The Impact of the EU-SA Free Trade Agreement on Selected COMESA Countries

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Abstract

Following the recent free trade agreement (FTA) between the European Union and South Africa, definite concern has arisen amongst the countries within the Common Market for Eastern and Southern Africa (COMESA) as to the impact of this FTA on their exports into these two markets. This paper aims to determine the extent to which the concerns of COMESA are founded and whether the EU-SA FTA will indeed result in significant trade diversion. This is done using non-linear partial equilibrium analysis under the assumption of imperfect substitution between imported and domestic goods. It is found that the FTA appears to have little impact on COMESA exports into either of the two markets. This is due largely to COMESA exports not being in competition with those of the European Union and South Africa, and the pre-existing high margins of preference granted to COMESA countries. Finally, recommendations are provided concerning the use of partial equilibrium modelling in the South African context.

1. Introduction

Following the recent free trade agreement (FTA) between the European Union (EU) and South Africa (SA), a definite concern has arisen amongst the countries within the Common Market for Eastern and Southern Africa (COMESA) as to the impact of this FTA on their exports into these two markets. It is feared that although many COMESA countries already have preferential access for certain of their exports into both markets, the margin of preference in their favour may be reduced following the new trade agreement. Here we aim to determine the extent to which the concerns of COMESA are founded and whether the EU-SA FTA will indeed result in significant trade diversion.

We begin in Section 2 by providing a brief overview of the EU-SA FTA. The impact of this FTA on COMESA is modelled within a four-market non-linear partial equilibrium framework under the assumption of imperfect substitution between domestic and imported goods. Section 3 outlines the specification of this model. Although we broadly aim to assess the impact of the FTA on COMESA as a whole, the number of countries falling within the common market, as well as the number of products traded by these countries, demands that only certain countries and products be selected for analysis[1]. The criteria for choosing the COMESA countries and products to be included are described in Section 4. One of the motivations behind the use of partial equilibrium analysis is the low level of product-disaggregation required by this study. However, while partial equilibrium analysis may in this case be preferable over other modelling techniques, its data requirements still remain significant. Furthermore, the sensitivity of partial equilibrium analysis to the data used in the models (particularly the various elasticities) makes sensitivity analysis essential. Section 5 describes the calibration of the models as well as the sensitivity analysis used to assess the robustness of the results.

[1] COMESA comprises twenty countries: Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.

The impact of the EU-SA FTA can be divided into two potential areas of trade diversion. The first refers the expected increase in European competition faced by COMESA exports into the South African market, and the second, the expected increase in South African competition faced by COMESA exports into the European market. Section 6 presents the results of this study for each of these two areas in turn. Section 7 summarises the findings of the study and attempts to draw conclusions that can be extended to the COMESA countries beyond those selected for analysis. The paper concludes by discussing the applicability of partial equilibrium analysis to trade-related impact-studies and the implications of the sensitivity analysis for partial equilibrium modelling in the South African context.

2. A Brief Comment on the EU-SA FTA

The EU-SA FTA was finally concluded in 1999 and came into operation in January 2000. The European Union is South Africa's most important trading partner, and the EU and South Africa are for many countries in the Southern African region both vital sources of supply and important markets for their exported goods. The final agreement covers virtually all trade between the EU and South Africa with only a few exceptions[2].

Cognisant of the adjustment costs involved, the agreement is to be phased in gradually over a period of eight to twelve years, with most of the adjustment taking place during years three to five. However, SADC sensitive products have been 'back loaded' in the offer to the EU. For the purposes of the research undertaken in this study, the impact the EU-SA FTA is modelled assuming that the agreement is fully implemented through a once-off reduction in tariffs. This implies that the worst possible outcome for the COMESA countries is simulated in this study.

3. Specification of the Model

The decision to use partial equilibrium models to estimate the impact effects of the EU-SA FTA was driven by the level of disaggregation required by the study. Although computable general equilibrium models provide a more comprehensive assessment (by dealing with both backward and forward linkage effects), the requirement to model the impact at at least the four-digit HS level rules out the modelling of general equilibrium effects (Francis and Reinert, 1997).

The model used in this study is a comparative-static non-linear partial equilibrium model. While it is possible to produce multi-region partial equilibrium models that do take into account upstream and downstream markets, the model specified below considers only the horizontal linkages between markets. Accordingly, the model is able to assess the direct effects of the elimination of tariffs under the EU-SA FTA on competing products within the immediate sector of interest. Finally, factors such as investment and productivity are held constant.

