 2011, followed by poultry meat at 22%.[42] In 2011, Mozambique had an estimated 41.2 million total number of poultry, of which chicken represented 58.2%, followed by guinea fowl and geese at 36.4% and ducks at 5.1%.[43] According to the Mozambican Association of Poultry Farmers (AMA) data and reports from Ministry of Industry and Trade (as reviewed in Nicolau, 2011), Mozambique produces an average of 1.5 million units of chicken per month. This translates to roughly 40,500 tons of chicken a year. Consumption however is estimated to be roughly around 47,000 tons per year nationwide, resulting in the country importing an annual average of 10,562 tons of chicken between 2008 and 2012.[44] Reports on chicken imports are somewhat ambiguous, with some estimates showing that chicken meat imports decreased by 24.1 percent between 2009 and 2011 to about 6,069 tons. However, FAO data shows that while there are fluctuations year-on-year for imports, the general trend for the past decade has been a rise in imports (Figure 11).

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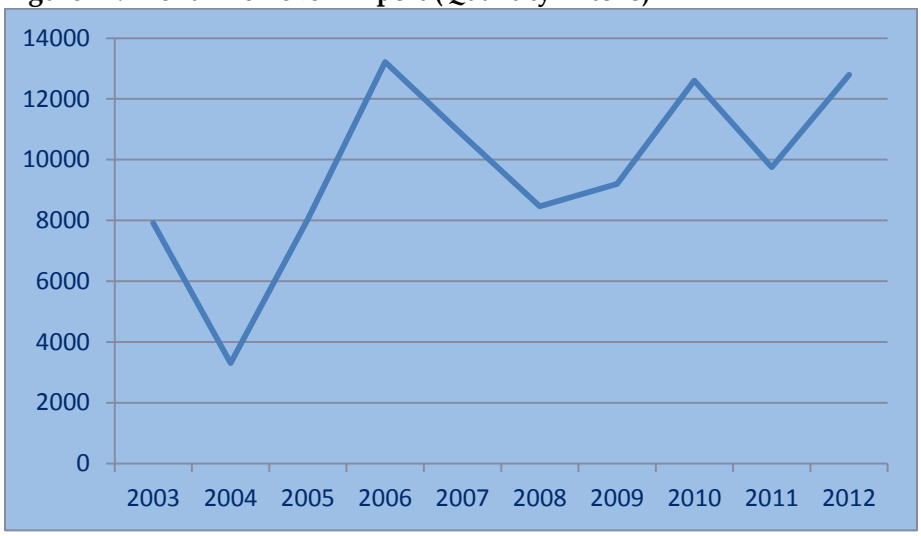
[41] MAFAPSPAAA (March 2013)

[42] FAOSTAT Database

[43] FAO Livestock Country Reviews, Mozambique Poultry Sector (2013)

[44] FAOSTAT Database

Figure 11: Trend in chicken import (Quantity in tons)



Source: FAOSTAT Database

The highest concentration of domestic chicken population is in the central zone of the country in Sofala, Manica, Tete, and Zambezia, which has roughly half of the total chicken stock in the country, according to the 2009-10 agricultural census (INE, 2011). The largest producers include General Union of Agricultural and Livestock Cooperatives (UGC), Mozambique Farms, the Mozambique National Poultry Association (AMA) in the South of the country, Frangos de Manica, Abilio Antunes in Manica province in the central part of the country, and Novo Horizonte and Pintanhos Stewart in Nampula province, in the North of Mozambique.[45] Table 6 summarizes characteristics of chicken market in Mozambique.

Table 6: Overview of the Chicken sub-sector

Characteristics	Item	Source
Mozambique Population	25 million	INE, projections
Per capita consumption	1.6 kg	MIC (2013)
Production system	90% independent	Nicolau, 2011
Raw material for feed	60% must be imported	Nicolau, 2008
Eggs for broiler production	from imports	Nicolau, 2008
Number of slaughterhouses	30 medium and large slaughterhouses	Agostinho 2010
Chicken products available	Whole and frozen chicken	Agostinho, 2010

Source: Authors' Compilation

The chicken industry in Mozambique faces tough competition from increasing imports of frozen chicken, mainly from Brazil. Imports help to fill the gap between national production and domestic demand. Chicken imports increased from about 3100 tons in 2004 to 7,992 tons in 2009.

[45] FAO Livestock Country Reviews, Mozambique Poultry Sector (2013)

Prices of imported chicken are lower than those for domestically produced chicken because Brazil is a global low-cost producer. The main reason is that Brazil is one of the world's largest and most efficient exporters of soy, due to soil and climatic advantages and scale economies. Soy meal is a major component of chicken feed, which in turn represents about two-thirds of the cost of raising a chicken. Imported chickens pose steep competition for Mozambican producers even during peak supply season.

Mozambican stakeholders are aware of the need to improve competitiveness and productivity in the chicken industry. Efforts have been underway some for years to improve productivity, and also to encourage consumers to buy local. Commercial investment in Mozambique's poultry industry has come from multiple sources, including ones facilitated by TechnoServe as part of a U.S. government program. Partnering with thousands of soy and corn farmers, TechnoServe has given particular emphasis to the production of poultry feed. Programs were carried out to provide business and technical training for smallholder poultry farmers in order to improve their production practices. Support has also been given to commercial poultry businesses to upgrade processing machinery, expand production capacity, improve the quality of broilers and strengthen links to smallholders. Notwithstanding these efforts, the industry as a whole remains dependent on imported chicken—a phenomenon that is likely to increase as the rate of consumption continues to outpace the rate of production.

One of the main causes of low chicken productivity is Mozambique's continued dependence on costly imported chicken feed. These imports have seen exponential growth from about 122 tons in 2004 to about 15,147 tons in 2009.[46] Even neighboring South Africa relies on imported chicken feed, increasing its own production costs. Northern regions of Mozambique are slowly increasing production of chicken feed and it may not be surprising if industrial chicken production slowly sees a shift in production base from the south to the north to locate closer to feed production. Coupled with largely traditional productive structures, domestic production is highly seasonal and often volatile. The Government recently approved Law 3/2012 of February 24, that alters the VAT code to exempt animal feed from VAT. This law is aimed at reducing the price of domestic chickens. However, the VAT exemption alone is unlikely to compete with Brazilian chicken due to the latter's competitive price and climatic advantages for producing soybeans. One important competitive advantage for Mozambican producers, however, is that they can supply live chickens and fresh chicken meat, which are better quality products than frozen meat imported from Brazil.

Interestingly, our interviews revealed that a multi-sectorial team informally monitors data on number of chicken imported, future domestic chicken production, stock, and consumption. The team is comprised of government representatives, chicken importers, producers, Mozambican poultry association, and interested retailers. Based on their analysis of market conditions, the team estimates the deficit or surplus in domestic chicken production. In case of a predicted

[46] FAO Livestock Country Reviews, Mozambique Poultry Sector (2013)

deficit, the calculated deficit is set as the amount of allowed imports. The objective is clearly to protect the local chicken industry. In practice, however, imposition of an import quota (though it's not called a quota) is to restrict supply and consequentially increase the retail price of chicken, especially during seasons of peak demand or reduced domestic supply. This is an important consideration in assessing the high price of chicken in the country.

Unlike the other commodities covered in this study, the chicken industry has additional health and safety standards that are key to the industry's long-term viability. Mozambique is at risk of introduction and spread of Highly Pathogenic Avian Influenza (HPAI), according to the FAO. However, weak diagnostic capabilities, weak rural veterinary network, difficulties in providing compensation for mandatory culling of poultry all pose problems for prevention, detection, and containment of the disease. Several reports have cited that even commercial production of chicken falls short of biosecurity measures to avoid introduction and propagation of diseases. The state veterinary service, administered by the National Directorate of Veterinary Services (DNSV), is responsible for disease surveillance and control by law (Decreto 26/2009 of 17 August). However, compliance with established norms and enforcement is far from ideal. For instance, all imports of animals and their by-products are required to be inspected at port of entry. However, this is not done systematically and a number of border points do not have Veterinary Authority present on site.

Before delving into discussions about the difference in chicken prices between Nelspruit and Maputo, it is helpful to understand a little about the South African chicken industry. Due to South Africa's dependence on costly feed imports, its own domestic chicken industry is not competitive. To encourage the domestic industry, the South African government increased tariffs on imports of Brazilian whole birds from 27 percent to 82 percent in 2013. Then in July, 2014, provisional duties ranging from 22 percent to 73 percent were imposed on frozen bone-in portions imported from Germany, the Netherlands and the UK, again to protect the domestic poultry industry. These numbers show that the tariff-inclusive import parity price for chickens is very high in South Africa, signaling that domestic production costs must be highly uncompetitive.

Hence, few chickens are imported from South Africa to Mozambique, and the price of chicken in Maputo is unlikely to have a direct supply chain relationship to the retail price in Nelspruit. Instead, supermarkets in Mozambique procure their chicken either through agents in Mozambique or through imports of frozen chicken from Brazil. As with other products, the supermarkets rely on agents to supply the chicken in bulk, and do not have direct farmer-to-supermarket links. Wholesalers are typically responsible for both imports and for collection of domestic products to supply to the retailers. In section 5, below, analysis of the price differential for chickens focuses on a build-up of the supply costs for importing Brazilian chickens into both countries. However, since the specific chicken brand that we priced in both markets (Spar frozen chicken) happens to originate in South Africa, we will also show the analysis in terms of cost build-up for importing from Nelspruit to Maputo.

