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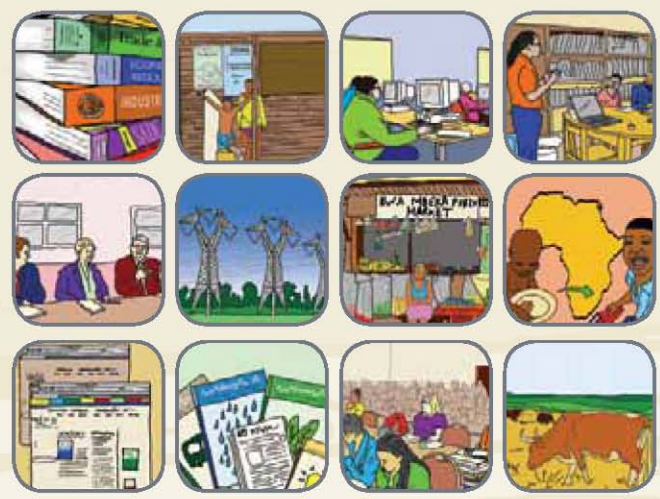
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The 2007/8 Food Crisis: The Case of Maize and Maize Taxation in Southern Africa

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indigenous growth

The 2007/8 Food Crisis: The Case of Maize and Maize Taxation in Southern Africa

by

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Introduction

Maize is the most important staple cereal product consumed in the Southern African region. The purpose of this paper is to examine the origins of the global 2007/8 food price crisis and the impact this had on the trade in maize within the Southern African Customs Union (SACU) customs union as well as to consider the impact on consumer prices of maize. The reason why maize is central to this issue is not simply because of its roles as the principle staple food product of the SACU region but because much of the global crisis that occurred in 2008 had its origins in changes in US ethanol policy which were related specifically to the maize sector. The paper also considers whether in fact changes in Value Added Tax (VAT) policy with appropriate and targeted poverty alleviation programs will achieve the objective of decreasing poverty in the SACU region. Lastly the paper considers duty on maize meal and processed maize products which serve to raise the import parity price for meal in an already oligopolistic market.

The pricing of maize of maize products in South Africa has been studied extensively and there is abundant evidence of the existence of market imperfections in the form of oligopolies along the value chain. What will be argued here is that the international crisis which started from the United States of America (USA) and European Union (EU) was only weakly transmitted to Southern Africa because the Republic of South Africa (RSA) experienced its largest maize crop in almost 30 years in 2007/8 and thus the very serious price increases in other regions were much more moderate in SACU because maize was trading at export parity prices. It is argued that with global warming, rising populations and the shift to maize fed bio-fuels the risks of very substantial price increases in future exacerbate concerns regarding food security in Southern Africa. South African Futures Exchange (SAFEX) spot prices for maize rose moderately but have been on a general downward trend. Retail prices for maize meal rose disproportionately during the period.

The Origins and Causes of the Increase in International Food/Oil prices- 2007/8

The main global and international financial institutions (IFIs) that have reviewed the causes and impacts of the food and oil crisis of 2006-2008 have concluded that they were a result of a combination of factors that have been listed in virtually every study (World Bank 2008, IMF 2008, ADB (2008b) that has been undertaken on the subject. These factors include:

- 1) Rising Incomes in India and China causing an increased demand
- 2) Rising petroleum prices
- 3) Increased demand for bio-diesel feedstock from corn and rapeseed
- 4) Currency Fluctuation.

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- 5) Climatic conditions in supplying nations.
- 6) The use of export restrictions by some exporting countries
- 7) Speculation in futures markets on basic commodities
- 8) Lack of productivity growth in key sectors

International organizations including the World Bank (WB) and International Monetary Fund (IMF) which provide national advice to SACU members have avoided apportioning blame for the crisis to policies of individual members for obvious political reasons. However, failing to disentangle the causes of the 2007/8 crisis runs the very serious risk of an inappropriate policy response. If the causes of the food crisis are structural in nature rather than the consequence of random and unexpected confluence of events then they may be repeated in future as the global economy recovers from its current recession.

Indeed subsequent scholarly work by agricultural economists as well as by World Bank staff suggest that there is little evidence to support the blaming of rising incomes in India and China for causing the 2007/8 food crisis. This is in large measure because both countries are substantial net food exporters in most, if not all of the products that experienced substantial price increases. Moreover in soybeans, the one product associated with increased feed for meat consumption, there is evidence that Chinese demand was significant to longer term price rises. Petroleum prices however were affected by increasing demand from these emerging markets. However neither climatic conditions, nor speculation on commodity markets nor productivity growth are supported as key variables in explaining the price increases of 2007/8.

Two factors, oil prices and biodiesel demand along with the structural decline in the value of the US dollar would appear to be primarily responsible for the observed international price rises. However since the last oil shock following the Iranian revolution in 1979/80 bio-fuels and their subsidized introduction have changed the nature of the relationship between food and oil prices. The WB now concludes that for every one percentage point increase in the barrel price of oil the price of maize will rise by 0.9% for all oil prices above USD50 per barrel (World Bank 2009, p7). This has profound implications for food security policy for the wider SACU region. The US intends to use 40% of its maize crop for bio-fuel by 2015. The US is the world's largest exporter of maize, the region's main food staple. South Africa, under normal climatic conditions is SACU's main supplier of maize and prices its product at farm gate based largely on import parity price i.e. global prices and therefore the US (and EU and Chinese) policy will have profound implications on all SACU citizens in the coming years.

It should be recalled that the shift to bio-fuels in the blending of petroleum and diesel in the three main producing countries and regions i.e. the US (maize), Brazil (sugar), and the EU (rapeseed oil) has been the result of subsidies and policy interventions over a prolonged period of time. These subsidies to bio-fuel blending are often thinly disguised subsidies and support measures to the basic feedstock producers i.e. farmers and therefore circumvent, in a World Trade Organisation (WTO)-compatible manner, the prohibitions on further increases in such subsidies provided under the WTO Agreement on Agriculture.

It should also be noted that the use of bio-fuel boom is also being expanded by China and other countries which are late entrants but which have substantial and growing demand for oil.

Indeed the Chinese entry is having a novel and potentially historically important consequence for Africa and parts of Asia as China for example has reportedly been attempting to acquire 4.8 million hectares of land in Zambia and DRC to grow palm oil and jatropha for bio-fuel.

Increases in global production of basic feedstock for bio-fuel may adjust to the increases in demand in the current mandates but these are set to expand greatly and demand for feedstock for bio-fuels from India and China have only just begun. While these so-called ‘first generation’ bio-fuels compete directly with land and water use for food, second and third generation bio-fuels from waste and algae (fed on carbon dioxide) offer greater prospects for less conflictual use of this technology.

Bio-fuel Policies of Major Food Exporters

Country	Mandate
USA	Mandatory target of 7.5 billion gallons of biofuels by 2012, rising to 36 billion by 2022
Brazil	Mandatory blend of 20-25 per cent anhydrous ethanol with petrol; mandatory minimum blend of 3 per cent biodiesel with diesel by July 2008 and 5 per cent by end of 2010
EU	Mandatory target of 10 per cent share of renewable (including biofuels) in transport fuels by 2020
China	15 per cent of transport energy needs from biofuels by 2020
Canada	5 per cent renewable content in petrol by 2010; 2 per cent renewable in diesel fuel and heating oil by 2012
India	Proposed blending mandates of 5-10 per cent of ethanol and 20 per cent of biodiesel

Source: Commonwealth Secretariat (2009)

The decline in the value of the dollar between 2006-2008 was precipitous and this greatly compounded and exaggerated the apparent rise in commodity prices. This decline in the value of the dollar was arrested with the onset of the financial crisis of 2008 and the subsequent but temporary ‘flight to quality’ which followed the downturn. However, while the speculative rise in the value of the dollar throughout the last quarter of 2008 decreased the dollar denominated fall in food prices, this depreciation is being rapidly reversed because the initial decline in the value of the dollar was structural in nature stemming from the trade deficits which have plagued the US economy throughout to the third quarter of 2009. The dollar has commenced to decline against other trading currencies in line with the fundamental imbalances as the concerns pertaining to the global recession begin to recede.

