Chapter 9

Sugar in South Africa and Swaziland

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Abstract

The SACU Agreement calls for members to recognise the importance of the agricultural sector to their economies and to cooperate on agricultural policies. Analysis of this sector finds that cooperation is indeed taking place with one notable exception: sugar – a crop important to both Swaziland and South Africa. While South Africa's agricultural pricing and trading structure have been liberalised in the past few years, sugar has not had to adjust to the same extent as other sectors. An outline is provided of how this anomaly remains an outlier in SACU's agricultural policies. However, it is acknowledged that computer modelling shows the regime to be beneficial to SACU.

1. Introduction

Sugar is a key issue in agricultural trade between South Africa/SACU and Brazil, and any assessment of the implications of a freer trading regime between these two parties must reflect this. South Africa is the world's 13th most important producer of cane sugar and sugar is an important export. Similarly, but even more so, sugar dominates Swaziland's agricultural production by value and is currently a crucial export to the EU under preferences which bestow considerable economic rents upon Swaziland given the distorted nature of the EU sugar sector. However, these rents to Swaziland are decreasing and will decrease further as the EU reforms its sugar policies to bring the internal price down to around double the general world price. Partial compensation for falling rents may be forthcoming if the EU provides Swaziland and other non-South African African countries with quota- and duty-free access for sugar under the terms of the Economic Partnership Agreements (EPAs).

Meanwhile, Brazil, the world's top producer and exporter, could potentially be competing on a more level playing field with both South Africa and Swaziland in the SACU market. Importantly, the Brazilian sugar sector operates in a virtually unsubsidised environment. In South Africa, by contrast, the sugar sector remains the

only agricultural sector that has not undergone substantial policy reform and continues to operate under a protectionist cloak. Much of this protection exists despite the SACU Agreement, which has as its underlying philosophy the free movement of domestic products whereby goods grown, produced or manufactured in the Common Customs Area are meant to be free of customs duties and quantitative restrictions within the Union (Article 18).

The objective of this paper is to examine the sugar sectors in the SACU countries more closely and to seek some clarity on what unfettered access for Brazilian imports may mean for the South African and Swazi sugar sectors. Associated with this is the issue of the integration and coordination of agricultural policies within SACU, and what reform of the sugar trading arrangement within SACU may mean for regional integration.

2. The production background

South Africa was behind the Philippines but ahead of Argentina as the 13th largest sugar cane producer globally in 2007, while Swaziland was ranked at number 27. Egypt is the only other African country ranked in the top twenty (16th place) in a list headed by Brazil, India and China. Africa's share of global sugar production is around 5.7%; this share is similar for exports but higher for imports, making the continent a net importer of sugar.

Table 4 shows that sugar cane production in the SADC region as a whole has increased by some 30% since the early 1970s. South Africa is the largest cane producer in the region, with a production pattern that dominates regional production. However, South African production increased by 26% over the period, while production in Swaziland increased by 217%. As a result, South Africa's share of regional production has declined from 90% to 85% of SACU output. The increase in both South Africa and Swaziland is largely due to increased acreage under the crop, because average yields have been declining in South Africa and have been stagnant in Swaziland. The most recent data from the Food and Agricultural Organisation (FAO) reports that South African production in 2007 was 20,300,000 tons while production in Swaziland was around 5,000,000 tons. Thus, production in South Africa fell slightly from the 2000–2005 average while that in Swaziland increased

marginally.

Table 4: Sugarcane production in eastern and southern Africa (average annual tons)

	1970s	1980s	1990s	2000–2005
South Africa	17 043 561	18 518 672	18 201 730	21 470 657
Swaziland	1 834 834	3 548 664	3 828 993	3 980 767
Total SACU	18 878 395	22 067 336	22 030 723	25 451 424
Total SADC	34 686 406	39 048 440	39 275 491	44 949 710
South Africa as a % of SACU	90.28	83.92	82.62	84.36

Source: FAOSTAT database

2.1 The South African sugar sector

By value of production, sugar cane ranks as South Africa's fifth largest agricultural commodity, following cattle meat, chicken meat, grapes and milk, but ahead of maize, eggs and wheat. The industry operates in the deep rural areas of some of the poorest provinces in South Africa – KwaZulu-Natal, Mpumalanga and the Eastern Cape. Direct employment totalled approximately 77 000 jobs, or about 8% of South Africa's agricultural workforce in 2001. Average sugar production is around 2.5 million tons, which generates exports earnings of around R2 billion annually from sugar itself plus the supporting contribution to export industries such as canned fruit. McDonald et al. (2004) reported that the sector has around 50,000 farmers, of whom 48,000 are small-scale growers based in deep rural areas and farming on tribally owned land producing only some 14% of the crop in 2003. Despite concerted attempts to facilitate the transfer of resources to previously disadvantaged farmers, the situation does not appear to have changed much since then. As of 2009 the South African Sugar Association reports that the number of registered sugar cane growers has reduced to some 38,200, with around 1,600 large scale farmers and the rest small farmers on mostly tribal lands. Some 370 of the larger farmers are black emerging farmers. The large farmers and the mill-owned lands produce between 88 and 90% of the cane, with the remaining 10 to 12% produced by the small-scale farmers (SASA 2009).