TOMATO

Tomatoes, a high-value crop, are produced in Mozambique predominantly by smallholder farmers. Production is seasonal, with the main growing season running from February to August.

During the off-season most tomatoes are imported, mainly from neighboring South Africa. Mozambique is by far the largest market for South African tomato exports, with a 75.3% share in 2012, at 15,964 tons. South African tomato exports to Mozambique increased by 26% and 27% in terms of value and quantity between 2008 and 2012.[47] Notwithstanding a rapid increase in domestic production from an estimated 25,000 tons in 2002 to 195,000 tons in 2011,[48] imported tomatoes are still a dominant player in the urban retail market.

Tomato consumption is an important part of the Mozambican diet in both urban and rural areas. According to news reports, Maputo alone consumes 40 tons of tomatoes each day. Domestically grown production can satisfy 20 to 60% of national demand, depending on the year's yield quality.[49] According to standardized FAO statistics, consumption of tomatoes in Mozambique has increased quite sharply in recent years, with rising supplies from both domestic production and imports.

The bulk of Mozambican tomato production is sold fresh, in 20 kg crates, to domestic retail markets. There is no cold storage. Tomatoes are sold in open spaces to local supermarkets and bazaars located in Grande Maputo and its surrounding areas, as well as other markets in the rest of the country. The Maputo suburb of Zimpeto hosts the nation’s most important wholesale produce market. *Mukheristas*, or informal traders, are the most important tomato importers in Mozambique. They source their purchases mainly from the Mpumalanga and Limpopo provinces of South Africa, supplying imported tomatoes to the fresh/informal food markets of Mozambique, and even to some supermarkets, although the supermarket chains also bring in their own supply.

Apart from actual cost of domestic production and importation, there are anecdotal reports that speculators have sometimes pushed up the price of tomatoes in Maputo markets—for instance in March/April 2012—by obstructing cross-border trade, sometimes physically seizing trucks hired by small scale Mozambican importers. Such actions caused the price of tomatoes in Maputo's main wholesale market to more than double in a few weeks from 200-250 meticais ($7-$9 US) to 500-600 meticais for a 22 kilo crate.[50] Such groups are alleged still to be in force around the South African border.

With support from the Ministry of Agriculture both commercial growers and small households have undertaken private investment in greenhouses in or near Maputo. In addition, the Mozambican government is providing support for investments in greenhouse nurseries for tomato seedling production.

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[47] A Profile of the South African Tomato Market Value Chain, Department of Agriculture, Forestry and Fisheries, Republic of South Africa (2013)

[48] Represents standardized data from the FAOSTAT database.

[49] http://www.freshplaza.com/article/95249/Mozambique-takes-action-against-tomato-mafia with citation from allafrica.com

[50] *preciousjules1985.wordpress.com April 13, 2012*

Procurement for tomato seems to vary by store. Game, for instance, procures all of its fruits and vegetables from South Africa. They do not have any agents supplying local produce. Shoprite on the other hand, procures most of its tomatoes from domestic farmers, and only procures about 5 percent of its tomato sales from South Africa during off seasons.

COOKING OIL

Soyabean oil is the principal cooking oil consumed in Mozambique. Imports account for an estimated 81 percent of the domestic vegetable oil needs in Mozambique. Of these, 45 percent consist of industrially refined oil from crude oil imports and 36 percent are imports of refined oils.[51] Palm, sunflower and soybean oils, both in crude and refined forms, are the main product types entering the country. Palm oil, in particular, accounts for about half of the total imports. Major suppliers of bulk vegetable oils to Mozambique are South Africa (sunflower, generally mixed with other oils such as maize or peanut), Brazil (soyabean), Malaysia (palm) and Argentina (sunflower), which together accounted for an approximate 60 percent in 2013. For instance, imports of canola oil into Mozambique have soared from $1.4 million in 2007 to $14.5 million in 2013, of which imports from South Africa alone accounted for $93,000 in 2007 and $13 million in 2013.[52]

The demand for vegetable oils in 2006 was between 35 and 45 thousand tons per year, but the capacity to produce oils from locally produced seeds was only 15 thousand tons per year. Consequently, imports accounted for 81 percent of domestic demand.[53] Prior to 2003, bulk oil imports were charged a 2.5 percent tariff and were subject to 17 percent VAT. Refined oils, on the other hand, had an import tariff of 25 percent and a VAT of 17 percent. Yielding to successful advocacy in favor of government support to the domestic industry, local authorities had in 2003 completely exempted manufacturers and processors that met minimum levels of gross revenues and value addition from any import duties on imported raw materials. Later, in 2004, VAT exemption was also granted to domestic oil refiners. These tax breaks help domestic oil refiners to save on working capital costs to help them compete with imports of processed oil, but they also encourage the use of imported feed stocks. As a result, oil-crushing operations have all but ceased, while refining activities have intensified. According to industry sources, There are 5 mid- to large-scale oil refineries in Maputo, 2 in Sofala, 3 in Nampula, and 1 in Zambezia.[54]

Despite growing crude oil imports, Mozambique faces a number of challenges to meet growing demand. First, limited financial capacity of refineries poses a constraint on expansion. Second, storage capacity for oil is severely limited. Third, ports in Maputo and Beira do not have capacity

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[51] Sutton, John (2014) – An Enterprise Map of Mozambique

[52] International Trade Center, TradeMap Data (based on UN COMTRADE database)

[53] FAO Briefs on Import Surges: No. 3 Mozambique, Vegetable Oils, November 2006

[54] Based on authors' interviews of the Association of Oil Producers

to receive large shipments. The port of Nacala has this capacity, but lacks adequate storage facilities.

Given this market structure, the cooking oil sold in Mozambican supermarkets is procured both through domestic sources and imported from South Africa. As with most of the other commodities studied here, imports are still the marginal source of supply and therefore a primary determinant of the supermarket price.

PROCESSED GOODS (BAKED BEANS, TOMATO PASTE, TUNA)

Fruit, vegetable, and animal processing in Mozambique is relatively nascent. Although some small and mid-sized processing plants are present, such as a cassava processing plant in the city of Umbeluzi, the retail market is far from satisfied via local processing of most horticulture crops. Unsurprisingly, almost all of the baked beans and tomato paste, as well as the canned tuna, found on Mozambican supermarket shelves are imported. Imports of these processed goods cater mainly to the urban middle class population who can afford variety in their daily diets.

In contrast to the situation in Mozambique, South Africa has a very well developed agro-processing industry. Manufacturing of food and beverages accounted for 14 percent of the total income from manufacturing in South Africa in 2008;[55] 91 percent of the food and beverage processing is done by large companies with annual turnover above 51 million Rand.

South Africa is therefore a major source for imports of such goods, along with Portugal and Thailand. Supermarkets in Maputo use their in-house distribution networks to procure these items, whether they are produced directly in South Africa, or come from other countries via South Africa.

[55] Stats SA, 2010

5. Elements of Price Variation

To examine the cause of price variations for the eight selected commodities, the study team narrowed the product specifications as listed in Tables 2 and 3 above. For all eight products, imports represent the source of supply at the margin to supermarkets in Maputo. This means that domestic production is insufficient to meet market demand, and imports fill the supply gap. As explained below, in markets where imports are the marginal source of supply, the import parity price is generally the main determinant of the supply price to the market. Also, for most of the selected products, the primary source of imports is South Africa (with the exception being chicken imports from Brazil). We therefore use the cost of imports from South Africa as the basis for our analysis of the observed variations between prices in Nelspruit versus Maputo, for each product. The tables that follow present a build-up of cost estimates with the aim of explaining as much as possible of the price difference in terms of observable costs such as import duties, transportation costs, and customs delays; the remainder of the price difference is then attributable to operating markups and price differentials within the commercial sector in Maputo.

Drawing on information from interviews with retailers, transporters, and government officials, we have used the following assumptions for estimating the build-up of costs for importing food products from Nelspruit to Maputo:

1. Due to lack of data on prices at the supermarket distribution centers in Nelspruit, we derive these prices from the observed shelf price in Nelspruit. Specifically, we assume that retail operating costs in Nelspruit average 10 percent of the shelf price, net of VAT, and that transportation costs from the local distribution centers to supermarkets in Nelspruit average 1 percent. We also take the average profit margin for South African retailers to be 5.0 percent.[56] These assumptions allow us to estimate the average price for each commodity *at the distribution center* in South Africa. We then use this estimate of the price at the distribution center as the FOB value for the commodity that gets imported to Maputo.
2. We assume that goods are transported from Nelspruit to Maputo in a 28-tonne truck, and that the cost, including insurance and handling, for a 28-tonne truck to Maputo costs on average about 28,000 ZAR.[57]
3. Our interviews confirmed that perishable goods generally pass through the 4KM border and FRIGO near Maputo within a day, with special authorizations for perishables. For

[56] Deloitte's 2014 report on *Global Powers of Retailing 2014* shows that the average net profit margin is 4.4% for the top 250 retailers in Africa, including major South African retailers such as Spar and ShopRite. The net profit margin is defined as the ratio of net income (after interest and taxes) to total sales revenue.