In line with the Armington specification, it is assumed that preferences are well behaved over a weakly separable product category that comprises similar but not identical products (Armington, 1969). These products are considered imperfect substitutes due to their differing

[2] 3.4 percent of total imports from South Africa into the EU and 10.9 percent of total imports from the EU into South Africa are excluded within the FTA. Furthermore, the separate protocol for wines and spirits is still to be written into law.

countries of origin. In the context of this study, this assumption implies that even though goods produced in the European Union, South Africa, COMESA and the rest of the world may fall within the same product categories, they are not perfectly substitutable with each other.

The model used in the analysis is developed from Francois and Hall (1997) and is extended to include four markets. It consists of a system of non-linear equations assuming a constant elasticity of substitution for the composite good. The CES composite Armington good, *q*, is composed of the domestic good and imports from the *n* countries such that

$$q = \left[\sum_{i=1}^{n} a_i X_i^r \right]^{1/r} \quad \text{where} \quad r = 1 - \left(\frac{1}{s} \right) \tag{1}$$

where X_i represents the domestic and import goods, denotes the CES weights, and is the Armington substitution elasticity.

The model is calibrated such that internal prices, including that of the Armington composite good *q*, are normalised to unity in the benchmark. The price index for the composite good can therefore be shown to equal

$$P = \left[\sum_{i=1}^{n} a_i^s P_i^{1-s} \right]^{1-1/r} \tag{2}$$

From the first order conditions the demand for the good X_i can be defined as

$$x_i = \left[\frac{a_i}{P_i} \right]^s \left[\sum_{i=1}^{n} a_i P_i^{1-s} \right]^{-1} Y = \left[\frac{a_i}{P_i} \right]^s P^{s-1} Y \tag{3}$$

where Y denotes total expenditure in the importing country's market.

Combined with supply equations, these terms can be used to define a simple non-linear system in terms of prices. Under the assumption of a constant elasticity of supply $_{si}$, excess demand within each market is defined as

$$\left[\frac{a_i}{P_i} \right]^s P^{s-1} Y - K_{si} \left[\frac{P_i}{(1+t_i)} \right]^{e_{si}} = 0 \tag{4}$$

where t_i is the *ad-valorem* tariff (which is equal to zero for the domestic market).

The composite price can be rewritten as

$$\left[\sum_{i=1}^{n} s_i^s P_i^{1-s} \right]^{1-1/r} - P = 0 \tag{5}$$

Finally, if the demand for the composite good is defined as

$$q = k_A P^{NA} \tag{6}$$

where NA is the elasticity of demand for the composite good, then the excess demand for the composite good is as follows

$$k_A P^{NA+1} - Y = 0 \quad \text{where } Y = Pq \tag{7}$$

Equations 4, 5 and 7 define a system of (n+2) equations and (n+2) unknowns. The system can be solved for prices, and these solution prices can then be used to solve for quantities.

The calibration of the model requires information on the sales of domestic goods, as well as the sales and the country-specific tariff rates of the goods imported from each of the markets included in the model. Values of the various elasticities are also required: these include the composite elasticity of demand, domestic and import supply elasticities, and the elasticity of substitution or Armington elasticity.

4. The Selection of Countries and Products

As already noted, COMESA has within its boundaries a large number of countries, whose trade with the European Union and South Africa falls within a large number of product categories. However, these countries vary considerably in terms of both their size and the importance of the European Union and South Africa as markets for these countries' exports. As such, it was necessary to model only a selection of countries and products, and then from these results draw conclusions for COMESA as a whole.

The Selection of Countries

From the eighteen non-SACU COMESA countries it was decided to select six countries whose value of trade with the European Union and South Africa are most important, both for the country in question and for COMESA. Two sets of criteria were applied. The first criterion involved determining each country's exports to the EU and SA markets as a percentage of those countries' total trade with the world. In doing so it was possible to assess the importance of these two markets for each individual country. The second criterion determined each country's exports to SA and the EU as a percentage of total COMESA exports to each of these two markets. This measure assessed the extent to which each country is responsible for generating COMESA's overall trade with the EU and SA.

