Africa Beyond 2005: Understanding the Impact of Eliminating NTBs and tariffs on Textiles and Clothing

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ABSTRACT

A number of recent studies examine the impact on exporting countries of removing NTBs on textiles and clothing. However, no single study explicitly models the effects on the new Sub-Saharan Africa exporters. With the implementation of AGOA, there has been considerable growth in the textile and clothing industry in the African subcontinent. We examine the welfare implications on Africa of removing all textile and clothing NTBs under the ATC. By incorporating the preferential treatment from AGOA into the GTAP framework, the authors hope to understand to what extent the completion of the ATC will eclipse AGOA. Furthermore, the authors examine post-ATC removal of all tariffs on textiles and clothing. While the completion of the ATC generates some loss for Sub-Saharan Africa, post-ATC tariff liberalization results in additional benefits for SACU and Other Southern Africa countries, resulting in a net benefit for these two groups but losses for the rest of Sub-Saharan Africa.

Key words: SACU, Southern Africa, ATC, AGOA, textiles, clothing

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**The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily represent the view of the U.S. International Trade Commission or any of its individual Commissioners.

I. INTRODUCTION

On October 1, 2000, the African Growth and Opportunity Act (AGOA) came into effect, authorizing preferential treatment for qualifying clothing from eligible Sub-Saharan African countries until September 30, 2008. Encouraged by the trade and employment opportunities offered by the AGOA, African countries have expanded their textiles and clothing (T&C) industries. However, by January 1, 2005, the Agreement on Textiles and Clothing (ATC) is to be fully implemented. By that date, all U.S., Canadian, and European quantitative restrictions (QRs) on T&C imports are to be removed, thereby eliminating long-standing impediments to many other non-African developing countries' exports. Concerns are now being raised that completion of the ATC will undermine these new African industries, and have a negative impact on African welfare.

A number of previous GTAP simulations have examined the impact on exporting countries of removal of industrial country QRs on T&C trade (Trela and Whalley, 1990; Francois, *et al*., 1995; Yang, *et al*., 1997; Francois and Spinanger, 2001). Despite differences in assumptions, these models predict expansion in the world market for T&C, relatively larger expansions in clothing exports than in textiles, and welfare improvements for virtually all developing countries. China, South Asia and ASEAN exporters are presently facing relatively more severe trade restrictions, and thus are likely to see larger expansions of exports from liberalization. Latin American exporters, in contrast, have expanded largely due to preferential agreements. Since the completion of the ATC will erode these preferences, Latin America will most likely see reductions in exports (Spinanger, 1999). Until recently, Sub-Saharan Africa was not broken out separately from other countries in these models. However, Francois and Spinanger (2001) do predict that Africa and the Middle East (as a joint region) will experience reductions in exports of both T&C with the completion of all Uruguay Round commitments. However, the region will experience a welfare gain.

In a recent paper Mattoo, *et al*. (2002), argue that AGOA has been a significant factor in the growth of the clothing industry in Sub Saharan Africa (SSA), but that the mandatory use of U.S. fabrics (or limited regional fabric) as inputs raises SSA production costs, hence reducing the benefit of the preferences. Distance and relative efficiency considerations imply that China is likely the cheapest source of fabrics for SSA clothing producers. The authors note that 90 percent of the exports of South Africa and Mauritius (the two largest SSA producers), did not meet this rule-of-origin (ROO) requirement. Thus, some of the growth seen after AGOA may be diversion within SSA to poorer countries which are initially exempt from the ROO. Using a partial equilibrium approach, Mattoo *et al*. calculate that AGOA will likely raise SSA's clothing exports by about 8.3 percent. Yet clothing exports

could have grown by close to 60 percent, had the ROO been removed. The completion of the ATC in 2005, leading to lower clothing prices, and the erosion of rents earned by SSA producers, will make the presence of the ROO all the more damaging to incentives.

This paper analyzes the welfare implications for Africa of full implementation of the ATC, and of elimination of all T&C tariffs, in a global general equilibrium framework. SSA is split into three sub-regions to capture differences in the T&C industries within the African subcontinent.1 Three specific issues are analyzed. First, to what degree did the implementation of AGOA preferences impact African exports and welfare? Second, will the completion of the ATC reverse benefits attributed to AGOA? Finally, to what degree would extending liberalization to full T&C tariff removal impact African exports and welfare? We find that the Southern African Customs Union (SACU), other Southern African countries and the rest of SSA all benefited from AGOA preferences on clothing, with Other Southern Africa experiencing the largest benefits. The completion of the ATC does reverse these benefits, though resulting in small net welfare losses compared to pre-AGOA levels. Surprisingly, the removal of all T&C tariffs post-2005, and therefore the loss of any AGOA tariff preference, yields some benefits for SACU and Other Southern African countries.

II. BACKGROUND

As part of the Trade Act of 2000, both AGOA and the Caribbean Basin Trade Preference Act (CBTPA), came into effect. Both of these unilateral programs provided for duty-free and quota-free treatment for eligible products imported from eligible Sub-Saharan Africa (SSA) and Central American/Caribbean countries, respectively.2 AGOA provides duty-free and quota-free U.S. market access for clothing made in eligible SSA countries from U.S. fabric, yarn and thread. It also provides for the growth of these items made from fabric produced in eligible SSA countries.3 Under a special rule, the lesser developed beneficiary countries (LDBCs) are granted duty-free U.S. market access for clothing made from fabric and yarn originating anywhere in the world until September 30, 2004.[4] The AGOA

1 The SSA subgroups are SACU, Other Southern Africa and rest of SSA. For more details see Table 3A.
2 CBTPA and AGOA have very similar although not identical provisions. For more detail, see USITC, *Year in Trade 2001: Operation of the Trade Agreements Program*, Publication 3510, May 2002, chapter 5.
3 Clothing items made with African fabric and yarn are subject to a limit of 1.5 percent of overall U.S. clothing imports beginning in 2000, and growing to 3.5 percent of overall U.S. imports over an 8-year period. The Trade Act of 2002 doubles the limit to a new level of 3 to 7 percent over 8 years. For more detailed information, see USITC, *U.S. Trade and Investment with Sub-Saharan Africa*, Investigation No. 332-415, Publication 3552, December 2002, especially chapter 2.
[4] LDBCs are designated SSA beneficiary countries with a per capita GNP of less than $1,500 in 1998. The Trade Act of 2002 exempts Botswana and Namibia from this criteria, granting these two countries LDBC status.

