FREE TRADE BETWEEN
SOUTH AFRICA AND THE
EUROPEAN UNION
A Quantitative Analysis

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Lorenza Jachia and Ethél Teljeur [*]

This study summarizes the findings of the technical assistance provided jointly by UNCTAD and the Trade and Industrial Policy Secretariat (TIPS) to the Department of Trade and Industry of South Africa during its negotiations with the European Union for a Free Trade Area (FTA) Agreement. The technical assistance programme involved preparing and keeping up to date a complete data set of South African-European Union trade and tariffs as well as the negotiating proposals in digital format at the tariff line level. This effort was completed by the customization of the SMART (Software on Market Analysis and Restrictions on Trade) simulation model for the specific purpose of the negotiations. This allowed for the simulation of the impact of the proposed FTA Agreement on bilateral trade flows as well as on trade with other commercial partners. Additionally, other indicators of the impact of the FTA were elaborated, such as the preference margins and product coverage.

Executive summary

Following South Africa's historic transition to democracy, the European Union (EU) Council of Ministers, recognizing the importance of trade and market access as an instrument to facilitate the country's reintegration into the global economy, called for a package of support measures. In particular, the EU proposed that, in the short term, South Africa (SA) be included in the generalized system of preferences (GSP) and that comprehensive negotiations towards a long-term agreement be initiated. Following this offer, SA requested and obtained access to GSP preferences — which it still enjoys to the current date — and called for a long-term agreement under terms as close as possible to the Lomé Convention. The EU rejected this request and offered in its place a free trade agreement and a qualified accession to Lomé (excluding the trade aspects of the Convention). The negotiations for the FTA were formally opened in June 1995 and were still on-going at the time the study was completed (June 1998).

This study projects the impact of the proposed FTA between SA and the EU on the bilateral trade flows between the two. The results are evaluated both at an aggregate level, to gauge its impact on the balance of payments and on government revenue, and at a sectoral level to assess its implications for specific industries. Additionally, a simulation of the impact of the agreement on SA's trade with its other commercial partners is discussed. The simulation is conducted utilizing a static, partial equilibrium methodology, SMART, jointly developed by UNCTAD and the World Bank and widely utilized by

negotiators of both bilateral and multilateral trade agreements. The simulation that was run was based on the respective proposals of the EU and of SA as they were formulated in 1996.

Our results show that the impact of the proposed FTA agreement on bilateral trade flows is likely to be uneven, with a relatively large effect on SA's imports from the EU and a comparatively smaller effect on its exports towards this market. The size of this projected imbalance will depend on the exact terms of the agreement, which are currently under negotiation. Depending on the scenario used, our projections show an increase in SA imports from the EU between 2.3 and 12.3 per cent of 1996 SA imports from the EU and an increase in SA exports to the EU of 1.3 per cent of 1996 SA exports to the EU (see table 1 below):

Table 1
Summary results: Impact of tariff liberalization (FTA and Uruguay Round)
(Millions of rands)

		Elasticity of import demand	
		-0.85	**-1.5**
(1)	SA exports to the EU 1996	46,791	
(2)	SA imports from the EU 1996	51,041	
(3)=(1)-(2)	SA-EU trade balance 1996	-4251	
(4)	Projected increase SA exports to the EU[a]	637	
(5)	Projected increase SA imports to the EU — Scenario I	1,190	2,100
(6)	Projected increase SA imports from the EU — Scenario II	3,563	6,288
(7)=(1+4)-(2+5)	Projected SA-EU trade balance — Scenario I[a]	-4,803	-5,713
(8)=(1+4)-(2+6)	Projected SA-EU trade balance — Scenario II*	-7,176	-9,901

a   The import demand elasticity used for the projection of SA exports to the EU was -1.5 in all cases.

It is significant that a deterioration in the EU-SA trade balance occurs in spite of the fact that, under Scenario I, SA liberalizes only 85 per cent of trade with the EU, while the EU liberalizes 94 per cent. The rationale behind this strong finding is that the SMART simulation projections are directly proportional to three key variables: the current level of trade, the size of the respective tariff reductions, and the import demand elasticity. As regards current levels of imports and exports, table 1 shows that SA is currently running a trade deficit vis-à-vis the EU: this influences the results from the SMART simulation which show an imbalance of the same sign under all the different scenarios.

Secondly, the size of the tariff reductions is smaller on the EU side than on the SA side: this is due first of all to the fact that EU tariffs on imports from SA are currently much lower than SA tariffs on imports from the EU (the trade weighted averages are 1.7 per cent and 11.7 per cent respectively). In evaluating this finding, however, one should carefully appreciate the fact that — since SA is currently a beneficiary of the EU GSP scheme — in our simulation we have assumed that GSP tariffs are applied to all SA exports to the EU. As we discuss below, this leads to an underestimation of the tariffs currently being applied and thus to an underestimation of the effect of the FTA on exports. Another factor that contributes to dwarf the effect of the FTA on SA exports is the rather lengthy list of exclusions that the EU has singled out in its proposal, comprising close to 50 per cent of total current SA agricultural exports to the EU. The list of products that SA will on its part exclude from the agreement was still the subject of negotiations at the time the study was completed.

The Agreement will, under all scenarios projected, have a negative impact on both the balance of payments and on government revenue. The projected deterioration of the overall balance of payments is between R553 million and R5,651 million. The projected decrease of revenue from customs lies between R1,604 million (including an R318 million decrease due to the Uruguay Round [UR]) and R5,733 million.

This paper also attempts an evaluation of the Agreement at the sectoral level. In spite of the important exclusions made in the EU offer regarding agricultural products, still it is agricultural exports that are poised to increase the most. To the contrary, the effect of the agreement on SA exports of manufactures to the EU is projected to be relatively small, with the exception of textile products. This finding hinges on the fact that current exports of manufactures to the EU are limited and moreover, EU GSP tariffs on industrial goods are very low. Finally, SMART is a static model and this does not allow us to model adequately the increased investment from the EU that may well be the most important consequence of the Agreement, especially for the manufacturing sector. In this regard, it would definitely be important to conduct additional research on some aspects of the Agreement that this paper does not attempt to analyse in detail. In particular, the programme of technical and financial assistance that will accompany the FTA, as well as the wider context of SA commercial and industrial policy should be carefully analysed in order to assess the impact of the Agreement on the specific sectors. Also fundamental are the rules of origin regulations that will in effect determine the capacity of the SA exporters of manufactures to actually utilize the Agreement's provisions.

Finally, it has been observed in the context of agreements signed or in the course of negotiation by the EU with the countries of the Mediterranean Region (Hoekman and Djankov, 1997) that the commitments regarding the increased protection of foreign direct investment, the provisions concerning competition policy and government procurement as well as the protection of intellectual property rights may play a role in creating a business environment that is conducive to investment, both by foreign and by local entrepreneurs. Time will show whether these observations are valid in the different context of SA, which has not only a more advanced legislation but also firm World Trade Organization (WTO)

commitments in many of these areas, and whether these will be significant incentives for investment in SA.

Another important dimension is the impact of the Agreement on SA's trade with its regional partners, particularly the countries of Southern African Development Community (SADC). While this projected to be small in absolute value terms, for some of these countries trade diversion is nonetheless significant as a percentage of own trade. To counter this potentially harmful effect, again, other aspects of the Agreement which we do not attempt to analyse in the paper may be significant, such as the commitment by the EU to provide compensatory financial assistance to counter the negative effects on Southern African Customs Union (SACU) countries' tariff revenue. Most important of all will be the measures of support which will be given to the business community, both European and South African, to build on SA's leading position in Southern Africa and to make the Agreement an occasion to foster development and cohesion among the countries of the region.

Introduction

Following SA's historic transition to democracy, the EU Council of Ministers, recognizing the importance of trade and market access as an instrument to facilitate the country's reintegration into the global economy, called for a package of support measures. In particular, the EU proposed that, in the short term, SA be included in the generalized system of preferences (GSP) and that comprehensive negotiations towards a long-term agreement be initiated. Following this offer, SA requested and obtained access to GSP preferences — which it still enjoys to the current date — and called for a long-term agreement under terms as close as possible to the Lomé Convention. The EU rejected this request and offered in its place a free trade agreement and a qualified accession to Lomé (excluding the trade aspects of the Convention). The negotiations for the FTA were formally opened in June 1995 and are still on-going.

This study projects the impact of the proposed FTA between SA and the EU on the bilateral trade flows between the two, based on the two countries' respective negotiating proposals as formulated in 1996. The results are evaluated both at an aggregate level, to gauge its impact on the balance of payments and on government revenue, and at a sectoral level to assess its implications for specific industries. Additionally, a simulation of the impact of the agreement on SA's trade with its other commercial partners is discussed. The paper also introduces alternative method of analysis, such as calculation of preference margin, product coverage and revealed comparative advantage, which provide useful indications of the potential impact of the Agreement.

The simulation has been conducted utilizing a static, partial equilibrium, methodology — SMART — jointly developed by UNCTAD and the World Bank, and widely utilized by negotiators of both bilateral and multilateral trade agreements.

The paper is organized as follows. The methodology is outlined in chapter I, while chapter II gives a description of the data set and of its sources. Chapter III provides a summary of the current structure of tariffs between SA and the EU, followed in chapter IV by an analysis of the features of the negotiating proposals. Chapter V discusses the results of the SMART simulation. Alternative methods for the derivation and interpretation of negotiating proposals as well as for the general analysis of trade data are outlined in chapter VI. The conclusions in chapter VII provide a critical discussion of the SMART methodology.

I. METHODOLOGY

This study is a practical application of the SMART simulation technique, constructed by the UNCTAD secretariat in cooperation with the World Bank as a simple tool for quantification of the effects on trade flows induced by changes in market access conditions. In particular, the present study projects the impact of the tariff phase down as contained in the proposed terms for an FTA Agreement between the EU and SA.

In order to project the impact of the agreement, it is useful to analyse separately the import and the export side, and then combine the two to assess the net impact. On the import side, the total effect of a reduction in tariffs on SA imports from the EU is represented in SMART as the sum of two components, namely:

- Trade creation (TC), which measures the increase in SA imports from the EU owing to a decrease in the relative price of these imports vis-à-vis domestically produced goods, resulting in a net increase in SA's total imports and a net decrease in SA's domestic production;

- Trade diversion (TD), which measures the increase in SA imports from the EU owing to a decrease in the relative price of these imports vis-à-vis imports from other countries resulting in a different geographical composition of imports, whereby imports from the EU increase at the expense of imports from other sources, with no change in total SA imports.

The same calculations need to be performed on the export side to assess the impact of the Agreement on SA's exports to the EU, which, as a result of the agreement, will also increase at the expense, on the one hand, of domestic EU production (trade creation) and, on the other hand, of imports by the EU from other sources (trade diversion).[1] These quantitative analyses are performed at the eight-digit level of the Harmonized System. The results are subsequently summed up to obtain the total trade effect for SA exports to the EU.[2]

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[1]   Due to the technical problems involved with EU import data and tariff structures, the TD on the EU side has not been estimated.

[2]   Useful references for the foundations of the SMART model include Stern et al. (1975), Cline et al. (1978).

A.   Notation

M	Imports
X	Exports
P	Domestic price
RP	Relative price
E_m	Elasticity of import demand with respect to domestic price of imports
E_s	Elasticity of substitution between imports from SA and imports from other sources
TC	Trade creation
TD	Trade diversion

0,1 subscript   0 = before liberalization, 1 = after liberalization

B.   Calculation of trade creation

Although the calculation of trade creation and trade diversion is a straightforward exercise, it is useful to show the step-by-step calculations, so as to clarify the assumptions underlying the analysis. In particular, trade creation (based on Viner, 1950) depends on three factors:

  (i)   the current volume of imports from the relevant commercial partner *(M)*;

  (ii)   the elasticity of import demand *(E$_m$)*, definexd as the percentage change in the demand for imports when the price of the imports on the domestic market increases by 1 per cent; and

  (iii) the change in the tariff.

Formally equation (1):[3]

$$TC = E_m \times M \times \frac{T_1 - T_0}{T_0}$$

It should be noted that in SMART trade creation is proportional to current imports. Thus, for those tariff lines in which no trade occurred before liberalization, the simulation will project no trade after

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[3]   It should be noted for the sake of completeness that this formula is only valid when the export elasticity is infinite, i.e. when demand in the importing country is too small to affect the world price of its imports, an assumption that will be retained throughout this paper.

liberalization either.[4] When the absence of trade is caused by a lack of comparative advantage of the commercial partner, this is of course a perfectly acceptable projection. However, if the lack of trade is due to *prohibitive* tariffs, a tariff liberalization may well result in a substantial increase in trade, and the SMART simulation would be an underestimation. An attempt to identify the tariff lines that might suffer from this drawback is made in chapter IV. It can also be seen from the formula that trade creation in SMART is proportional to the elasticity of import demand. Hence, this parameter influences rather heavily the results of the simulation .