In South Africa, the entire agricultural sector that had been subjected to some form of market intervention was reformed in the 1990s through trade liberalisation under the Uruguay Round Agreement on Agriculture and then through domestic market deregulation under the Marketing of Agricultural Products Act, 1996 and other similar processes – with the exception of the sugar industry. Perhaps it is significant that sugar is the only agricultural sector that has remained under the wing of the Department of Trade and Industry (DTI) and not the Department of Agriculture. Whatever the reason, the arguments employed by the sugar sector, namely that it faces a distorted international trading environment, and that the sector contributes to the general economy through its employment and income multipliers, hold equally true for many of the sectors that have been fully exposed to international competition in South Africa. Conversely, the OECD (2005) considers that in South Africa

> sugar, maize, and eggs are the most supported commodities. A high support level for sugar is particularly notable given that this commodity is one of South Africa's key exports (around one half of sugar production is exported). The situation is explained by the double-pricing system, whereby South African sugar producers are effectively compensated for export losses by higher prices for domestic sales compared to that destined for exports.

This high level of support to the sugar sector is reinforced by Kirsten et al. (2009) who assess the protection levels to South African agricultural sectors using the nominal rate of assistance (NRA) measure. They find that sugar and sugar products have had NRA values of around 40% or higher since 1980 and by 2000–2005 the NRA was still at 44.4. This level was significantly above the weighted average of 3.6 for the products that they analysed, and considerably higher than the 19.7 for yellow maize, the next highest support level. This sugar support was caused by the tariff levels of the period and by the pricing parity mechanism that enabled import parity pricing despite sugar being an export product. This is the dollar-based reference price administered by the DTI upon which the protection is based. This mechanism operates when world prices drop below what is purported to be the world long-term price plus an adjustment upwards of $60/tonne for 'distortions to the global market'. It was implemented by the former Board on Tariffs and Trade in September 2000 after a comprehensive tariff review. Given the higher sugar price, the tariff is currently zero.

2.2 Swaziland's agriculture

Swaziland is a small landlocked country with an area of 17,364 square kilometres, of which 15-20% is estimated to be arable. The total population is about 1.1 million and the current population growth rate close to zero, with more than 70% of the population living in rural areas and a similar percentage living below the poverty line. The agricultural sector of Swaziland is acutely dualistic, with a dynamic commercial sub-sector established on Title Deed Land (TDL) that occupies 26% of the land, holds an estimated 90% of available irrigation infrastructure, and uses modern technologies to produce mainly cash crops (primarily sugar) and a traditional subsistence sector, based on communal tenure in the Swazi Nation Land (SNL) that involves smallholder agriculture with communal grazing.

Swaziland has not been self-sufficient in cereal production since 1980: in the 1990s it produced only 60% of domestic food requirements for its staple food (maize), and in the early 2000s food production further declined to only 40%. Currently, 12% of the population is malnourished, and nearly one-third needs food aid to survive. Persistent shortages in satisfying domestic food requirements have caused a significant proportion of the population to suffer from malnutrition, which has the greatest impact on children. It is estimated that up to 348,000 people are vulnerable and food-insecure in the country, with the main contributing factors the high poverty rate, inequality of income distribution and the high incidence of HIV/AIDS[1]. Other factors specific to rural areas include chronic drought and consequent water shortages resulting in death of animals and crop failures, widespread soil erosion and land degradation, lack of agricultural land and isolation from markets, limited income generating opportunities, gender restrictions for women to access land and resources, and lack of implementation of appropriate policies. The current rate of HIV prevalence also has enormous implications for the development of the agricultural sector and its capacity to contribute to economic growth.

A major challenge for attaining food security and reducing poverty in Swaziland is to create an enabling environment for increasing rural and agricultural productivity and competitiveness. However, achieving a productive and competitive agriculture sector

[1] On the impacts of HIV/AIDS in rural Swaziland Masuku and Sithole interviewed 847 households and found that 'Most households were vulnerable to food insecurity'.

will require addressing a complex set of constraints. For example, there is no doubt that the HIV/AIDS pandemic is seriously increasing poverty and hunger and reducing the capacity for accelerating economic growth. Moreover, the land is being denuded of its topsoil as a result of poor land management, overgrazing and soil erosion. This has exposed the country to serious ecological and environmental degradation. Increasing agricultural productivity depends, among other factors, on reliable access to water. Water shortage, however, is still an impediment to intensifying and diversifying agriculture and bringing new land into production, particularly on SNL. Irrigation's potential is constrained by international obligations[2] and high demand on financial, water and human resources. Smallholder agriculture, which is the predominant source of livelihood for most of the population, is characterised by limited access to mechanisation and technology. A similar situation exists in the livestock subsector: the large number of livestock of substandard quality, together with land mismanagement, has had a deleterious effect on grazing land.

For Swaziland a fundamental question remains to be considered. This questions are: Is the EU indirectly contributing to the abject rural poverty and malnutrition in Swaziland by ensuring that the Kingdom is using a very high percentage of its limited quality agricultural land for sugar production? Does the use of most of the best land in the Kingdom for sugar production in a highly distorted global regime represent the ideal outcome for Swaziland under conditions where a large percentage of the population live in poverty in the subsistence sector on very poor land? The opportunity cost to Swaziland of concentrating much of the available resources for agriculture in sugar production must be considerable.