provisions are in effect until September 30, 2008. The Trade Act of 2002 modified and expanded these AGOA provisions for imports from eligible SSA countries.[5] By the end of April 2003, 38 of 48 eligible SSA countries had been designated AGOA beneficiary countries; and half of these 38 countries had met the additional requirements to qualify for the AGOA clothing benefits.[6] All 19 countries, excluding Mauritius and South Africa, are eligible for LDBC benefits, allowing producers in these countries to use third country fabric in qualifying clothing items.

The U.S, the EU, and Canada still maintained high tariffs and quantitative restrictions on many textile and clothing imports from more than 40 countries as of 2003.7 These barriers originated under the Multi Fibre Agreement (MFA), which permitted the use of QRs on imports of T&C without compensation.8 One of the significant accomplishments of the Uruguay Round was the ATC, which replaced the MFA, and began the process of integrating textile and clothing trade into the General Agreement on Textiles and Trade (GATT) regime. Under the ATC, QRs were to be eliminated in three stages, over a 10-year period, ending on January 1, 2005.9 However, at present, little liberalization has actually occurred, as the final 49 percent of textile and clothing trade is to be integrated on January 1, 2005.10

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[5] The Trade Act of 2002 amended AGOA by doubling the limit for clothing made in SSA beneficiary countries from regional fabric made with regional yarn from the previous level of 1.5 to 3.5 percent of U.S. consumption to a new level of 3 to 7 percent over 8 years. This broadening of the AGOA preferences has been come to be analogous to AGOA II. Herein, we will refer to these preferences as AGOA. See USITC, *U.S. Trade and Investment with Sub-Saharan Africa*, Investigation No. 332-415, Publication 3552, December 2002, pp.19-21.

[6]The 38 countries are Benin, Botswana, Cameroon, Cape Verde, Central African Republic, Chad, Republic of Congo, Côte d'Ivoire, Democratic Republic of Congo, Djibouti, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Swaziland, Tanzania, Uganda, and Zambia. The 19 countries that have met additional requirements are Botswana, Cameroon, Cape Verde, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Senegal, South Africa, Swaziland, Tanzania, Uganda, and Zambia. Six countries, Cameroon, Cape Verde, Ghana, Mozambique, Senegal and Tanzania became eligible for clothing benefits under AGOA in 2002. Rwanda qualified for clothing benefits in 2003.

7 The AGOA removed U.S. quotas on clothing imports from Mauritius and Kenya in 2000.

8The QRs negotiated under the MFA tended to be voluntary export restraints. As such, these barriers were discriminatory, differed from country to country in terms of product coverage and degree of restrictiveness; and generated a transfer of rent from the importing country to the exporting country.

9 Beginning Jan. 1, 1995, countries were required to: integrate at least 16 percent T&C trade into the GATT regime, based on their respective 1990 import volumes; implement accelerated annual growth rates for the remaining QRs, with an increase of 16 percent for the major supplier countries and 25 percent for small suppliers. Starting Jan. 1, 1998, an additional 17 percent of trade was integrated, and quota growth rates were increased by 25 percent for major supplier countries and 27 percent for smaller suppliers. Finally, on Jan. 1, 2002, an additional 18 percent of trade was integrated and annual growth rates for the remaining quotas were increased by 27 percent.

10 In its first report, the Textile Monitoring Body of the WTO stated that, with one exception, the products

Table 1 presents Sub-Saharan African T&C exports to the world between 1996 and 2001, along with growth rates for these items.11 The data shows SSA exports to the world of cotton textiles (HS 52), vegetable textile fibers (HS 53), manmade filaments (HS 54), and manmade fibers (HS 55) rose between 1996 and 1997, and then declined throughout the remainder of the period. Average SSA export growth rates for silk textiles (HS 50), special yarns (HS 56), laminated fabrics (HS 59) and knitted fabrics (HS 60) slowed, and in some cases declined during 1999-2000 compared to the 1996-1999 period. However, in 2001, this trend was reversed, as African exports to the world increased across these four textile categories.

The data in table 2 shows similar data for SSA T&C exports to the U.S. during 1996-2001. Calculated shares show SSA textiles exports to the U.S. represented, on average, only 4 percent of total SSA textiles exports to the world. However, the U.S. share of SSA textiles exports varied across categories ranging from a negligible amount for cotton fabrics (HS 52) to 42 percent for special woven fabrics (HS 58). Average growth rates of SSA exports of textiles to the U.S. rose during 1999-2001 compared to 1996-1999 in several textile categories, including manmade staple fibers (HS 55), special yarns (HS 56), knitted fabrics (HS 60), and made-ups (HS 63). Table 2 shows average SSA export growth rates of silk (HS 50), cotton (HS 52), vegetable textile fibers (HS 53), and manmade filaments (HS 54) declined during 1999-2000 compared to 1996-1999. However, this decline slowed or in some cases was reversed in 2001, reflecting the significant increase in SSA exports of textiles to the U.S. in these categories.