Table 1 below shows how each country fared in terms of the criteria described above. Initially, for exports to SA, the countries that were identified on the basis of the two criteria were Angola, Malawi and Zimbabwe. For exports to the EU, the countries identified were the Democratic Republic of the Congo, Egypt and Mauritius. However, as the trade of Angola and the Congo largely consisted of diamond, oil and primary mineral exports, and since these products would be unaffected by the EU-SA FTA, it was decided to exclude these two countries from the study. Kenya and Zambia were selected in their place due to their importance in COMESA's exports to the European Union and South African markets respectively.

Table 1: The Criteria for the Selection of Countries

COMESA Country	Exports to the EU as a Percentage of Total Exports	Exports to the EU as a Percentage of Total COMESA Exports to the EU	Exports to SA as a Percentage of Total Exports	Exports to SA as a Percentage of Total COMESA Exports to SA
Angola	2.1%	9.0%	5.2%	35.9%
Burundi	6.0%	0.5%	0.1%	0.0%
Comoros	2.3%	0.1%	0.1%	0.0%
DR Congo	6.4%	10.2%	0.0%	0.1%
Djibouti	1.9%	0.4%	0.0%	0.0%
Egypt	**1.8%**	**27.9%**	**0.1%**	**1.7%**
Eritrea	0.7%	0.1%	0.0%	0.0%
Ethiopia	1.8%	2.1%	0.1%	0.1%
Kenya	**3.1%**	**9.8%**	**0.4%**	**1.9%**
Madagascar	6.7%	5.8%	0.7%	1.0%
Malawi	**4.4%**	**2.5%**	**16.2%**	**14.7%**
Mauritius	**4.5%**	**13.5%**	**0.1%**	**0.6%**
Rwanda	3.0%	0.4%	0.2%	0.0%
Seychelles	3.3%	1.4%	0.4%	0.2%
Sudan	3.3%	2.2%	0.0%	0.0%
Uganda	4.1%	3.1%	0.3%	0.3%
Zambia	**2.3%**	**2.5%**	**4.2%**	**7.3%**
Zimbabwe	**2.8%**	**8.8%**	**7.0%**	**35.9%**
Total		100%		100%

Note: The countries in bold are those that were finally selected for inclusion in the analysis. The trade data used for the selection process is for 1998-99 for exports to SA and for 1999 for exports to the EU. The sources of this data will be described in more detail in Section 5.

Together Egypt, Kenya, Malawi, Mauritius, Zambia and Zimbabwe account for 65 and 62 percent of COMESA's total trade with the EU and SA respectively.

The Selection of Products

The products to be included in the modelling for each selected country were decided upon at the four-digit HS level. The process of selection was driven by the need to adequately cover each country's trade with the EU and SA markets, while at the same time limiting the number of products[3]. For COMESA's exports to the South African market a cut off of R5 million was used to limit the number of product categories for Malawi, Zambia and Zimbabwe, while a cut off of R1 million was used for Egypt, Kenya and Mauritius[4]. As can be seen in Table 2 below, while these cut offs reduced the number of products to be included in the modelling to ninety-three categories, the coverage of COMESA's exports to SA remained considerable at an average of 74 percent of total trade. Similarly, for COMESA's exports to the EU, the cut off was set at ECU 10 million. Again while this reduced the number of products to ninety

[3] It was necessary to reduce the number of products included in the study since each product category requires its own partial equilibrium model. As will become clear in Section 5, the importance of rigorous sensitivity analysis further demands that for each product the impact of the FTA needs to be simulated nine times under the various assumptions made about the calibrated values of the elasticities. Had all countries and product categories been included in the study, then the number of simulations required could have potentially exceeded 150 000.

[4] The reason for employing two separate cut off values lies in the relatively low value of exports from Egypt, Kenya and Mauritius. Had R5 million been used for all countries then these three countries would not have featured in the analysis. Conversely, a cut off of R1 million would have greatly increased the number of product categories selected for Malawi, Zambia and Zimbabwe.

categories, the coverage of COMESA's total trade with the EU remained particularly high at 84 percent[5].

Table 2: The Selection of Products

Country	SA		EU	
	Number of Products	Selected Exports as a Percentage of Total Exports	Number of Products	Selected Exports as a Percentage of Total Exports
Egypt	10	79	30	79
Kenya	10	79	12	86
Malawi	17	87	3	93
Mauritius	7	44	16	89
Zambia	5	73	5	78
Zimbabwe	44	81	14	82
Average		74		84
Total	93		80	

Therefore despite choosing to investigate the impact of the EU-SA FTA on only *selected* countries and products, the coverage of the analysis remains sufficiently high to be able to draw generalised conclusions for COMESA as a whole.