C.   Trade diversion

In order to calculate trade diversion, it is useful to break the process into two steps. First, we need to know the relative price change *(dRP/RP)*. In the case of a preferential liberalization, which brings tariffs on imports from the EU to zero while retaining a positive tariff on imports from other sources, the price of imports from the EU relative to the price of imports from other sources will fall proportionally to the reduction in the tariff. Formally, equation (2):

$$\frac{dRP^{EU}}{RP^{EU}} = \frac{\dfrac{1+T_1^{EU}}{1+T_1^{other}}}{\dfrac{1+T_0^{EU}}{1+T_0^{other}}} - 1$$

If there is no change in the tariffs applying to imports from other sources, as is the case for partners engaging in a free trade agreement, the expression reduces to equation (3):

$$\frac{dRP^{EU}}{RP^{EU}} = \frac{1+T_1^{EU}}{1+T_0^{EU}} - 1$$

Once we have calculated the relative price change, we can proceed to calculate the trade diversion (TD) by applying the following formula (4):

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[4]   See chapter VI (Conclusions) for a thorough discussion of the merits and weaknesses of the SMART methodology.

$$TD^{EU} = \frac{M^{EU} \times M^{other} \times \dfrac{dRP^{EU}}{RP^{EU}} \times E_s}{M^{EU} + M^{other} + M^{EU} \times \dfrac{dRP^{EU}}{RP^{EU}} \times E_s}$$

TD^{EU} indicates the increase in EU exports on the SA market — over and above that due to trade creation — which results in the displacement of SA imports from other sources. The formula, from which, as in the case of TC, we obtain a quantity measured in the appropriate currency, indicates that the substitution of imports from a foreign supplier whose price is unchanged to imports from a foreign supplier whose price has fallen is proportional to:

(ii) the change in relative price,

(ii) the existing import level from each of the two sources, and

(iii) the elasticity of substitution between goods of the two sources (assumed to be -1.5).

It can easily be verified that in the case of a reduction in tariffs *(dRP/RP < 0)* the trade diversion will be higher; the higher the elasticity of substitution, the higher the change in price and the higher the existing imports from both sources. The caveats discussed above in relation to trade creation — namely, the importance of the value of the estimate of elasticity and the drawbacks of utilizing historical trade in the calculations — also apply in the case of trade diversion.

For the interested reader, the hypothetical example outlined in Annex A may prove useful for the practical utilization of this methodology.

II. DATA SET UTILIZED IN THE SIMULATION

A. *Trade data*

We have used 1996 import data from the EU and from SA respectively, since this can safely be assumed to be the most reliable indicator of trade flows. EU trade data was supplied by UNCTAD from the TRAINS database,[5] while SA trade data was obtained from the Industrial Development Corporation (IDC), based on information from Customs and Excise.[6]

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[5] Where necessary, we have converted this data (originally expressed in US dollars) to rands, using the December 1996 average $1 = R4.8 exchange rate.

[6] The alternative of utilizing the DTI database was ruled out because retrieving the corresponding 1996 tariffs from the DTI tariff database (*Jacobsen s Electronic Tariffs*) was impossible as tariffs are updated continuously. Exceptions were made for US and Japanese trade data, which were extracted from the DTI database.

B.   *Tariff data*

To ensure that the tariff data would match the 1996 trade data, we have used 1996 applied tariffs for both SA and the EU. Since SA is currently a GSP beneficiary country, we have used GSP duties[7] where applicable and MFN duties elsewhere.

This would imply that all SA exports to the EU of products covered by the scheme actually receive preferential market access. This is not likely to be the case in practice, due to the fact that not all SA exports to the EU comply with EU rules of origin or meet EU obligations regarding documentary evidence. As a consequence, not all exports qualify for preferential treatment, and not all qualifying exports actually receive it.[8] However, since disaggregated utilization rates were not available at the time of writing, the current level of tariffs that SA currently encounters when exporting to the EU may be underestimated in our analysis, resulting in an underestimation of the projected impact of the FTA on SA exports to the EU.

It should also be noted that to evaluate the net effect of the agreement only against the status quo, 1996 tariffs would be misleading, since both SA and the EU are implementing their Uruguay Round commitments, and hence are scaling down their MFN rates accordingly to gradually reach their targeted rates by the year 2004. Therefore, we isolated in our analysis the tariff reduction within the context of the FTA from the tariff reduction within the context of the Uruguay Round. As regards the EU, the post-Uruguay MFN rates were obtained from UNCTAD. However, since future GSP tariffs were not available, we calculated the 2004 GSP rates under the assumption that the ratio of GSP to MFN rates will remain constant upon the implementation of the WTO commitments, as has indeed been the case up to the present. In the case of SA, MFN 2004 tariffs were received from IDC, but were unavailable for Chapter 3, much of Chapters 27 and 84 and various other subheadings: in these cases, 1996 applied tariffs were used.

C.   *Elasticity of import demand*

The elasticity of import demand with respect to domestic price of imports is, as mentioned above, a key parameter that influences the results to an important extent. For the EU we decided to utilize the "default" SMART parameter of -1.5, which the literature[2] suggests is a statistically significant estimate for developed countries. Recent research[9] indicates a much lower value for SA, namely -0.85. This

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[7]   Information on the EU GSP scheme was constructed based on material available at DTI, complemented by and improved upon with, information from the *Official Journal*, L160, Vol. 19, 29 June 1996, C 102A, April 1997 and C255A, Vol. 39, 3 September 1996, as well as tariff data from the IDC, namely the *EU Defensive List* (estimation) (Management Information), 23 September 1997.

[8]   Of course, similar utilization problems will indeed be encountered by exporters in complying with requirements to obtain preferential market access under the FTA, so that the magnitude of our underestimation is somewhat reduced.

[9]   Small, *Reserve Bank Bulletin*, June 1996.

value is smaller than unity indicating that SA imports from the EU are relatively price-inelastic. Trade creation on the SA market would be higher if a common parameter for the elasticity of import demand were used in both calculations. For completeness, we have run an alternative simulation for the SA market utilizing -1.5.

III. CURRENT STRUCTURE OF TRADE

At R51 billion, the EU is the largest single supplier of imports to SA. Of total SA imports in 1996 (see breakdown in Annex C, table C.3), goods from the EU constituted approximately 43.9 per cent. As shown in figure 3.1, 73 per cent of these imports is concentrated in five HS sections, of which machinery, mechanical appliances and electrical equipment is the largest one, with a share of 39 per cent. Currently, 56 per cent of imports from the EU enters SA free of duty. However, relatively high tariff duties are levied on the remaining 44 per cent. In fact, only 6.6 per cent of imports face a tariff lower than 10 per cent, while the proportion of duty levied in excess of 40 per cent is, at 13.1 per cent, almost double that amount (see figure 3.2). Import weighted tariffs amount to 11.23 per cent of total imports.

After completion of the transition phase for the establishment of the proposed FTA, the share of imports from the EU facing zero tariff will gradually increase to a share between 85 per cent and 100 per cent, depending on the precise terms of the agreement that is currently in the course of negotiation (see chapter IV for details).

The EU is also an important export market for SA: in 1996, exports to the EU amounted to R46.8 billion, or approximately 38 per cent of total SA exports. As shown in figure 3.3, SA exports to the EU are concentrated in three HS sections, the largest one of which (pearls, [semi-] precious stones and jewellery) constitutes 36 per cent of total exports.

Tariffs on EU imports from SA are generally quite low, only 5 per cent of all imports faces a tariff higher than 10 per cent; moreover, the major part of imports from SA (75.4 per cent) enters the EU free of duty. Of total trade-weighted tariffs (i.e. non-duty-free imports), 58 per cent is levied between 0 and 4.9 per cent *ad valorem*. After a full implementation by the EU of its commitments within the Uruguay Round, scheduled for 2004, as much as 78 per cent of all SA imports will enter the EU duty-free. The implementation of the FTA will raise this share to 94 per cent. EU tariffs on imports from SA are represented in figure 3.4.

Currently at 1.67 per cent, tariffs weighted by SA 1996 exports are expected to drop to 1.29 per cent of the value of total 1996 SA exports to the EU, after full implementation of the Uruguay Round.[10] In evaluating these findings, however, one should be reminded of the caveat we discussed above, namely that utilizing GSP tariffs as a proxy for applied tariffs inevitably underestimates the actual amount of duty paid by the SA exporter.

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[10]   The full implementation of FTA will cause import weighted tariffs to drop to 0.67 per cent.

Figure 3.1: Structure of SA imports from the EU

Transport equipment 7%

Base metals 6%

Plastics and rubber 5%

Special classification 9%

Other 21%

Chemicals 13%

Machinery 39%
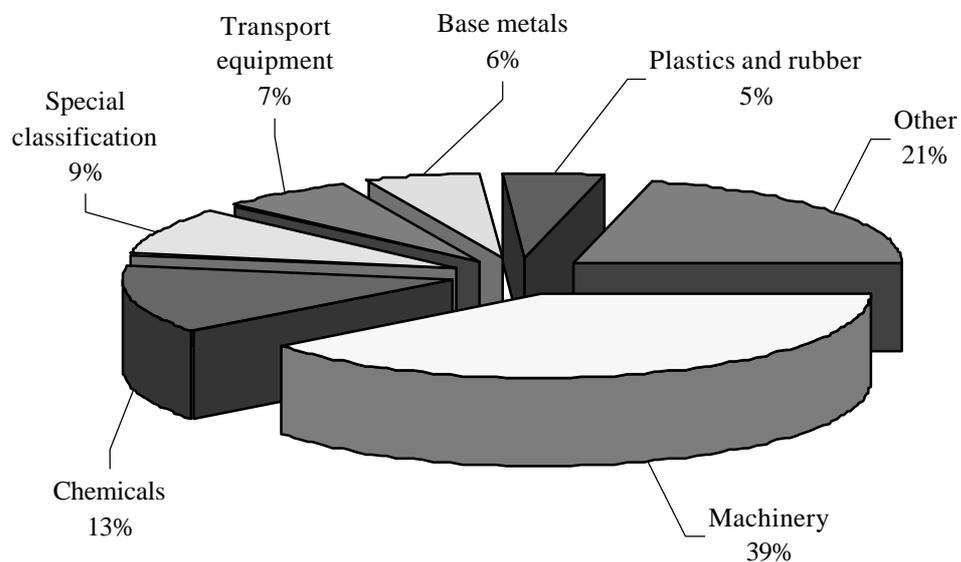
Figure 3.2: Structure of SA tariffs on imports from the EU

> 40 %

20 - 40 %

0%

10 - 20 %

0 - 10 %
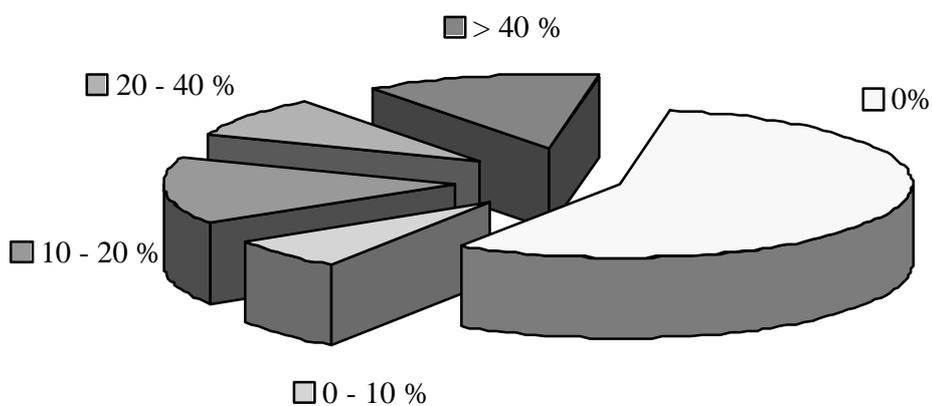
Figure 3.3: Structure of EU imports from SA

Base metals
9%

Vegetable products
8%

Machinery
4%

Other
21%

Precious stones; jewellery
36%

Mineral products
22%
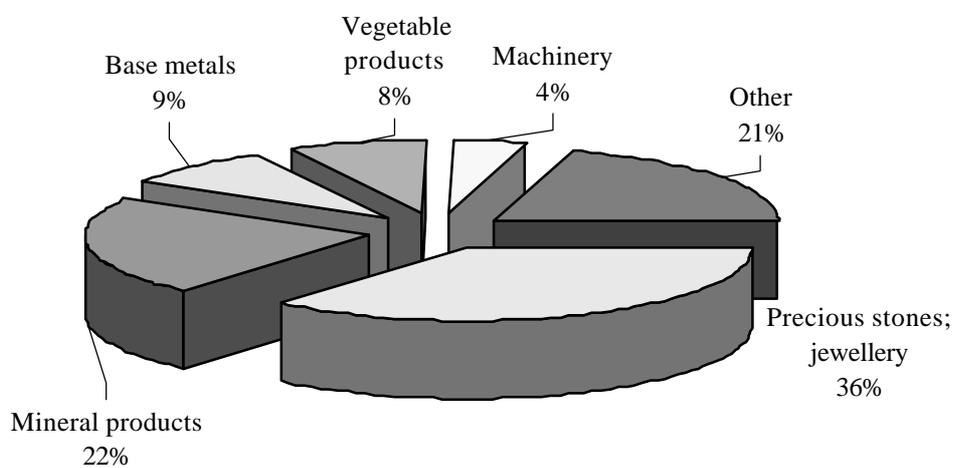
Figure 3.4: Structure of EU tariffs on imports from SA

☐ 5 - 10 %

☐ > 10 %

☐ 0%

☐ 0 - 5 %
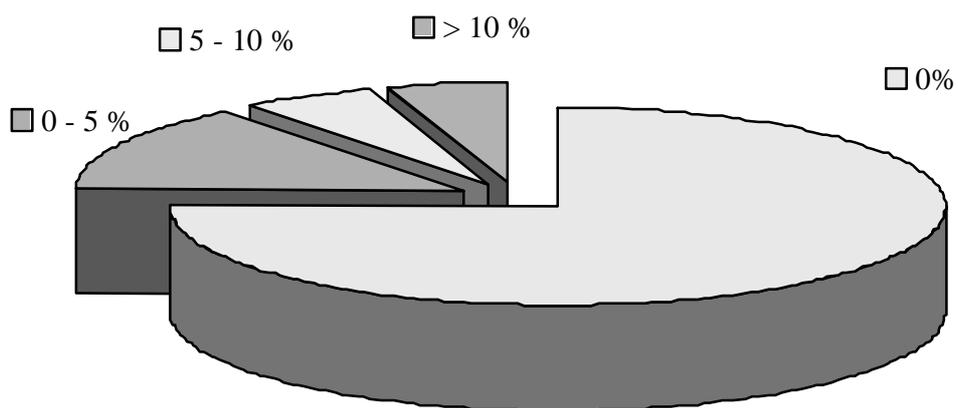
IV. THE FEATURES OF THE PROPOSED AGREEMENT

This study is based on the negotiating proposals for an FTA between the EU and SA as they were presented in 1996, on the assumption that the most trading developed partner, the EU, should liberalize its imports from SA at a faster pace and in higher proportions than its counterpart.