2.3 The Swazi sugar industry[3]

Sugar production increased from an annual average of 214,305 tons per annum in the 1970s to 405,343 tons in the 1980s, to 480,154 tons in the 1990s and 587,621tons since 2000. The average for the years 2006/07 and 2007/08 is 627,297 tons, and is expected to grow to 767,000 by 2012 through normal annual expansion as well as on account of the two new irrigation schemes that are being developed. Sugar cane growing contributes 66% to total agricultural output, 35% to total

[2] Swaziland is downstream of South Africa but upstream of Mozambique.
[3] This section is based on information provided to tralac by the Swaziland sugar industry.

agricultural employment and 25% to total manufacturing output. About 20% of cane production is through smallholder production, and is poised to increase under the new irrigation projects. The industry as a whole (i.e., sugar cane growing and milling) contributes 12% to national output and 10% to national formal employment. Gross proceeds from sugar sales are approximately €2 billion per annum. Since 2000, an annual average of 51% of total sales has been going to SACU, 25% to the EU, 3% to the US and 21% to the world market (mainly the east African region). Sugar sales outside SACU contribute seven% to the country's foreign exchange earnings.

At the domestic level the sugar industry is closely linked to many other sectors in the Swazi economy, from both the input or upstream side (e.g., chemicals, transportation, packaging, banking, etc.) and output or downstream side (pre-packers, sweets, chocolates, jams, confectionary, etc.). Accordingly, it plays a crucial strategic and multifunctional role in promoting economic growth and development in the overall Swazi economy. In 2006, the government approved a National Adaptation Strategy (NAS) to assist the sugar industry in adapting in the wake of the reform of the EU sugar sector and thereby to enhance its sustainability.

3. Sugar and the SACU Agreement

The underlying philosophy of the SACU agreement is that of **free movement of domestic products.** Goods grown, produced or manufactured in the Common Customs Area are meant to be free of customs duties and quantitative restrictions (Article 18). Also, with respect to agricultural policies, the Agreement in Article 39 (Agricultural Policy) states:

1. Member states recognise the importance of the agricultural sector to their economies; and
2. Member states agree to cooperate on agricultural policies in order to ensure the coordinated development of the agricultural sector within the Common Customs Area.

Before 1999 the DTI was the only responsible authority regulating the sugar industry in terms of the Sugar Act. Amendments to Section 31 of the Competition Act in 1999 now allow for concurrent jurisdiction by the Competition Commission, as well as

'*other regulatory authorities*' on an industry or sector in terms of Chapter 2 ('Prohibited Practices') and Chapter 3 ('Merger Control') of the Competition Act. This led to an inter-departmental committee consisting of representatives from the Competition Commission, the Department of Agriculture as well as the Agricultural Marketing Council. The act is currently under review with the aim of optimising the level of competition that can be generated within the policy restrictions imposed on it by a severely distorted global market for sugar. This will foster a competitive environment that will contribute to the optimal development of the industry within the accepted framework of the Strategy for the Sugar Sector in the SACU and SADC contexts.

The SACU sugar industry is protected against import competition through a dollar-based reference price (DBRP) tariff system that grants import protection against low world prices. In assessing agricultural policy harmonisation in SACU the following points are relevant for (a) where there is policy harmonisation and coordination:

- Common External Tariff
- SACU market access granted to non-SACU SADC sugar producers[4]
- Single export channel for raw sugar exports
- Coordinated inputs on trade negotiations with third countries
- Equitable exposure for millers and growers to the world market and to the SACU market[5]
- Preferential access to the US market. In the case of South Africa the benefits derived goes to small-scale growers (which would seem to be a subsidy to these growers).

And (b) areas where there is no harmonisation:

- Preferential access only for Swaziland to the EU under the EPA and to the Common Market for Eastern and Southern Africa (COMESA)

[4] Due to fact that Swaziland still administers import control, none of the sugar imported in terms of the agreement goes to Swaziland.
[5] Based on reforms introduced in terms of Industry Agreement 2000, milling companies compete for market share

- Restructuring funds received by Swaziland from the EU[6]
- Swaziland applies import and export controls by way of a permit system
- The Swaziland Sugar Association has monopoly marketing of both raw and refined sugar (other than in small packs)
- Swaziland's sugar marketing arrangements are not subject to competition laws
- Swaziland maintains price controls for sugar
- Swaziland has non-reciprocal access into SACU's sugar market
- South Africa actively applies a Black Economic Empowerment (BEE) policy and legal framework in its sugar sector.

The South African industry argues that the lack of harmonisation in the sugar policies between South Africa and Swaziland discriminates against South African sugar millers and cane growers and impacts negatively on BEE initiatives that need to ensure sustainable land reform. It is an interesting policy development whereby land reform may well become a factor in locking in protection to just one agricultural sector in South Africa. According to the Swazi sugar industry the main obstacles to policy harmonisation are the ordering of competition between the two industries in the SACU market (where market-sharing arrangements were abandoned because of the South African Competition Act) and delays in effecting desired changes due to the need to consult with respective government authorities, as the process is long and complicated. It would seem evident therefore that policy harmonisation in the sugar industry should be given priority under the terms of the SACU Agreement, and we note that the main disadvantage of the sugar regime in SACU is that it imposes a cost on consumers in the region. This is especially unfair to Botswana, Lesotho and Namibia, where consumers get limited benefits from the regime, but carry a part of the costs.

[6] This constitutes a special payment to a specific sector in Swaziland regardless of the source of these funds.