In terms of clothing exports, SSA exports of knitted clothing (HS61) to the world rose throughout the 1996-2001 period, with the exception of a slight decline in 1999 (table 1). Similarly, SSA exports of woven clothing (HS 62) to the world rose between 1996 and 2000, and then declined slightly in 2001. The data presented in table 2, which shows SSA exports of clothing items to the U.S., partially explains these trends. Calculated ratios show SSA exports of knitted clothing (HS 61) to the U.S. represent about a quarter (or 24 percent) of total SSA knitted clothing exports, whereas SSA exports of woven clothing (HS 62) to the U.S. represent more than half (or 52 percent) of total SSA exports of these clothing items. According to the data in table 2, SSA exports of knitted clothing (HS 61) to the U.S. rose between 1996 and 1998, declined in 1999, and then rose throughout the remainder of the period. African exports of

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integrated by the importing developed countries in the first stage were not subject to quotas and consisted mainly of relatively lower value-added products, such as yarns and fabrics. The Body also stated that products integrated in the second stage consisted mainly of relatively lower value-added products. In its second report, the Textile Monitoring Body confirmed these conclusions, and emphasized that the large majority of products under restrictions would be integrated between Jan. 1, 2002 and Jan. 1, 2005. See WTO (2001), par. 277-281, 329.

11 For complete definitions of each HS product category, see table A1.

woven clothing (HS 62) to the U.S. declined in 1998, rose between 1998 and 2000, and then declined slightly in 2001. Comparing tables 1 and 2, it appears that African exports have been shifting out of woven clothing, and are becoming more specialized in knitted clothing. This trend is evident with respect to global trade and trade with the U.S., though it is less evident with the latter.

The 2000 passage (and 2002 enhancement) of AGOA provided significant opportunities for SSA garment exporters. More specifically, the AGOA legislation resulted in increased foreign direct investment flows, increased employment and output in the T&C industries, with most of this investment concentrated in the SACU and other Southern Africa regions.12 In addition, during this period, a number of countries in SSA, including South Africa, committed to a program of trade liberalization, resulting in expanded levels of T&C trade. The textile manufacturing industry in SSA is a small, albeit growing, industry. Some countries in Africa produce their own raw materials. For example, South Africa produces over half the world supply of mohair wool; Madagascar, Swaziland, Uganda, Mali, and Cote d'Ivoire grow cotton. However, most SSA countries do not have access to sufficient quantities of raw materials and rely largely on imports from Asia and other suppliers.13 This largely explains why the opportunities presented by AGOA have been exploited by only a few eligible countries in Africa, mostly in the SACU and Other Southern Africa regions. In 2001, for example, more than 95 percent of SSA textile and clothing exports to the U.S. under AGOA came from five countries--Lesotho, Madagascar, Kenya, Mauritius and South Africa. All five countries, with the exception of Kenya, are in Southern Africa. Furthermore, although SSA textile and clothing exports expanded in recent years, SSA countries as a group are still a relatively small supplier of these products to the global market accounting for less than 1 percent of world exports in 2000. For a number of SSA countries, however, these industries are a significant sector in industrial production and a significant source of employment.14

Sub-Saharan Africa trade is occurring in an international context of T&C trade liberalization, and SSA export opportunities are evolving together with shifts in the position of competing suppliers. Thus, the elimination of quotas in 2005 and tariff liberalization can be expected to have deep impacts on trade, as international producers are forced to rationalize production methods and wages; and higher cost producers are displaced by more efficient producers.

III. Analytical Framework

12 USITC, *U.S. Trade and Investment with Sub-Saharan Africa*, Investigation No. 332-415, Publication 3552, December 2002, p.iv.
13 *Ibid*, p.147.
14 *Ibid*, p.147.

Matoo, *et al*. (2002) presented a partial equilibrium graphical analysis of the impact of the full implementation of the ATC on AGOA countries.15 We present a similar analysis here, to illustrate the results which are likely to emerge in three scenarios. However, we add several important features. Non-African T&C exporters are explicitly included. The impact on Africa of restraining the non-African exporters under the MFA is examined. This outcome is then compared with the additional impact of introducing AGOA, allowing some assessment of the relative impact of these two events on African exporters. The last new feature is the examination of tariff removal after the ATC completion.

Figure 1 shows two groups of exporters, AGOA Exporters (group A) and Other Exporters (group B). Group B is assumed to be large, and restrained by both tariffs and QRs under the ATC. Group A is assumed to be small, and restrained by tariffs only. Prior to AGOA, if only tariffs existed, the export supply of both groups A and B would have been S_A^T and S_B^T, respectively, with a price of P^T.16 Group A would have exported X_A^1, and earned no rent. However, the VER restraints imposed on group B have caused the price of exports to rise to P^V.17 This diverts some of the export market from group B to group A, and allows group A to charge the higher export price. Group A, therefore, earns rent $P^T P^V$ per unit on X_A^2 exports (the pink rectangle). Notice, therefore, that the initial tariffs which the U.S. maintains on T&C are responsible for reduced African exports and welfare initially. The subsequent introduction of QRs on group B under the ATC actually diverts trade toward African sellers and allows them to earn relatively large rents. These latter effects more than compensate for group A's initial losses from the tariff. Note, too, that the end result is an inefficient allocation of resources, both globally and within Africa, since the QRs induces a switch from more to less efficient T&C suppliers.

The implementation of AGOA allows group A to export clothing to the U.S. duty-free, provided the clothing is made with U.S. fabrics. *Without this ROO*, AGOA would imply a rightward shift in group A's export supply from S_A^T to S_A. Additional trade would be diverted from group B to group A, and group A's exports would rise to X_A^4. Rent per unit would also increase to $P^W P^V$, implying a total rent equal to the sum of the pink, aqua, and blue rectangles. However, the existence of the ROO implies an increase in group A's costs of production (S_A^{ROO}). Thus, duty-free access *with the ROO*, implies a smaller

15 Aadiya Mattoo, Devesh Roy and Arvind Subramanian "The Africa Growth and Opportunity Act and its Rules of Origin: Generosity Undermined?" World Bank Policy Research Working Paper 2908 (Nov. 20, 2002).

16 Note, this price would be determined by the intersection of total export supply $(S_A^T + S_B^T)$ and the residual demand curve of the importing countries.

17 This is because group B's export supply is now reduced to S_B^{TV}.

expansion in exports to X_A^3, and in rent (pink plus aqua rectangles). The important insight gained here is that the export expansion and additional rent earned as a result of AGOA is relatively small in comparison with that already experienced with the introduction of the QRs. Had the QRs not been present, the preferences bestowed under AGOA would have implied much smaller incentives to expand T&C production in Africa.