5. Calibration of the Models

As already noted in Section 3, the specified partial equilibrium model requires information on the value of domestic production, trade and tariff data for the three foreign markets, and elasticity values for demand, supply and import substitution. The data sources used for the calibration of the models are described below.

Trade and Domestic Production Data

Data on South Africa's imports by country of origin was obtained from the Department of Trade and Industry at the eight-digit HS level for the years 1998 and 1999. An average of the two years was used so as to smooth out any non-typical shocks that might have occurred in either of the two years. The data was then aggregated to arrive at exports to South Africa at the four-digit HS level from the COMESA country being analysed, the European Union and the rest of the world. The value of domestic production was derived from the above value of total imports into South Africa and import penetration ratios by sector available in the Industrial Development Corporation's *Sectoral Prospects* (IDC, 1998).

Data for exports into the European Union was obtained from EU website for the year 1999. Unfortunately, these data were only available for this year as the other data from EUROSTAT covered a period that was not consistent with the South African part of the study. As 1999 was not an unusual year in terms of drought, and as the East Asian crisis had passed, it was considered that using one year rather than averaging over two years would not do a disservice to the study. Exports from South Africa, COMESA and the rest of the world to the EU were then extracted at the four-digit HS level. EU domestic production was estimated using the

[5] Had a cut off of ECU 1 million been used the number of products would have risen to 307 while the coverage would have increased to only 96 percent. From this it can be seen that a relatively marginal loss in coverage greatly simplified the task of modelling the impact of the FTA.

above value of imports into the EU and penetration ratios calculated for the EU using data from UNIDO.

Tariff Data

Information on duties collected by South Africa's Customs and Excise was obtained from the Department of Trade and Industry. Nominal tariff rates for each product category were derived by dividing these duties by the value of imports entering the country. Clearly, there is a difference between the duty collected as a percentage of import value and the duty specified in the tariff tables for South Africa. This difference is often due to a variety of reasons ranging from smuggling and duty-evasion, to duty exemptions and other allowances. However, given the presentation of the official tariff rates in the tariff schedules, with their complex combinations of formula, compound, specific and *ad volrum*, it was decided that the best method of arriving at the appropriate margin of preference in the South African market is to use the collected duties and allow for bilateral agreements. In the case of Malawi and Zimbabwe, a large proportion of the goods entering South Africa do so on a duty-free basis as a result of the bilateral trading agreement that exists between them and South Africa. Information on the zero-rated product categories was obtained from the Government Gazette (1990)[6].

EU tariff data was extracted from EUROSTAT for the year 1998. Simple averaging was used to aggregate from the eight-digit to the four-digit level. Again it was necessary to take into account existing bilateral agreements. In the case of COMESA, all of the selected countries, with the exception of Egypt, fall within the Lome tariff schedule. Furthermore, South Africa has a bilateral agreement with the European Union under which certain product categories are charged GSP (rather than MFN) tariff rates. Information on these particular categories was obtained from Holden (1994).

Elasticities and Sensitivity Analysis

The price elasticities of demand for South Africa were obtained from the ORANI model (Dixon et al, 1982) and the Armington elasticities from the Industrial Development Corporation (IDC, 1997). Although the IDC has produced elasticities for their CGE model of the macro-economy, these elasticities are mostly uniform across large product categories, and are therefore less than ideal.

Demand elasticities for the EU were taken from Stern (1994), while the Armington elasticities were initially assumed to have a value of 3. Although this value is quite high (even for developed countries) it was decided that, given our intention of providing a long-run worst-case impact of the FTA, it would be better to assume higher rather than lower substitutability.

The uncertainty as to the actual values for the Armington and demand elasticities implied that rigorous sensitivity analysis was required to ensure the robustness of the results. Initially a 'base-case' simulation was run using the elasticities described above. Furthermore, the domestic supply elasticity was assumed to be 5 for the EU and 1 for SA. Import supply elasticities were taken to be 5 for the EU and the rest of the world and 1 for SA and

[6] Two additional FTA's are currently under negotiation. These include the proposed SADC FTA, which would, in terms of this paper, effect Malawi, Mauritius, South Africa, Zambia and Zimbabwe; and the FTA between Egypt and the EU. Although these FTA's are not taken into account in this paper, they would serve to lessen the impact of the EU-SA FTA on the COMESA countries involved, and as such would produce a 'better than worse-case' scenario for COMESA.