As we shall see below while US and EU policies on biofuels and grain affected global grain prices, the bumper crop of 2007/8 saved the SACU region from what would otherwise have been disastrous consequences for the poor. Had there been a crop similar to that which occurred in 2006/7 then the effects would have been far more severe on low income groups. The spread of bio-fuels together with the increased volatility of rainfall in the Southern African region that will accompany global warming will create potentially very serious consequences for low income segments of the population in future.

Production, Consumption and Imports of Maize in Southern Africa

Global production of maize in 2008 was 789 million tonnes, only 9.8% of which was traded on world markets. SACU production was approximately 13 million tonnes, which is a small but not insignificant proportion of global production. Most maize is consumed domestically within the SACU region though the world market prices continue to be the reference price for producers. Approximately 60% of South Africa maize is white and the remaining 40% yellow and principally used for feed. Maize is the most important field crop in South Africa and throughout the Botswana, Lesotho, Namibia and Swaziland (BLNS) (with the exception of Swaziland). In South Africa maize represents some 44% of field crop production over the 2004-08 period and 16% of total agricultural production in 2007/8. Output per hectare in the commercial maize sector in South Africa is approximately 4.4 tonnes per hectare. In the subsistence sector output per hectare is slightly less than 1 ton. To the extent that data is available it is possible to infer that both subsistence and commercial yields are considerably lower in most BLNS countries than in South Africa.

While other grains such as rice have grown rapidly with rising incomes no other product is of such significance for both producers and consumers. Production of maize in the SACU region principally occurs in South Africa and is undertaken in relatively competitive context with producer prices based on import and export parity prices. The margins between import and export parity prices are very substantial in the RSA context because of the physical isolation from alternative markets and therefore this margin provide a significant room for maneuver in terms of SACU spot market prices and protection from the impact of external shocks to world market prices.

Estimated Cereal and Maize (in brackets) Production, Requirements and Imports for SACU members 2008/9 (000's tonnes)

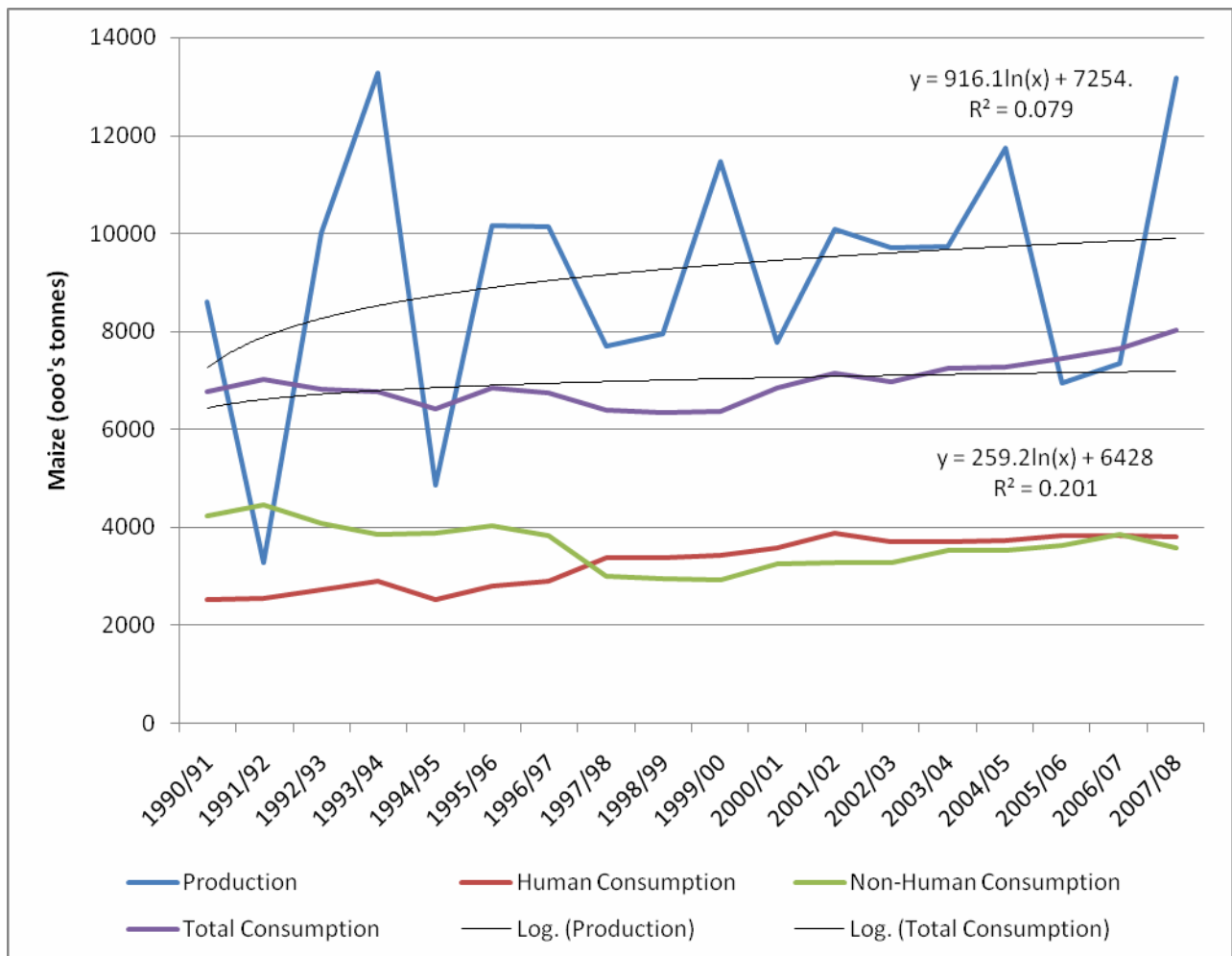
	Production	Imports	Estimated Consumption
Botswana	37(8)	290(135)	296(135)
Lesotho	88(69)	213(118)	323(230)
Namibia	121(68)	123(74)	264(145)
South Africa	15,510(13,164)	1150(0)	14173(10,158)
Swaziland	64(64)	34(34)	172(115)

Source: SADC, Food Security Update, January 2009 NB –Cereals include maize, wheat, rice, sorghum and millet. – Rice is not commercially grown in SACU countries – Numbers in parenthesis represent maize. NB the differences between production plus imports and requirements/consumption is change in stock or aid shipments.

The table above presents the recent estimates of production, imports and consumption of maize and other cereals by SACU member states and indicates that total BLNS imports of grain are 670,000 tones based. This constitutes 4.3% of total RSA production. While this currently constitutes an important addition to the RSA agricultural export market its use declines if the RSA continues its on-going specialization in high value added production rather than basic cereals. Potentially as RSA incomes and population rise and exportable surplus decline the commercial utility of the access to the BLNS commodity markets will also diminish.

The export of maize from RSA has made it one of Southern Africa's principle suppliers, especially in light of the decline in exports from Zimbabwe. As a result, BLNS remain highly dependent upon imports from RSA in order to achieve cereal balance. However in those years where climatic conditions in RSA have meant that SACU domestic production is inadequate to meet local demand then imports of maize and other agricultural products coming from Argentina, Brazil and the USA have made up the balance. At least for maize SACU remains largely self-sufficient as witnessed by figure 1 below though all SACU countries are net cereal importers. However in several years exports of maize from RSA to Southern African Development Community (SADC) countries has become important. In large measure the flat consumption curve for maize depicted below despite the very rapid rise of population in RSA stems from a negative income elasticity of demand. Consumption per capita in RSA of maize has declined dramatically as income has risen over the last 17 years².

RSA Production and Consumption of Maize



Source: Statistics South Africa

² While production data is for RSA alone consumption normally includes exports to BLNS countries which, for statistical purposes have been considered as part of domestic demand.

The table below indicates that Botswana has become a significant importer of processed maize products while imports of unprocessed maize have been in dramatic decline over the last three years. Namibia, on the other hand experienced the opposite indicating a relatively successful replacement of imports of processed maize products. Cereal import dependence on South Africa is very high in the BLNS with most countries buying from RSA as prices are, except in periods of poor harvests between that of the import and export parity price.