Once the ATC is fully implemented in 2005, the VERs on group B are removed, and group B's export supply returns to S_B^T. As a result, the world export price falls to P^T and some trade is diverted from group A back to group B. However, because tariffs are still in place against group B's exports, group A retains the preference under AGOA.18 The implementation of the ATC clearly reverses the expansion in African exports and rents that it had initially caused, but does not reverse the benefits directly attributable to AGOA itself. *With no ROO,* group A still exports above the free trade level, X_A^5, and still earns some rent ($P^W P^T cd$). *With ROO in place*, group A's exports are now at the free trade level, X_A^0, but with a positive rent of $P^W P^T ab$. Clearly the exact changes in exports as a result of implementation of the ATC will depend upon the elasticities of supply in Africa, and upon the cost implications of the ROO. It is easy to see that the more costly the ROO, the more likely that group A would actually export below its free trade level after ATC completion, but at the higher, rent inclusive price of P^T.

Subsequent removal of tariffs will clearly return both group A and group B to free trade export levels and price P^T. In figure 1 *with no ROO*, group A sees a reduction in exports of T&C and an elimation of rent. *With the ROO,* group A sees an elimination of rent, as exports are already at the free trade level. However, if the ROO was more costly, group A would have been exporting below free trade level. In that case, tariff removal would actually raise group A's exports. Notice that tariff removal should generate relatively small changes in group A's price, compared to the QR removal under ATC completion. This should make it more likely that general equilibrium efficiency gains from resource reallocation will dominate welfare losses due to terms of trade deterioration.

IV. METHODOLOGY

18 Since only Mauritius and Kenya were bound under QRs, the AGOA preference amounts to duty-free access for most African sellers.

A. Data and Model

The data and model used for the analyses are derived from the Global Trade Analysis Project (GTAP), which is widely used for international trade policy analysis. We apply the model to an aggregated version of GTAP v. 5 (Hertel and Tsigas, 1997, Dimaranan and McDougall, 2002), which combines detailed bilateral trade, transportation and protection data, and accounts for inter-regional linkages among economies and input/output data bases for inter-sectoral linkages within countries. The model used herein assumes perfectly competitive markets and constant returns to scale technology. The database includes a fully specified record of trade transactions and duties among different regions for the commodities (see Gehlhar, *et al*., 1997).

The experiments conducted are performed on a 14-region, 7-sector aggregated data set. The regional aggregation separates Africa into three regions (SACU; Other Southern Africa; and Rest of SSA), creates 10 other regions (Latin America; Mexico; Central America and the Caribbean; China; old NICs; ASEAN; South Asia; USA, Canada; and EU-15) and groups the remaining countries into Rest of the World (ROW). We keep Mexico and China as separate regions since we expect these two countries to be significantly affected by these policy changes, relative to the rest of Latin America and Asia, respectively. Table 3A lists specific countries in each regional aggregation. In the sectoral aggregation, specific categories of textiles, wearing clothing and plant based fibers are separated out. Larger sectoral aggregations are then used for mining, services, agriculture and other manufacturing. Table 3B provides the specific sectors included in each grouping. The tariffs and ATC export tax equivalents used in the simulations are presented in table 3C19

The trade transactions in the GTAP database differentiate among commodities by their region of origin and destination. In addition, they are distinguished by agents (intermediate and final demand by households, government and investment) that absorb commodities into their economies. This specification enables different economic agents to have varying levels of import intensity within a region. As with other CGE models, this model uses Armington assumptions, such that products are differentiated by country of origin (Armington, 1969). As a result, policy scenarios are sensitive to substitution and import elasticities as well as trade shares (de Melo and Robinson, 1989).

B. Policy shocks and Counterfactual Baseline

19 For additional information about the methodology used to calculate ATC quota rents and the corresponding export tax equivalent rates, see J. Francois and D. Spinanger (2002), "ATC Export Tax Equivalents," Chapter 16.F in GTAP Version 5 Documentation, Center for Global Trade Analysis, Purdue University.

The baseline scenario is pre-AGOA, and incorporates the GTAP version 5 estimates of export tax equivalents on T&C under the ATC. In Scenario 1, the Trade Act of 2000 is implemented. AGOA is incorporated by eliminating tariffs on U.S. clothing imports from the three African regions. U.S. QRs on clothing imports from Mauritius and Kenya are also lifted. CBTPA is incorporated by removing tariffs and QRs on U.S. T&C imports from the Central American/Caribbean region. The results of scenario 1 form the baseline for Scenario 2. In the second scenario, all U.S., European, and Canadian QRs on T&C imports are eliminated, as specified under the ATC.20 Lastly, scenario 3 begins with the T&C market post-ATC completion, and considers the effects of eliminating all T&C tariffs worldwide.

V. RESULTS

A. SCENARIO 1 – AGOA and CBTPA are implemented.

Scenario 1 represents the period after the Trade Act of 2000--both AGOA and CBTPA--are implemented. Under this scenario, the three Africa regions show increases in economic welfare, due largely to changes in the terms of trade (Table 5A). African exporters can maintain export prices at the high price determined by restrained non-African exporters. Yet they now receive the former U.S. tariff revenue as rent (see figure 1). The gains vary across the three African regional groups, reflecting, in part, differences in production capacity and efficiency. Other Southern Africa, which includes Mauritius, sees the largest benefit from AGOA, followed by SACU which includes South Africa. Since Mauritius has been subject to MFA restraints since 1974, some of its benefit should reflect the removal of this barrier. With the exception of Kenya (which also saw QRs lifted with AGOA), there is little production capacity in Rest of SSA. Thus, it is not surprising that it gains the least from AGOA. In terms of GDP, these net gains are still fairly small for all three regions.21 Table 5A also shows a large benefit to the Central American/Caribbean region, reflecting the introduction of U.S. preferences under CBTPA. The two preference programs AGOA and CBTPA together imply losses to Asia. The decrease in welfare for the U.S. is primarily due to a deterioration in its terms of trade.