COMESA. Table 3 below shows the upper and lower bounds of the various elasticities used in the models.

Table 3: Elasticity Values Used During the Sensitivity Analysis

Elasticity	Lower bound	Base-case	Upper-bound	Worst-case
Exports to the South African Market				
SA Domestic Supply	0.5	1	2	2
EU Import Supply		5	10	10
COMESA Import Supply	0.5	1	2	2
RoW Import supply		5	10	10
Composite Demand		IDC		
Armington		IDC	Base + 4	Base + 4
Exports to the European Union Market				
EU Domestic Supply		5	10	10
SA Import Supply	0.5	1	2	2
COMESA Import Supply	0.5	1	2	2
RoW Import supply		5	10	10
Composite Demand		Stern		
Armington		3	Base + 4	Base + 4

Given the possible sensitivity of the models' results to the above values it was decided to rerun the simulations under varying assumptions. Upper-bounds and lower-bounds were established for the various elasticities. The base-case was rerun replacing each elasticity in turn with its upper and lower bound values. The Armington elasticities were replaced twice: by adding 2 and then 4 to the base-case value. Finally, given the aim of the study to determine the largest likely impact of the FTA on COMESA, a 'worst-case' scenario was devised using the upper-bound values described in the table[7].

6. Simulation Results

The impact of the EU-SA FTA can be divided into two potential areas of trade diversion. The first refers the expected increase in European competition faced by COMESA exports into the South African market, and the second, the expected increase in South African competition faced by COMESA exports into the European market.

Impact on COMESA exports into the South African Market

Although more than ninety products were modelled, Table 4 shows only those products that were worst affected by the reduction of SA tariffs on EU imports. What is immediately clear is that the overall impact is likely to be slight even in the worst-case scenario. Mauritius appears to be the most affected country where, in the worst case, it stands to loose 2.9 percent of its exports to SA as result of trade diversion. The products that are most affected are those which are likely to face direct competition from the European Union. These generally include textiles, clothing, footwear, and leather products[8].

[7] It should be noted that, given the high value of the Armington elasticity, the model begins to resemble a perfect-substitutes model in the worst-case scenario.

[8] According to NTSIKA (2000), 1.7 percent of total exports to the EU and 2.8 percent of total exports to SA are to be partially liberalised under the FTA. Some of the COMESA products listed as those most affected fall

Table 4: The Worst Affected of COMESA Exports to South Africa

HS4	Product	Base-case Scenario	Worst-case Scenario
Egypt			
2170	Petroleum oils and other bituminous oils	-0.02%	-0.16%
2803	Carbon	-0.15%	-1.10%
2941	Antibiotics	-0.34%	-2.31%
6910	Ceramic sinks,wash basins etc	-0.14%	-3.21%
8418	Refrigerators and freezers	-0.28%	-3.26%
Overall change in exports to South Africa		-0.04%	-0.30%
Kenya			
0603	Cut flowers	-0.05%	-0.24%
0902	Tea	-0.01%	-0.07%
2401	Unmanufactured tobacco	-0.01%	-0.03%
2836	Commercial carbonates	-0.10%	-0.70%
4104	Leather of bovine or equine animals	-0.75%	-2.73%
Overall change in exports to South Africa		-0.08%	-0.39%
Malawi			
6104	Women's or girl's suits (knitted)	-0.47%	-2.00%
6105	Men's or boy's shirts	-0.75%	-3.31%
6108	Women's or girl's nightwear	-0.64%	-3.30%
6109	T-shirts,singlets and other vests	-0.62%	-2.39%
6204	Women's or girl's suits (not knitted)	-0.71%	-2.83%
Overall change in exports to South Africa		-0.29%	-1.22%
Mauritius			
2918	Carboxylic acids	-0.44%	-3.06%
5209	Woven fabrics of cotton	-0.73%	-2.25%
6114	Other garments (knitted or crocheted)	-0.25%	-1.24%
8525	Transmission apparatus for radio	-0.46%	-4.43%
Overall change in exports to South Africa		-0.47%	-2.90%
Zambia			
1207	Other oil seeds and oleaginous fruits	-0.02%	-0.09%
7408	Copper wire	-0.03%	-0.25%
8544	Insulated wire and cable	-0.28%	-2.63%
Overall change in exports to South Africa		-0.04%	-0.38%
Zimbabwe			
3005	Wadding, gauze and bandages	-0.37%	-2.83%
4104	Leather of bovine or equine animals	-0.75%	-2.74%
6403	Footwear	-2.31%	-6.16%
7323	Household articles of iron or steel	-0.36%	-3.80%
Overall change in exports to South Africa		-0.08%	-0.40%