Total Maize and Processed Maize Imports, 2000-2008 (ZAR)

	Botswana ¹	Lesotho ²	Namibia ³	South Africa ⁴ (000's ZAR)	Swaziland ⁵
2000	n/a	100,684,085 (75,612,072)	n/a	218,868 (213,883)	n/a
2001	n/a	242,982,227 (152,031,511)	n/a	139,084 (134,916)	n/a
2002	186,000,201 (162,784,195)	329,973,625 (160,884,056)	n/a	1,118,726 (1,112,125)	160,767,850 (155,745,313)
2003	200,282,374 (172,833,713)	254,844,206 (120,951,793)	n/a	522,147 (501,117)	207,082,302 (192,535,300)
2004	151,013,026 (121,364,433)	249,858,881 (80,978,562)	104,159,502 (69,109,092)	493,694 (472,705)	167,137,864 (135,932,892)
2005	138,038,321 (117,217,649)	223,599,914 (36,284,504)	74,335,351 (64,275,357)	70,375 (49,338)	129,540,565 (116,183,841)
2006	175,706,554 (167,154,596)	n/a	96,386,432 (89,414,388)	782,890 (757,388)	114,502,231 (99,543,024)
2007	152,766,330 (99,575,039)	n/a	156,673,658 (139,938,186)	1,501,263 (1,471,893)	368,746,602 (340,183,169)
2008	130,338,236 (54,466,497)	n/a	169,111,888 (157,991,128)	239,614 (220,156)	n/a

Source: Statistics office of SACU members Note- ¹Values are in Pula, ²Values in Maloti, ³Values in Namibian Dollars, ⁴Values in R'000(rands) ⁵Values in Emalangeneni NB Maize include the following tariff lines; 100510 and 100590. Processed maize products include the following tariff lines; 110220, 110313, 110423, 110812. NB Unprocessed Maize imports in brackets

SACU Tariff and Non-Tariff Measures on Maize- A Customs Union but not an FTA for Food

The import duty on maize (HS 11.02.20) is currently zero as published in the South African Government Gazette (8th December 2006). While this is factually correct maize wheat and sugar are subject to dollar based reference prices which are not published in the SACU tariff schedule. There is however a variable levy based on Dollar Based Reference Price (DBRP). If 21 day moving average free on board (FOB) price of US Gulf maize falls by more than US\$7 per ton from the reference price of US\$92.07 per ton for 21 consecutive US trading days a new tariff is triggered (Department of Agriculture-South Africa, 2008, p.13). However, where the world maize price rises above \$110 per ton for more than two weeks maize is granted duty free price (OECD, 2009). It should be noted that even following price decreases on the world market in the wake of the global recession in the 3rd quarter of 2008, the US reference price for maize in March 2009 was still \$70 per ton above the reference price and hence only a dramatic turn in the market would result in the re-imposition of tariffs.

The actual tariff rates applied on the maize value chain are presented in Table below and exhibit the cascading tariff found for many SACU food products. While the raw material is duty free at the moment the more the product is processed the higher the tariff.

SACU MFN Tariffs on the Maize Value Chain

10.05	Maize	Free
11.02.2	Maize Flour	Free
11.03.13	Maize Meal and Groats	5%
1108.12.90	Maize starch in packets exceeding 1.5 kg	10%
15.15.2	Maize Oil	10%
1901.90.10	Malt extract of Maize Flour	10% or 55c/kg less 90% ^{1/}
19.04.10	Prepared foods obtained by the swelling or roasting of cereals or cereal products(e.g. corn flakes)	25%

Source: SACU Tariff Schedule, 2009 1/ The expression 10% or 55c/kg less 90% means that an ad valorem duty of 10% is applicable if the import price is at least 55c/kg. If the import price is lower than 55c/kg then the applicable duty will be 55c/kg less 90% of the import price.

While duties on imported maize and maize flour are now in effect free it should be considered that the trigger mechanism, aimed at protecting SACU producers could result in tariffs rising while consumer prices fall³. Significantly the DBRP trigger mechanism means that at very low prices tariffs can rise substantially. This in turn may have the effect of limiting the potential contestability of the grain market as firm will be reluctant to enter based on what could potentially 99% tariff ceiling. However in light of the tariffs on maize over the last fifteen years the risks that the variable levy regime poses to market penetration is limited⁴.

While SACU is a customs union and has been so for 100 years the provisions of the SACU Agreement permit members to undertake national measures for the promotion of infant industries. The following trade restrictions and other measures pertaining to the intra-SACU trade of maize and maize products were reported. This tends to create a fragmented maize market in the SACU region which protects producers in the BLNS at the expense of consumers

³ The South Africa's WTO binding on maize in the Uruguay round was 99% and with an IQTR at 20% with an initial quota of 161,400 tonnes rising to a final quota of 269,000 tonnes for HS 1005 and 1100 defined as maize and maize equivalent. While this is not commercially significant in a more usual tariff regime it is certainly valuable because it creates a ceiling to tariffs where there is a variable levy regime which is based on reference prices in a volatile international market.

⁴ Import duties on maize since 1994 have been zero in all years except 2000-2005 and 2005-6. The duty was highest at ZAR 0.15103/kg in 2000 and has declined subsequently.

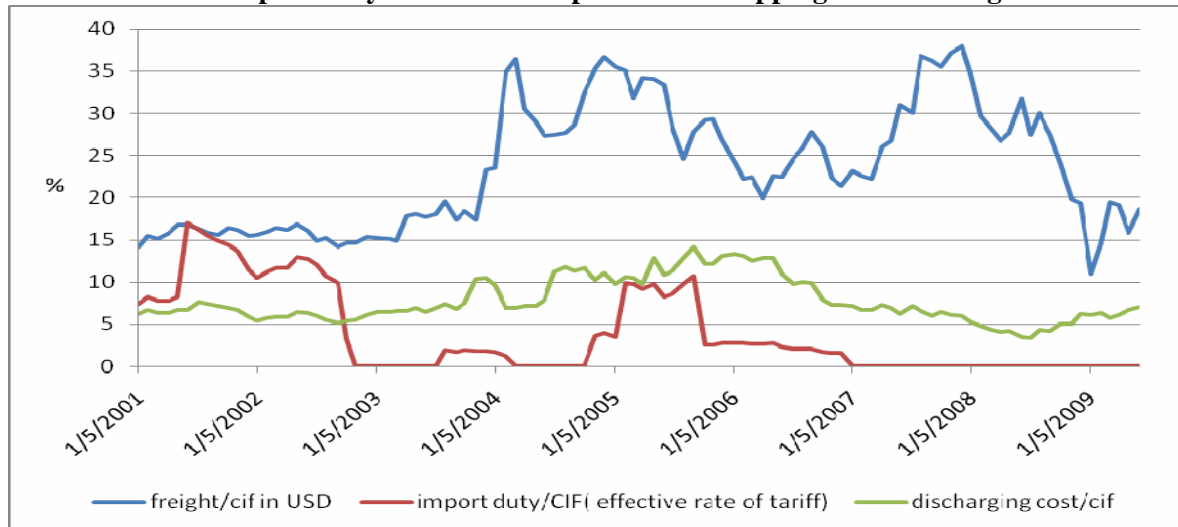
Intra- SACU Trade Measures pertaining to Maize

Country	Measure
Botswana	Import Permit required. Traders must buy 50% of their maize meal from local mills. Import permits are also required on maize feed stock.
Lesotho	No restrictions on imports exist
Namibia	Import of processed yellow and white maize is prohibited in Namibia. Imports are only permitted after the Namibian maize crop has been harvested, purchased and milled.
RSA	No restrictions on imports exist
Swaziland	Maize meal imports are banned.

Source: SADC NTM Study, 2007 and WTO TPR for SACU 2003

It is important to note that Southern Africa producers have a high rate of natural protection from imported and often subsidized imports of maize through high shipping costs from main exporting nations as well the high cost of domestic clearance. While other SADC members such as Zimbabwe were previously in a position to supply maize to SACU consumers this has not been the case for a number of years. The value of the natural protection stemming from remoteness from the main global suppliers is depicted in Figure 6.1 below. It is always necessary to keep the impact of various components of total costs in perspective as throughout most of the period import duties on maize had a lower impact on CIF than did the cost of discharge of imported maize into South Africa. This also adds to the substantial ‘natural protection’ of all SACU producers.