4. SADC

SADC's own special provision in the SADC Sugar Arrangement (Annex VII to the SADC Protocol on Trade), states that the end goal is full reciprocal liberalisation of SADC sugar trade after 2012. But Article 3 contains the proviso that 'liberalisation will be dependent on a positive review of conditions prevailing in the world sugar market'. Furthermore, liberalisation by any date after 2012 depends upon 'sufficient normalisation of the international sugar market'. The justification for this protection is given in the agreement as

> the world sugar market is highly distorted and conscious of the fact that the world price for sugar is a dumped or subsidised price resulting in the continuing need for most sugar producing countries to impose tariff and non-tariff barriers against the free importation of sugar in order to protect their domestic industries; Recognising, therefore, that for as long as the world sugar market remains highly distorted, sugar will be a product requiring special dispensation within the framework of the Protocol on Trade so that no sugar industry within SADC will suffer injury.

Thus, full liberalisation in SADC is contingent upon a sufficient normalisation of the international sugar market, with this determined by a 'positive review' by SADC with 'sufficient normalisation' not defined. The implication is that the continuation of the current SADC sugar regime is likely to remain.

There is no doubt that the sugar sector is heavily protected in the rich countries, that this protection distorted the global trading regime, and that these distortions place a burden on the sugar industry in developing and least developed countries. According to the Organisation for Economic and Cooperation Development (OECD) data the average Nominal Assistance Coefficient (NAC) is 1.96 for sugar. This means that rich country producers are receiving nearly double the world market price for their sugar. This is not the highest – rice has a NAC of 3.96. This means that OECD rice producers are getting four times the world price for their rice. Other products are not that far behind sugar: sheepmeat at 1.74, beef at 1.54, milk at 1.41 and wheat at 1.50. These products have all been substantially liberalised in South Africa, the country that dominates SACU agricultural production. So why not sugar?

Meanwhile, lobbyists for the SACU sugar sector are arguing for sugar to be excluded from the preferential trade agreement with Brazil/Mercosur due to the vast size and competitiveness of the Brazilian sugar industry. They argue that the Brazilian sector is supported and enhanced through government regulatory support for ethanol production from sugar cane, including mandatory blending for ethanol. However, the OECD (2005) debunks the myth that Brazilian sugar is protected, and, using the standard analysis that takes all support contributions into account, comes up with support levels of just under 2%[7]. Importantly, it does not consider that ethanol production constitutes a subsidy to the sugar sector. Similarly, according to OECD, data producers in Australia receive no more than token Producer Support Estimate (PSE) supports for their sugar. In addition, there is a single desk exporting arrangement for South African sugar, and these single desk arrangements are extremely controversial in the WTO as many argue that they constitute distortions to a market.

In summary, the notable exception in the effects of trade reform on field crop production in South Africa is the sugar industry, which still enjoys high levels of protection, partly because of the large investment required in the processing of sugar, partly because the industry argues that the world market in sugar is even more heavily distorted by the protectionism of the OECD countries than other agricultural products, partly because of the large number of small-scale sugar producers, and partly because of the greater lobbying power of the industry. Sugar producers even enjoy protection from producers in other SACU and SADC countries. While the domestic pricing structure has been liberalised to some extent in the past eight years, the sector has not had to adjust to the same extent as maize and wheat.

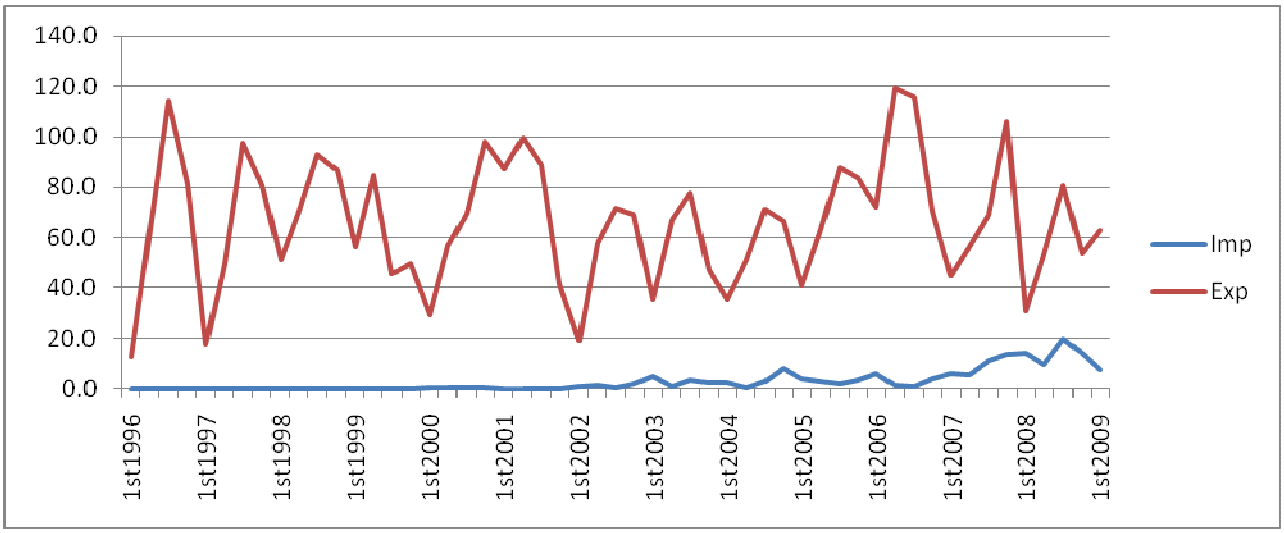
5. South African sugar trade

While South Africa is a major exporter of sugar (as shown in Figure 1), imports of sugar as are currently arriving from Brazil. Over recent periods the quarterly **exports** peaked at $119 million in the second quarter of 2006. South African imports of sugar from outside of SACU only really started in the first quarter of 2002, and through until

[7] This OECD measure is the Producer Support Estimate, and is the benchmark measure for international support. It is an indicator of the annual gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level, arising from policy measures which support agriculture (regardless of its nature), objectives or impacts on farm production or income.

the first quarter of 2005 these imports were dominated by the SADC sources of Zimbabwe, Malawi and Zambia, with a contribution from both India and the EU. Since 2004 Brazil has displaced SADC as the main import source (Figure 3). Recent **imports** peaked during the third quarter of 2008 at just on $20 million. In addition, imports of 'other sugars', molasses and sugar confectionary have been at this $20 million level per quarter over the last few years. This level of sugar imports should serve as a 'wake-up' call to South Africa.