The impact of AGOA on trade flows is shown in Table 5B. Dramatic increases in clothing exports are enjoyed by SACU, Other Southern Africa and Rest of SSA, with Other Southern Africa region leading the change. In general, trade for African T&C increases. As expected, the CBTPA causes clothing exports from Central American and the Caribbean to increase substantially. Some of this growth

20 Since our focus is on Africa, the longer time horizon for the liberalization of China's T&C imports are not incorporated in this analysis.

21 Authors' calculations based on 2001 GDP figures for SACU ($124.7 billion), Other Southern Africa ($47.3 billion), and Rest of SSA ($654.4 billion) GDP data from the *IMF World Economic Outlook* (April 2003)

in African and Caribbean exports is at the expense of Asian exports. China, the old NICs, ASEAN and South Asia all register declines in clothing exports once AGOA and CBTPA are in place. U.S exports of textiles rise as anticipated, given the ROO and U.S. imports of clothing also rise. U.S., Canadian and EU textile imports are largely unchanged.

B. SCENARIO 2 - T&C Quotas are removed.

When the ATC is completed, the pattern of welfare gains and losses outside of Africa are similar to those found in earlier studies (Table 6A). Although China experiences terms of trade losses (since VER rents disappear), China's allocative efficiency gains dominate the losses and the result is a large net gain in welfare for China. South Asia registers a small positive net gain in welfare--its terms of trade losses are balanced almost exactly by gains in allocative efficiency and investment. The loss for the old NICs (Korea, Hong Kong, Taiwan and Singapore) are as expected, however the similarly sized loss for ASEAN is somewhat anomalous, and requires further investigation. Large importing regions, such as the U.S., Canada and EU, all enjoy relatively large welfare gains, due to increased T&C products entering their economies at lower prices. Regions such as Mexico and Central America/Caribbean which had seen growth in exports due to preferential treatment, see significant losses.

For Sub-Saharan Africa, the completion of the ATC generates the anticipated losses. As discussed earlier, the largest component of the loss for SSA as a whole comes from the deterioration in the terms of trade--African exporters lose the ability to *free-ride* on the artificially high price generated by the QRs on other larger exporters. Comparing the welfare changes in tables 5A and 6A, we see that the loss in welfare due to the completion of the ATC more than fully offsets the positive impact of AGOA. But the effects differ greatly across the three regions. SACU is left roughly with no change in welfare from the pre-AGOA period. The other African regions experience a larger welfare loss. However, relative to their GDP, these losses represent less than one percent, so are still fairly small.22 This is likely due to the fact that global demand for T&C grows significantly with the completion of the ATC. Thus, the negative impact of substitution away from African exporters towards more efficient Asian sellers, is mitigated somewhat by a rise in overall demand for T&C from all sources.

The impact of ATC implementation on trade flows is shown in Table 6B. The three SSA regions trade significantly less T&C after 2005, with clothing exports showing a fall of nearly 40 percent. Central American and the Caribbean also show exports of clothing decrease by 42 percent and textile exports by 17 percent, as purchasers seek to buy from relatively more efficient producers. A similar pattern appears

22 *Ibid.*

for imports, as CBTPA preferences are eroded. With clothing exports doubling for China, their efficiency is apparent. Although China experiences large increases in clothing trade post ATC, actual Chinese trade may be smaller since the liberalization of T&C will be phased in over a longer period of time in reality. ASEAN and South Asia experience significant increases in both T&C exports, as expected. With T&C markets finally free of NTBs, the U.S. and Canada show dramatically large increase in clothing imports. The EU also increases clothing imports, though to a much smaller degree. All three countries also show declining textile exports, only the U.S. registers an increase in textile imports.

C. SCENARIO 3 - T&C Tariffs are removed.

Completion of the ATC may discourage African T&C production to the extent that industries sprang up due to quota restrictions and AGOA preferences. At the same time, significant growth in the T&C global market should increase production incentives, and also increase the production of cotton and other inputs used in T&C production. These effects should be augmented if T&C tariffs are also removed. These resource reallocation effects may indeed be more important for Africa than terms of trade changes. Though the tariff preference received under AGOA is significant in theory, the ROOs reduce its value. In addition, even without the ROO, North country tariffs on T&C imports are relatively low compared to the price wedges generated by the QRs on other exporters.

Removal of T&C tariffs after the completion of the ATC again generates losses in Mexico, and Central America/Caribbean regions, likely due to preference erosion. All Asian exporters gain from this liberalization, as well as the importing countries. The results in Africa are particularly interesting. Despite the loss of any advantage from a tariff preference, all of Africa does not experience losses in welfare. SACU and Other Southern Africa experience welfare gains as tariffs on textiles are elimated (Table 7A). These gains are large enough to offset the net losses in welfare resulting from the combination of scenarios 1 and 2. However, in the rest of Sub-Saharan Africa, the negative impact of tariff liberalization simply enlarges the net losses experienced as a result of the completion of the ATC. As suggested earlier, it appears that any deterioration in the terms of trade in SACU or Other Southern Africa is more than compensated for by improvements in resource allocation in the textiles sector.

After T&C tariff liberalization, Africa increases its trade in T&C significantly. Imports of clothing increase dramatically, especially for Other Southern Africa and Rest of SSA. African exports of T&C also increase with textile exports experiencing the larges change. The three largest industrial countries again show large increases in imports of clothing, as we would expect. One dramatic shift is that ASEAN and South Asia show an increased appetite for clothing, increasing imports between almost two

and three fold, likely from other Asian sources.

VI. CONCLUSION

The objective of this study was to analyze the welfare implications for Africa, post AGOA, post ATC and post-ATC removal of all textile and clothing tariffs. We found that SACU, Other Southern Africa, and Rest of SSA all benefit from AGOA's implementation. When the ATC is implemented, these benefits are reversed. However, contrary to expectations, two of the three regions of SSA analyzed—SACU and Other Southern Africa--gain under complete liberalization of T&C trade, although the magnitude of these benefits are small.