[57] For conversion to Meticais, we use the same exchange rate here (2.9 MT to 1 ZAR) as we used to convert average food prices in Nelspruit to Meticais.

non-perishables, we assume an average stay at the 4KM border for four days and at FRIGO for two days.

4. The financial cost of each additional day of delay for customs clearance is about ZAR 4,500 per day.
5. About 10 percent of trucks crossing the border are now selected for going through the new scanning services at FRIGO (known as *Kudumba*), requiring nominal additional costs of US $100 per truck.

In addition to these cost assumptions, Mozambique's Customs Authority provided the import duties and tax rates applicable to imports from South Africa under the current SADC protocol for each of the eight commodities, as listed below:

Table 7: Tax Rates applied on imports from South Africa

Commodity	Import Duty	VAT on Imports[58]
Sugar	3%	17%
Maize Flour	10%	17%
Chicken	10%	17%
- from Brazil[59]	*20%*	*17%*
Tomatoes	10%	0%
Cooking Oil	10%	17%
Tomato Paste	0%	17%
Baked Beans	0%	17%
Tuna	0%	17%

Source: Customs General Directorate

Our analysis of the price differentials also makes use of the Mozambican government's Decree 56/2011, which sets ceilings for the allowable operating costs and profit margins that wholesalers and retailers may incorporate in prices for twelve basic food products. The maximum allowable profit margin for each product is shown in Table 8. For this purpose, the Decree defines the profit margin as the difference between the sales price and the "total cost" of the goods. It is therefore a measure of gross profit, presumable before taxes, interest charges, and depreciation.

Table 8: Maximum Allowable Profit Margin for Basic Food Commodities

Commodity	Wholesaler	Retailer
Frozen Chicken	12%	25%
Fish	12%	25%

58 The VAT on imports has only a small effect on the retail price due to the VAT credit mechanism. Suppose the 17% VAT is paid on imports and reclaimed as a VAT credit on sales made within one month. Also suppose that the interest rate on working capital for a major chain is 10%. Then VAT at the border would explain a price increase of just 0.14% (17% x 10%/12). The main impact of VAT is simply to boost that retail price by 17%.

59 This is the duty for imports from outside SADC, under HS code 0207.12.00—Frozen chickens, not cut into parts.

Beans	10%	20%
Rice	10%	20%
Maize Flour	10%	20%
Wheat Flour	10%	20%
Edible Oil	10%	20%
Sugar	10%	20%
Tomato	10%	25%
Onion	10%	25%
Potatoes	10%	25%
Eggs	12%	25%

Source: Decree 56/2011

For warehouses or wholesalers dealing with imported products, the "total cost" referred to above as the basis for calculating the profit margin includes the CIF price, all port charges, customs duties, and border fees, local transport to the warehouse, and "other diverse charges" ("*outros encargos diversos*") up to 5 percent of the cost of product in the warehouse.[60] At the retail level, the "total cost" of goods includes the procurement price, excluding VAT, local transport from the warehouse, and other diverse charges up to 7 percent of the cost of acquisition at the wholesaler. Again, the allowable profit margins shown in Table 8—wholesale or retail—apply on top of the "total cost" of goods, as just described.[61]

The decree stipulates a penalty for infraction for retailers at 50 times the minimum wage for the non-financial service sector; and for wholesalers at 40 times the same minimum wage. The monthly minimum wage for non-financial services sector in Mozambique was MT 4,228 in 2014, or about US $141 per month. Hence, the penalty is about $7,050. That is quite small for a large supermarket. However, the decree is ambiguous in regards to whether the penalty is applied per identified violation, or per day of identified violation, and whether each item sold at an excess markup is considered a separate infraction. In the latter two cases, the penalty could potentially be quite high. Also, for a repeat infraction within six months the penalty doubles and the establishment can be shut down for three to thirty days.

Four points about Decree 56/2011 are worth noting. First, for any supermarket that places deliveries in a warehouse facility, the Decree allows the company to apply both the warehouse and retail markups, leaving ample scope for quite a high overall markup on the final retail price. Since supermarkets must have a place to store deliveries in excess of the immediately available

[60] For goods produced domestically, the "total cost" to the wholesaler or warehouse includes the procurement price excluding VAT, the cost of transportation and insurance, and other charges up to 7 percent.

[61] It was noted earlier (see footnote 56) that Deloitte has reported an average *net* profit margin for large retailers in Africa at 4.4%. The Decree allows much higher profit margins, but in this case the margins refer to *gross* profit. Gross profits exceed net profits due to deductions for taxes, depreciation and interest costs. With a corporate tax rate of 32% in Mozambique, the tax factor would boost the Deloitte figure to 6.5%. The burden of interest plus depreciation is likely to be no greater than the corporate tax. Assuming again Using an adjustment of 32% brings the estimate for gross profit to 9.5%--still far below the margins allowed under the Decree.

shelf space, this condition is likely to be utilized even if the warehouse is not a separate physical building.

Second, our interviews suggest that the margins allowed under the Decree are not based on any serious study of margins that are required for maintaining supermarket operations or attracting new investment into the sector.

Third, as long as the market can bear the full markup, the Decree essentially invites traders to apply these pricing components fully. Hence, the Decree might actually be causing higher retail prices for basic products in Mozambique, when it was intended to do the opposite. Of course, market forces would limit this kind of exercise of pricing discretion, if the supermarket sector were highly competitive; but currently that is not the case.

Fourth, government-imposed ceilings of this sort in Mozambique may also add to the cost of doing business through intrusive inspections and punitive fines (*multas*), often for minor infractions.[62] This situation creates incentives for corrupt practices via informal payments to inspectors, in order to avoid fines. In essence, such price controls are incompatible with the development of the market economy. The best way to remedy excessive pricing is through improving the business environment to promote competition and strengthen market forces.

For purposes of analyzing price differentials, we will assume as a benchmark here that retailers apply the maximum ceilings for those products covered by Decree 56/2011. This assumption may not hold for all commodities, because retailers may apply a lower markup where warranted by demand conditions, competitive pressures, or marketing strategies. However, the analysis below shows that the full allowable markup, or something close to it, is indeed built into the shelf price for most of the covered products. Indeed for two of the staple foods (sugar and cooking oil), the markup estimated here appears even to exceed the limits set by the Decree. This might be attributable to uncertainty about our assumptions on other cost elements, but no plausible change in these assumptions would alter the conclusion that supermarket margins tend to approximate the maximum allowable levels, for goods covered by the Decree.

For the products under review that are not covered by the Decree, we estimate the markup as a residual, calculated simply as the difference between the observed retail price and the estimated supply price to Maputo, taking into account observable cost elements as outlined above.

To summarize the methodology, we start with the observed retail price in Nelspruit as the basis for estimating the supply price at a distribution center in Nelspruit, which we take as the f.o.b. cost for importing each product into Mozambique from South Africa. We then seek to explain the difference between (a) this supply price at the distribution center and (b) the observed shelf price

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[62] Inspectors for MIC have a direct incentive to levy maximum fines for any fraction, because a portion of the money collected from these charges is earmarked for distribution back to personnel of the Ministry. In past years, a portion of the fine was paid directly to the individual inspectors, themselves.

in Maputo (net of VAT), in terms of estimates for the observable costs for delivery to Maputo, and mark-ups on the delivered product at the warehouse and the retail store in Maputo. All of these estimates are expressed in Meticais, using the exchange rate with the Rand that prevailed at the time of the supermarket visits.

Given this methodology, the analysis will show that the *observable* cost elements explain less than half of the price variance between Nelspruit and Maputo, for identical items sold in major supermarkets in the two cities.

SUGAR

The price differences for sugar in Nelspruit and Maputo, as shown in Tables 2 and 3 above, compare sugar produced in Swaziland, not domestically produced in Mozambique. As explained in Section 2, only this one brand was common to both cities. Since supermarkets in Maputo mainly procure imported goods from distribution centers in South Africa, we examine the price difference for this particular product using as a benchmark the cost that would apply if the Swazi sugar were to reach supermarkets in Maputo via distribution centers in Nelspruit. Alternatively, this calculation can be viewed as the price difference that would be expected from spatial price arbitrage, given the ease with which this product can cross the border.

Table 9 breaks down the difference in prices between Nelspruit and Maputo for this case.

Table 9: Explaining difference in Sugar Prices (1 Kg Bag)

	In MT	As a % of difference
Average retail price of sugar in Nelspruit	27.57	
Estimated price of sugar at distribution center 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 (as per Decree 56/2011)	1.41	6%
Wholesale Profit Margin (per Decree 56/2011)	2.96	12%
Allowance for retail operational costs (as per Decree 56/2011)	2.28	9%
Retail Profit Margin (per Decree 56/2011)	6.97	28%
Other price determinants (unexplained residual)	3.78	15%

Source: Authors' Calculations

Given our estimate of the f.o.b. price in Nelspruit at 20.75MT per kilogram of sugar and the observed shelf price in Maputo of 45.58MT (net of VAT), we have a price difference of 24.83MT to be explained. We estimated that transport costs and the costs of customs delays at the border each account for 12 percent of the price difference. Border taxes and fees incurred at FRIGO account for approximately 6 percent of the price difference. Taken together, these observable factors represent 30 percent of the price difference that we are seeking to explain. Therefore, an estimated 70 percent of the price difference is attributable to warehouse and retail markups in Maputo, including operating margins and profit margins.