Effective Rate of Import Duty on Maize Compared with Shipping and Discharge Costs

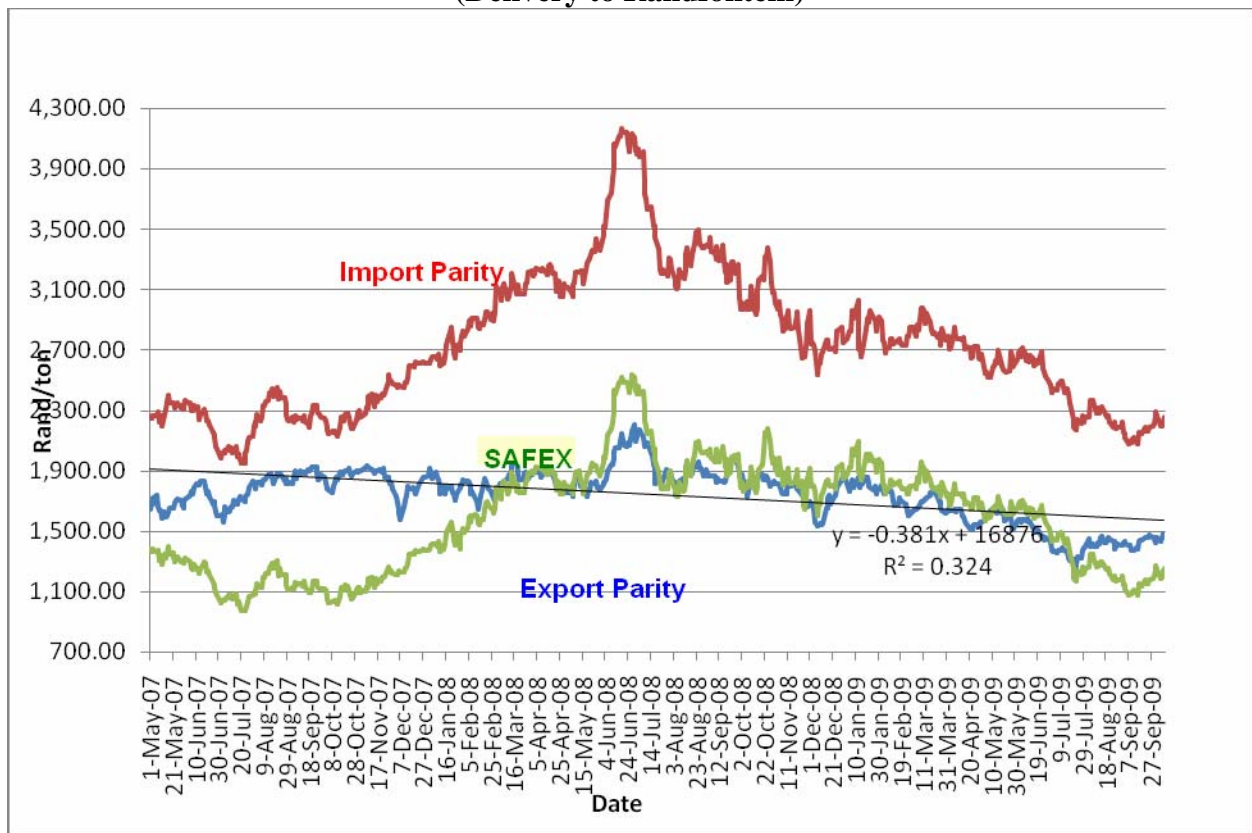


Source: Chicago Board of Trade, SAGIS, author’s calculations

In practical terms the existence of natural protection stemming from high shipping and handling costs for maize has a very substantial impact on maize prices as see in the figure below. The gap between import and export parity is determined principally by the handling and transport cost of the grain between RSA and the US Gulf. When there are surpluses SAFEX spot prices tend to be around export parity prices and when there are market shortages in South Africa prices tend closer to import parity levels. In September 2009 the margin between export and import parity was approximately ZAR 1,100 which results largely from the shipping and handling costs. This is approximately equivalent to the export parity price at the time. This in

effect means that the impact of world prices on SAFEX prices on a day-to-day basis is limited so long as there are no severe shortages. Shortages will shift the SAFEX spot prices to import parity equivalence. By extension the physical proximity of South Africa to the BLNS states which are universally maize deficient countries is one of the single greatest advantages of their trading relationship in terms of food security. As maize does not need to be imported from the US Gulf or Argentina and Brazil the cost of maize is much lower than would otherwise be the case. Thus the natural protection afforded maize producers in South Africa have certainly allowed trade to occur at much lower prices than would otherwise be the case. If however RSA did not have its largest crop since 1981 then the effects of the 2007/8 crisis would have been very severe as prices would have risen to import parity. However even at export parity SAFEX spot prices are not immune from commodity price developments on world markets as witnessed by the export parity price peak in June 2008.

**Import, Export Parity & SAFEX Spot Prices for Gulf White Maize
(Delivery to Randfontein)**

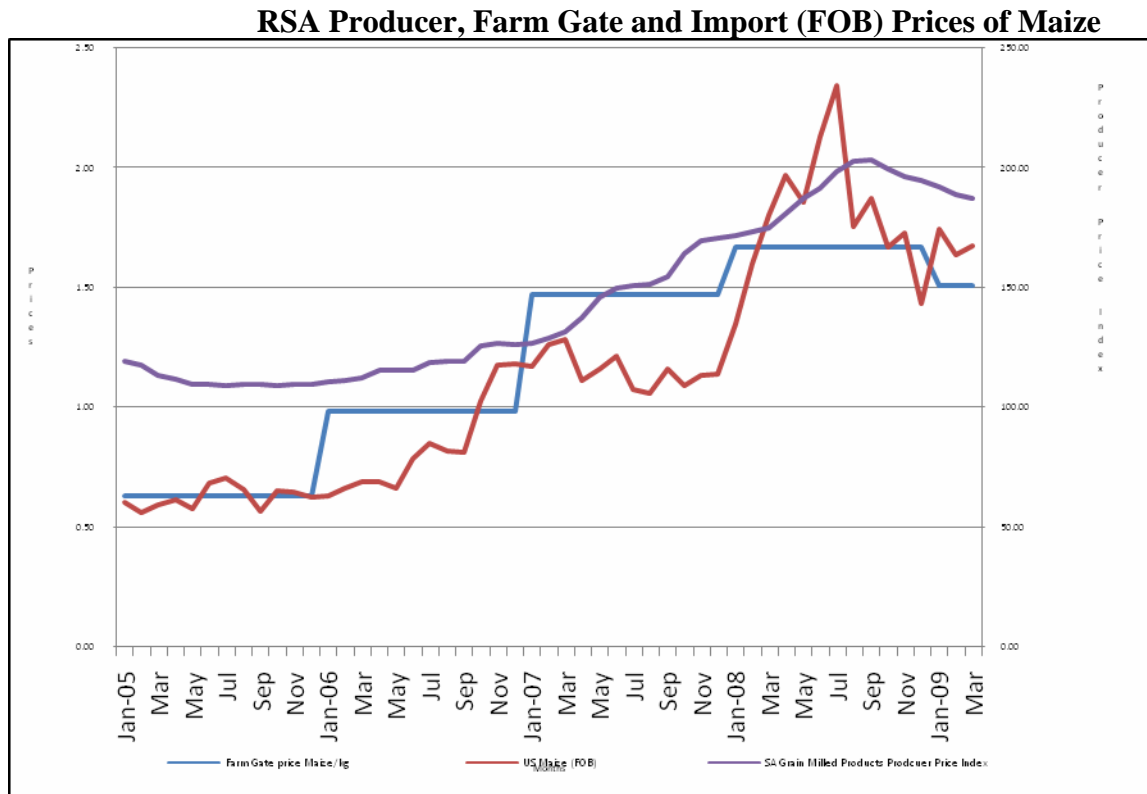


Import, Farm Gate and Consumer Prices for Maize

Producer prices for maize in South Africa, the largest producer and predominant supplier to other SACU members follow the import and export parity prices. The international market sets the broad parameters of internal trading but does not establish the day to day price trends. These are reflected in the SAFEX maize prices as noted above. Over the last five seasons the producer price has doubled as witnessed by the figure below. The co-efficient of correlation

between the producer price and the fob price of US maize is 0.89 for the 2005-2009 periods. Since the deregulation of the market millers have the opportunity to purchase maize either domestically or import and as a result maize prices fluctuate between import and export parity prices.