The larger question remains: After such a large transformation of QR removal following full ATC implementation, will countries be motivated to pursue tariff liberalization, (after some smaller countries experience negative welfare impacts of ATC implementation)? In light of possible significant trading gains, a case can be made that full liberalization is in Southern Africa's best interests. Given the very slow path that U.S., Canada and EU chose to implement the ATC, quick full liberalization may be a tough sell at best. South countries may be interested in receiving these welfare and trade gains, although unable or unwilling to give up the revenue generated from existing tariffs. However, it is important to illustrate that although some South countries gain more trade as a result of liberalization, there may be benefits from reallocation that may prove significant, especially for smaller countries.

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Table 1 SSA Exports to the World, 1996-2001

HS Chapter	----------U. S. million dollars----------						----------Percent change over--------		
Textiles	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	***1996-99***	***1999-2000***	***2000-01***
50 Silk	1.5	20.8	0.7	11.9	0.3	0.4	*687.9*	*-97.1*	*20.2*
51 Wool	241.2	227.5	186.8	190.2	169.3	154.2	*-21.1*	*-11.0*	*-8.9*
52 Cotton	999.0	1185.8	995.8	850.0	621.3	431.3	*-14.9*	*-26.9*	*-30.6*
53 Veg textile fibers	8.0	28.4	25.4	24.1	9.1	1.2	*200.4*	*-62.4*	*-86.6*
54 Manmade filament	91.2	110.5	96.5	88.6	85.6	84.9	*-2.8*	*-3.5*	*-0.7*
55 Staple fibers	77.8	97.0	65.1	64.4	59.2	55.3	*-17.2*	*-8.1*	*-6.6*
56 Special fibers	22.0	23.4	23.3	28.1	19.6	17.3	*28.3*	*-30.4*	*-11.9*
57 Carpets	19.6	22.3	25.2	26.6	28.6	22.8	*35.5*	*7.7*	*-20.2*
58 Special woven	14.7	18.6	18.1	21.9	23.7	17.9	*48.7*	*8.2*	*-24.5*
59 Laminated fabric	11.8	21.3	17.5	14.8	15.4	16.2	*25.3*	*3.7*	*5.3*
60 Knitted fabric	32.5	33.1	31.6	36.3	32.0	37.7	*11.8*	*-11.8*	*17.9*
63 Textile article	59.6	79.3	68.2	102.3	79.9	48.4	*71.6*	*-21.9*	*-39.4*
Clothing									
61 Knitted	598.4	613.7	624.6	582.4	677.7	714.6	*-2.7*	*16.4*	*5.5*
62 Nonknitted	477.6	482.7	521.9	553.7	623.6	528.4	*15.9*	*12.6*	*-15.3*

Source: UN HS Merchandise Trade Data downloaded from the Department of Commerce Trade Policy Information Systems, http://tpis3.ita.doc.gov/, April 2003.

Table 2 SSA Exports to the United States, 1996-2001

HS Chapter	----------U. S. million dollars----------						----------Percent change over----------		
Textiles	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	***1996-99***	***1999-2000***	***2000-01***
50 Silk	(1)	(1)	(1)	(1)	(1)	(1)	*4,880.1*	*-62.0*	*2709.3*
51 Wool	2.6	5.0	5.3	4.6	5.0	4.6	*74.6*	*8.7*	*-7.6*
52 Cotton	6.1	6.8	22.2	10.0	1.7	1.1	*63.2*	*-83.4*	*-36.7*
53 Veg textile fibers	(1)	(1)	(1)	(1)	(1)	(1)	*146.5*	*-99.9*	*66,624.0*
54 Manmade filament	10.4	14.0	14.3	12.0	10.1	11.3	*14.4*	*-15.6*	*11.6*
55 Staple fibers	2.0	2.8	0.7	1.0	1.1	1.1	*-48.8*	*5.3*	*6.3*
56 Special fibers	0.6	0.6	0.2	0.3	0.5	1.1	*-43.3*	*46.9*	*135.6*
57 Carpets	1.4	0.7	1.1	2.4	5.7	4.4	*78.8*	*134.5*	*-22.7*
58 Special woven	6.1	6.8	7.1	7.2	9.3	7.6	*19.2*	*28.6*	*-18.8*
59 Laminated fabric	0.2	0.2	0.3	0.7	1.4	0.9	*195.6*	*93.3*	*-31.7*
60 Knitted fabric	1.4	1.0	2.4	1.1	1.1	1.2	*-22.0*	*0.9*	*13.8*
63 Textile article	2.1	2.0	1.3	1.7	2.3	2.8	*-20.2*	*36.8*	*20.9*
Clothing									
61 Knitted	80.0	94.3	97.4	87.4	120.5	168.6	*9.4*	*37.8*	*39.9*
62 Nonknitted	168.2	152.9	222.7	256.3	297.5	273.2	*52.3*	*16.1*	*-8.2*

(1) Trade less than $100,000; in HS50 trade was 125; 509; 488; 6,234; 2,366; and 66,473 from 1996 to 2001. For HS53, trade was 27,590; 79,593; 34,375; 68,005; 93; 62,167 during the same period.

Source: UN HS Merchandise Trade Data downloaded from the Department of Commerce Trade Policy Information Systems, http://tpis3.ita.doc.gov/, April 2003.

Table 3A. Regional Aggregation 14x7

		GTAP Regions
1	SACU	Botswana, Rest of SACU
2	Other Southern Africa	Malawi; Mozambique; Tanzania; Zambia; Zimbabwe; Other Southern Africa.
3	Rest of SSA	Uganda, Rest of SSA
4	Latin America	Colombia; Peru; Venezuela; Rest of Andean Pact; Argentina; Brazil; Chile; Uruguay; Rest of South America.
5	Mexico	Mexico
6	Central America, Caribbean	Central America and the Caribbean
7	China	China
8	Old NICs	Hong Kong, Korea, Taiwan, Singapore
9	ASEAN	Indonesia, Malaysia, Philippines, Thailand, Vietnam
10	South Asia	Bangladesh, India, Sri Lanka; Rest of South Asia
11	USA	USA
12	Canada	Canada
13	EU-15	Austria, Belgium, Denmark, Finland, France, Germany, UK, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden
14	Rest of World	Australia, New Zealand, Switzerland, Rest of EFTA, Hungary, Poland, Rest of Central European Associates, Former Soviet Union, Japan, Turkey, Rest of Middle East, Morocco, Rest of North Africa, Rest of the World.