Beyond facing increased competition from the EU, another possible reason for the low impact of the FTA on the COMESA countries is that many of the products prior to the FTA faced zero tariffs regardless of country of origin. This would imply that the EU-SA FTA would

within these partially liberalised categories. However, since it is impossible to extract only certain products from within the four-digit HS categories used in this study, it should be noted that the above results probably exaggerate the effect of the FTA. This possibility further supports our objective of finding the worst-case impact of the FTA on COMESA.

have no effect on the operation of the markets for those products since there would be no change in the relative margin of preference granted any of the foreign countries. Approximately one-quarter of all products modelled or 20 percent of the total value of exports from COMESA to SA fell within this category[9]. This observation largely explains why, even though Zimbabwe appears to be severely affected by the FTA based on the worst performing product categories, the overall effect on exports to SA is marginal at only –0.4 percent in the worst-case.

Finally, Malawi appears to be more resilient to the FTA than Mauritius, despite trading in similar products. This is largely due to the initial and considerable margin of preference granted to this country by South Africa. Accordingly much of the trade diversion that does exist takes place between the EU and the rest of the world. The existence of an initial bilateral agreement also explains why the FTA has had a relatively low impact on Zimbabwe.

Although not shown in table above, the results of the sensitivity analysis indicate that the models are most sensitive to changes in the Armington elasticity. Therefore, even though increasing the various supply elasticities does worsen the effect of the FTA on COMESA, the results from the worst-case scenario are largely driven by the assumption placed on the domestic country's (in this case South Africa's) ability to substitute between the sources of imports.

Impact on COMESA exports into the European Union Market

In terms of COMESA's exports to the EU market, the results from the partial equilibrium analysis indicate that there will be even less of an impact than that to be expected in the SA market. Table 5 below shows the worst affected of COMESA's export categories to the EU[10]. From this it is clear the impact is virtually negligible. Again however, those product categories that are affected most negatively are those that face competition from South Africa. This is particularly true for fruit products.

The reason why COMESA can expect less of an impact on its exports into the EU rather than into SA lies largely in the assumption made about the value of the EU and SA's import supply elasticities. In the models simulating the impact on COMESA's exports to SA, the EU's import supply elasticity was assumed to be 5 in the base-case and 10 in the worst-case. On the other hand, in this part of study, SA's import supply elasticity was assumed to be 1 in the base-case and 2 in the worst-case. This implies that SA is far less responsive to the opportunities offered by the FTA. Accordingly SA producers do not as readily shift their production into producing for the EU market, as the EU producers do into the SA market following the reduction of tariffs. Therefore, even in product categories where COMESA's exports could potentially experience competition from SA producers, this is likely to be lower than the competition faced from EU producers.

Finally, as in the case for Malawi and Zimbabwe in the first part of the study, all COMESA countries benefit from an initially high margin of preference offered to them by their bilateral agreements with the EU (most notably the Lome protocol). As such much of the trade diversion takes place with the rest of the world. Furthermore, the initial GSP-rating of many

[9] This observation does not hold for COMESA's exports to the EU market where only 0.6 percent of the value of the selected exports to the EU prior to the FTA were zero-rated regardless of country of origin.
[10] Malawi has been omitted from the table since the results indicate that there will be no impact from the FTA on this country's exports to the EU.

of SA's exports into the EU market implies that the FTA involves a lower nominal reduction of tariffs on SA goods into the EU market than on EU exports to SA.

As in the first part of the study, the results from the simulation of the impact of the FTA on COMESA's exports to the EU are most sensitive to the assumptions placed on the Armington elasticities. The larger negative impact reflected in the worst-case scenario should therefore be seen as resulting from a move towards perfect substitutability between the various sources of imports, rather than from greater domestic and import supply responsiveness.