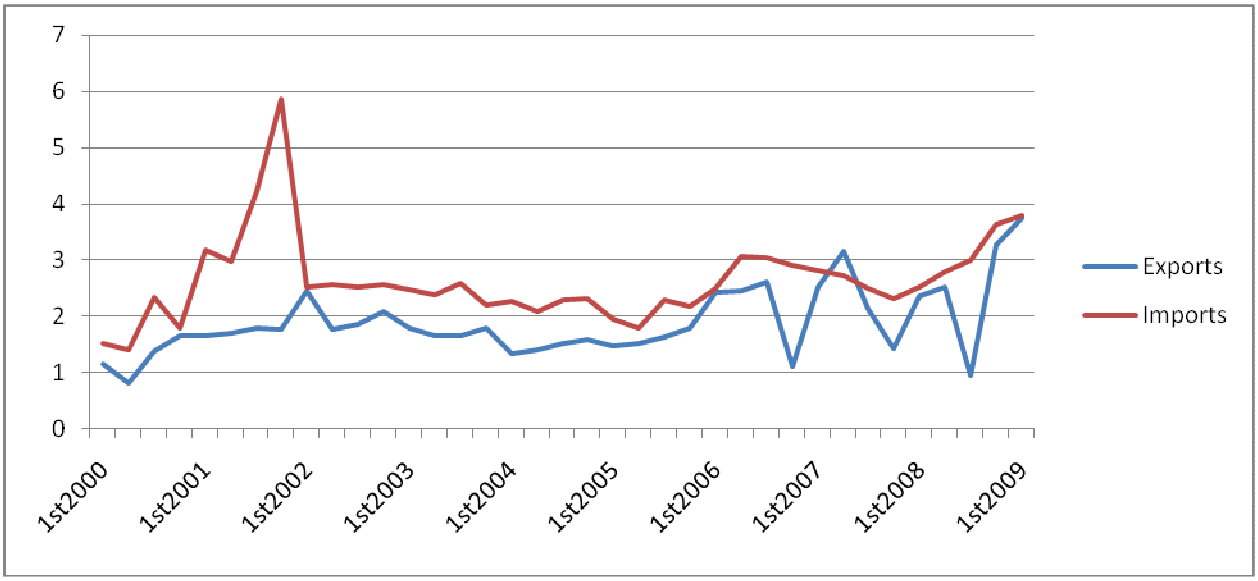
Figure 1: South Africa (non-SACU) sugar trade; 1996 to 2009, US$ million



Source: World Trade Atlas

Another interesting feature of the sugar imports is the relative price between South African exports and imports of raw sugar. Figure 2 shows the average price per kg of the South African sugar trade since the first quarter of 2000 when the imports in general started to feature. Here the import price expressed in rand per kg is generally above the export price (we suggest that the peak at fourth quarter 2001 is an outlier as there were limited imports during that quarter). Note also that South African import data does not include freight and insurance costs, which if added would raise these average import values even higher relative to export values.

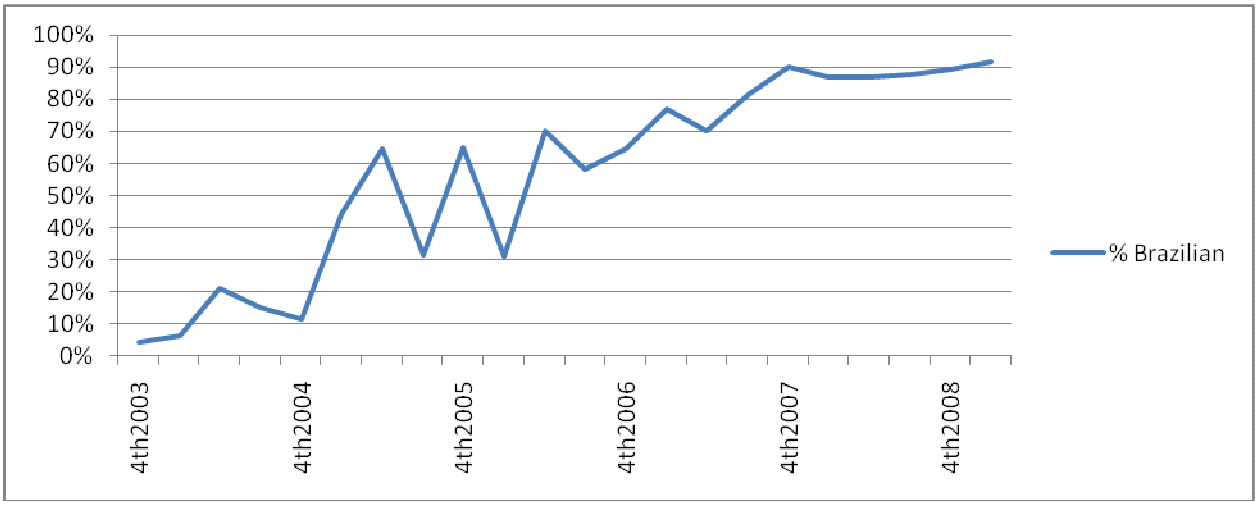
Figure 2: South African sugar trade price, rand per kg



Source: World Trade Atlas data

The imports from Brazil started in the fourth quarter of 2003, and by the fourth quarter of 2007 they had a market share of over 80% of imports – with a high of 92% in the first quarter of 2009 and 87% for the second quarter of 2009. This is shown in Figure 3 through to the first quarter of 2009.