The 1996 SA negotiating proposal to the EU is straightforward, and can be roughly represented as follows. First, all tariffs levied on EU imports are weighted by the corresponding trade in 1996. These trade-weighted tariffs are arranged in order of increasing tariffs (from 0 per cent to the highest tariff of 132 per cent). From a simple calculation it then followed that in the base year of 1996 56 per cent of all EU imports entered SA free of duty. The FTA proposal defines the tariff liberalization in four phases, via which this share is to increase. According to this version of the proposal, Phase 1 will lead to an increase of duty-free trade to 65 per cent, Phase 2 to 70 per cent, Phase 3 to 85 per cent, and Phase 4 to 100 per cent (see Annex B.2 for details).

The liberalization of tariff lines implied by Phase 4 is currently under negotiation; it is envisaged that a certain share of the relevant products will be covered by protocols and therefore excluded from complete tariff elimination. We have therefore elaborated two alternative scenarios. Under Scenario 1, all products covered by the fourth phase are excluded; only 85 per cent of current imports from the EU would then enter the SA market duty-free at the end of the 12-year transition period. Under Scenario 2, SA makes no exclusions: 100 per cent of current imports from the EU would then be progressively liberalized (see figure 4.1). The actual terms of the agreement will lie somewhere in between these two poles.

Fig. 4.1: EU exports to SA - Share of duty free on total [a]
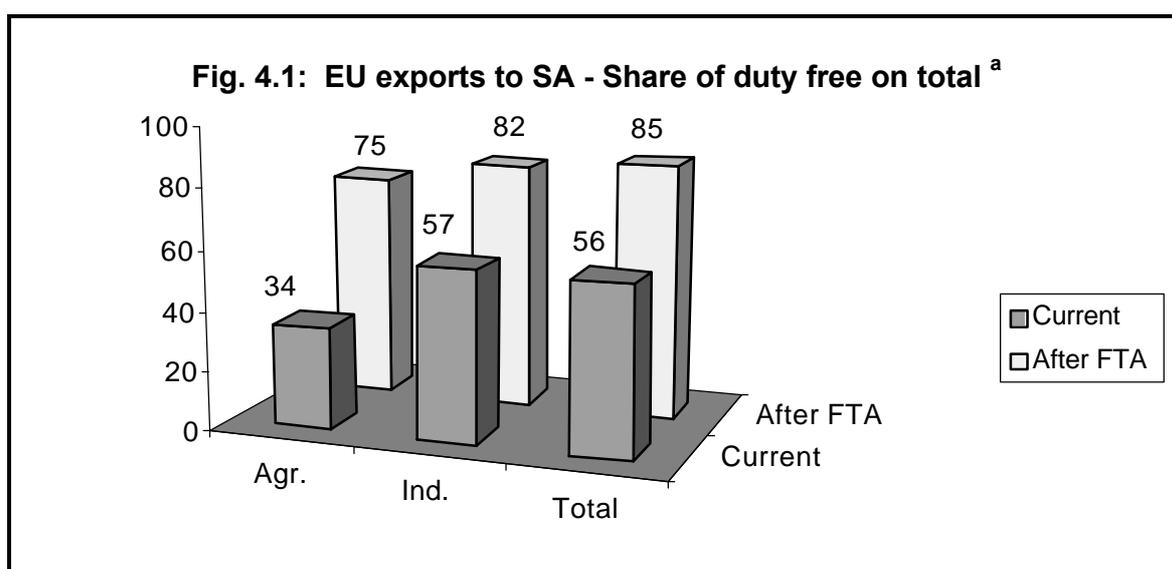
Source: Authors' calculations based on current trade flow.
a   The share of duty-free exports refers to Scenario 1 (all Phase 4 products excluded) at the end of the transition period.

The EU negotiating proposal to SA is more complex. Due to the differentiated level of market access granted to various commercial partners and geographical regions, the EU tariff structure has grown into a complex web of tariff rates including, in addition to MFN rates, preferential rates granted under the GSP schemes, the Lomé Convention and a number of other bilateral and plurilateral trade agreements.

Finding out what the EU proposal to SA actually entails at the eight-digit HS level was therefore quite a task in itself. Based on the definition of "sensitive products" contained in the GSP scheme — of which SA is currently a beneficiary — in combination with the level of the MFN tariffs, the EU proposal defines three groups of industrial products and five groups of agricultural products. Each of these categories is then assigned its own respective liberalization calendar (for details, see Annex B.2).

A preliminary evaluation of the EU proposal may be attempted on the basis of the analysis of the proposal by tariff line. Out of the 10,539 lines included in the EU tariff book, 4,400 are already duty-free on an MFN basis. Upon implementation by the year 2004 of the UR commitments, 4,905 lines will be MFN duty-free. Once the FTA is fully implemented, 9,612 lines will be duty-free, 8,064 for industrial goods and 1,548 for agriculture (Chapters 1-24).

It is interesting to note that out of the 927 tariff lines to be excluded from the Agreement — all of which refer to agricultural products — only 135 were exported by SA to the EU in 1996 (figure 4.2).[11]

Figure 4.2: Implications of EU negotiating proposal for SA exports of agricultural products (HS Chapters 1-24)
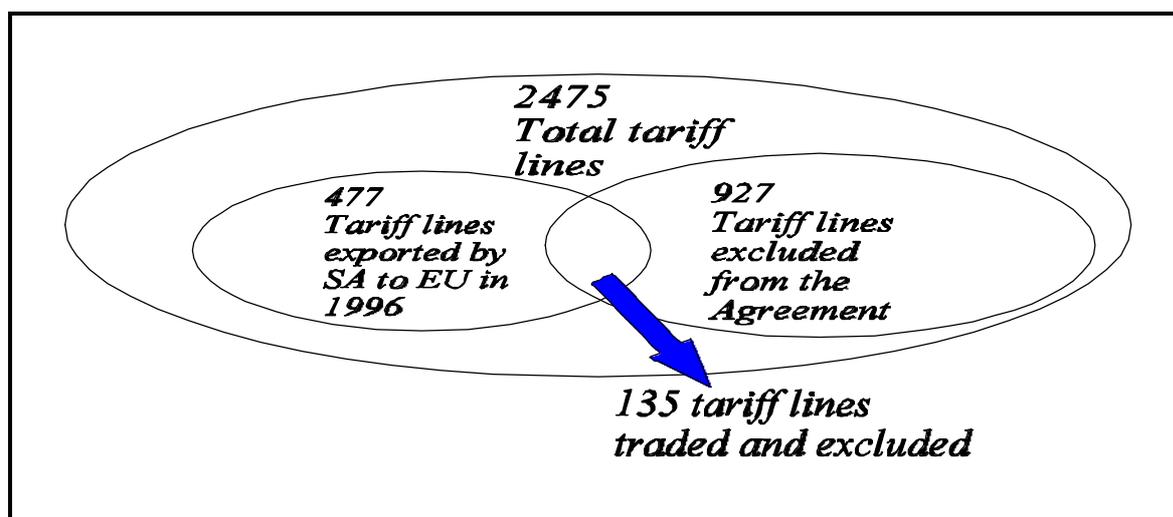
Source: Authors' calculations based on current trade flows (assuming fish is included in the Agreement).

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[11] For agricultural products, one should bear in mind that different product lines can refer to different dates of production, i.e. SA may not be exporting in a particular line, because the relevant eight-digit code refers to the European summer/SA winter.

There is, however, a possibility that fishery products (corresponding to Chapter 3 of the Harmonized System) may also be excluded from tariff concessions by the EU in the context of the FTA Agreement.[12] Should Chapter 3 indeed be completely excluded after completion of the transition period, 9,455 lines (i.e. all of the 8,064 industrial tariff lines plus 1,391 agricultural ones) would be tariff-free. A total of 1,084 (agricultural) lines would be excluded from any tariff reductions; in 1996, SA exported only 164 of these to the EU markets.

The striking implication of this negotiating proposal is that, when applied to current trade flows, as shown in figure 4.3, only 50,17 per cent of agricultural trade becomes duty-free after implementation of the FTA Agreement (up from 6.7 per cent in 1996), while for industrial goods the proportion is 100 per cent (up from 85.1 per cent in 1996).[13] In other words, the 135 tariff lines that are excluded from the EU proposal and currently exported by SA to the EU carry 49.8 per cent of total SA agricultural exports to the EU.

Fig. 4.3: SA exports to EU - Share of duty free on total*
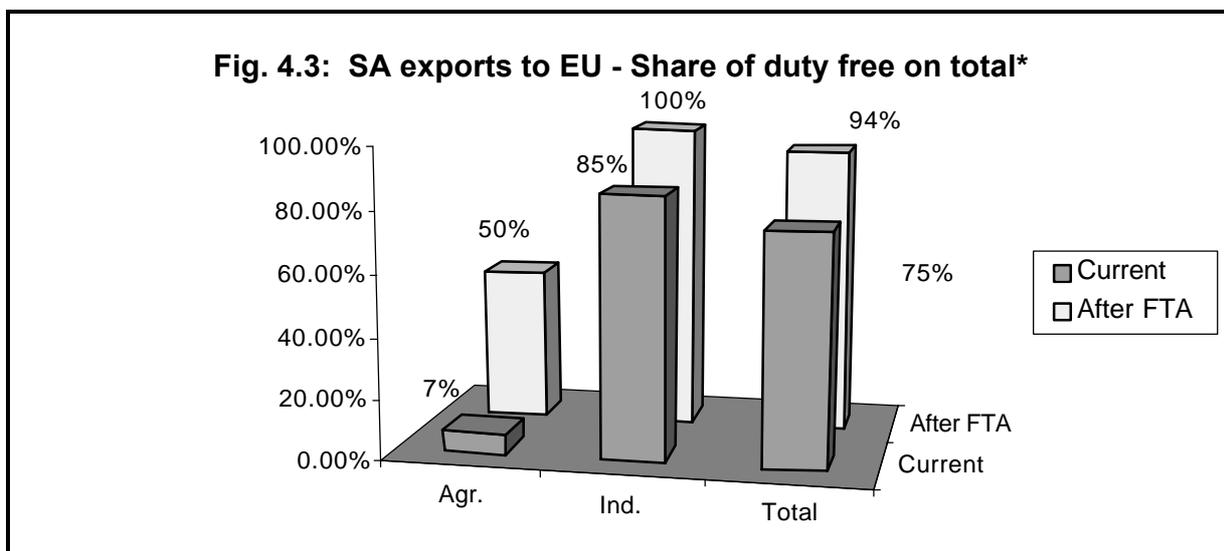
Source: Authors' calculations based on current trade flow.

It is on this basis that we elaborated two scenarios for the estimation of the impact of the Agreement on SA exports to the EU: under the first, HS Chapter 3 (fish) is included in the proposed agreement, while under the second it is excluded. We shall see from the following section, which discusses the results of the simulation, how this proposal actually impacts bilateral trade.

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[12]   The inclusion of fish in the EU Agreement was made conditional on free access to SA fishing waters for EU fishing vessels — a condition that SA regards as unacceptable.

[13]   If fish is excluded, the proportion of duty-free agricultural exports drops further to 44.63 per cent.

V. THE RESULTS OF THE SMART SIMULATION

As illustrated in chapter I, applying the SMART methodology to the EU-SA Free Trade Agreement implies the completion of three exercises:

• trade creation on the SA market (increase in EU exports to SA displacing domestic SA production);

• trade creation on the EU market (increase in SA exports to the EU displacing domestic EU production);

• trade diversion on both markets (displacement of imports from third countries).