As is evident from data in Figure below South African import and farm gate prices for maize have also followed the reference world market prices for maize closely. Significantly, as we shall see below, the producer price for milled grains has tended to closely follow the market and farm-gate prices.



Source: Chicago Board of Trade, SAGIS, author's calculations

However, the data suggests that while the various estimates of producer prices are closely correlated to world prices the margin between consumer and farm gate prices has widened sharply from that at the beginning of the period. From January 2005 until March 2009, the last month for which such data is available, South African farm gate-consumer margins rose from R2.8/kg to R4.17/kg maize meal indicating that the milling-wholesale- retail margins had increased by 50% in the period. In part this can be explained by the rate of inflation in South Africa which saw consumer prices rise by 32%. Thus milling and wholesale retail margins for maize grew considerably more rapidly than the increase in the Consumer Price Index (CPI).

Along the maize value chain in particular and the food value chain there are a number of points at which there appears to be considerable concentration and evidence of imperfect

competition in at least two vital parts of that chain. These points include the milling and storage of maize, the provision of fertilizer as well as at the retail end of the food market.

i) Milling and Storage

There appears to be some evidence from earlier studies that this part of the maize and wheat value chains is highly concentrated. While results are slightly dated Cutts concludes that⁵:

The storage and milling industries show a certain degree of concentration which arose naturally from many years of a single channel controlled marketing system. The grain storage capacity in South Africa is approximately 17.5 million tons, 85% of which is in the hands of 22 silo owners. Three of the above silo owners control 70.3% of the total grain storage capacity. Even though the number of informal millers has increased rapidly since deregulation, the situation in the milling industry is not very different from that of the storage industry: 73% of the market share is held by four firms.

In January the RSA Competition Commission has announced that Tiger Brands, would be fined ZAR 99 million over collusion in the bread market. At the same time the Competition Commission added that⁶:

Tiger brought additional information regarding collusive activities in the milling industry to the Commission's attention and was granted conditional leniency in respect of this aspect of its business.

ii) Fertiliser

The single largest fine ever imposed by the RSA Competition Commission was against Sasol in 2009 for ZAR 188 million for its collusive practices in the fertilizer sector The RSA Competition Commission press release relating to its decision on Sasol for collusion in the fertilizer sector said ⁷:

...the Commission found that Sasol and its competitors, Omnia and Yara, divided markets and fixed prices. Sasol, Omnia and Yara, the main suppliers of fertiliser in South Africa, set up various committees to co-ordinate business practices, derive forecasted market shares and ensure balance of supply and demand. In addition, arrangements between these competitors resulted in Sasol becoming the sole wholesale supplier of an important fertiliser product, limestone ammonium nitrate (LAN).

⁵ Cutts, M and Kirsten J (2007), "Asymmetric Price Transmission and Market Concentration: An Investigation into Four South African Agro-Food Industries". *South African Journal of Economics*, 74(2), 323-333.

⁶ Competition Commission, 'Competition Commission settles with Foodcorp' Republic of South Africa, 9th January 2009, http://www.compcom.co.za/resources/Media%20Releases/Media%20Releases%202009/PR01_2009.pdf

⁷ RSA Competition, Press Statement 'Sasol settles Fertilizer Case with Competition Commission ; to pay R188 million , May 6th 2009 http://www.compcom.co.za/resources/Media%20Releases/Media%20Releases%202009/PR09_2009.pdf

Sasol's compliance review uncovered further collusive practices between Sasol, Omnia and Yara, including price fixing, market allocation and collusive tendering in the supply of a wide range of fertiliser products in the period 1996 to 2004, across most provinces of South Africa.

ii) Food Retail

The RSA Competition Commission has initiated an investigation against major South African supermarket chains Pick n Pay, Shoprite/Checkers Woolworths and Spar which are responsible for 60% of the market by turnover. The investigation covers major wholesaler-retailers, Massmart and Metcash for violations of the Competition Act⁸. In particular the Competition Commission is investigating the concentration of buyer power which manifests itself through practices such as exclusive supply arrangements, listing fees, slotting allowances, payment policies, returns policies, promotional discounts and other rebates which potentially limit upstream competition and making it difficult for small producers to gain and retain access to retailers' shelves.

In discussions with large supermarkets in BLNS countries it was indicated that purchasing of maize and other basic staples can only through established branches of South African suppliers for example, Pioneer and Tiger Brands resident in the country or through their buyers based locally or in South Africa. Purchases outside those marketing channels were not permitted.

Food Price Trends

According to the South African National Agricultural Marketing Council (2009), consumer prices have not followed world market prices and have responded very late to the observed decline in world market price⁹:

Maize experienced a year-on-year price decrease of 12.9% between April 2008 and April 2009. During the same period maize product experienced average price increases of 6.33%.....For the period January 2009 to April 2009 maize product prices declined on average by 5.31% (emphasis in original).

The real rise in prices of the region's principle staple product, after taking into account the CPI could either be a result of increased milling margins or rising wholesale-retail margins. No definitive answer to this question can be given because there is no publicly available data on mill-gate prices for individual South African grains. What is available is the South African grain milled products Producer Price Index which covers a wide range of such products which over the same period rose by 56%. There is simply insufficient data to draw concrete conclusions as to which segment of the value chain is the precise source for the observed price escalation¹⁰. As noted above the producer index peaked in September 2008 and began to decline thereafter. This

⁸ Press Release Competition Commission -29th June 2009. 'Competition Commission to probe the supermarket industry'

⁹ National Agricultural Marketing Council, Quarterly Food Price Monitor, May 2009, page 4 v

¹⁰ In 2006, 5 supermarket chains in South Africa controlled 66% of the retail food sales. (See www.planetretail.net). These same supermarket chains operate throughout the SACU region.

very much follows the trends in the global market prices for most grains where prices started to fall either in the second or third quarter of 2008. Significantly the consumer price of maize in South Africa did not decline in the wake of the global market trends or the producer price. In fact consumer price of maize in South Africa has continued to rise until March 2009, the last date for which data is available. There was then a minor decline in RSA maize prices. This suggests that the market price asymmetry that has been observed in South Africa over previous food price cycles¹¹ has continued and given the transnational nature of food retailing in SACU, is in effect extended to the BLNS states.