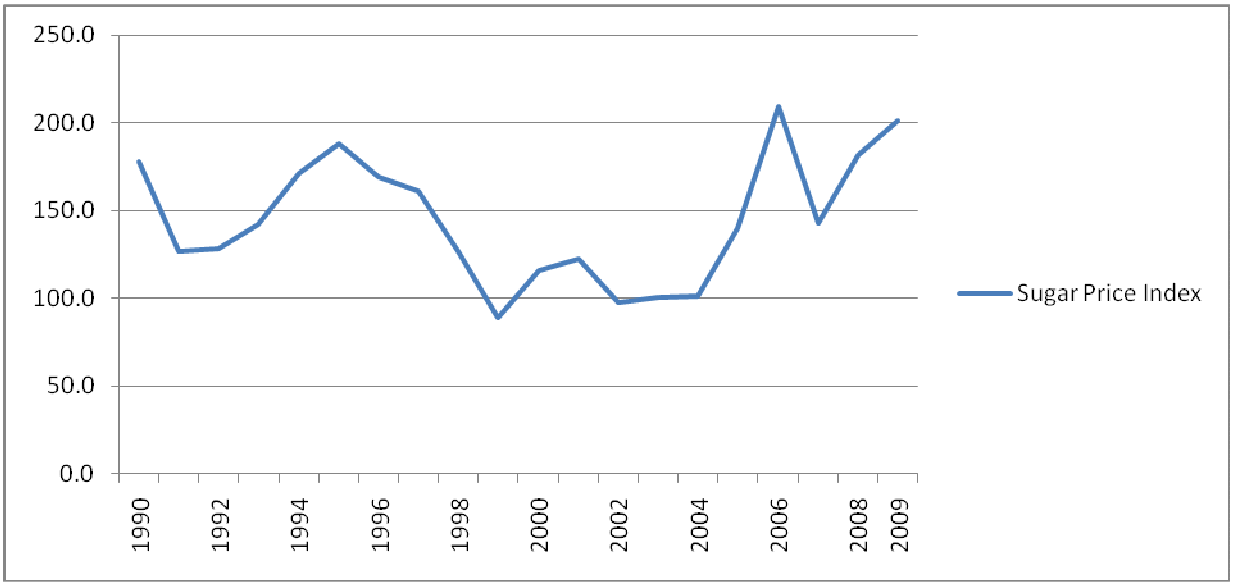
Figure 3: Brazilian market share of South African sugar imports



Source: World Trade Atlas data

In updating the trade data for the June 2009 quarter we find that sugar exports over this quarter were $75.37 million and imports $11.28 million (with $9.82 million of the imports from Brazil and effectively nothing from SADC countries). The price difference continues, with the average export price of $0.35 per kg below the import price of $0.40 per kg. Currently the world sugar price is strong, with the price index at the highest point over the last twenty years as shown in Figure 4. As of September 2009 the indications were that these high prices would continue, as both Brazil and India are experiencing difficult climatic conditions. Analysts are suggesting that global demand may be greater than projected output (thus draining inventories).

Figure 4: Global sugar price index, 2002–2004 = 100.