We shall discuss the results of each of these analyses in the next paragraphs.[14]

A. *Trade creation on the EU market*

The total trade creation projected to result from the FTA on the EU market after all the stages are fully implemented is 1.4 per cent of current exports to the EU or R637 million.[15] This increase of the 1996 level of SA exports to the EU will be realized incrementally, as the commitments contained in the EU negotiating proposal are gradually implemented.[16] It should, however, be highlighted that this increase results from two distinct components: on the one hand, the commitments which are contained exclusively in the EU proposal to SA, and on the other those that are contained both in this proposal and in the EU scheduled tariff reductions in the context of the implementation of the Uruguay Round Agreements.

Tables 5.1 and 5.2 illustrate this point under the two different scenarios discussed above (HS Chapter 3 on fish included or excluded from the Agreement). The "Projected increase due to UR" — which would occur even in the absence of a FTA Agreement as the result of EU commitments within WTO — is estimated at 241.2 million rands, or 0.5 per cent of 1996 SA exports to the EU. The "Projected increase due to FTA" is estimated at 395.9 million rands or 0.9 per cent of 1996 exports. Clearly, if SA decides to sign the FTA Agreement, then the projected increase in exports resulting from the simultaneous implementation of the FTA and the UR will result in an increase in exports to the EU equal to the sum of the two components. It is noteworthy that the "WTO Component" represents roughly 40 per cent of the combined total.

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[14]   The calculation of trade diversion on the European market was not included, since the complexity of the EU tariff book makes it extremely difficult to assess the rate of duty levied on imports from the various trade partners.

[15]   Including UR tariff reductions. When Chapter 3 (fish) is excluded, the projected increase drops by R28.8 million to R608.3 million (1.3 per cent of 1996 exports).

[16]   It may be worthwhile to point out that this one-off increase projects the permanent increase in imports that will occur (on top of normal trade growth) after liberalization is completed. In the transition period, only the component of the trade creation that relates to commitments already implemented will be realized each year (see Annex C, table 2).

Table 5.1

Aggregate results: Projected increase in SA exports to the EU (fish included)

	Agr.	Ind.	Total
Exports to the EU — 1996 (in millions of randsl)	5,793.6	40,998.1	46,791.7
Projected increase due to UR (in millions of rands)	133.1	108.0	241.2
Projected increase due to FTA (in millions of rands)	151.8	244.1	395.9
Projected increase due to UR and FTA combined (in millions of rands)	284.9	352.1	637.1
UR as percentage of 1996 exports to the EU	2.3	0.3	0.5
FTA as percentage of 1996 exports to the EU	2.6	0.6	0.9
UR & FTA combined as percentage 1996 exports to the EU	4.9	0.9	1.4

Table 5.2

Aggregate results: Projected increase in SA exports to the EU (fish excluded)

	Agr.	Ind.	Total
Exports to the EU — 1996 (in millions of rands)	5,793.6	40,998.1	46,791.7
Projected increase due to UR (in millions of rands)	133.1	108.0	241.2
Projected increase due to FTA (in millions of rands)	128.4	244.1	367.1
Projected increase due to UR & FTA combined (in millions of rands)	256.1	352.1	608.2
UR as percentage of 1996 exports to the EU	2.3	0.3	0.5
FTA as percentage of 1996 exports to the EU	2.2	0.6	0.8
UR & FTA combined as percentage 1996 exports to EU	4.4	0.9	1.3

One final observation relates to the timing of the liberalization. In fact, the major part of the trade creation will take place in the last stage of the FTA, Phase 4, which is to start no later than the year 2005 and is due for completion in 2011 (see figure 5.1).

Fig. 5.1
Breakdown of trade creation by phases (UR+FTA)
(Millions of rands)

[For technical reasons, it is not possible to reproduce the graph here.]

B. Trade creation on SA market

The total trade creation projected to result from the FTA on the SA market after all the stages are fully implemented ranges between 1190 and 3562 million rands or between 2.3 and 7 per cent of current SA imports from the EU.[17]

Again, like in the case of the trade creation on the EU market, we need to distinguish the component which is projected to result from the implementation of SA commitments within the Uruguay Round from the one which relates exclusively to the FTA Agreement.

Tables 5.3 and 5.4 respectively illustrate this point under the two different scenarios introduced in chapter IV. Under the first, SA excludes from the trade agreements all Phase 4 products, while under the second SA makes no exclusions and entirely liberalizes imports from the EU by the end of the transition period. Both scenarios were simulated utilizing two alternative values for import demand elasticity -0.85, as estimated by recent research by the SA Reserve Bank,[18] and -1.5, the default value of the SMART simulation (which is the value we utilized to simulate trade creation on the EU market).

The increase in SA imports from the EU resulting from the implementation of SA commitments under the Uruguay Round is estimated to range between 0.4 and 0.7 per cent of current imports from the EU, depending on the assumption made as to the value of SA import demand elasticity.

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[17]   Including UR tariff reductions, and assuming that the SA elasticity of import demand is relatively inelastic at -0.85. Assuming instead that the elasticity of import demand is -1.5, the estimation ranges between 2,100 and 6,287 million rands, or between 4.1 and 12.3 of current SA imports from the EU.

[18]   Small, *SA Reserve Bank Bulletin*, 1996.

Table 5.3
Aggregate results: projected increase in SA imports from the EU
Elasticity of import demand -0.85

	Agr.	Ind.	Total
Imports 1996 (in millions of rands)	1,822.3	49,219.3	51,041.5
Projected increase due to UR (in millions of rands)	3.7	207.1	210.8
Projected increase due to FTA — Scenario I (in millions of rands)	84.0	895.3	979.3
Projected increase due to FTA — Scenario II (in millions of rands)	195.2	3,157.0	3,352.2
Combined effect UR and FTA — Scenario I (in millions of rands)	87.7	1,102.4	1,190.1
Combined effect UR and FTA — Scenario II (in millions of rands)	198.9	3,364.1	3,562.9
UR as percentage of 1996 imports	0.2	0.4	0.4
FTA Scenario I as percentage of 1996 imports	4.6	1.8	1.9
FTA Scenario II as percentage of 1996 imports	10.7	6.4	6.6
Combined effect UR and FTA — Scenario I as percentage of 1996 imports	4.8	2.2	2.3
Combined effect UR and FTA — Scenario II as percentage of 1996 imports	10.8	6.8	7.0

Table 5.4
Aggregate results: Projected increase in SA imports from the EU —
Elasticity of import demand -1.5

	Agr.	Ind.	Total
Imports 1996 (in millions of rands)	1,822.3	49,219.3	51,041.5
Projected increase due to UR (in millions of rands)	6.6	365.4	372.0
Projected increase due to FTA only Scenario I (in millions of rands)	148.2	1,580.0	1,728.2
Projected increase due to FTA only Scenario II (in millions of rands)	344.4	5,571.2	5,915.6
Combined effect UR and FTA Scenario I (in millions of rands)	154.8	1,945.4	2,100.1
Combined effect UR and FTA Scenario II (in millions of rands)	351.0	5,936.6	6,287.5
UR as percentage of 1996 exports (%)	0.4	0.7	0.7
FTA Scenario I as percentage of 1996 imports (%)	8.1	3.2	3.4
FTA Scenario II as percentage of 1996 imports (%)	18.9	11.3	11.6
Combined effect UR and FTA — Scenario I as percentage 1996 imports	8.5	4.0	4.1
Combined effect UR and FTA — Scenario II as percentage 1996 imports	19.3	12.1	12.3

As regards the projection of the effects of the proposed FTA, under the assumption that SA import demand elasticity is relatively price inelastic with a value of -0.85 (table 5.3), the estimate ranges between R979 million or 1.9 per cent of current SA imports from the EU under the first scenario and R3352 million, or 6.6 per cent under the second.

Under the alternative assumption that the elasticity of import demand is more price elastic with a value of -1.5 (table 5.3), the effect of the proposed agreement is estimated to range between R1728 million, or 3.4 per cent of current SA imports from the EU under the first scenario and R5916 million or 11.6 per cent under the second. The total effect of the FTA and the UR combined is, therefore, estimated between 2.3 and 4.1 per cent of current imports from the EU under Scenario I and between 7 and 12.3 per cent under Scenario II.

If strategic exclusions are effectuated in the final FTA Agreement, the resulting trade creation for the EU on the SA market would have to be adjusted accordingly and would lie in between the two extremes that we have set out above. It is clear that the largest increases in imports from the EU would take place with regard to commodities which currently face high tariffs, so obviously the more exclusions are made among the products in this category the lower trade creation for the EU becomes.

As illustrated in figure 5.1, the major part of this increase will occur as a result of the implementation of Phase 4, which is envisaged to be implemented alongside the other phases and is excluded from the free trade agreement under the alternative scenario, in which we assume that all Phase 4 products are excluded. A second point which is apparent from figure 5.1 is the disproportion between the projected increase in SA imports from the EU and its projected exports. It should be emphasized this figure was elaborated under the assumption that import demand elasticity is -0.85 for SA and -1.5 for the EU. Clearly, using -1.5 on both sides would further deepen the discrepancy in the favour of the EU.

It is significant that a deterioration in the EU-SA trade balance occurs in spite of the fact that, under Scenario II, SA liberalizes only 85 per cent of trade with the EU, while the EU liberalizes 94 per cent. The rationale behind this strong finding is that the SMART simulation projections are directly proportional to three key variables: the current level of trade, the size of the respective tariff reductions, and the import demand elasticity.

As regards current levels of imports and exports, table 5.5 shows that SA is currently running a trade deficit vis-à-vis the EU: this influences the results from the SMART simulation which show an imbalance of the same sign under all the different scenarios.

Secondly, the size of the tariff reductions is smaller on the EU side than on the SA side: this is due first of all to the fact that EU tariffs on imports from SA are currently much lower than SA tariffs on imports from the EU (the trade weighted averages are 1.7 per cent and 11.7 per cent respectively). In evaluating this finding, however, one should carefully appreciate the fact that, since SA is currently a beneficiary of the EU GSP scheme, in our simulation we have assumed that GSP tariffs are applied to all SA exports to the EU. As we discuss below, this leads to an underestimation of the tariffs currently being applied and thus to an underestimation of the effect of the FTA on exports. Another factor that contributes to dwarf the effect of the FTA on SA exports is the rather lengthy list of exclusions that the

EU has singled out in its proposal, comprising close to 50 per cent of total current SA agricultural exports to the EU. The list of products that SA will on its part exclude from the agreement is still the subject of negotiations.

Finally, the assumptions made regarding the elasticity of import demand also have an important effect on the end results of the simulation: the analyses summarized in the tables in this section illustrate the impact of a change in this parameter.

C.   *Impact on SA current account and government revenue*

As a consequence of the analysis above, the trade agreement is projected to increase the trade deficit vis-à-vis the EU under all scenarios.

As shown in table 5.5, the 1996 trade deficit with the EU amounted to R4.3 billion or 9.1 per cent of 1996 exports to the EU. Under Scenario I this trade deficit will increase to between R4.8 and R5.7 billion, or 10.1 per cent -12.1 per cent, whereas under Scenario II the trade deficit vis-à-vis the EU will worsen significantly to between R7.2 and R9.9 billion or 15.1 per cent — 20.9 per cent of the projected 2011 total exports to the EU.

Table 5.5
Impact of tariff liberalization (FTA and UR)
(millions of rands)[19]

	Elasticity of import demand	
	-0.85	**-1.5**
Current trade balance	-4250	
Projected trade balance SA-EU — Scenario I[a]	-4803	-5,713
Projected trade balance SA-EU — Scenario II[a]	-7,176	-9901
Current SA-EU trade balance as percentage of SA exports to the EU	-9.0%	
Proj. SA-EU trade balance as percentage of SA exports to the EU — Scenario I	-10.1%	-12.0%
Proj. SA-EU trade balance as percentage of SA exports to the EU — Scenario II	-13.7%	-18.6

a   Only one value (-1.5) was used for import demand elasticity for the projection of SA exports to the EU.

In Annex C an attempt was made to estimate the annual net impact resulting from the phased implementation of the proposals (see Annex C, table C.3). The net impact of the FTA will be negative for each year under consideration.

Imports from the EU form a sizeable part of total SA imports, with a share of approximately 44 per cent in 1996. Thus, the worsening of the trade deficit vis-à-vis the EU might have a significant impact

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[19]   These projections include the effect of both the UR and the FTA.

on SA overall balance-of-payments situation. Finally, revenue from customs is also projected to decrease by between R1,604 million and R5,733 million (including an R318 million decrease due to the Uruguay Round).

D. Impact at the sectoral level

Perhaps the most interesting feature of the SMART simulation model is the fact that results are disaggregated at the highest possible level, the single national tariff line (HS eight digits). This is why, as we pointed out above in chapter I, it can be a useful tool for the negotiating sides of an FTA Agreement. For analytical purposes, different levels of aggregation may be utilized, and in particular the HS section (HS one digit, see table 5.6) and the HS Chapter (HS two digits, see Annex; see also table C.3).

One final observation relates to the timing of the liberalization. In fact, the major part of the trade creation will take place in the last stage of the FTA, Phase 4, which is to start no later than the year 2005 and is due for completion in 2011 (see figure 5.1).