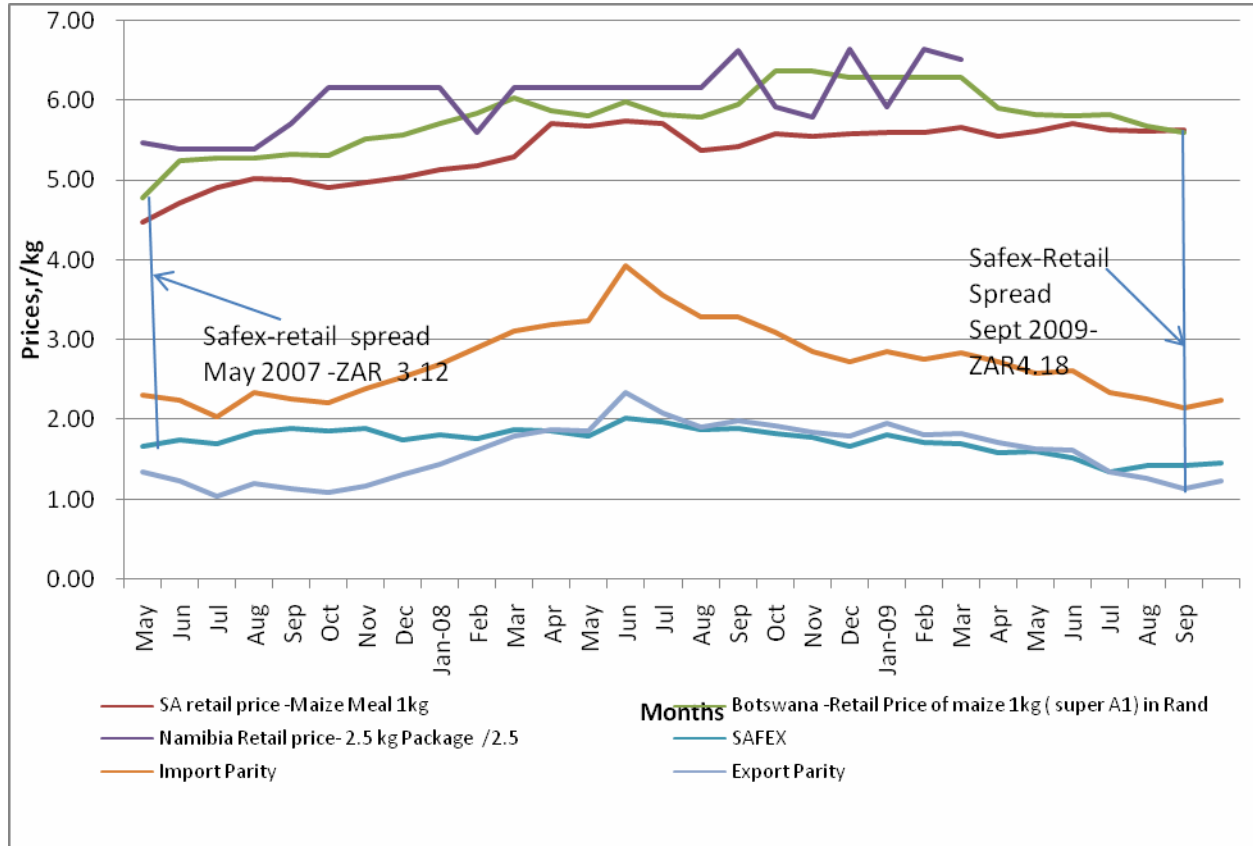
In the case of Botswana the producer to retail price margin more than doubled from R2.30/kg maize to R4.71 per kg. In the case of Namibia, the only other SACU member for which price data was available the margin increased from an already high R4.38 to R6.50¹². Like South Africa, prices for maize in Botswana and Namibia have not declined since the onset of the global financial crisis. Prices for Swaziland, where only a very short time series was available show that the price has declined slightly but maize prices for a 2.5 kg package were significantly higher than that of Botswana or Namibia throughout most of the period for which data is available¹³. Moreover, the results of the comparison indicate that prices are considerably higher than in South Africa.

¹¹ See Cutts, M and Kirsten J. *ibid*.

¹² Interpretations of such data needs to be undertaken with due care as consumer prices comparisons across a range of products are influenced by brand specific issues. However in this case it should be noted that consumer price data for identical quantities and brands was not available from public CPI data. In the case of Namibia a 2.5 kg packet of maize was used as the reference consumer product and then divided by 2.5 to make comparisons with South Africa and Botswana where 1 kg price data was available. What is significant is that per kilo consumer prices for maize in Namibia were considerably higher than that of the other comparators. This is unexpected given that consumer prices normally fall dramatically with the size of the package.

¹³ It should be noted that there is no sales tax imposed on maize in Swaziland.

Consumer and World Prices for Maize and Maize Meal in SACU Countries



Sources: Country’s Central Statistics Office, www.sagis.org.za, SAFEX and Authors own calculations Notes: Namibian prices continue until March 2009

It is significant to note that South African farmers face a globally competitive market for maize. Millers are able to purchase maize at import parity prices duty free at current market prices. The SAFEX spot price above is the price at which. However maize meal, the principle output of the milling process is protected by a 5% tariff on competing products. SACU members may wish to consider whether the 5% tariff for maize meal (HS code 11.03.13) is justifiable in light of the market structure of milling and the retailing of food in the SACU region.

What the data in the table below shows is that when comparing the international price of maize is that prices rose most sharply in Botswana and continued to rise up to March 2009. Only minor price decreases occurred in RSA and Swaziland in March 2009.

Percentage Price Increase in International and Consumer Prices for Maize

	International Comparator Price	Botswana	Namibia	South Africa	Swaziland
Maize-from trough to peak ^a	241.59	114.62	32.79	67.74	-
Maize- from peak to March 2009 ^b	-28.60	6.61	5.85	-0.87	-2.14

Sources: Chicago Board of Trade, www.sagis.org.za, Countries' Central Statistics Offices, FAO commodity Price Database, National Department of Agriculture RSA and author's calculations. a/Trough and peak for maize were recorded in May 2006 and June2008 respectively. b/From peak to March 2009NB no consumer price data was available for Lesotho and Swaziland from 2006-2006

Poverty in the SACU region

The purpose of this section is to review the impact of food price increases on low income groups in SACU. Maize price increases at consumer price level were quite substantial in 2008 and early 2009 despite the fact that RSA had a very substantial crop with large exports. It was only this factor that stopped RSA spot market prices for white maize from rising to import parity levels during the crisis and therefore greatly increasing the loss of welfare resulting from the crisis. The intention of this section is to determine the losses by income group or by income or consumption deciles stemming from the price increases of maize alone. This will provide estimates of the loss of consumer surplus.

Proportion of SACU Population Living below the National Poverty Line

Country	Poverty rate (%)
Botswana	30.6
Lesotho	56.6 (29)
Namibia	28
South Africa	43
Swaziland	69 (37)

Sources: Poverty Datum Line for Botswana, 2009; Lesotho Household Budget Survey, 2002/03; Namibia Household Income and Expenditure Survey, 2003/04; Republic of South Africa Development Indicators Mid-Term Review, 2007; Swaziland Household Income and Expenditure Survey, 2000/01 **NB:** values in parentheses represent food poverty rates

Taxation Policy and Maize Prices.

It has long been argued that policies that move away from a value added tax that is horizontal i.e. applies the same rate for all products is necessarily inefficient. This version of the 'New Zealand' model of VAT provides no zero rating or exemption. The proponents of such a wide VAT argue that zero rating has two significant economic impacts. First it makes the tax compliance system more complex which is certainly the case for retailers having to comply with a fundamentally more complex trading system. Second the zero-rating of VAT taxes is supposed to alleviate the tax burden on the poor but in fact, by its generality also benefits the rich. This too is not in dispute. The question posed here is the counter-factual. The advocates of the elimination of zero-ratings for staple products that are normally employed in many countries argue that the optimal approach is to VAT is to impose a flat tax with no exemptions and to use the added income generated to develop targeted poverty alleviation programs.

However, whether this is in fact the case is an empirical question that will be examined below. The question posed is it possible to raise sufficient revenue so as to make the target group better off. The standard **Pareto criteria** does not lend itself to an analysis of such issues a redistributive question because one party ie the poor are made better of this is in effect predicated on a welfare criteria based on redistributive equity. Can the poor be made better off by increasing the tax burden on the rich? Within this particular context one may posit the question of whether the increase in VAT taxes on the rich and poor be sufficient to compensate the poor as well as provide revenues for a targeted poverty alleviation program as normally recommended by the IMF and World Bank. If the imposition of the VAT tax does not have the potential to compensate poor then it will have failed the redistributive test. The answer to this question is purely technical and will be addressed below. The broader question as to whether this is welfare enhancing must involve some assessment of whether the decrease in the administrative burden associated with a no-exemption VAT policy is greater than the increase in administrative cost of a poverty alleviation program. The reality is that the VAT zero exemptions are costly to implement because of the administrative burden imposed on business. Similarly government transfer systems also impose an administrative burden. There will be some discussion of the cost of such social programs in Botswana.

At present under the domestic VAT and sales tax laws of each of the SACU members maize meal is zero rated in all countries. The list of staples that are zero rated varies from country to country but this is the one staple common to all¹⁴. The table below presents the results of simulation for added VAT revenue from removing the zero-rating in all SACU countries.

Increase in VAT/Sales Tax Revenue from the removal of Zero rating for Maize Meal

	Increase in Tax Revenue (ZAR)
Botswana	31,200,673
Lesotho	62,715,533
Namibia	52,813,962
Swaziland	42,281,527
RSA	1,895,026,192

Source: SADC Maize requirements 2008 & authors calculations. NB assumptions as follows- RSA uses 60% of maize needs for human consumption, Botswana, Lesotho, Namibia and Swaziland 80%, 1 tonne of maize meal produces 700 kg of maize meal. 20% consumption is non-monetized or not captured by VAT.