As per Decree 56/2011, the maximum margins for operating costs and profits at the wholesale or warehouse level are 5 percent and 10 percent, respectively. At the retail level, the allowable ceilings are 7 percent for operating costs, and 20 percent for the profit margin. If a supermarket structures its procurement system so as to apply the maximum mark-ups at both the retail and wholesale levels, these combined mark-ups would account for 55 percent of the observed price difference. This leaves 15 percent of the estimated price difference unexplained, after accounting for transport costs, duties, border delays, and the maximum allowable markups for operating costs and profits.

MAIZE FLOUR

As noted in the previous section, it is likely that the price difference in maize flour between Nelspruit and Maputo may stem from high costs of milling in Mozambique. However, for this study, in order to compare exactly the same products in both cities, we are focusing on maize flour that is imported from South African distribution centers, rather than maize grain that is processed domestically.

Table 10: Explaining difference in Maize Flour (White Star, 1 Kg Bag)

	In MT	As a % of difference
Average retail price of maize flour in Nelspruit	21.29	
Estimated price at distribution center 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 (as per 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 (residual from price build-up)	3.91	22%
Other price determinants (unexplained residual)	0.00	0%

Source: Authors' Calculations

For maize flour, the estimated f.o.b. price in Nelspruit is 16.02MT per kilogram, while the observed shelf price in Maputo of 34.19MT (net of VAT), giving a price difference of 18.16MT, to be explained. Here, 47 percent of the price difference can be attributed to observable cost factors, as defined above, leaving 53 percent as being attributable to wholesale and/or retail mark-ups. Unlike the case of sugar, the total mark-up on maize flour is less than the maximum allowed under Decreto 56/2011. Specifically, the estimated total markup is 9.69MT per kilogram, whereas the decree would allow markups summing to 11.83MT—consisting of 1.22MT for warehouse operating costs; 2.57MT for warehouse-level profit; 1.98 for retail operating costs; and 6.06MT for the retail profit margin. Evidently, for this case, the market does not bear the full extent of the allowable markups. It is also possible that supermarkets in Maputo might choose to apply less than the maximum allowable markups on this product as part of their marketing strategy. Nonetheless, we still find that wholesale and retail markups in Maputo account for more than half of the estimated price difference, with the margins totaling nearly 40 percent on top of the procurement plus delivery cost to Maputo.

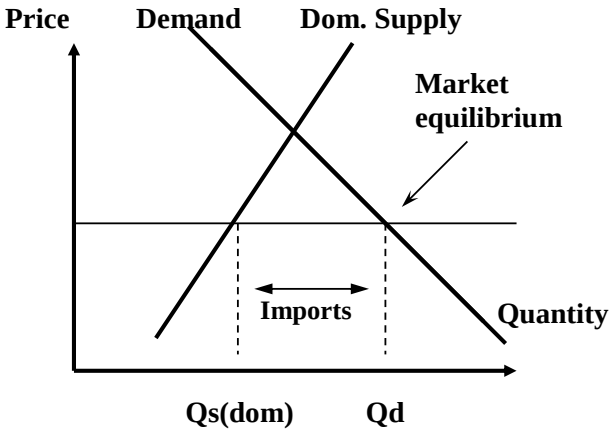
Suppose, instead, that there is no wholesale or warehouse link in supply chain, so that there are no operating costs and profit margins at this level. In this case, Decree 56/2011 would limit the markup to those applied at the retail level. In this scenario, 15 percent of the price difference for maize flour between Nelspruit and Maputo would unexplained by the cost and profit components that are captured in our analysis.

CHICKEN

The case of chicken presents an interesting puzzle. Imports of frozen chicken from Brazil appear to be the source of supply at the margin to urban markets in both Mozambique and South Africa, yet the observed price for frozen chicken in Nelspruit turned out to be highly inconsistent with available data on the cost of importing frozen chicken from Brazil. The inconsistency might be traced to differences in the quality of chicken, or factors not captured in this analysis. Because of these anomalies, the chicken sector requires further in-depth investigation. Here, we present our findings, given the data collected for this study, based on the assumption in this case that the import parity price of frozen chickens originating in Brazil should be driving the market prices in both countries.

The starting point is the simple supply and demand graph in Figure 13 below. In situations where domestic supply (Qs) does not satisfy domestic demand (Qd), the gap is filled by imports. And where imports are the source of supply at the margin, the import parity price (inclusive of tariffs and trading margins) becomes the equilibrium price in the domestic market. As and when the domestic supply curve shifts to the right sufficiently to satisfy domestic demand (through a combination of increased capacity and improved efficiency), the import price will no longer determine the market equilibrium.

Figure 12: Relevance of Import Parity Price



Our interviews with Shoprite and Game confirmed that chicken is either procured locally in Mozambique or imported from Brazil. As storage facilities are a constraint—even for Shoprite, which has the largest number of existing and planned stores in Mozambique—retailers prefer to procure locally through supplier agents, or national suppliers such as Nacional. As explained in section 4, however, imports from Brazil are still the source of supply at the margin.

Another factor affecting the price of frozen chicken in Mozambique is the apparent restriction placed on imports through the multi-sector committee discussed in Section 4. Shoprite revealed it was allowed to import only 350 tons of chicken in2014 from outside of Mozambique. In 2015, Shoprite claims to be pushing to import 500 tons of chicken. As national supply is unable to meet demand, particularly during peak season and importers are restricted in import quantities, the equilibrium price of chicken is higher than it would be in a free market with no import restrictions.[63] The informal import quota on chicken therefore creates a shortage of supply, thereby increasing the price of chicken in Mozambique.

Since chicken imports are reported to be the supply source at the margin in South Africa, as well, we focus our analysis of price differences on building up the price in both countries from the CIF import value of frozen chickens from Brazil, taking into account import duties, transport costs and retail markup in both countries. Due to lack of capacity for large shipments at Maputo port, we assume that chickens imported from Brazil are routed via Durban and transshipped to Maputo. In our analysis, we have assumed that retailers in Nelspruit also obtain imported frozen chickens via the port of Durban. Hence, both supply chains face the same c.i.f. price at that point in the supply chain. It may be possible that chickens for Nelspruit arrive through Maputo harbor to save on road transport charges, but port charges via Maputo are probably higher than those in Durban, which benefits greatly from scale economies in shipping and port operations. Also, information

[63] In Figure 12**,** this would be shown by a new supply curve shaped like the domestic supply curve, but lying further to the right by the amount of the fixed ceiling that limits the volume of imports. This will result in a higher equilibrium price.

from our interviews did not provide any reason to consider the case of imported chickens reaching Nelspruit via Maputo.

Table 11 below shows the build-up of prices for importing Brazilian frozen chickens for the case of import parity pricing in both countries. This calculation is based on the actual F.O.B. value per metric ton of chicken from Rio De Janeiro as of November 2014, [64] plus the known cost of shipment and insurance to Durban,[65] and estimated costs of transport to Nelspruit and Maputo.

Table 11: Price Buildup for Frozen Whole Chicken (1.1 Kg), Brazil Import Scenario

	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 Cost 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%

Source: Authors' Calculations

In the case of Mozambique, the table applies the assumption that supermarkets make full use of the maximum allowable warehouse and retail operating costs of 5 percent and 7 percent, respectively, under Decree 56/2011, and the maximum allowable profit margins of 12 percent for warehouse and 25 percent for retail margins. We also assume freight rate from Durban to Maputo

[64] Data from FAO database for FOB export value of chicken from Brazil as of November 2014, http://www.fao.org/economic/est/prices

[65] CIF value estimation assumes $7,400 per 40-foot refrigerated container of frozen meats from Rio de Janeiro to Durban from at: http://worldfreightrates.com/freight#. As per http://www.grwglobal.com/chickenprodpakistan.htm, a 40ft Reefer container contains about 16,000 kg of chicken.

to be USD 1,400 per container—consistent with Druren & Veldman (2009). If the container to Maputo is full of frozen chickens, this works out to an average cost of about USD 0.10 per chicken. If the shipping container mixes chickens and other goods, then the pro-rata freight cost per chicken should be approximately the same as shown in the table as long as the value of the other goods is similar to the value of a shipment of chickens only.

These assumptions, combined with available data on import duties and custom fees, more than fully explain the observed average price of frozen chickens in Maputo. This implies that supermarkets were not applying the maximum allowable margins under Decree 56/2011 for this product at the time of our data collection in Maputo (or that we overestimated some of the cost elements).