Table 5.6
Results from the SMART Simulation aggregated at the section level

HS section	Export increase	Import increase Scenario I	Import increase Scenario II	Net change Scenario I	Net change Scenario II
-Section I Live animals & prod.	29,181	966	55,883	28,215	-26,701
Section II Vegetable products	219,017	7,253	7,584	211,765	211,434
Section III Fats and oils	830	9,986	14,584	-9,157	-13,755
Section IV Prepared food, etc.	35,913	69,492	120,830	-33,579	-84,918
Section V Mineral products	385	22,863	22,914	-22,478	-22,529
Section VI Chemical & prod.	22,511	179,293	208,912	-156,781	-186,400
Section VII Plastics & rubber	11,908	85,212	180,767	-73,303	-168,858
Section VIII Hides and skins	1,069	9,399	13,029	-8,330	-11,960
Section IX Wood and articles	3,775	8,529	8,907	-4,754	-5,132
Section X Pulp, paper etc	166	90,497	93,857	-90,331	-93,691
Section XI Textile & articles	80,390	34,958	152,342	44,289	-73,096
Section XII Footwear, headgear	4,825	1,052	24,123	3,773	-19,298
Section XIII Articles of stone	1,983	34,380	71,874	-32,397	-69,891
Section XIV Precious stones, etc	196	5,510	6,230	-5,314	-6,034
Section XV Base metals & prod.	177,106	149,195	162,143	27,911	14,963
Section XVI Machinery	17,639	381,790	464,969	-364,151	-447,329
Section XVII Transport equipment	28,489	77,119	584,282	-48,629	-555,793
Section XVIII Precision instruments	689	8,699	12,605	-8,010	-11,916
Section XIX Arms & ammunition	816	0	0	816	816
Section XX Miscellaneous manuf	1,333	13,331	68,655	-11,998	-67,321
Section XXI Works of art, etc	0	2	2	-2	-2
Section XXII Miscellaneous[20]	0	538	1,288,438	-538	-1,287,900
TOTAL	638,222	1,190,063	3,562,930	-552,984	-2925314

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[20]

Within the Harmonized System, this Section comprises two Chapters (97 and 98) which are reserved for "special" uses by the Contracting Parties. The EU does not utilize this nomenclature, but SA does. Mainly, these Chapters record the imports of used machinery, which are projected to increase significantly under Scenario II.

The HS sections in which significant increases in imports from the EU are projected are Section XVI on machinery and Section VI on chemicals (especially Chapter 29 on organic chemicals). Under Scenario II — i.e. assuming that SA does not make any strategic exclusions — imports of Section XVII (vehicles) are also projected to record an important increase.

Machinery already constitutes the bulk of the imports from the EU, which is the leading world exporter, while the installed capacity of SA in this sector is relatively minor. Machinery is also a sector that has a strong impact on the overall productivity of the manufacturing system, and may well be a sector in which the arguments in favour of tariff liberalization most clearly outweigh those against it.

Base metals represents a case in which a relatively important trade creation is projected on both sides. Interestingly, there appears to be a potential for intra-industry trade, with SA specializing in the early phases of the production and the EU in the finished products. Depending on the size of the exclusions that will be decided the SA negotiators in the final rounds transport equipment could also be an industry in which both partners would benefit, with the EU producers building on SA current position as a leading exporter to the countries of the Southern African region.

Relatively more head-to-head competition could well emerge in the chemicals sector — which, like base metals, is characterized by heavy start up costs and economies of scale — as well as in the light industries, in the sectors of prepared food and beverages, textiles and footwear.

On the export side, currently SA capacity is concentrated in precious stones and metals, base metals and vegetables. The HS sections in which significant increases in exports towards the EU are projected are: Section II, vegetable products (in particular Chapter 8, edible fruit) and Section XV, base metals, (in particular Chapter 72 on iron and steel) as well as Section XI, textile and textile articles (in particular Chapters 61 and 62, clothing, and Chapter 54, man-made filaments). It should also be noted that should Chapter 3 (fishery) be included in the Agreement, this chapter too would benefit from a substantial increase in exports.

Thus, in spite of the important exclusions made in the EU offer regarding agricultural products, still it is agricultural exports that are poised to increase the most. This by itself creates a strong argument against these exclusions for the SA negotiators.

To the contrary, the effect of the agreement on SA exports of manufactures to the EU is projected to be relatively small, with the exception of textile products. This finding hinges on the fact that current exports of manufactures to the EU are limited and moreover, EU GSP tariffs on industrial goods are very low. Finally, SMART is a static model and this does not allow us to model adequately the increased investment from the EU that may well be the most important consequence of the Agreement, especially for the manufacturing sector.

In this regard, it would definitely be important to conduct additional research on some aspects of the Agreement that this paper does not attempt to analyse in detail. In particular, the of technical and financial assistance that will accompany the FTA, as well as the wider context of SA commercial and

industrial policy should be carefully analysed in order to assess the impact of the Agreement on the specific sectors.

Also fundamental are the rules of origin regulations that will in effect determine the capacity of the SA exporters of manufactures to actually utilize the Agreement's provisions.

E.   Trade diversion

It will be remembered from the section on methodology above that the total trade effect is equal to the sum of the trade creation effect, analysed above, and of the trade diversion effect, defined as the displacement of imports from other sources by increased imports from the EU.[21]

Trade diversion towards the EU was estimated to be R2.4 billion. This must be compared against estimated trade creation for the EU of R1.2 to R6.3 billion (depending on the scenario and the value of the elasticity utilized). The total trade effect therefore ranges between R3.6 and R8.7 billion.

As illustrated in tables 5.7 and 5.8, in volume terms most of the trade diversion occurs at the expense of Japan and US. Nevertheless, SADC countries both individually and as a group are also adversely affected when trade diversion is evaluated as a percentage of own trade with SA. Within this group, Mauritius stands out as the country worst affected.

It should, however, be noted that in our analysis we have not taken into account the preferential tariffs which SA applies to these countries' exports, so that this effect may well be overestimated. Moreover, the value of the elasticity of substitution utilized, -1.5, is rather high, thus adding to the potential overestimation.

Although by definition it does not displace domestic SA production, trade diversion is significant in at least two ways. First, it may result in substitution away from the most efficient producer to the preferential partner, so it may have adverse consequences on the overall efficiency of the productive system: it is for this potentially *adverse* effect that standard economic analysis considers FTA as a second best to MFN liberalization.

Table 5.7
Trade diversion

	Trade diversion (in millions of rands)	Trade diversion as percentage of 1996 exports (%)
EU	+2,424.7	4.75%
Japan	-322.5	-6.12%
U.S.	-136.6	-2.43%
SADC	-50.5	-2.16%
All other trading partners	-1,915.1	-3.52%

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[21]   The calculation of trade diversion on the European market was not included, since the complexity of the EU tariff book makes it extremely difficult to assess the rate of duty levied on imports from the various trade partners. This effect would lead to a net increase in SA exports.

Table 5.8
Trade diversion (decrease in SA imports from SADC trade partners)

	Trade diversion (in thousands of rands)	Trade diversion as percentage of 1996 exports (%)
Angola	-44.4	-0.02%
Malawi	-11,302.7	-3.32%
Mauritius	-1,330.8	-5.77%
Mozambique	-1,533.9	-1.61%
Tanzania, U.R.	-187.9	-0.74%
Zambia	-1,154.4	-0.57%
Total SADC	-50,524.2	-2.16%

As a second dimension, trade diversion may also result in pressures from other commercial partners which may be exerted both at a bilateral level or at a multilateral level when the Agreement is presented before the Committee on Regional Trade Agreements of WTO for examination.

To counter any potentially harmful effect on the regional partners, other aspects of the Agreement which we do not attempt to analyse in the paper may be significant, such as the commitment by the EU to provide compensatory financial assistance to counter the negative effects on SACU countries' tariff revenue. Most important of all will be the measures of support given to the business community, both European and South African, to build on SA leading position in the Southern Africa and make the Agreement an occasion to foster development and cohesion among the countries of the region.

VI. ADDITIONAL ANALYSES: THE CALCULATION OF PRODUCT COVERAGE AND PREFERENCE MARGINS

This chapter will discuss the results from analyses that were undertaken in addition to, and independently of, the SMART methodology, and will in particular examine two useful indicators (product coverage and preference margins) of the potential economic gain arising from preferential access to foreign markets.

Product coverage is defined simply as the percentage of exports to which preferential treatment applies. Since currently SA is a beneficiary of GSP one can compare the percentage of exports currently covered by the GSP scheme to the percentage of exports that would be covered by the FTA Agreement. Table 6.1 shows how the FTA will increase the share of SA exports to the EU which benefit from preferential market access, yet this improvement is dampened by the implementation of the reductions of the MFN tariffs in the context of the Uruguay Round, particularly for industrial products.

Table 6.1
Comparison of product coverage for all traded goods

	Agr.	Ind.	Total
Current product coverage (1996 GSP compared to 1996 MFN)	43.7 %	0.219	24.6 %
Product coverage after FTA (2011 SA tariffs compared to 1996 MFN)	49.2 %	26.0 %	28.9 %
Product coverage after FTA (2011 SA tariffs compared to 2004 MFN : implementation of the UR)	46.0 %	20.55 %	23.7 %

The preference margin (PM), which complements naturally an analysis of product coverage - provides an indication of the value of a tariff preference by multiplying the relevant price advantage to the value of exports of a particular tariff line. In algebraic form:[22]

$$PM = \frac{(MFN\ tariff - Preferential\ tariff) \ \times \ Value\ of\ exports}{(1 + MFN\ tariff)}$$

This indicator is expressed in units of the national currency. It may therefore be easily aggregated across all tariff lines and then expressed as a percentage of the value of total exports. This may then be compared across time — as the tariff preferences or the MFN tariffs change — or across countries, as shown in tables 6.2 and 6.3. The interesting feature of both the product coverage and the preference margin is that they are based on *actual trade*, thus providing the policy maker with an objective trade-weighted figure.

Table 6.2 shows the erosion of SA's preferential position upon implementation of the UR commitments. Taking this erosion into account the proposed FTA represents a significant improvement. The impact of the total improvement on SA's PM is biased towards agricultural goods, the PM for which is expected to triple at least. The effect is most likely due to the fact that MFN tariffs on agricultural goods are set at a much higher level than those for industrial goods so that there is more room for preference vis-à-vis MFN tariff levels. On industrial goods the PM will increase by one third only, although compared to the PM after the UR, this increase represents a doubling of the PM. Overall, the erosion of PM's induced by the UR is more than compensated for by the proposed FTA.

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[22] This indicator represents an approximation of the value of a given preference when detailed information, such as export supply elasticities and export prices, is not available (see Grethe, 1997).

Table 6.2
Evolution of the preference margin for all traded goods[23]

	Agr.	**Ind.**	**Total**
1. Current preference margin	1.1 %	0.6 %	0.7 %
2. Preference margin upon implementation of UR	0.1%	0.4 %	0.5 %
3. Preference margin after FTA	3.3 %	0.8 %	1.1 %

Source: Authors' calculations.

Table 6.3
International comparisons product coverage and preference margins:
agricultural products

	Israel	**Morocco**	**Tunisia**	**SA (proposal)**
Preference margin before FTA and UR (%)	6.62	8.4	14.3	1.1
Preference margin after UR before FTA (%)	4.81	7.3	12.96	0.1
Preference margin after FTA and UR (%)	5.60	9.40	12.90	3.3
Product coverage before FTA (%)	59.5	73.5	93.7	43.7
Product coverage after FTA (%)	72.6	92.0	91.30	46.0

Source: UNCTAD (1997), authors' calculations.

A.   International comparisons

Based on this information, we can attempt to make some comparisons with other trade agreements the EU has recently signed with countries of the Mediterranean basin, which, as with the proposed agreement with SA, aim at the establishment of bilateral FTAs following a transition period of 12 years.[24]

UNCTAD has published a study (1997) regarding preferential market access to European markets for agricultural goods from Mediterranean countries, which can provide the basis for a comparative evaluation of the proposal that the European Commission has made to SA with respect to agricultural

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[23]   See Annex C, table C.1 - *Additional Results* - for the formulae utilized for the calculations.

[24]   All the countries of the Mediterranean Basin (with the exception of the Libyan Arab Jamahiriya) have enjoyed preferential market access to the EU market since signing the Cooperation Agreements in the late 1970s. Preferences took the form of duty-free market access for industrial exports and of preferential tariffs — often within the context of tariff quotas — for agricultural exports. Cooperation Agreements were revised on several occasions until 1994 (after the Barcelona Conference and the New Euro-Mediterranean Policy), when the EU started negotiations with the Mediterranean countries for the conclusion of a new generation of agreements. At the time of writing, such Association Agreements have been concluded with Israel, Jordan, Morocco, the Palestinian Authority and Tunisia, while they are in course of negotiation with Algeria, Egypt, Lebanon and the Syrian Arab Republic. Only the agreements with Israel, the Palestinian territories and Morocco have already entered into force. For additional details, see UNCTAD 1998.

goods.[25] Table 6.3, while it only includes a small subset of the countries to which the EU currently grants preferential market access, provides an interesting basis for discussion.

It is evident that the product coverage and preference margin granted to SA is significantly lower than that granted to its counterparts. The third row shows the relative impact on SA's preferential treatment of the implementation of the Uruguay Round, perhaps making the most compelling case yet for the benefits of the FTA as proposed, as well as providing the first step towards a cost/benefit analysis of the FTA.