Imposing VAT on basic staples would certainly generate significant revenues for SACU member states as witnessed by the results presented in the table above. The question is distribution of the taxation incidence of imposing VAT. This depends on several important factors including the consumption patterns of maize as divided by income deciles. With exception of South Africa no country in SACU has a complete data set that would answer this question in a relatively robust fashion. What is needed is a distribution of consumption by

¹⁴ VAT rates in Botswana are 10%, Namibia- 15%, Lesotho 14%, RSA 14% and sales tax in Swaziland is 14%

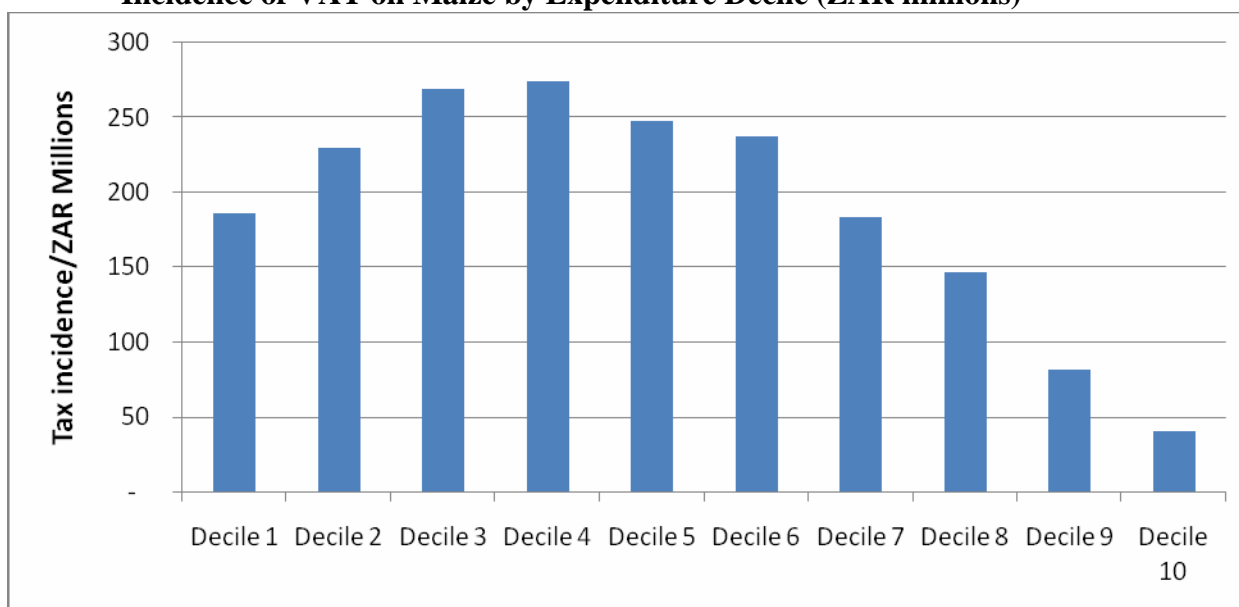
deciles as well as a complete data set on commodity prices¹⁵. The data for Swaziland from the Household Income and Expenditure Survey (HIES) did not permit an analysis of tax incidence.

Distribution of Tax Incidence

i) RSA

The figure below depicts the distribution of the tax burden by decile for the re-imposition of the VAT in RSA. As we know from the table above the RSA defines 43% of its population to be poor and therefore if the total value of the highest six deciles is greater than that of the lowest four then it is not possible to design a targeted intervention that would result in an increase in the welfare of the poor ie it would fail the Robin Hood Criteria. In the case of RSA the total burden on the poor would be ZAR 958 million and the increased revenue from the other six deciles would be ZAR938 million. Thus in RSA it would not be possible to design a pro-poor intervention with the added revenue generated from the additional VAT from the ‘rich’ that would make the poor better off.

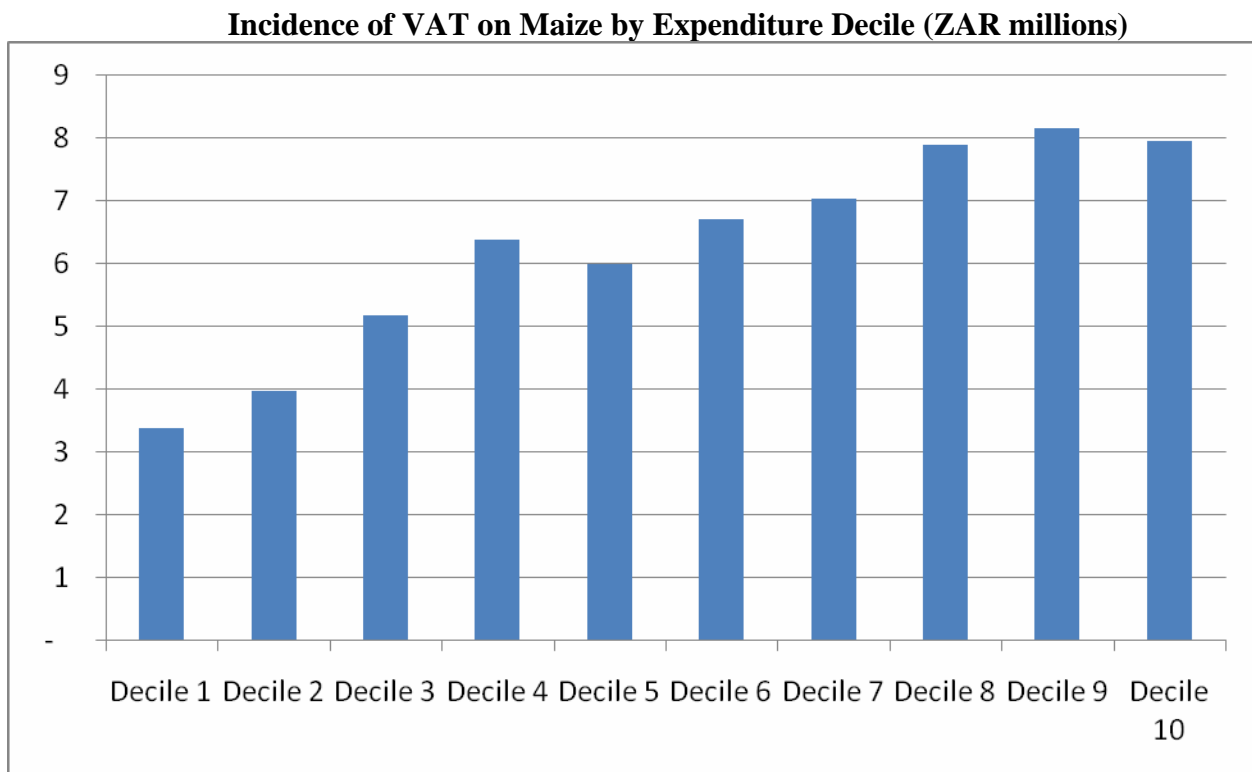
Incidence of VAT on Maize by Expenditure Decile (ZAR millions)



¹⁵ This data is not available for the BLNS and hence assumptions had to be made in order to complete the data set. The Lesotho HIES has a distribution of consumption of maize by deciles but does not have a complete CPI so RSA prices were used for maize. Namibia has a data on the consumption of grains by deciles and prices but no figures on what proportion of maize is consumed by decile. Botswana has no consumption data on maize by decile but by various income groups ie low medium and high. In each case assumptions regarding the apportionment of consumption of maize consumption as a proportion of cereal or food consumption were made. These assumptions are stated in each case.

ii) *Lesotho*

As Lesotho is an LDC the pattern of its consumption of maize, the principle cereal staple is quite different from that of middle income South Africa or Namibia. Whereas in middle income South African maize has the consumption characteristics of an inferior good with consumption falling with income the HIES in Lesotho indicates the opposite and consumption rises with income. In order to determine the incidence it was necessary to use RSA prices of maize as Lesotho had no CPI data. The absence of price data will affect the total burden but not the distribution. In the case of Lesotho the increase in tax revenue on those who are defined as 'not poor' ie the highest 44% of the population is ZAR33 million but the increased burden on the 56% of the population defined as poor is ZAR 28.9 million. Thus imposing VAT does pass the criteria of redistributive equity in Lesotho. This in itself is insufficient to support such a shift in policy. What also has to be determined is whether a well designed and targeted poverty alleviation program can be designed that would increase social welfare.