In the case of delivery to Nelspruit, we have assumed that custom fees and delay costs in Durban amount to 5 percent of CIF value, with an additional 2.5 percent cost for inland transportation to Nelspruit, which would likely include warehousing and reloading in Johannesburg for transport to Nelspruit. Custom fees do not apply to products that are transshipped through Durban to Maputo, but we have assumed a cost increase of 2.5 percent due to delays in the Durban port. We also assume 2.5 percent each for warehouse and retail operational costs in South Africa, as well as 2.5 percent each for warehouse and retail markups.[66]

The build-up of prices as shown in Table 11 suggests that the retail price for chicken in Nelspruit should be much higher than in Maputo due to the very high import duty that South Africa levies on this product. In fact, the shelf price that we recorded in Nelspruit is actually below the estimated c.i.f. price of chicken imports from Brazil, and far less than the tariff-inclusive cost of imported chickens, which ought to be a major determinant of domestic prices in South Africa. We observe, instead, is that the average price in Nelspruit was about 41 percent lower than in Maputo, less than half of the price suggested by our build-up analysis for supplies to Nelspruit. This glaring anomaly cannot be explained by any revision in our assumptions about markups, operating costs, and transport costs within South Africa. Indeed, the price in Nelspruit is lower than the CIF value plus import duty, alone. Furthermore, if the price in Nelspruit were truly that much lower than in Maputo, then every supermarket in Maputo should have been reporting to us that their frozen chickens were procured through Nelspruit; this certainly was not the case. A possible, though unlikely, factor at play is that sales of frozen chicken represent less than 1 percent of poultry imports to South Africa.[67] Most imports are of chicken parts rather than whole birds. If whole chickens are a luxury item, perhaps the supermarkets in Nelspruit were selling

[66] These assumptions were made due to lack of data on inland transportation costs, custom fees, cost of delays at the South African border, retail and warehouse operating costs and markups. Lower estimates here would result in a smaller difference in prices between Nelspruit and Maputo, while higher cost estimates for these elements of the supply chain in South Africa would increase the estimated price difference.

[67] http://mg.co.za/article/2013-09-30-sa-increases-import-duties-on-whole-chickens-to-82, September 2013

them as a loss leader to attract more affluent shoppers.[68] Finally, the anomaly may simply be due to errors in data collection, quality differences, or other factors not considered in this study.

Even though chicken prices in both countries ought to be driven by the respective import parity prices, the actual price comparison reported in Tables 2 and 3, above, relate to frozen chickens of South African origin that were on the shelves of Spar stores in both cities. For this reason, it is also important to examine the price difference in terms of the actual supply chain from Nelspruit to Maputo, in parallel to the analysis presented above for sugar and maize meal. This analysis is presented in Table 12, under the assumption that trucking costs are doubled due to the need for refrigeration, and that the trucks receive expedited treatment passing through the border with a perishable product.

Table 12: Price Buildup for Frozen Whole Chicken (1.1 Kg), Nelspruit Import Scenario

	In MT	As a % of difference
Average retail price of frozen whole chickens in Nelspruit, incl. VAT	82.77	
Estimated price at distribution center in Nelspruit, net of VAT	72.60	
Average retail price in Maputo, net of VAT	123.93	
Difference in average price	51.33	
Of which:		100%
Transport Cost for Shipment	6.38	12%
Border Taxes	7.90	15%
Cost of delays at 4KM border	0.08	0%
FRIGO Scanning, Parking & Handling	0.12	0%
Additional Transport Costs due to Delays	1.03	2%
Wholesale and Retail Markup	35.82	70%
Of which:		
Allowance for wholesale operational costs (as per Decree 56/2011)	4.41	9%
Wholesale Profit Margin (per Decree 56/2011)	11.10	22%
Allowance for retail operational costs (as per Decree 56/2011)	7.25	14%
Retail Profit Margin (per Decree 56/2011)	27.72	54%
Retail Profit Margin (residual from price build-up)	13.06	25%
Other price determinants (unexplained residual)	0	0%

Source: Authors' Calculations

[68] The low proportion of imports may be even lower as the Government introduced an import tariff of 83 percent in September 2013 on whole birds—the maximum allowable by the World Trade Organization. Given the small demand for whole chicken, frozen whole chicken may be a poor standard for pricing comparisons.

For this scenario, the supermarket markups account for 70 percent of the price difference that we are seeking to explain, with 30 percent being attributable to the cost of moving the refrigerated product to Maputo from a distribution center in Nelspruit. However, the wholesale plus retail markups estimated above, at 35.82MT, are 29 percent below than the full amount of the margins allowed under Decree 56/2011 (which sum to 50.48MT).

TOMATO

Unlike other food commodities in this study, fresh tomatoes are highly seasonal. Our interviews with supermarkets revealed that there is no consistent procurement system for tomatoes. For instance, Game procures all of its fruits and vegetables directly from South Africa irrespective of Mozambican alternatives. Shoprite, on the other hand, procures about 95 percent of its tomatoes in Maputo with the remaining 5 percent from South Africa during off-season around December every month. Shoprite even has direct contracts with a small number of farmers just outside Maputo that supply about 3 tons of tomatoes a week to the stores in and around Maputo. Government and donor programs can encourage this type of linkage between large supermarkets and local suppliers, but not through local content requirements, which tend to shield inefficient producers, leading to higher prices for consumers.

The pricing analysis shown in Table 13 focuses on prices in the Game store for tomatoes procured from South Africa. This approach to comparing tomato prices in the two cities is justified by the fact that the import parity price (which applies to tomato prices at Game) should establish a ceiling on the price of domestically produced tomatoes at Shoprite or other major supermarkets.

Table 13. Explaining difference in Tomato Prices at Game Store (1 Kg)

	In MT	As a % of difference
Average retail price of tomatoes in Nelspruit	55.17	
Estimated average distribution center price of tomatoes in Nelspruit, net of VAT	48.39	
Average retail price of tomatoes in Maputo, (VAT zero rated)	73.00	
Difference in average price of tomatoes	24.61	
Of which:		100%
Transport Cost for Shipment	2.90	12%
Border Taxes	5.13	21%
Cost of delays at 4KM border	0.04	0%
FRIGO Scanning, Parking & Handling	0.12	0%
Additional Transport Costs due to Delays	0.47	2%
Retail Markup	15.94	65%
Of which:		

Allowance for retail operational costs (as per Decree 56/2011)	3.99	16%
Retail Profit Margin (observed)	11.95	49%
Retail Profit Margin allowed (per Decree 56/2011)	15.26	
Other price determinants (unexplained residual)	0.00	0%

Source: Authors' Calculations

Here, we exclude the markups allowed by Decree 56/2011 for wholesale or warehouse operations for two reasons. First, our interview with Game indicated that they do not utilize warehouse facilities in Maputo. Second, our price build-up shows that the estimated markup by the supermarket in Maputo is smaller than the allowable retail margins, alone. Nonetheless, nearly two-thirds of the inter-city price difference (65 percent) is still attributable to the markup, including both operational costs and the profit margin at the retail level. Border taxes are another significant cost component, accounting for an estimated 21 percent of the observed price difference. Transport costs, including border fees and cost of the delays, account for an additional 14 percent of the price difference. This result implies that market for tomatoes in Maputo does not bear the full set of markups permitted under the Decree—at least not during the period of strong local supply, when the data collection for this study took place.

COOKING OIL

For analysis of the price differential on cooking oil, we use the South African brand Sunfoil canola oil as the common denominator between Nelspruit and Maputo. Table 14 shows our estimates of the various cost elements for this product.

Table 14: Explaining difference in Cooking Oil Prices (1 Liter)

	In MT	As a % of difference
Average retail price of cooking oil in Nelspruit	43.88	
Estimated average distribution center price of cooking oil in Nelspruit, net of VAT	33.03	
Average retail price of cooking oil in Maputo, net of VAT	67.52	
Difference in average price of cooking oil	34.50	
Of which:		100%
Transport Cost for Shipment	2.67	8%
Border Taxes	3.57	10%
Cost of delays at 4KM border	0.16	0%
FRIGO Scanning, Parking & Handling	1.21	3%
Additional Transport Costs due to Delays	2.57	7%
Wholesale and Retail Markup	24.32	71%
Of which:		
Allowance for wholesale operational costs (as per Decree 56/2011)	2.16	6%
Wholesale Profit Margin (per Decree 56/2011)	4.54	13%
Allowance for retail operational costs (as per Decree 56/2011)	3.49	10%
Retail Profit Margin (per Decree 56/2011)	10.68	31%

Other price determinants (unexplained residual)	3.46	10%

Source: Authors' Calculations

Here, again, the supermarket markups are the most important element of the price difference in cooking oil. In particular, transport costs, border fees, and delay costs account for 18 percent of the difference, with border taxes contributing10 percent. That means that supermarket operating costs and profit margins represent just over 70 percent of the observed price difference. As shown in the table, the estimated markup in this case is actually 10 percent larger than the maximum allowed under the Decree, after taking into account the enumerated cost elements and the ceilings that apply at both the retail and wholesale or warehouse levels. We refer to this (in the last line of the table) as the unexplained residual in the price build-up. This unexplained residual would be even higher—roughly 29 percent—if supermarkets did not incorporate warehouse margins before putting the cooking oil on their shelves for sale.