Source: FAO database

6. International competitiveness of SACU sugar

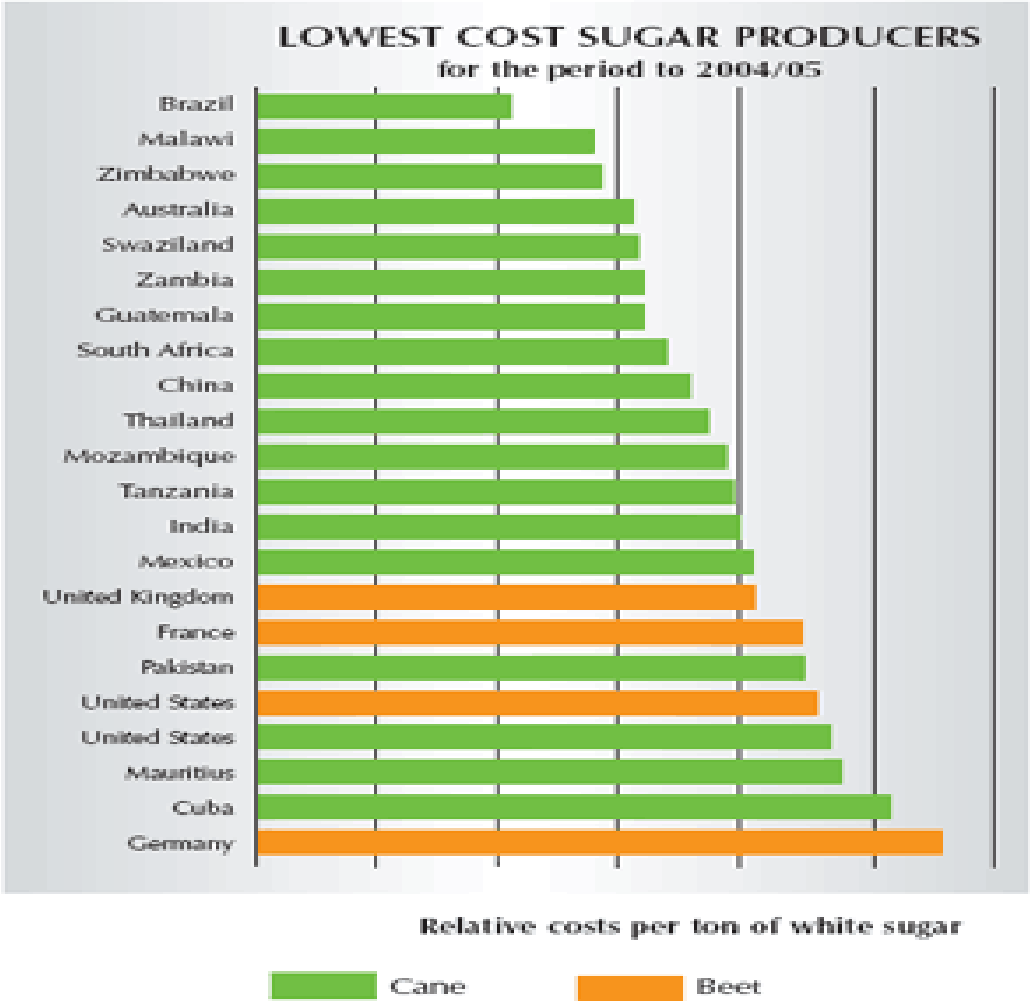
The theory of comparative advantage traces back to David Ricardo in 1815. This theory supplanted Adam Smith's absolute advantage theory: if a country can import a commodity at a cheaper price, then it should be bought instead of being produced locally. Ricardo's theory suggested that international trade was not governed by absolute advantage in price but by comparative advantage whereby a country can still gain from producing and trading certain goods that it can produce 'comparatively' more cheaply. This theory held sway for around two centuries. In the 1980s, Michael Porter (1990) proposed the doctrine of 'competitive advantage' as an alternative to comparative advantage in economic analysis of international competitiveness. Porter argued that the 'key' factors of production are created, not inherited. Specialised factors of production are skilled labour, capital and infrastructure, and these can be influenced in a pro-active way by government. In essence, comparative advantage is what you have but competitive advantage is what you do with it.

This can be taken a step further by using the concept of productivity, and more specifically, the real exchange rate to examine what a country should be best suited to producing and exporting. The real exchange rate (RER) is a concept which embodies the competitiveness of the tradable (export or import competing) sectors of an economy relative to the non-tradable sector in the economy. Crucial to this is a

suite of factors such as currency levels, inflation rates, agricultural tariffs and supports (both domestically and abroad) and many general government policies that act as 'flanking' or supporting policies. In general, export market share is the benchmark for international competitiveness. In other words, if a country is actively exporting a product, then it is, by definition, internationally competitive. However, in highly distorted markets such as the global sugar markets, this generalisation cannot hold true.

An indication of global sugar production costs is provided in Figure 5 for the period 2005/2006. This highlights both the absolute cost advantage of Brazil, the favourable position of many African countries (including South Africa and Swaziland) and the high cost structures of the EU and US sugar beet production. Updating this same data for the 2005/06 year suggests that while Brazil is still the benchmark, the other low to medium cost cane producers are moving nearer to Brazil. Both Swaziland and South Africa are relatively well placed should trade opportunities open up.

Figure 5: Global production costs of sugar



Source: Illovo website: http://www.illovosugar.com/worldofsugar/internationalSugarStats.htm

In interpreting this discussion on sugar productivity in southern Africa, it is important to consider that a relatively large proportion of the total output of refined cane sugar in the region is produced by a single firm, namely Illovo. This firm has produced 35% of Swaziland's national output, 25% of Mozambique's, all of Malawi's and 50% of Tanzania's over the past few years[8], and it is also a large producer in South Africa. Future investments by the firm and its ultimate owners are likely to be based in part on their estimate of the extent of trade concessions that these countries are able to retain, especially into the EU and indeed in SACU/SADC.

[8] See www.agritrade.cta.int.

7. What benefits is the sugar industry likely to derive from trade liberalisation ?

In examining the literature on the gains from trade liberalisation to Africa generally and South Africa in particular from the Doha Development Agenda (DDA) of the WTO we find warnings that projected gains from the DDA are not what they were initially expected to be. This is so because an updated model database enables factors such as tariff revenue loss to be factored into recent research dashing the hope of anything approaching a comprehensive DDA agreement. Many analysts are talking of the 'disappearing gains from trade liberalisation' (Ackerman 2005; Anderson and Martin 2005; Hertel and Winters 2005; Polaski 2006; Kirkpatrick et al. 2006; the (Swedish) National Board of Trade 2006; and Sandrey et al 2007) as they detail how the gains are becoming both smaller and skewed towards the developed countries rather than leading to poverty alleviation in the developing world. Why are the gains shrinking? Part reason for this is that some of the assumptions such as employment are being revisited, while the newer version of the GTAP database in particular enables analysts to use better trade and tariff data and incorporate both the EU expansion and China's WTO accession into their now-updated base work. In addition, the DDA negotiations are based upon the so-called bound tariff rates that are the maximum countries can impose and these bound rates are often considerably above where actual rates apply. But a real concern is that the use of special and sensitive products neuters an agricultural outcome from the DDA as countries shield their sensitive sectors from meaningful liberalisation, and this in particular means sugar (along with rice and perhaps dairy). Thus, it is increasingly apparent that potential gains from trade liberalisation for most developing countries in general and Africa in particular from a possible outcome of the WTO DDA are a mirage, and it is unlikely that South Africa will obtain meaningful gains for sugar access from the DDA in its current framework.