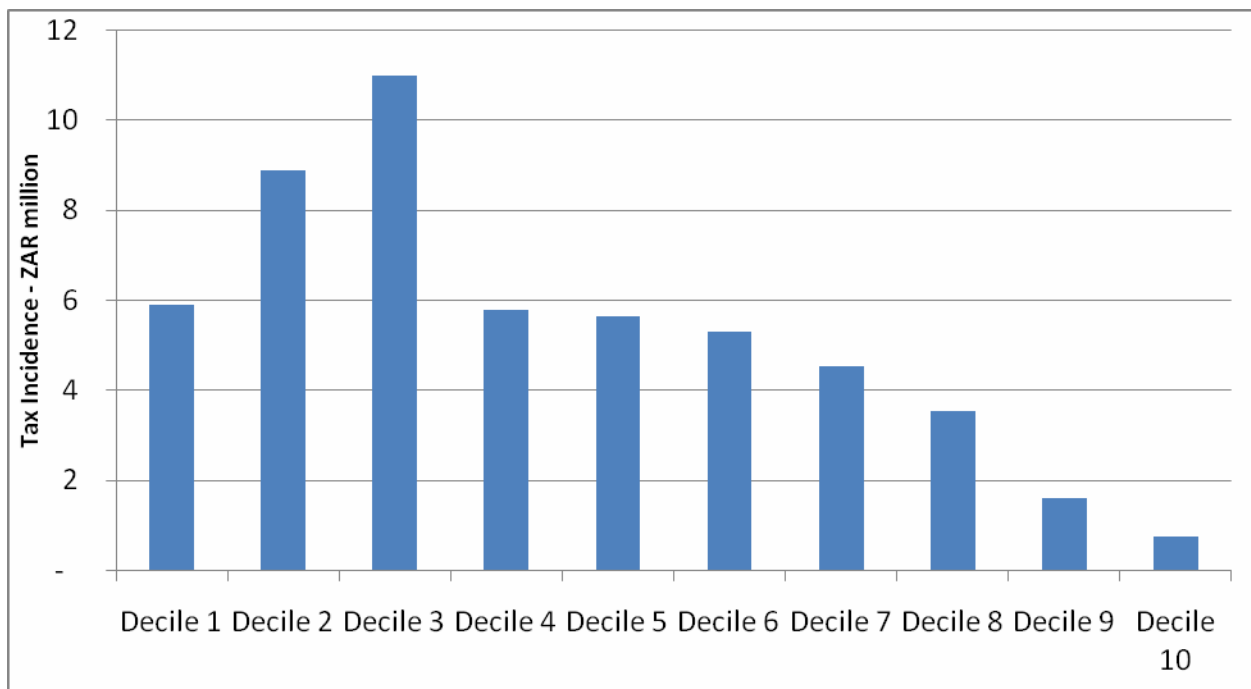


It is important to consider the reasons why the results are reversed in the case of Lesotho. This very much conforms to what economic theory would tell us. While poverty rates are much higher in Lesotho, and the distribution of consumption indicates preferences reflecting a high and positive income elasticity of demand for maize which results in the unusual pattern of consumption rising with income. It is because of this pattern of income distribution plus the income elasticity of demand which reverse the results found in South Africa.

iii) Namibia

The analysis below is indeed predicated on a number of assumptions because while the distribution of consumption of food by income decile is known for Namibia, the share of maize by income deciles is not. It was necessary to make assumptions regarding the importance of maize by deciles. This was based on the assumption that bread and cereals were based the assumption that the poor consumed like the rural average, middle income groups like the urban average and the three highest deciles consumed like South Africans in the same deciles. However because Namibia has the lowest rate of poverty in SACU 28.6% the impact of imposing VAT on maize could potentially raise welfare if an appropriate targeted poverty alleviation strategy could be developed. The increased burden on the poor would be ZAR26 million while the burden on the rich would be ZAR 27 million. The policy conclusion varies significantly with the assumptions employed regarding the intensity of maize consumption in the Namibian food basket by income decile.

Incidence of VAT on Maize by Expenditure Decile (ZAR millions)



What the results above indicate is that whether the implementation of the VAT on maize can be made to potentially benefit the poor will depend ultimately on several predictable economic factors. The most significant is the distribution of income ie the size of the poor relative to the rich. Clearly, in situations such as exist in Swaziland where those the government defines as poor constitute a very large share of the population (69%) a tax on the rich is unlikely to generate enough revenue to cross subsidize the poor. The second factor of relevance is the income elasticity of demand. Staples normally have a very low and often negative income elasticity of demand. In the case of Lesotho where the income elasticity was large and positive, a

situation not typical for staple products such as maize disproportionately consumed by the poor, then the imposition of VAT generated sufficient revenue for a large population of the poor so as to make the imposition of VAT a potentially 'pro-poor' policy. In the case of South Africa where a more normal income elasticity of demand for maize is observed the imposition of VAT cannot, by itself, be made pro-poor. It should however be noted that the incidence analysis is based on several assumption regarding the proportion of maize consumption that is monetized and the proportion that is for human as opposed to non-human consumption. Changes in those assumptions will affect the results of this exercise. It should be reiterated that in all three cases examined above it could only be established that the imposition of VAT tax on maize was potentially 'pro-poor'. The reality of whether an actual pro-poor program with potentially significant administration as well as transaction costs can be designed to be pro-poor is another matter. The experience from the region has been that these programs have in the past been high transaction cost and therefore given the very marginal net benefit for the poor of imposing VAT in the case of Namibia and Lesotho above implies that the case for imposing VAT on maize in order to fund pro-poor programs cannot be made based on available evidence.

CONCLUSION

This paper has argued that the origins of the food crisis of 2007/8 stem from subsidy induced transformation of biofuel production in the US and EU. The US, the world's largest exporters of maize has set production targets that have induced a shift there is considerable evidence that maize in Southern Africa is traded and produced in a highly imperfect market with considerable constraints to trade from oligopolistic choke points along the value chain along with national restrictions in the BLNS that further compound the smooth functioning of the customs union. Prices of maize meal failed to adjust downwards after the market peak of June 2008 and consumer prices continued to rise for at least 6- 8 months after. The SACU market is fragmented both through government policy of BLNS member states and through the inability of private traders to purchase in any country of the customs union. The definition of a market is where arbitrage can occur so as to clear price variations. In the case of SACU significant consumer price differences exist for maize but government policy as well as the restrictions on trade created by large milling and processing companies that do not permit cross-border trade unless it is through their market channels perpetuate price differentials. In the case of many food products in general and maize in particular SACU is a customs but not a free trade area.

Taxes on basic staples such as the 5% tariff on maize meal and DBRP system further restrict the potential contestability in the sector but at different points in the value chain. The DBRP has resulted in no tariffs on grain over the last three years but nonetheless decreases market contestability because market entrants face potentially very high tariffs in the trough of markets. However, as SACU is remote from other maize exporting countries the potential for contestability only occurs when SAFEX spot prices approach import parity which is only in the event of a severe domestic shortfalls. Nevertheless the two tariffs provide further protection to a sector whose output is disproportionately consumed by the poor. Indeed the 5% tariff needs to be reconsidered as it further limits competition in the maize processing sector which is a sector typified by considerable concentration as well as the considerable natural protection created by remoteness from competitors.

The VAT zero-rating on basic staples such as maize has long been criticized by the proponents of a generalized VAT as being regressive and a subsidy to the rich who are also exempted. It has been demonstrated above that based on a welfare criteria that requires such a shift to be pro-poor it could not be demonstrated that imposing VAT could compensate the poor while providing governments with sufficient revenue for targeted pro-poor programs in the case of RSA and that in the cases of Namibia and Lesotho the shift could be 'pro-poor' but the extra revenue generated would be marginal and likely to be absorbed by the increased administrative cost of targeted pro-poor programs.

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