TOMATO PASTE

Since tomato paste is not a staple food, the retail markups are not subject to ceilings under the Decree. In addition, there is practically no competition for tomato paste from the domestic industry. This allows imported goods to dominate the domestic market and allows retailers the latitude to charge high markups, to the extent that the market will bear. It is not entirely surprising, then, that our estimate of the markup in Mozambique accounts for the bulk of the price difference in tomato paste between Nelspruit and Maputo—in this case almost 90 percent. As shown in Table 15, transport costs, border fees, and custom delays account for about 11 percent of the price difference. There are no import duties on imports of tomato paste from South Africa.

Table 15: Explaining difference in Tomato Paste (410g)

	In MT	As a % of difference
Average retail price of tomato paste in Nelspruit	41.25	
Estimated average distribution center price of tomato paste in Nelspruit, net of VAT	31.05	
Average retail price of tomato paste in Maputo, net of VAT	62.41	
Difference in average price of tomato paste	31.36	
Of which:		100%
Transport Cost for Shipment	1.19	4%
Border Taxes	0.00	0%
Cost of delays at 4KM border	0.07	0%
FRIGO Scanning, Parking & Handling	1.03	3%
Additional Transport Costs due to Delays	1.15	4%
Sales Markup	27.93	89%

Source: Authors' Calculations

BAKED BEANS

Again in the case of baked beans, the supermarket sales markup in Mozambique accounts for the majority of the price difference—about 81 percent. As with tomato paste, there is virtually no

domestic industry processing beans to prepared canned baked beans. Hence, almost all of the domestic consumption is imported from abroad. Baked beans are also considered a luxury item, mainly accessible to people with higher income and varied taste. Both of these factors support the high retail markup. As shown in Table 16, transport costs and related delays account for 14 percent of the price difference, and border fees contribute 4 percent of the difference. As with tomato paste, baked beans originating in South Africa are exempt from import taxes.

Table 16: Explaining difference in Baked Beans Prices (400g)

	In MT	As a % of difference
Average retail price of baked beans in Nelspruit	23.72	
Estimated average distribution center price of baked beans in Nelspruit, net of VAT	17.85	
Average retail price of baked beans in Maputo, net of VAT	33.45	
Difference in average price of baked beans	15.60	
Of which:		100%
Transport Cost for Shipment	1.16	7%
Border Taxes	0.00	0%
Cost of delays at 4KM border	0.07	0%
FRIGO Scanning, Parking & Handling	0.63	4%
Additional Transport Costs due to Delays	1.12	7%
Sales Markup	12.62	81%

Source: Authors' Calculations

TUNA

In common with the analysis for baked beans and tomato paste, in the case of canned tuna the supermarket markups are the primary component of the price difference between Nelspruit and Maputo. In this case the markups account for an estimated 92 percent of the price difference. Transport costs and transport delays, together, represent only 4 percent of the price difference, with border fees accounting for 3 percent of the price differential. No import duty applies to canned tuna from South Africa.

Table 17: Explaining difference in Tuna Prices (170g)

	In MT	As a % of difference
Average retail price of tuna in Nelspruit	53.47	
Estimated average distribution center price of tuna in Nelspruit, net of VAT	40.24	
Average retail price of tuna in Maputo, net of VAT	78.63	
Difference in average price of tuna	38.39	
Of which:		100%
Transport Cost for Shipment	1.16	3%
Border Taxes	0.00	0%
Cost of delays at 4KM border	0.03	0%

FRIGO Scanning, Parking & Handling	1.25	3%
Additional Transport Costs due to Delays	0.48	1%
Sales Markup	35.48	92%

Source: Authors' Calculations

OBSERVATIONS ON THE PRICE DIFFERENTIALS

A common thread throughout the analysis of cost components for the selected commodities is that sales markup is the main element of the observed price difference between Nelspruit and Maputo. Since the study team had no access to proprietary information on supermarket operating costs and profit margins, it has not been possible to unpack the markup into component parts. For the five staple commodities, however, Decree 56/2011 allows us at least to compare the observed markets with the allowable ceilings on margins for profits and operating costs, taking into account both warehouse and retail steps in the supply chain.

Even without having information on the actual supermarket cost structure, we can gain some additional insights by reviewing some of the differences that they face by operating in Maputo versus Nelspruit, in terms of factors that affect the cost of doing business and thus retail prices. Table 18 below presents some rough estimates of basic operating costs for retailers in both Nelspruit and Maputo.

Table 18: Sample Operating Costs in Nelspruit and Maputo

Type of Cost	Nelspruit	Maputo
Average Commercial Space Rental (per sq.ft.)	US$ 10	US$ 40
Minimum Wage of Labor (per month for a clerk in metropolitan area)	US$ 316.00	US$ 140.93
Price of Electricity (per kWh, for low-voltage power)	US$ 0.04	US$ 0.05
Corporate Income Tax Rate	28%	32%
Interest rates on working capital (prime +2%)	11.25%	16%

Source: Authors' Compilation from various sources and interviews

To the extent that operational costs are higher in Maputo, this puts upward pressures on the sales markup in order for supermarkets simply to recover their own costs. (The next section discusses additional costs incurred due to general business environment.) With the exception of labor costs, the other operating costs shown in the table are higher in Maputo than in Nelspruit. Most notably, the rental cost for commercial space is four times as high in Maputo. The difference is much smaller for electricity, but this factor, too, adds to the cost in Maputo. The difference in interest rates for working capital actually translates into a very small cost component per unit of each product. This is because the annualized interest rate has to be pro-rated to the relevant time period, and inventories typically turn over quickly at well-managed supermarkets. If the average turnover period is two weeks, then the difference in interest rates contributes adds just a fraction

of 1 percent to the product price in Maputo. On top of those factors, the corporate income tax rate is higher by four percentage points in Maputo. While this one tax may not be a significant source of the cost difference,[69] what matters to the food prices is the entire array of taxes, fees, and other legal charges in Maputo, compared to similar official charges in Nelspruit. (Tax differences are discussed further in the next section.)

The table shows that the wage rate for unskilled labor is less than half as high in Maputo than in Nelspruit. This difference may be attenuated or even reversed, however, by the fact that the labor cost to an employer is determined not just by the wage rate, but also by labor productivity (as well as other factors such as payroll taxes and fringe benefits). Some of our interviews indicated that labor productivity might be much lower in Mozambique, in that operations here may require more supervisory staff than in South Africa. More detailed study is clearly warranted to assess the effect of all such cost factors on the observed price differentials.

Another noticeable observation from our estimates of the breakdown of the price differences is that the sales markup tends to be higher for the processed products—cooking oil, baked beans, tomato paste, and tuna. For each of these goods, the sales markup accounts for more than half of the price difference between Nelspruit and Maputo. Given fixed operating costs, it is to be expected that a retailer will vary the profit margins across commodities, earning higher margins on some products and less on others, as a strategy to achieve or exceed the target for the aggregate profit margin. This is standard practice in the supermarket industry worldwide, to the extent allowed by demand conditions and the strength of local competition. Processed food imports baked beans, tuna, and tomato paste face little or no domestic competition, and have no regulatory restriction on markups. These commodities therefore provide the opportunity for stores to make higher margins than on goods that face local competition or restrictions on pricing.

Among the staple commodities, sugar appears to have the highest sales markup—accounting for about 70 percent of the difference in prices of sugar in Maputo and Nelspruit. DNA is responsible for controlling the imports and exports of all sugar in Mozambique, and does so for the purpose of supporting the price of sugar in the domestic market by limiting supplies. Of course, there is evidence that contraband sugar is also entering the market, which is to be expected in a country with porous borders, when the domestic market price is well above the price on world markets. Nonetheless, our estimates price build-up in Maputo suggest that supermarket in Maputo apply markups that include the maximum allowable margins for operating costs and profits.

For chickens, domestic supply falls well short of demand, especially in peak season. This, coupled with the fact that retailers face restrictions on the volume of chicken imports, means that scarcity in the market puts upward pressure on the prices in times of peak demand. In this case, factors other than the supply cost come into play to push prices higher.

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[69] In theory, the corporate tax rate should not directly affect pricing, because optimal price to maximize profits is the same whether the state takes 32% or 28% of that pre-tax income. Whether supermarkets actually behave this optimal way is an open question.

With limited capacity at the MIC to enforce Decree 56/2011, combined with the possibility that some inspectors may view informal side payments as a substitute for levying fines, some retailers may even apply markups higher than allowed during periods of peak demand, as part of their pricing strategy, while setting lower margins at other points in the seasonal cycle. Since the present study collected data at just one point in time—September 2014—we are unable to say anything about variations in price differences. Our interviewees suggested, however, that government agencies may lack the detailed data on supermarket operating costs that would be necessary to enforce the Decree systematically and objectively. In addition, there may be limited capacity within MIC to perform such accounting investigations, given the complexity involved in imputing cost margins for particular products on the shelf. Furthermore, the need for supermarket managers to deal with the inspections, and the possible cost of fines or side payments, are added expenses that have to enter into pricing decisions.