Furthermore, it is even doubtful that these potential gains do exist at all for sugar. The World Bank's World Development Report for 2008 reports their estimates of price changes for all commodities under complete liberalisation. The largest increase was for cotton (20.8%) and the average was 5.5%. Sugar's price increase under global liberalisation was only 2.5%, while the increase in sugar trade was only 9%. While intuitively these figures seem very low given the distorted nature of world sugar

regimes, they give little credence to the argument that the high level of support to the South African sugar sector as reported by both the OECD (2005) and Kirsten et al. (2009) is justified on the basis of these global distortions.

But South Africa may benefit from the liberalisation of its own sugar industry. Such a liberalisation does not seem to have been analysed in detail, and dedicated modelling research that has been done on the industry, such as that of McDonald et al. (2004), looks at the implications for an increase in world prices following global trade liberalisation. Given the global sensitivities of sugar and the probable abilities of countries to shield the sector from meaningful liberalisation in the DDA, it seems unlikely that such liberalisation will happen in the near future in the sugar industry. However, the general outcome from trade policy research is that the big beneficiaries of trade liberalisation are the very countries doing the liberalising. Therefore given the distortions to the import regime, the pertinent questions relate to the implications of South Africa liberalising its own (or SACU's) import regime. We report upon an examination of this in the following section.

The economic implications of the sugar regime

In ongoing research tralac is modelling the implications of a free trade agreement between South Africa (SACU) and Brazil (Mercosur[9]), and given the special case of the South African/SACU sugar regime, liberalisation of this sector is being examined by proxying the sugar protection as a 20% non-tariff equivalent. We acknowledge that this 20% has elements of an arbitrary figure, but given the high levels of support to the sector outlined by both the OECD and Kirsten et al., we consider that this is a useful starting point to proxy the non-tariff protection. We also note that while the tariff level may be zero in times of high world prices such as we are witnessing, it does constitute a non-tariff measure in that there is uncertainty about future tariff levels. Details of this model and the simulation analysis of an FTA between SACU and Mercosur are contained in Sandrey et al. (2010). The results, measured as welfare increases at the end of the simulation period and expressed in real US dollars, therefore gives an estimate of the effects of the sugar regime in SACU if indeed this regime did represent a 20% NTB.

[9] Mercado Comun del Sur (Argentina, Brazil, Uruguay and Paraguay).

Thus, the new baseline becomes one in which all other parameters in the model as discussed in Sandrey et al (2010) for the main analysis were held constant, and the only change was an increase to 20% in the NTB on sugar imports into SACU. The simulation scenario now becomes one of reducing that NTB 20% tariff equivalent to zero. The expectation is that this elimination of the NTB on sugar imports would enhance welfare in SACU.

This is not the case. Liberalisation of the sugar section as proxied in the model actually reduces welfare in both South Africa and rest of SACU (which includes Swaziland). Using the standard Armington elasticities the model results suggest that welfare reduces by $13.5 million in South Africa and by $6.9 million in the rest of SACU. Conversely, there are gains to Brazil of $15.8 million as sugar exports to SACU increase, and overall this is beneficial to the world as total welfare increases ever so marginally by $1.3 million. Increasing the Armington elasticities or making sugar less of a differentiated product merely increases the losses to South Africa. With the standard run, imports of sugar into South Africa from Brazil increase by $38 million, but as some $18 million of this is displacing imports from Swaziland (rest of SACU), the final result is an increase of $17 million or 6.6%.

The main driving force behind the negative result for South Africa/SACU is that the reduction of the NTB tariff equivalent to zero reduces the price of imported sugar which lowers the returns to capital/labour employed in the sugar sector of the South African economy. Capital/labour employed in this sugar industry is reduced slightly, with some of it being reallocated in other industries. But due to the reallocation of capital/labour in the South African economy, the rental/wage rate declines slightly, reducing the total amount of capital/labour employed in the South African economy. In other words, the modelled NTB in this simulation is creating income (increasing total factor income and indirect taxes (rents) generated by the NTB tariff equivalent) in South Africa. The reallocation of resources away from the sugar industry does not find a better efficient allocation in the economy which could have given a more efficient production structure in South Africa. The 20% non-tariff barrier against imports is therefore welfare enhancing for South Africa when modelled as an ad valorem tariff equivalent at the border, with agents capturing rents on the restrictions imposed.

Changing the modelling approach and instead modelling the NTB as 'sand in the wheels' of trade where we assume that NTB policies only generate efficiency losses (with no rents being generated), still results in a welfare loss to South Africa ($2.8 million) when we increase sugar import efficiency by 20%. Once again we find that increased efficiency in the handling/administration of sugar imports into SACU reduces import prices in the market place which feeds back to the sugar industry reducing slightly the amount of capital and labour employed in South Africa. This has a negative impact on the economy.

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