Of course, particular care should be applied before concluding from this data that the proposal made by the EU to SA is particularly penalizing, and this for several reasons. First of all, several of the preferences granted to the Mediterranean countries are in the form of preferential tariffs, which often do not go all the way to the granting of duty-free market access, but are simply some percentage reduction of the MFN tariff. In the proposal made to SA, instead, all agricultural products that are included will be granted duty-free market access. A second important caveat is that — both in the case of the Mediterranean countries and in the case of SA — many of the tariff concessions take place within "tariff quotas": this means that the reduced tariff applies only until concurrence of the quota, while the standard MFN duty applies for all exports in excess of the country's quota. So an informed comparison should also take into account the size of the quotas granted to SA and to the Mediterranean Countries, which is impossible at the date of writing since the tariff quotas for SA are still under negotiation.

B.   *Sectoral impact*

At an aggregated level, the FTA will more than compensate the relative erosion of SA's current margin of preference as a consequence of the implementation of the EU Uruguay Round Commitments. At a more desegregated level, however, the preference margin may decline because, even if the FTA proposal provides for a deeper tariff cut for SA than was the case under the GS, the decline in MFN tariffs under the Uruguay Round more than compensates for this change. Table 6.4 divides the 20 HS sections into three categories according to the net impact of the FTA on their PM.

The sections which are projected to achieve the highest relative gain in terms of preference margins are:

- Textile and textile articles   (+ 450%)
- Vegetable products   (+ 275%)
- Base metals   (+ 143%)
- Live animals   (+ 150%)
- Vehicles, aircraft and other transport equipment (+ 150%)

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[25]   As would be the case for SA after the conclusion of the FTA, all industrial products originating in the Mediterranean countries currently enjoy duty-free market access to the European market under the term of the 1977 Cooperation Agreements.

Table 6.4
Absolute changes in PM per HS section

Increase PM	No change in PM	Decrease PM
I : Live animals & products	III : Fats and oils	X : Pulp of wood, paper
II: Vegetable products	V : Mineral products	XVI : Machinery, electrical equipment
IV: Prepared foodstuffs, beverages, tobacco	VIII : Raw hides and skins	XX : Miscellaneous manufactured articles
VI: Products of the chemical or allied industries	IX : Wood & wood products	
VII : Plastics & rubber	XIV : Pearls, (semi)-precious stones, jewellery	
XI : Textile & articles	XVIII : Instruments and apparatus	
XII : Footwear	XIX : Arms and ammunition	
XIII: Articles of stone, ceramics, glass	XXI : Works of art, antiques	
XV : Base metals		
XVII : Vehicles, aircraft & other transport equipment		

Out of the disadvantaged sections, Section X on wood pulp, paper and paperboard, is particularly hard hit; its PM is actually reduced to zero. It should be noted, however, that, since the proposals used in this study indicate a complete elimination of tariffs on industrial goods on the EU side, the decrease cannot be cushioned by further tariff reductions.

Once again, as we observed when discussing the results of the SMART simulation at the sectoral level, the FTA is likely to boost agricultural exports by increasing the preference margin that SA enjoys on the European markets. However, as regards exports of manufactures — in particular pulp and paper, electrical machinery, miscellaneous manufactured goods — the evolution of the margin of preference will be at SA's disadvantage, due to the erosion which follows from the general reduction in EU tariffs in the context of the Uruguay Round.

VII. CONCLUSIONS

In conclusion of this study we should like to make some comments regarding both the methodology employed in this study as well as the SMART simulation technique (para. 9.1) and the policy implications of the analysis (para. 9.2).

A. *Methodological conclusions*

The main strengths of the SMART simulation tool can be summarized as follows:

   (i)   The methodology is straightforward, thus simplifying the task of constructing and evaluating alternative phase-out scenarios;

  (ii)   the calculations are detailed at the level of the eight-digit tariff line, providing the negotiators with an indication of the projected outcome of the phase-out of tariffs on both imports and exports at the highest level of disaggregation possible;

 (iii)   the data requirements are relatively small in comparison with alternative forms of impact evaluation.

However, it appears that SMART's main strength, simplicity, is also its main weakness. The implementation of SMART for the present study exposed the following constraints.

SMART is a static, partial equilibrium model operable only under strict *ceteris paribus* conditions. It provides a snapshot of the projected impact of tariff reductions, whilst disregarding any adjustment process accompanying this change. The analysis is limited to export and import projections, leaving policy makers uninformed about general price level and other macro-economic variables.

In addition, no time series are used, so that the TC becomes a linear extrapolation of current exports, dependent only on the level of tariff reduction and the elasticities used. Outlier years in terms of export performance or a miscalculation of the import demand elasticity on either side of the agreement will therefore seriously affect the results.[26]

Furthermore, SMART can be used to manipulate *ad valorem* tariffs only, non-tariff barriers are not taken into consideration, unless it is possible to estimate *ad valorem* equivalents. This limitation also applies when specific tariffs are used, as in the case of the EU for agricultural products.[27]

Another problem regarding the interpretation of these results stems from SMART's exclusively demand-side focus and the assumption of infinite supply elasticity. First of all, price may not be the decisive factor in consumer spending, i.e. regardless of where these imports are sourced, as SMART assumes. Secondly one could certainly argue that in the case of many developing countries the infinite supply elasticity assumption does not correspond to reality. In particular, one could question this assumption in the case of a SA agreement with the EU, since almost half of all exports are destined for the EU. Apart from obvious raw material supply constraints, for some products significant increases in the value of exports are projected (Annex C). These increases may be of such magnitude that they affect SA export prices, so that the estimated increase in SA exports may not materialise to the full extent of the projection.

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[26]   Some of these problems could be circumvented by using averages for import and export data and by using a consistent elasticity throughout so that different scenarios can be compared. Furthermore, import demand elasticities estimated per sector of the economy would significantly improve the reliability of the findings.

[27]   Fortunately, in our case most of the *ad valorem* equivalents of the EU-specific tariffs were available from UNCTAD.

In spite of these many limitations, the SMART methodology was used, among others, by many countries in preparing their negotiating position during the Uruguay Round. Both the EU delegation and SA have utilized it in the context of the current negotiations.

The reason for the success of this simple methodology is twofold: on the one hand, alternatives are limited. Practical impediments to the application and interpretation of computable dynamic general equilibrium (CGE) models are numerous. On the other hand, SMART is particularly well-suited to detailed trade negotiations.

It may appear that the model of choice for this kind of analysis would be a CGE model. However, this is not always the case, first of all because there are many problems regarding the availability or reliability of the type of time series data required. The results generated by CGE modelling may also be quite difficult to unravel, as the impact on every macroeconomic aspect must be taken into consideration. Partial equilibrium models such as SMART allow an exclusive focus on certain parts of the economy, which may prove more useful in the context of trade negotiations.

SMART proves invaluable when different trade agreement proposals need to be evaluated against each other and time is limited. Detailed analyses on a whole range of variables may be cumbersome to compare quickly, whereas one can compare TC results under different scenarios at a glance. Finally and perhaps most importantly, a CGE model cannot provide a tariff-line detail, yet actual trade agreement negotiations are conducted at this highly disaggregated tariff line level.

In summary, the evaluation of the pros and cons of the SMART tool, leads us to the following observation: SMART can be extremely effective provided it is used in context. SMART's main contribution lies in facilitating the evaluation of alternative trade agreement proposals. For a meaningful interpretation of the results, however, the trade creation and diversion outcomes must be appraised in the context of the country's industrial and macro-economic policies as well as the prevalent export climate and envisaged export strategies, leading to an informed position on the main offensive interests in the FTA negotiations.

Moreover, the SMART analysis is in many ways the starting point of various lines of inquiry, necessary for a full analytical evaluation of the FTA. Since SMART is able to incorporate non-uniform tariff reductions, it can be used to undertake a preliminary analysis on the impact on overall tariff levels implied by a certain proposal, which can subsequently be used in CGE models. In this case using SMART is a "means", and not an "end", in itself.

B. Policy conclusions

Our results show that the impact of the proposed free trade area agreement on bilateral trade flows is likely to be uneven, with a relatively large effect on SA's imports from the EU and a comparatively smaller effect on its exports towards this market. The size of this projected imbalance will depend on the exact terms of the agreement, which at the time this study was completed were still in the process of being negotiated.

Depending on the scenario used, our projections show an increase in SA imports from EU between 2.3 and 12.3 per cent of 1996 SA imports from EU and an increase in SA exports to EU of 1.3 per cent of 1996 SA exports to the EU. Therefore, from a purely "mercantilistic" point of view SA stands to lose from the FTA. In fact, even assuming that SA liberalizes only 85 per cent of its imports while the EU liberalizes 94 per cent, the trade deficit will still widen in the favour of the EU.

It is clear that trade liberalization inevitably leads to a displacement of domestic production by imported goods; however, if opportunely sustained and nurtured, the subsequent adjustment process may lead to a more efficient organization of production and increased competitiveness on both the domestic market and the export markets (Krugman, 1987). Of course, it would be important to evaluate the costs of the transition to freer trade in terms of the human and technological capital, which is at least in part sector-specific and may not find a suitable alternative occupation. But, as we pointed out above, a static, partial equilibrium model, such as SMART, is not the right tool for these considerations. Additional analyses will be required into these areas, that will allow to pinpoint the specific measures that may be required to support the transition to free trade. The examples of the economic boom in Spain or Ireland after joining the EU market and dismantling import protection could provide an interesting starting point for this research.

Some important policy considerations may be elaborated on the basis of the findings from the SMART simulation that we have conducted and which were detailed in this paper, in particular as concerns the sectoral composition of the increase in imports and exports. The HS sections in which significant increases in imports from the EU are projected are Section XVI on machinery and Section VI on chemicals (especially Chapter 29 on organic chemicals). Under Scenario II — i.e. assuming that SA does not make any strategic exclusions — imports of Section XVII (vehicles) are also projected to record an important increase.

Machinery already constitutes the bulk of the imports from EU, which is the leading world exporter. Machinery — and in particular plants, industrial or office equipment, tools and apparatus — is a sector in which arguments in favour of tariff liberalization most clearly outweigh those against it. Liberalizing imports in this sector may in fact contribute to boost the productivity of SA's production of industrial goods as well as services, taking full advantage of advanced technology. In this regard, the agreement with the EU may well be considered a "political vehicle" for a reform that might have been envisaged also on a unilateral basis.

Base metals represents a case in which a relatively important trade creation is projected on both sides. Interestingly, there appears to be a potential for intra-industry trade, with SA specializing in the early phases of the production and the EU in the finished products. Depending on the size of the exclusions that will be decided the SA negotiators in the final rounds transport equipment could also be an industry in which both partners would benefit, with the EU producers building upon SA's current position as a leading exporter to the countries of the Southern African region.

Relatively more head-to-head competition could well emerge in the chemicals sector — which, like base metals, is characterized by heavy start up costs and economies of scale — as well as in the light industries, in the sectors of prepared food and beverages, textiles and footwear.

On the export side, currently SA capacity is concentrated in precious stones and metals, base metals and vegetables. The HS sections in which significant increases in exports towards the EU are projected are: Section II on vegetable products (in particular Chapter 8, edible fruit) and Section XV on base metals (in particular Chapter 72 on iron and steel), as well as Section XI on textile and textile articles (in particular Chapters 61 and 62, clothing, and Chapter 54, man-made filaments). Thus, in spite of the important exclusions made in the EU offer regarding agricultural products, still it is agricultural exports that are poised to increase the most.

To the contrary, the effect of the agreement on SA exports of manufactures to the EU is projected to be relatively small, with the exception of textile products. This finding hinges on the fact that current exports of manufactures to the EU are limited and, moreover, EU GSP tariffs on industrial goods are very low. Finally, SMART is a static model and this does not allow us to model adequately the increased investment from the EU that may well be the most important consequence of the Agreement, especially for the manufacturing sector.

In this regard, it would definitely be important to conduct additional research on some aspects of the Agreement that this paper does not attempt to analyse in detail. In particular, the programme of technical and financial assistance that will accompany the FTA, as well as the wider context of SA commercial and industrial policy should be carefully analysed in order to assess the impact of the Agreement on the specific sectors.

Also fundamental are the rules of origin regulations that will in effect determine the capacity of the SA exporters of manufactures to actually utilize the Agreement's provisions on the export and on the import side.

Finally, it has been observed in the context of the Agreements signed or in course of negotiation by the EU with the countries of the Mediterranean region (Hoekman and Djankov, 1997) that the commitments regarding the increased protection of foreign direct investment, the provisions concerning competition policy and government procurement, as well as the protection of intellectual property rights, may play a role in creating a business environment that is conducive to investment, both by foreign and by local entrepreneurs. Time will show whether these observations are valid in the different context of SA, which has not only a more advanced legislation but also firm WTO commitments in many of these areas, and whether these will be significant incentives for investment in SA.

Another important dimension is the impact of the Agreement on SA's trade with its regional partners — particularly the countries of SADC. While this projected to be small in absolute value terms, for some of these countries trade diversion is nonetheless significant as a percentage of own trade. To counter this potentially harmful effect, again, other aspects of the Agreement which we do not attempt to analyse in the paper may be significant, such as the commitment by the EU to provide compensatory financial assistance to counter the negative effects on SACU countries' tariff revenue. Most important of all will be the measures of support which will be given to the business community, both European and South African, to make the Agreement an occasion to foster development and cohesion among the countries of the region.