More broadly, the analysis in this paper has identified several concerns that call into question the entire justification for maintaining Decree 56/2011. First, the quantitative analysis shows that for several goods the supermarkets appear to be applying markups that are close to the maximum amounts allowed under the Decree, and in some cases even slightly higher. The issue here is that by formally setting allowable margins that appear to be well above industry norms, the Decree could act as an mechanism to anchor expectations in the local supermarket industry, thus inviting companies to set prices higher than would otherwise prevail.[70] Second, as just discussed, there are questions about how the Decree is being implemented, and extra costs thereby created for the supermarkets. Finally, imposition of the Decree is fundamentally inconsistent with development of the market economy.

[70] In conducting interviews, the study team sought to determine the source of the numbers used in Decree 56/2011 to set ceilings on the markups for operating costs and profit margins. It was clear that MIC introduced the measure without conducting a careful study of the appropriate markups. According to one interviewee, the numbers came from an earlier decree that had been abolished in 2005, which itself was based on a measure that had been introduced originally in 1973.

6. Some Considerations for Price Variation

The previous section deals with the direct elements that add up to price differentiation in commodities between Nelspruit and Maputo. In this section, we take a look at other factors that retailers and wholesalers may take into account while determining their retail markup.

BUSINESS ENVIRONMENT AND PROFIT RATES

Any investor who commits capital to open a business has in mind a threshold rate of return on equity, below which the investment will not take place. This threshold rate, or hurdle rate, varies from country to country in consideration of the quality of the general business environment and perceptions about risk, including both economic and political risks. Due to these considerations the hurdle rate for investment in a country like Mozambique is typically well above the comparable rate for doing business in a more developed business environment such as that in South Africa. One would therefore expect that the businesses operating in Mozambique require a higher profit margin, and that this basic factor gets built into pricing decisions.

As one indicator of the business environment, the World Bank ranks 189 economies in the ease of doing business. This ranking is based on standardized surveys of small and medium-size enterprises in 10 areas of business regulation, such as starting a business, resolving insolvency, and getting electricity. In the Doing Business report for 2014, Mozambique was ranked 139th, compared with South Africa's ranking of 41st. Although Mozambique's ranking is in the top 11 among 47 countries Sub-Saharan Africa, it still signals an inefficient and rigid business climate, which is a deterrent to both domestic and foreign investment. Among the Doing Business indicators, Mozambique's ranking is relatively strong in only one: protecting investors. This favorable sign, however, is outweighed by much weaker scores, compared to South Africa, across all of the other rating factors.

Table 19: World Bank Doing Business Rankings

Business Environment Indicator	South Africa	Mozambique
Ease of Doing Business Rank	41	139
Starting a Business	7	11
Dealing with Construction Permits	1	13
Getting Electricity	27	37
Registering Property	15	32
Getting Credit	5	22
Protecting Investors	1	7
Paying Taxes	4	21
Trading Across Borders	7	14
Enforcing Contracts	12	26
Resolving Insolvency	8	26

Source: World Bank Doing Business Indicators Database, 2014

According to Doing Business data, total tax rate—including profit tax, labor and social contributions, and other taxes—is about 36.6 percent in Mozambique. This compares with a total tax rate of about 28.8 percent in South Africa, and 46.2 percent in Sub-Saharan Africa. The World Bank Doing Business indicators collect data for the cost of imports and exports to the largest cities in each country. Mozambique fares better than South Africa in the costs of imports and exports due to the cities used for this comparison. For Mozambique, the World Bank data estimates that exporting from/importing to the coastal city of Maputo costs $1,100 and $1,600 per container, respectively. This compares to the cost per container of exporting from and importing to the inland city of Johannesburg of $1,830 and $2,080, respectively. The indicator unfortunately does not provide data on the costs of imports and exports from Nelspruit.

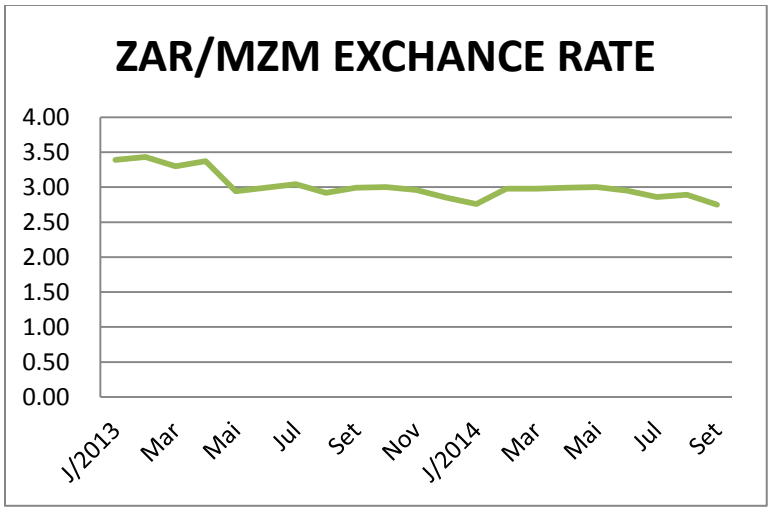
These business environment considerations, therefore, have far reaching implications, including in the pricing structure of food commodities in the Mozambican retail sector.

EXCHANGE RATE VARIATIONS

Price differences in cities of two different countries may in part reflect risks of exchange rate variation. The price differentials examined above were measured using the prevailing exchange rate at a point in time. Still, under conditions where exchange rate fluctuations tend to be pronounced, retailers might be applying higher markups to offsetting the perceived risk of devaluation, and to ensure sufficient cash flow to restock inventories at what could be a less favorable exchange rate. In Mozambique, however, Decree 56/2011 limits the markups that can be applied to most staple foods. Additionally, in our interviews with retailers, they did not express devaluation risk as a consideration in determining markups.

If the Metical were to weaken relative to the South African Rand, the real cost of goods in Maputo would be correspondingly higher simply reflecting the higher cost of Rand in terms of Meticais. In fact, the Medical has been appreciating against the Rand recently, gaining in value by 8.7 percent between September 2013 to September 2014, and by 23 percent from January to September 2013 (see Figure 13). The exchange rate evolution over the last two years has therefore been favorable to reducing the cost of imports from South Africa, which should contribute to lower prices in Mozambique.

Figure 13: ZAR/MZM Exchange rate movements



Source: Banco de Moçambique

INFRASTRUCTURE

South Africa is clearly a leader in the African subcontinent for its level of development and economic sophistication. Neighboring countries like Mozambique therefore compete with a high benchmark. Nonetheless, given the strategic importance of trade and investment between the two countries, it is imperative for Mozambique to move steadily and efficiently towards stepping up infrastructural development as a cornerstone for improving the competitiveness of domestic industries.

The current Global Competitiveness Report (GCR) transportation infrastructure ranks Mozambique 126th out of 144 economies, while South Africa ranks at the 32nd position. Similarly, road quality of infrastructure index is rated on a scale of 1 (extremely underdeveloped—among the worst in the world) to 7 (extensive and efficient—among the best in the world). The GCR rates Mozambique at 2.1, below South Africa's rating of 4.9. Quality of electricity and telephony infrastructure rates 2.2 for Mozambique, and 3.9 for South Africa.

Infrastructure costs add to the operating costs of retailers and warehouses. As the road between Nelspruit and Maputo is quite good, truck transportation may be a less relevant issue than other infrastructure considerations, such as water, electricity, or port efficiency. Additionally, improvements in transport infrastructure within Mozambique can reduce the country's dependence on imports by streamlining the supply chain between domestic producers and domestic markets. The prime example is the high cost of internal transportation, which renders economically unviable the supply of surplus maize from the North to the South.

INFORMAL SECTOR

The prevalent practice of informal trade in Mozambique by large numbers of small-scale informal traders, known as *mukheristas*, has an important influence on retail prices throughout the economy. No formal estimate exists for the number of informal traders operating across or near the border with South Africa, but the number is clearly large enough to create competition for supermarkets, at least for lower-income and middle-income consumers.

As *mukheristas* operate on the margins of the formal economy, they face risks and challenges unique to their undertakings. Due to low literacy levels and inadequate access to information on trade regulations, their operations are susceptible to redundant payments and unnecessary bottlenecks. Access to finance is limited, and women, in particular, are subjected to harassment and sexual abuse at the border posts. Even so, informal traders avoid paying corporate tax and often import duties as well.[71] They also have minimal operating costs, including very low labor costs. Hence, they create a relatively low-cost alternative source of supply for basic commodities. Even wealthy families, in many cases, purchase a portion of their food supplies through open air, informal markets. This presents them with a distinct advantage over supermarkets and other formal retailers who comply with government regulations and pay appropriate taxes and fees on a regular basis. Indeed, in the World Bank Enterprise survey (2007), which surveys a nationally representative group of enterprises in the country, 21.4 percent of the respondents identified competition from the informal sector as the one of the most challenging constraints to doing business in Mozambique; only access to finance was rated as a more serious constraint (cited by 23.1 percent of respondents).