Table 3B. Sectoral Aggregation 14x7

		GTAP Sectors
1	Textiles	Textiles
2	Clothing	Wearing apparel
3	Cotton	Plant based fibers
4	Mining	Coal; oil; gas; minerals nec; mineral products nec; ferrous metals; metals nec;
5	Services	Electricity; gas manufacture, distribution; water; construction; trade; transport nec; water transport; air transport; communication; financial services nec; insurance; business services nec; recreational and other services; public administration, defense, education, health; dwellings.
6	Agriculture	Paddy rice; wheat; cereal grains nec; vegetables, fruit, nuts; oil seeds; sugar cane, sugar beet; crops nec; bovine cattle; animal products; raw mink; wool, silk work cocoons; forestry; fishing; bovine meat products; vegetable oils and fats; dairy products; processed rice; sugar; food products nec; beverages and tobacco;
7	Manufacturing	Leather products; wood products; paper products, publishing; petroleum, coal products; chemical, rubber, plastic products; metal products; motor vehicles and parts; transport equipment nec; electronic equipment nec; machinery and equipment nec; manufactures nec;

Table 3C Tariffs and ETEs on Textile and Clothing products

	Textiles				Clothing			
	U.S. Tariffs	EU Tariffs	U.S. ETEs	EU ETEs	U.S. Tariffs	EU Tariffs	U.S. ETEs	EU ETEs
	----------*percent*----------				----------*percent*----------			
SACU	11.3	5.6	3.4	3.6	12.4	12.4	0.6	0
Other Southern Africa	13.1	11.5	0.5	0.3	12.8	12.3	0.6	0
Rest of Sub-Saharan Africa	10.5	9.9	0.2	0	11.7	11.6	0.5	0.1
Latin America	9.0	7.1	6.9	0.6	14.2	8.8	8.2	3.5
Mexico	0	9.0	0	0.1	0	11.6	0	4.7
Central America/Caribbean	16.4	12.5	3.6	7.6	13.9	9.7	0.4	0.5
China	8.7	9.5	20.0	12.0	11.3	11.1	33.0	15.0
oldNICs	12.6	10.9	1.1	0.9	13.8	12.2	6.5	3.7
ASEAN	12.4	10.0	7.9	6.3	14.5	12.3	9.2	6.6
South Asia	9.3	9.4	12.7	10.1	13.2	11.4	16.2	10.7
USA	0	8.0	0	0	0	11.4	0	0
Canada	0	7.4	0	0.2	0	9.4	0	0.2
EU-15	9.5	0	0	0	12.4	0	0	0
Rest of the world	11.3	8.5	0.7	0.3	13.8	12.3	0.3	0.3

Source: GTAP v.5 database

Table 5A Change in Welfare for Scenario 1 after AGOA and CBTPA; millions of U.S. dollars

REGION	Alloc Effi	TOT	IS	*TOTAL*
SACU	14	32	-4	*42*
Other Southern Africa	26	49	-3	*73*
Rest of SSA	8	20	2	*30*
Latin America	-7	-12	-19	*-37*
Mexico	-35	-60	3	*-92*
Central America, Caribbean	740	1465	479	*2684*
China	-189	-70	-27	*-286*
oldNICs	-45	-93	-36	*-174*
ASEAN	-61	-71	-21	*-152*
South Asia	-100	-85	-19	*-204*
USA	-160	-804	-143	*-1107*
Canada	-5	0	-8	*-13*
EU-15	-173	-225	-85	*-483*
Rest of World	-49	-29	-129	*-356*

Source: Results from authors' GTAP model experiment, 2003

Table 5B Changes in Aggregate imports and Exports after scenario 1 Implementation of AGOA and CBTPA, (relative to baseline)

	Change in Textiles				Change in Clothing			
	Imports (mkt p)		**Exports** (fob)		**Imports** (mkt p)		**Exports** (fob)	
REGION	*Percent*	*Millions*	*Percent*	*Millions*	*Percent*	*Millions*	*Percent*	*Millions*
SACU	4.0	50.7	0.6	3.6	1.8	8.3	60.7	213.9
Oth Sn. Africa	5.2	45.2	-1.7	-9.6	2.6	4.4	46.6	279.6
Rest of SSA	0.7	12.3	0.1	0.1	0.3	1.6	39.0	72.2
Latin America	-0.1	-2.6	0.6	15.9	-0.1	-2.9	-4.5	-63.4
Mexico	-0.5	-14.6	1.9	64.6	0.1	2.6	-10.0	-410.2
C.Am/Carib	32.1	1120.8	-13.7	-278.4	13.1	525.3	86.4	4791.5
China	-0.2	-35.5	0.5	105.2	-0.1	-2.2	-1.8	-472.9
Old NICs	-0.7	-115.0	0.4	111.0	-0.2	-12.4	-5.2	-655.2
ASEAN	-0.8	-78.1	0.2	17.0	-0.3	-3.6	-4.3	-468.9
South Asia	-0.9	-41.5	0.7	87.7	-1.7	-3.1	-3.8	-385.5
USA	-0.9	-203.7	3.7	422.7	5.4	2299.6	5.7	386.5
Canada	-0.5	-22.0	0.4	8.6	-0.1	-3.3	-9.5	-114.4
EU-15	-0.1	-34.5	0.0	-5.2	0.0	5.6	-0.6	-236.2
Rest of World	-0.1	-44.6	-0.1	-13.7	0.0	4.6	-1.5	-360.2

Source: Authors' GTAP model's experiment, 2003.