ANNEX A

Practical example of how to construct a SMART simulation

This example is constructed to guide the interested reader through the construction of a SMART simulation model. Table A.1 below, illustrates the hypothetical trade data utilized in this exercise.

Table A.1
Hypothetical trade and tariff data

Trading partners	Exports to SA ($)	Tariff before FTA (%)	Tariff after FTA (%)
EU	150	20.0	0.00
BLNS Countries	100	0.00	0.00
SADC country with preferential market access to SA	50	10.0	10.0
Other trading partners	10	20.0	20.0

In addition, let us assume that the elasticity of import demand (E_m) and the elasticity of substitution (E_s) are both -1.5.

Calculations:

Trade creation for the EU on SA market equation (1):

$$TC = 150 \times 1.5 \times \frac{(0.0 - 0.2)}{1.2} = \$37.5$$

Trade diversion in favour of the EU on the SA market equations (3) and (4):

$$\frac{dRP^{EU}}{RP^{EU}} = \frac{1.0}{1.2} - 1 = -16.7\%$$

$$TD^{EU} = \frac{150 \times 160 \times -0.167 \times -1.5}{150 + 160 + (150 \times -0.167 \times -1.5)} = \$17.26$$

Trade diversion away from other partners   *Diversion away from BLNS countries (combined)*:

For our calculation of the relative price change, we need to use the tariff applying to countries other than the BLNS, both before and after the preferential liberalization vis-à-vis the EU. We therefore need to compute a weighted average of tariffs applicable to countries other than the BLNS:

- Before the EU-SA FTA, this weighted average is: *((150*0.2)+(50*0.1)+(10*0.2))/ 210=17.6%*;
- After the EU-SA FTA, the weighted average is: *((150*0) + (50*0.1) +(10*0.2))/210 = 3.3%*.

The tariff on BLNS exports remains constant at 0 per cent, yet the relative price worsens because the weighted average of tariffs falls. This is a typical example of erosion of trade preferences:

$$\frac{dRP^{BLNS}}{RP^{BLNS}} = \frac{1.0/1.033}{1.0/1.17} - 1 = 13.8\%$$

$$TD^{BLNS} = \frac{150 \times 210 \times 0.13 \times -1.5}{100 + 210 + (100 \times 0.13 \times -1.5)} = \$-15.0$$

Diversion away from a typical SADC partner with preferential market access:

- Before the EU-SA FTA, the weighted average is: *((150*0.2)+(100*0.0)+(10*0.2))/260 =12.3%*;
- After the FTA the weighted average is: *((150 * 0) + (100 * 0.0) + (10 * 0.2)) / 260 = 0.7%*.

$$\frac{dRP^{SADC}}{RP^{SADC}} = \frac{1.0/1.0076}{1.1/1.12} - 1 = 11.4\%$$

$$TD^{SADC} = \frac{50 \times 260 \times 0.11 \times -1.5}{50 + 260 + (50 \times 0.11 \times -1.5)} = -\$7.4$$

Diversion away from other trading partners:

The weighted average of tariffs applying to countries other than "other trading partners" is:
- Before the FTA: *((150 * 0.2) + (100 * 0) + (50 * 0.1))/300 = 11.6%*;
- After the FTA: *((150*0) + (100 * 0) + (50 * 0.1))/300 =1.6%*.

$$\frac{dRP^{\;OTHER}}{RP^{\;OTHER}} = \frac{1.2/1.016}{1.2/1.116} - 1 = 9.8\%$$

$$TD^{\;OTHER} = \frac{10 \times 300 \times 0.098 \times -1.5}{10 + 300 + (10 \times 0.098 \times -1.5)} = -\$1.4$$

Summary results:

- Trade creation for the EU on SA market: = + \$37.5
- Diversion towards the EU: = + \$17.26
- Diversion away from BLNS, SADC, other   = -\$15.05 -\$ 7.40 -\$ 1.43 = — \$ 23.89

In theory, trade diversion does not affect total imports so that diversion towards the EU should be exactly equal to the diversion away from other trading partners. In this example, however — as is often the case in practice — the diversion towards the EU and the sum of the diversion away from other trading partners show a discrepancy. Therefore, the difference should be spread proportionally to the share in total trade as follows:

Table A.2
Trade diversion: Results of the simulation exercise

Partner	Original TD	Spread difference	Corrected TD
EU	+17.26	+3.2	+20.47
BLNS	-15.055	-2.13	-12.91
SADC	-7.40	-1.06	-6.33
Other	-1.43	-0.21	-1.22

ANNEX B

The negotiating proposals utilized in the simulation

1.   *The SA negotiating proposal to the EU (December 1996)*

The SA FTA proposal is based on cumulative duty-free percentages of total trade for both agricultural and industrial goods. The calculation is as follows: first, all trade-weighted tariffs are sorted in ascending order. Then, a calculation regarding the share of duty-free trade as part of total trade is made. The SA proposal aims for a total elimination of tariffs vis-à-vis the EU by the year 2011, via cumulative increases in the share of zero-tariff EU imports.

Phase 1: Base year

Year of completion: 1999

At the entry of the Agreement 65 per cent of all EU exports to SA must have a zero tariff (i.e. duty-free). An assessment of the current (1996) situation with regard to the percentage of EU exports to SA which is duty-free indicates that the 1996 share of total EU exports which is levied a zero tariff is 56.3 per cent. The first phase therefore entails an immediate elimination of all tariffs between the 56.3 and 65 per cent mark (for technical reasons, it is 64.9 per cent in this study). This group has been assigned "1": the corresponding phase in which these are set at 0 is Phase 1. The tariffs will then be held constant for the following three years, until the year 2002.

Phase 2: 2003-2004

Year of completion: 2004

In this phase the next 5 per cent of non-zero tariff lines (group "2") will be set equal to zero, bringing the total of trade-weighted duty-free tariff lines up to 70 per cent (cumulative share duty-free is in fact 69.9 per cent).

Phase 3: 2005-2011

Year of completion: 2011

By the end of this phase an additional 15 per cent of tariffs (group 3) will be reduced to zero, this elimination will be accompanied by protocol reviews. By the end of 2011 it is thus envisaged that 85 per cent of all EU imports will be free of duty. For technical reasons the actual increase in duty-free lines in the simulation will only amount to 11.9 per cent, resulting in a cumulative share of 81.8 per cent.

Phase 4: 1999-2011

Year of completion 2011

This phase is envisaged to be implemented alongside the other phases. It mainly covers cross-cutting protocols which will be dealt with in negotiations. The tariffs will become either zero, MFN duties or a percentage thereof. Due to technical reasons the actual share of tariffs that will be eliminated is 18.2 per cent, leading to the full elimination of tariffs.

Notes: *The SA dismantling offer is subject to asymmetrical configuration of SADC. The FTA will include all trade while making provision for specialized protocols in agreed sectors within 12 years. Non-traded products are not covered by this proposal but have to be incorporated, with specific reference to subsidy regimes in the EU.*

2.   *The EU negotiating proposal to SA (December 1996)*

The EU proposal employs a classification of products based on GSP sensitivity list and level of MFN tariff. In the definition of categories a distinction is made between three groups of industrial products and five groups of agricultural products.

All products are initially divided into 4 product sensitivity categories, namely Part 1, "very sensitive" products, Part 2, "sensitive" products, Part 3, "semi-sensitive" products and Part 4, "non-sensitive" products. The division used in this study is based on the *Official Journal*, L82/30, 12 April 1995 for industrial goods (HS Chapters 25-99). The product sensitivity categories for agricultural goods are contained in Council Regulation No. 1256 (20 June 1996), *Official Journal of the EU*, 29 June 1996.

Agricultural products

The EU offer to SA is built on five groups of agricultural products (HS Chapters 1-24), defined as follows:

List 1:	Non-GSP products with an (MFN) tariff duty of less than 3.5 per cent plus products listed under Part 4 of the product sensitivity categories, indicated by "i".
List 2:	Non-GSP products with an (MFN) tariff duty of 3.5 to 7 per cent plus products listed in Part 3 of the product sensitivity categories, indicated by "ii".
List 3:	Non-GSP products with an (MFN) tariff duty of 7 to 10 per cent plus products listed in Part 2 of the product sensitivity categories, indicated by "iii".
List 4:	Products listed in Part 1 of the GSP sensitivity categories, indicated by "iv".
List 5:	Non-GSP products with an (MFN) tariff duty of more than 10 per cent plus products specified in lists 1 and 2 of the EU *Negotiating Directives* of 25 March 1996, indicated by "v".

For these groups the following liberalization regime has been proposed to SA:

List i: Full elimination of tariff duties and taxes having an equivalent effect at the entry into force of the Agreement.

List ii: Full elimination of tariff duties and taxes having an equivalent effect within three years after the entering into force of the Agreement.

List iii: Elimination of tariff duties and taxes having an equivalent effect within 10 years after the entering into force of the agreement, starting not later than four years after the entering into force of the agreement.

List iv: Elimination of tariff duties and taxes having an equivalent effect within 10 or 12 years after the entering into force of the agreement, starting not later than six years after the entering into force of the agreement, if necessary in the context of quotas.

List v: No elimination of tariff duties.

Industrial products

The definition of the groups of industrial products (HS Chapter 25-99) is as follows:

List 1:   Non-GSP products with an (MFN) tariff duty of less than 2.5 per cent plus products listed under Parts 3 and 4 of the product sensitivity categories, indicated by "I".

List 2:   Non-GSP products with an (MFN) tariff duty of 2.5 to 5 per cent plus products listed in Part 2 of the product sensitivity categories, indicated by "I".

List 3:   Non-GSP products with an (MFN) tariff duty of more than 5 per cent, plus products listed in Part 1 of the product sensitivity categories. This list is indicated by "III".

For these groups the following liberalization regime has been proposed to SA:

List I: Full elimination of tariff duties and taxes having an equivalent effect at the entry into force of the Agreement.

List II: Full elimination of tariff duties and taxes having an equivalent effect within three years after the entering into force of the Agreement.

List III: Elimination of tariff duties and taxes having an equivalent effect conditional on and in parallel with a similar process at the SA side.

A limited number of industrial products is expected to be excluded from the FTA. The category "0" was subsequently constructed to deal with exceptions, e.g. those cases where an *ad valorem* equivalent was not available, and to indicate those HS codes for which the applied tariff was actually

zero before the implementation of the FTA. By setting the category "0" if no applied *ad valorem* tariff was available and the product was not covered by GSP, certain tariff lines may have had "0" assigned when "v" was appropriate. Either way this specific exception does not affect the outcome since neither "v" nor "o" results in trade creation.

Interpretation

Phases related to the EU proposal:

Phase 1: 1999

In this phase all agricultural goods which have been classified as "i" in the "EU proposal category", as well as all industrial goods classified as "I" will undergo a full elimination of tariff duties and taxes having an equivalent effect. All tariff lines corresponding to "0" entries in the "EU" proposal category" retain their zero tariffs.

Phase 2: 1999-2002   to be completed by 2002

In this phase all agricultural goods classified as "ii" as well as all industrial goods classified as "II" will have their duties and taxes having the equivalent effect eliminated. The calculation of trade creation is cumulative and therefore the year by the end of which all tariff reductions are meant to have been implemented is chosen as the year in which the trade creation will occur.

Phase 3: 2002-2009   to be completed by 2009

In this phase all agricultural goods classified as "iii" will have their duties and taxes having an equivalent effect will be eliminated. For this group of agricultural goods, the elimination should start no later than four years after the entering into force of the Agreement, which would be 2004 in this scenario, and be completed by 2009.

The elimination of duties and taxes having an equivalent effect of an additional group of industrial products was made conditional on a similar process at the SA side and should be in parallel with that process. The SA proposal states that the third phase of tariff reductions will be fully implemented by 2011, this year has thus been chosen as the terminal date for elimination of tariffs on industrial goods labelled as "III". This is part of the next phase.

Phase 4: to be completed by 2011
    (i)   1999-2009/2011 for agricultural goods, starting no later than 2005;
    (ii)   2005-2011 for industrial goods.

In this phase all agricultural goods classified as "iv" will have their duties and taxes having an equivalent effect eliminated. For this group of agricultural goods, the elimination should start no later than six years after the entering into force of the Agreement, which would be by the year 2005 in this scenario, and be completed by 2009 or 2011.

All industrial goods in the "III" EU proposal category will have the corresponding duties and taxes having an equivalent effect eliminated, starting in 2005.

ANNEX C

Additional Results

Table C.1
Origin of South Africa s imports   1996

Source	Value (million rands)	Share (%)
EU	51,042	44%
Japan	13,026	11%
USA	15,879	14%
SACU	17,803	15%
Rest of the world	36,353	31%
Total	116,317	100%

Table C.2
Trade creation per annum (from FTA and Uruguay Round)
(Em=-0.85, rand million)

Year	Phase	Projected increase in imports from the EU		Projected increase in exports to EU	Phase	Net TCSA - Scenario I	Net TCSA - Scenario II
		Scenario I	Scenario II				
1999	1, 4	217	400	49	1, 4a	-168	-351
2000	4	217	582	116	2, 4a	-101	-467
2001	4	217	765	183	2, 4a	-35	-582
2002	4	217	947	249	2, 4a	32	-698
2003	2, 4	318	1,231	272	3, 4a	32	-959
2004	2, 4	419	1,514	295	3, 4a	33	-1,219
2005	3, 4	529	1,807	345	3, 4a, 4i	-49	-1,461
2006	3, 4	639	2,099	396	3, 4a, 4i	-131	-1,703
2007	3, 4	749	2,392	446	3, 4a, 4i	-213	-1,946
2008	3, 4	859	2,685	497	3, 4a, 4i	-295	-2,188
2009	3, 4	970	2,978	548	3, 4a, 4i	-377	-2,430
2010	3, 4	1,080	3,270	592	4a, 4i	-465	-2,678
2011	3, 4	1,190,062,614	3,562,930,086	637,078,650	4a, 4i	-552,983,964	-2,925,851,436

Notes: 4a = agricultural chapters only.
       4b = industrial chapters only.