COMPETITION

The modern retail sector in Mozambique is relatively new, having taken off only in the late 1990s, after the end of the civil war and the introduction of market-oriented economic policies. Some Mozambican-owned supermarkets have emerged, but large well-established South African supermarkets such as SPAR, Shoprite, and others have dominated the industry. There are only a handful of supermarket companies overall, however, and most are concentrated in Maputo and a few other major urban centers. Shoprite has announced plans to expand to the rest of the country, and some others are following suit. At the present time, the limited degree of competition in this sector allows supermarkets a degree of latitude to charge higher markups than would be set in a highly competitive market. In the case of sugar, there is not only weak competition at the supermarket level, but also at the import stage, due to controls by DNA. Opening up import rights to legal competition (in addition to contraband) would reduce the domestic price of sugar to consumers (while creating problems for domestic producers, who would face lower prices in the domestic market). Similarly, imports of frozen chicken are artificially restricted, boosting market power for retailers who have access to the limited supply.

Even for staple products that are subject (for now) to legal ceilings on markups, some flexibility in pricing may be afforded by problems with enforcement of the ceilings. In order to enforce the Decree, MIC inspectors must know the cost structure of the supermarkets. Technical capacity to collect and analyze such information is weak, and in any case, the inspectors have to rely on information provided by the supermarkets.

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[71] In increasing number of informal traders in Mozambique are registered for the special simplified tax applying to small businesses, in lieu of registering for income tax and VAT.

Mozambique is a highly import-dependent country, including for food commodities. As shown in this study, the retail markup tends to be higher for products with little to no domestic competition, such as processed foods. This signals a need to foster domestic production, and encourage small and mid-scale processing operations to serve the country's growing demand for higher-end food products. Once local producers improve capacity and efficiency to the point where they become the primary source of supply at the margin for each commodity, then local prices will be delinked from import parity prices and border costs will mainly be relevant for setting a ceiling on the local price via spatial arbitrage.

7. Conclusion

This study has led to three main findings. *First*, we have substantiated the widely held view that food prices are significantly higher in Maputo than in Nelspruit, after controlling for the precise specification of eight important food products that appear on the shelf in both locations. In some cases, the prices in Maputo are higher by more than 50 percent. We also establish that there is much less price variation between Maputo, Beira and Nampula, except for seasonal products such as tomatoes; in fact, no price differences were observed between Maputo, Beira, and Nampula for cooking oil and tomato paste. Prices do vary for sugar, maize flour, baked beans, and tuna. As price differences within Mozambique (Beira, Nampula, and Maputo) were not observed to be significant, the analysis here has focused on price differences between Nelspruit and Maputo. A summary of the price differential between Maputo and Nelspruit is show in Table 20 below.

Table 20: 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	30%	70%	0%
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

Source: Author's data collection and calculations

Second, the most significant cause of price variation for most commodities between Nelspruit and Maputo appears to be supermarket markups, including operating costs and profit margins for the wholesale or warehouse stage and the retail stage in the supply chain. These markups account for as much as 81 percent to 92 percent of the price difference for processed foods, such as baked beans and tuna. Even for staple foods, markups account for at least 50 percent of the price differences between Nelspruit and Maputo.

Although it is has not been possible to obtain hard (and proprietary) data on corporate operating costs and profit margins, our analysis has used plausible assumptions on key parameters, and constraints imposed by Decree 56/2011 for most of the target commodities. Using third party data, we find that major elements of the cost for operating a supermarket are higher in Maputo than in Nelspruit. For example, commercial rental costs are four times higher, while the cost for electricity and working capital are moderately higher, as are tax costs. While labor costs in Mozambique are lower than in South Africa, this advantage may be offset by differences in labor productivity and related expenses for supervision. In addition to direct costs, the overall business environment makes Mozambique a more costly and risky place to do business; these factors affect threshold rate of return required by the parent companies, and thus the retail markups, albeit with variation depending on market conditions for each product. For instance, processed foods are almost all imported and face little or no competition from domestic producers. Not

surprisingly, our estimate of the retail markup for these commodities exceeds that for basic commodities such as tomatoes and chicken, where we observe substantial and growing domestic production.

The analysis points to some relatively quick fixes that can modestly help to reduce prices in Maputo. Although transportation costs and border delays are a relatively small element of the price variation, improvements in customs clearance will reduce costs to some extent, as will reduction in "double time" delays due to the need for trucks to stop at both FRIGO and the 4KM border. Additionally, as Mozambique complies with the SADC protocol and eliminates almost all of its tariff barriers with SADC countries, including South Africa, the import duty component of food prices in Mozambique should fall away.

However, the underlying cause for the price differences is much deeper. The main requirement is to continue pursuing reforms that improve the business environment in order to attract more competition into the retail food industry. The high level of red tape for operating businesses in Mozambique, as indicated by the country's low rank in the World Bank's Doing Business report, also feeds directly into operating costs and hurdle rates of return for investors, which in turn lead to higher product prices for consumers. The need for infrastructure improvement is another important example, including inefficiency in the provision of basic utilities. In addition, underdeveloped transportation systems impede the movement of products from surplus zones to deficit zones, as is the case for maize.

Other areas are much more difficult to address. For instance, rental costs in Maputo are steep, motivating supermarkets to forego storage and warehousing facilities and relying on local agents to supply commodities even if these supplies are unreliable in quantity, quality, and timeliness. In the case of sugar, one major factor holding up the product price results from a difficult political calculation. While the highly protected nature of the sugar industry, via import controls, is needed to support the domestic industry, this support comes at the expense of consumers.

Third, the evidence on supermarket markups calls into question the efficacy and advisability of Decree 56/2011. This Decree sets a ceiling on the markups allowed for operating costs and profit margins on twelve staple commodities. But the established ceilings appear to be well in excess of industry norms: in most countries, supermarkets operate on low markups, made possible through high volume and rapid turnover of stocks. Given the concentrated nature of the supermarket sector, the Decree may actually be serving as an official signal inviting supermarkets to apply higher markups than might otherwise prevail, at both the warehouse and retail level (to the extent consistent with market demand). The study has also raised questions about the capacity of government agencies such as MIC and INAE to enforce the Decree effectively and objectively. To do this, inspectors must be able to verify information provided by retailers and wholesalers, and analyze the data to determine compliance at the level of individual products. Our interviews suggest that the government may lack such capacity, in terms of technical skills and staff availability. Furthermore, there are well known risks in Mozambique that intrusive inspections with large penalties create incentives for illicit side payments. A similar Decree was dropped in 2005, on grounds that it was inconsistent with development of a market economy, as well as

being distortionary and costly to implement. For similar reasons, we conclude that the government should seriously reconsider maintaining the Decree.

Our analysis also raises questions about the advisability of import restrictions that limit supply and creating market shortages. In the case of chicken, for instance, informal import restrictions may be one of the principal reasons behind high retail prices of chicken. Such measures may have the effect of covering up and perpetuating inefficiency in the domestic supply chain, at the expense of consumers. Instead, the aim of regulations and restrictions must be to enhance efficiency and capacity in the domestic supply chain.

Finally, the analysis presented in this report suggests several avenues for further research. These include:

- Studying price differences across the various segments of the urban retail food market for staple foods, including variances between supermarkets, small retail shops, and informal markets.
- Analyzing cross-border price variances in terms of a standard basket of foods, based on the cost to the consumer for purchasing the most popular brand of each product in each city, rather than constraining the analysis (as done here) to identical items found on the shelf in both cities irrespective of whether the items so identified are widely purchased.
- Periodically replicating the present analysis (or the variation suggested in the previous bullet point) in order to assess changes over time in the price variance. (This might be turned over to a local consulting company, or possibly an NGO.)
- Revisiting the case of the cross-border price difference for chickens, to resolve the anomalies found in the present analysis.
- Studying in more detail the various taxes and fees contributing to the cost of operating a retail food business in Mozambique.
- Conducting an analysis of potential policies or programs to broaden linkages effects by engaging urban supermarkets in assisting farmers to upgrade productivity, improve storage and packaging, and possibly develop mechanisms for supplier financing.
- Evaluate the economic impact on consumers, as well as producers, due to import restrictions on basic goods such as sugar and chickens.

Annex A. List of Interviewees

Name of Interviewee	Organization	Title
Ms. Brigit Helms	USAID/SPEED	Program Director
Mr. Domingos Mazivila	USAID/SPEED	Policy Advisor
Mr. Hipolito Hamela	CTA	Senior Economist Adviser
Mr Feliberto Navalha	BM	Statistics and Studies Director
Ms Elizabeth	EXTRA	Trading Manager
Ms Denise	ACIS	Executive Secretary
Mr Aly Malla	CUSTOMS	Deputy Director for organization and working Methods
Ms Mara	Trans border trader	Trans border trader
Mr Muianga	MIC –Trade	National Director
Mr Rafael Uaiene	MSU	In-Country Coordinator
Mr Tiago Langa	INAE	Director
Mr Novela	Assoc. MUKHERO	President
Mr. Pine Opperman	Shoprite/Freshmark	Trading Manager
Mr. Jacques Richard	Shoprite Propco Mozambique Limitada	Financial Director
Mr. George Lingris	Game	Floor Manager
Mr. Shane Peterson	SPAR South Africa Lowveld Distribution Center	Export Manager
Mr. Calado Domingos M. da Silvs	Ministry of Industry and Trade	Director of International Relations
Mr Pauilo Balate	Association of Oil Producers	General Secretary
Mr. Ricardo Islanga	FRIGO	Manager
Mr. Lionel Roberts	LS Serviços	General Manager
Mr Feisal Lala	Imago Logistics	Manager

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