Table 5: The Worst Affected of COMESA Exports to the European Union

HS4	Product	Base-case Scenario	Worst-case Scenario
Egypt			
0708	Leguminous vegetables	0.01%	-0.01%
3922	Baths, wash-basins etc	-0.01%	-0.05%
5702	Carpets and other textile floor covering	-0.01%	-0.02%
Overall change in exports to European Union		0.00%	0.00%
Kenya			
0602	Other live plants	-0.01%	-0.03%
0603	Cut flowers	-0.01%	-0.04%
0804	Dates, figs, pineapples, avocados etc	-0.05%	-0.13%
2008	Fruit, nuts and other edible parts of plants	-0.09%	-0.29%
2009	Fruit juices and vegetable juices	-0.02%	-0.07%
Overall change in exports to European Union		-0.01%	-0.04%
Mauritius			
6203	Men's or boys' suits	0.00%	-0.01%
Overall change in exports to European Union		0.00%	0.00%
Zambia			
0603	Cut flowers	-0.01%	-0.04%
8105	Cobalt and articles thereof	0.00%	-0.01%
Overall change in exports to European Union		0.00%	-0.01%
Zimbabwe			
0603	Cut flowers	-0.01%	-0.04%
0805	Citrus fruit, fresh or dried	-0.29%	-0.75%
7108	Gold (unwrought or semi-manufactured)	-0.01%	-0.03%
7202	Ferro-alloys	-0.02%	-0.11%
Overall change in exports to European Union		-0.01%	-0.03%

7. Conclusions

On the Impact of the FTA on COMESA exports

From the results of the partial equilibrium analysis it appears that, even under the worst-case scenario, the impact of the EU-SA FTA on COMESA is likely to be limited. This is particularly true for COMESA's exports to the EU market. Those products that will be impacted on the most are those that stand in direct competition with the dominant exports of SA and the EU. In terms of the products selected for analysis, these include textiles, clothing, footwear and leather exports into the SA market, and fruit exports into the EU market. Even though tariffs are reduced for the remaining product categories, the low value of trade

between SA and the EU implies that any growth in exports between these two countries is likely to grow from a very low base.

Another reason for the low impact of the FTA is the substantial margin of preference already granted to COMESA countries. This is particularly true for COMESA exports to the EU where most COMESA countries fall under the Lome protocol. The result of these bilateral agreements is to cushion COMESA against the shock of the FTA, and cause most of the trade diversion to occur amongst products imported into SA and the EU from the rest of the world. Furthermore, one quarter of the selected COMESA countries' exports to SA fall into product categories that were zero-rated regardless of country of origin prior to the implementation of the FTA. These products include most primary mineral products, low-value added metal and wood products, and aircraft. As such these product categories will not be affected by the reduction in SA tariffs on EU imports.

Finally, the low importance of trade with the EU and SA for many of the COMESA countries (particularly those not included in the analysis) seems to indicate that the concerns of COMESA are largely unfounded. Even after rigorous sensitivity analysis, the conclusion of this research is that the EU-SA FTA will have next to no impact on COMESA's exports to both the EU and SA markets.

On the Use of Partial Equilibrium Modelling in South Africa

Although computable general equilibrium modelling is preferable when attempting to model large macro-economy policy-shocks, the level of sectoral aggregation makes it inappropriate in situations where simulations are required on either low-level product categories, or cases when the policy-shock is unlikely to produce substantial changes in macroeconomic variables. In these cases partial equilibrium modelling is preferable (despite not being able to take into account the backward and forward linkage effects inherent in any policy-shock).

A further advantage of partial over general equilibrium modelling is that the former is far less data intensive. This is particularly important in South Africa, where the information required by general equilibrium models is often scarce at high levels of disaggregation. However, the problem of incomplete data still exists for the calibration of partial equilibrium models. While not seriously undermining the conclusion of *this* study, the above analysis has highlighted the importance of the Armington elasticities in deriving robust results. Unfortunately the data used by the Industrial Development Corporation in deriving its substitution elasticities does not extend past the year 1992, and is only available at a high level of sectoral aggregation[11]. Furthermore, the technique used to estimate these elasticities is not in line with the more recent advances in time-series econometrics. However, this inadequacy in the existing data does not mean that perfect substitutability should be assumed in the application of partial equilibrium analysis to issues involving South African trade. Rather, any attempt to employ exact Armington elasticity values should be replaced by thorough sensitivity analysis. In the case of South African trade analysis, the predictive ability of this methodology should be restricted to describing the direction and *relative* size of changes in economic variables, rather than *absolute* changes. Finally, the results from partial equilibrium analysis in the South African context should be cautioned towards providing 'worst-case' scenarios under higher rather than lower degrees of substitutability.

[11] The sectoral disaggregation that is possible roughly corresponds to the three-digit level of the Standard Industrial Classification.

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