Since implementation will be a gradual process, the estimated annual impact also needs to be phased. For example, Phase 2 of the trade creation for the EU in SA (scenario II) occurs over two years and Phase 4 over 13 years; thus, in the year 2003 we should add Phase 2 (divided by 2) to Phase 4 (divided by 13) to the TC of 2002 (947,423,337) = 1,230,591,102.

Table C.3
Trade creation per HS chapter
(Combined effect of FTA and UR, elasticity of import demand =-0.85, rand million)

HS chapter	TCSA	TCEU - Scenario I	TCEU - Scenario II	Net change - Scenario I	Net change - Scenario II
01. Live animals	0	0	0	0	0
02. Meat and edible meat offal	350,920	52,691	29,937,118	298,229	-29,586,198
03. Fish & crustacean, mollusc & other aquatic invertebrates	28,830,286	658,048	2,089,875	28,172,238	26,740,412
04. Dairy products; birds' eggs; natural honey; edible products	0	255,619	23,855,510	-255,619	-23,855,510
05. Products of animal origin	0	0	0	0	0
06. Live tree & other plant; bulb, root; cut flowers	2,593,992	74,401	74,401	2,519,590	2,519,590
07. Edible vegetables and certain roots and tubers.	13,586,102	988,198	1,118,231	12,597,904	12,467,872
08. Edible fruit and nuts; peel of citrus fruit, etc.	202,714,784	2,487,514	2,491,428	200,227,271	200,223,356
09. Coffee, tea, mat and spices	67,203	225,894	282,185	-158,692	-214,982
10. Cereals	2,461	133	3,326	2,328	-865
11. Products milling industries; malt; starches; inulin; wheat grain	4,476	2,675,786	2,688,672	-2,671,310	-2,684,196
12. Oil seed, oleagi fruits; misc. grain, seed, fruit	45,133	405,862	405,862	-360,729	-360,729
13. Lac; gums, resins & other vegetable saps & extracts	3,250	394,823	519,692	-391,573	-516,442
14. Vegetable plaiting materials; vegetable products	0	0	0	0	0
15. Animal/veg fats & oils & their cleavage products, etc.	829,566	9,986,151	14,584,382	-9,156,586	-13,754,816
16. Prepapations of meat, fish or crustaceans, molluscs, etc.	640,510	348,041	1,288,352	292,469	-647,842
17. Sugars and sugar confectionery.	3,139,334	568,415	3,871,259	2,570,919	-731,925
18. Cocoa and cocoa preparations	1,104,400	4,390,058	6,577,573	-3,285,659	-5,473,173
19. Preparations of cereal, flour, starch, milk; pastrycooks	32,658	2,109,276	10,763,244	-2,076,618	-10,730,586
20. Preparations of vegetable, fruit, nuts	19,863,055	3,280,646	4,042,655	16,582,409	15,820,399
21. Misc. edible preparations	714,032	9,740,851	11,739,741	-9,026,819	-11,025,709
22. Beverages, spirits and vinegar	4,325,404	45,857,740	77,757,606	-41,532,335	-73,432,201
23. Residues & waste from the food industries	386,859	1,789,923	1,789,923	-1,403,065	-1,403,065
24. Tobacco and manufactured tobacco substitutes	5,706,587	1,406,697	3,000,133	4,299,890	2,706,454
25. Salt; sulphur; earth & stone plastering, mat; lime	13,876	3,812,957	3,863,665	-3,799,081	-3,849,789
26. Ores, slag and ash	0	177,413	177,413	-177,413	-177,413

HS chapter	TCSA	TCEU - Scenario I	TCEU - Scenario II	Net change - Scenario I	Net change - Scenario II
27. Mineral fuels, oils & product of their distillation	371,127	18,872,800	18,872,800	-18,501,673	-18,501,673
28. Inorganic chemicals; compounds of precious metal, radio-active elements	11,924,998	14,456,712	14,867,447	-2,531,713	-2,942,449
29. Organic chemicals	4,083,832	60,060,631	62,644,051	-55,976,798	-58,560,219
30. Pharmaceutical products	0	0	336,763	0	-336,763
31. Fertilisers	840,011	0	0	840,011	840,011
32. Tanning/dyeing extracts; tannins & derivatives; etc.	5,645,813	18,314,037	29,199,420	-12,668,225	-23,553,607
33. Essential oils & resinoids; perfumes, cosmetics/toiletries	0	4,353,506	18,233,786	-4,353,506	-18,233,786
34. Soap, organic surface-active agents, washing preparations	0	23,490,411	24,203,471	-23,490,411	-24,203,471
35. Albuminoidal substances; modified starches; glues; enzymes, etc.	0	8,752,209	8,753,466	-8,752,209	-8,753,466
36. Explosives; pyrotechnic products; matches; etc.	0	1,410,122	1,410,122	-1,410,122	-1,410,122
37. Photographic or cinemato-graphic goods	0	11,146,473	11,146,473	-11,146,473	-11,146,473
38. Miscellaneous chemical pro-ducts	16,806	37,308,459	38,116,859	-37,291,654	-38,100,054
39. Plastics and articles thereof.	3,962,925	59,912,058	121,993,770	-55,949,133	-118,030,845
40. Rubber and articles thereof	7,945,457	25,299,732	58,772,941	-17,354,274	-50,827,484
41. Raw hides and skins (other than furskins)	829,762	8,688,793	8,688,793	-7,859,031	-7,859,031
42. Articles of leather; saddlery/harness; travel goods	239,227	709,780	4,335,402	-470,553	-4,096,175
43. Furskins and artificial fur; and manufactures thereof	0	102	4,749	-102	-4,749
44. Wood and articles of wood; wood charcoal	3,661,005	8,466,352	8,844,881	-4,805,347	-5,183,876
45. Cork and articles of cork	107,959	3,036	3,036	104,922	104,922
46. Manufactures of straw, esparto, other plaiting materials	5,912	59,128	59,128	-53,216	-53,216
47. Pulp of wood/of other fibrous cellulosic materials, etc.	0	0	0	0	0
48. Paper & paperboard; articles of paper pulp, etc.	33,155	85,643,549	89,003,300	-85,610,394	-88,970,145
49. Printed books, newspapers, pictures & other products	132,629	4,853,551	4,853,551	-4,720,922	-4,720,922
50. Silk	3,947	0	0	3,947	3,947
51. Wool, fine/coarse animal hair, horsehair yarn, etc.	7,014,685	8,514	6,025,140	7,006,171	989,545
52. Cotton	7,478,424	1,079,861	15,074,241	6,398,563	-7,595,818
53. Other vegetable textile fibres; paper yarn & wove	45,499	460,970	460,970	-415,472	-415,472
54. Man-made filaments	12,194,700	9,846,668	23,946,134	2,348,032	-11,751,434
55. Man-made staple fibres	2,833,677	115,041	16,650,717	2,718,636	-13,817,040

HS chapter	TCSA	TCEU - Scenario I	TCEU - Scenario II	Net change - Scenario I	Net change - Scenario II
56. Wadding, felt & non-woven; yarns; twine, cordage, etc.	431,682	7,879,859	8,938,266	-7,448,177	-8,506,584
57. Carpets and other textile floor coverings	1,322,693	0	7,104,833	1,322,693	-5,782,140
58. Special woven fabrics; tufted textile fabrics; lace; tapestries	1,365,642	88,380	5,511,831	1,454,022	-3,969,428
59. Impregnated, coated, cover/ laminated textile fabrics	1,542,403	3,766,712	9,997,986	-3,544,363	-9,775,637
60. Knitted or crocheted fabrics	1,316,556	6,485,704	11,162,957	-5,169,148	-9,846,402
61. Articles of apparel & cloth-ing access, knitted or crocheted	13,394,962	2,857,339	13,246,007	10,537,623	148,956
62. Art of apparel & clothing access, not knitted/crocheted	28,276,660	3,647	25,107,445	28,273,013	3,169,215
63. Other made up textile articles; sets; worn clothing	3,168,280	2,365,212	9,115,970	803,067	-5,947,690
64. Footwear, gaiters and the like; parts of such articles	4,523,462	409,463	22,539,174	4,113,999	-18,015,711
65. Headgear and parts thereof	0	24,173	875,793	-24,173	-875,793
66. Umbrellas, walking-sticks, seat-sticks, whips, etc.	301,451	463,467	552,285	-162,016	-250,833
67. Preprations of feathers & down; articles of flowers; etc.	0	155,299	155,299	-155,299	-155,299
68. Articles of stone, plaster, cement, asbestos, mica, etc.	0	14,338,917	14,761,024	-14,338,917	-14,761,024
69. Ceramic products	560,475	969,039	38,041,079	-408,564	-37,480,604
70. Glass and glassware	1,422,818	19,071,995	19,071,995	-17,649,177	-17,649,177
71. Natural/cultured pearls, precious stones & metals, etc.	196,438	5,510,226	6,230,490	-5,313,787	-6,034,052
72. Iron and steel	162,908,614	37,120,959	37,120,959	125,787,655	125,787,655
73. Articles of iron or steel	5,949,613	59,200,648	62,341,403	-53,251,035	-56,391,790
74. Copper and articles thereof	1,056,478	6,741,648	6,941,328	-5,685,169	-5,884,849
75. Nickel and articles thereof	0	171,818	171,818	-171,818	-171,818
76. Aluminium and articles thereof	3,389,118	15,727,213	17,129,834	-12,338,095	-13,740,716
78. Lead and articles thereof	56,889	24,235	24,235	32,655	32,655
79. Zinc and articles thereof	253,286	60,264	60,264	193,022	193,022
80. Tin and articles thereof	0	127,550	127,550	-127,550	-127,550
81. Other base metals; cermets; arti cles thereof	2,152,625	139,973	139,973	2,012,651	2,012,651
82. Tool, implement, cutlery, spoon & fork, of base metal	1,023,833	11,150,431	15,151,474	-10,126,598	-14,127,641
83. Misc. articles of base metal	315,400	18,730,363	22,933,940	-18,414,963	-22,618,540
84. Nuclear reactors, boilers, machinery & mechanical appli-ances, etc.	6,909,098	155,339,505	192,525,594	-148,430,407	-185,616,496

HS chapter	TCSA	TCEU - Scenario I	TCEU - Scenario II	Net change - Scenario I	Net change - Scenario II
85. Electrical machinery & equip-ment, parts thereof; sound recordings	10,730,144	226,450,444	272,442,970	-215,720,301	-261,712,826
86. Railw/tramway locomotives, rolling-stock & parts thereof	0	223,047	223,047	-223,047	-223,047
87. Vehicles of railway/tramway rolling-stock, & parts	28,485,297	76,581,949	583,315,096	-48,096,652	-554,829,799
88. Aircraft, spacecraft, and parts thereof	0	0	0	0	0
89. Ships, boats and floating structures	3,936	313,643	744,243	-309,707	-740,307
90. Optical, photo, precision instruments, etc.	593,952	7,103,077	10,854,448	-6,509,124	-10,260,496
91. Clocks and watches and parts thereof	71,677	1,337,252	1,492,290	-1,265,575	-1,420,613
92. Musical instruments; parts and accessories of such art	23,151	258,241	258,241	-235,091	-235,091
93. Arms and ammunition; parts and accessories thereof	815,668	0	0	815,668	815,668
94. Furniture; bedding, mattress, mattress support, cushions	813,891	1,732	35,611,457	812,160	-34,797,565
95. Toys, games & sports requisites; parts & accessories	136,762	2,402,985	15,443,331	-2,266,223	-15,306,569
96. Miscellaneous manufactured articles	382,551	10,926,322	17,599,888	-10,543,770	-17,217,337
97. Works of art, collectors' pieces and antiques	0	2,476	2,476	-2,476	-2,476
99. Returned goods; used machinery & rest gategory	n.a.	0	1,287,900,366	0	-1,287,900,366
Total	**n.a.**	**537,769**	**537,769**	**-537,769**	**-537,76**

Table C.4
Calculations of preference margins

Preference margin	Formula	Agriculture %	Industry %	Total %
(a) Current preference margin	$\dfrac{MFN_{96}-GSP_{96}}{1+MFN_{96}}\times Exports_{96}$	1.1	0.6	0.7
(b) Preference margin upon implementation of the UR by the year 2004	$\dfrac{MFN_{2004}-GSP_{2004}}{1+MFN_{2004}}\times Exports_{96}$	0.1	0.4	0.5
(c) Preference margin after implementation FTA based on current exports	$\dfrac{MFN_{2004}-FTA_{2011}}{1+MFN_{2004}}\times Exports_{96}$	3.3	0.8	1.1

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