Table 6A Short run/2005: Change in Welfare after ATC Implementation; millions of U.S. dollars

REGION	Alloc Eff	TOT	IS	*TOTAL*
SACU	-26	-28	1	*-53*
Other Southern Africa	-38	-76	3	*-111*
Rest of SSA	-27	-58	12	*-72*
Latin America	-38	-94	68	*-64*
Mexico	-179	-414	63	*-530*
Central America, Caribbean	-699	-1377	-475	*-2551*
China	5409	-2534	-420	*2455*
oldNICs	-99	-621	87	*-633*
ASEAN	52	-730	46	*-632*
South Asia	1012	-1056	170	*126*
USA	2166	4991	167	*7325*
Canada	444	534	18	*995*
EU-15	1136	2129	76	*3341*
Rest of World	-150	-646	176	*-620*

Source: Results from authors' GTAP model experiment, 2003.

Table 6B Changes in Aggregate imports and Exports after scenario 2 Implementation of ATC, (relative to Scenario 1)

	Change in Textiles				**Change in Clothing**			
	Imports (mkt p)		**Exports** (fob)		**Imports** (mkt p)		**Exports** (fob)	
REGION	*Percent*	*Millions*	*Percent*	*Millions*	*Percent*	*Millions*	*Percent*	*Millions*
SACU	-5.6	-74.6	*-16.4*	*-104.0*	-2.8	-12.8	*-39.2*	*-221.5*
Oth Sn. Africa	-7.4	-67.9	*-3.0*	*-16.3*	-3.6	-6.4	*-38.2*	*-336.3*
Rest of SSA	-1.9	-35.1	*-5.6*	*-16.0*	-0.7	-3.6	*-38.6*	*-99.1*
Latin America	-1.1	-62.7	*-4.3*	*-121.2*	-5.1	-106.6	*-15.1*	*-201.3*
Mexico	-3.1	-90.7	*-11.6*	*-397.5*	2.2	43.6	*-53.5*	*-1971.5*
C.Am/Carib	-24.2	-1119.6	*-17.4*	*-317.2*	-9.6	-436.0	*-41.6*	*-4490.2*
China	17.8	4213.8	*7.9*	*1635.9*	11.1	290.2	*103.5*	*27101.2*
Old NICs	-1.5	-240.4	*3.3*	*1003.5*	-2.1	-174.9	*-11.4*	*-1352.3*
ASEAN	3.0	276.6	*9.0*	*823.0*	-1.0	-10.0	*8.1*	*842.7*
South Asia	15.8	729.9	*15.4*	*1941.6*	28.0	49.5	*54.6*	*5296.1*
USA	2.9	665.2	*-6.5*	*-769.6*	39.1	17270.0	*-2.4*	*-173.5*
Canada	-6.5	-301.1	*-10.8*	*-229.4*	67.0	1831.8	*-47.0*	*-514.9*
EU15	-0.9	-660.1	*-3.6*	*-2439.5*	7.0	4486.6	*-12.7*	*-4674.3*
ROW	-1.4	-681.8	*-0.3*	*-69.7*	-1.0	-330.6	*-20.3*	*-4768.3*

Source: Authors' GTAP model's experiment, 2003

Table 7A Long Run: Change in Welfare after removing all Textiles & Clothing tariffs, post-ATC; millions of U.S. dollars

Region	Alloc Eff	TOT	IS	*TOTAL*
SACU	51	-28	0	*23*
Other Southern Africa	63	1	0	*64*
Rest of SSA	154	-254	-23	*-123*
Latin America	261	-268	-45	*-52*
Mexico	51	-307	62	*-193*
Central America, Caribbean	-19	-735	-212	*-967*
China	2111	-114	-295	*1702*
oldNICs	169	3395	143	*3707*
ASEAN	466	418	48	*931*
South Asia	1104	556	177	*1837*
USA	909	-1655	-136	*-882*
Canada	256	-72	34	*218*
EU-15	1076	-1473	160	*-236*
Rest of World	1957	505	82	*2544*

Source: Results from authors' GTAP model experiment, 2003

Table 7B Changes in Aggregate imports and Exports after scenario 3 Removal of all T&C tariffs (relative to scenario 2)

	Change in Textiles				**Change in Clothing**			
	Imports (mkt p)		**Exports** (fob)		**Imports** (mkt p)		**Exports**(fob)	
REGION	*Percent*	*Millions*	*Percent*	*Millions*	*Percent*	*Millions*	*Percent*	*Millions*
SACU	17.7	222.0	*25.8*	*141.0*	31.0	141.2	*3.7*	*12.8*
Oth Sn. Africa	13.6	117.9	*36.4*	*193.3*	164.9	282.6	*20.4*	*110.9*
Rest of SSA	37.6	680.8	*32.0*	*86.2*	112.0	595.2	*39.3*	*62.0*
Latin America	30.1	1663.4	*22.9*	*616.9*	100.9	2024.8	*44.4*	*488.9*
Mexico	4.1	113.2	*-17.0*	*-510.2*	45.3	908.0	*-46.6*	*-793.3*
C.Am/Carib	2.7	93.7	*64.5*	*975.2*	24.8	1005.1	*-24.4*	*-1479.2*
China	51.7	14348.6	*29.1*	*6337.2*	166.4	4795.1	*44.5*	*20406.0*
Old NICs	18.1	2948.9	*34.2*	*10745.2*	18.3	1472.5	*54.6*	*5545.5*
ASEAN	38.6	3646.2	*29.1*	*2825.6*	184.8	1912.8	*74.3*	*7877.4*
South Asia	88.3	4758.0	*9.5*	*1318.1*	283.3	643.2	*54.0*	*7237.2*
USA	13.6	3051.7	*3.1*	*340.2*	28.7	15381.6	*24.0*	*1666.0*
Canada	-0.5	-19.4	*-14.0*	*-264.1*	54.7	2074.7	*-19.3*	*-110.8*
EU-15	1.7	1212.3	*-0.3*	*-168.6*	22.4	14819.5	*-10.0*	*-3170.6*
ROW	16.5	7773.1	*30.5*	*8160.6*	58.3	19610.9	*68.0*	*12718.5*

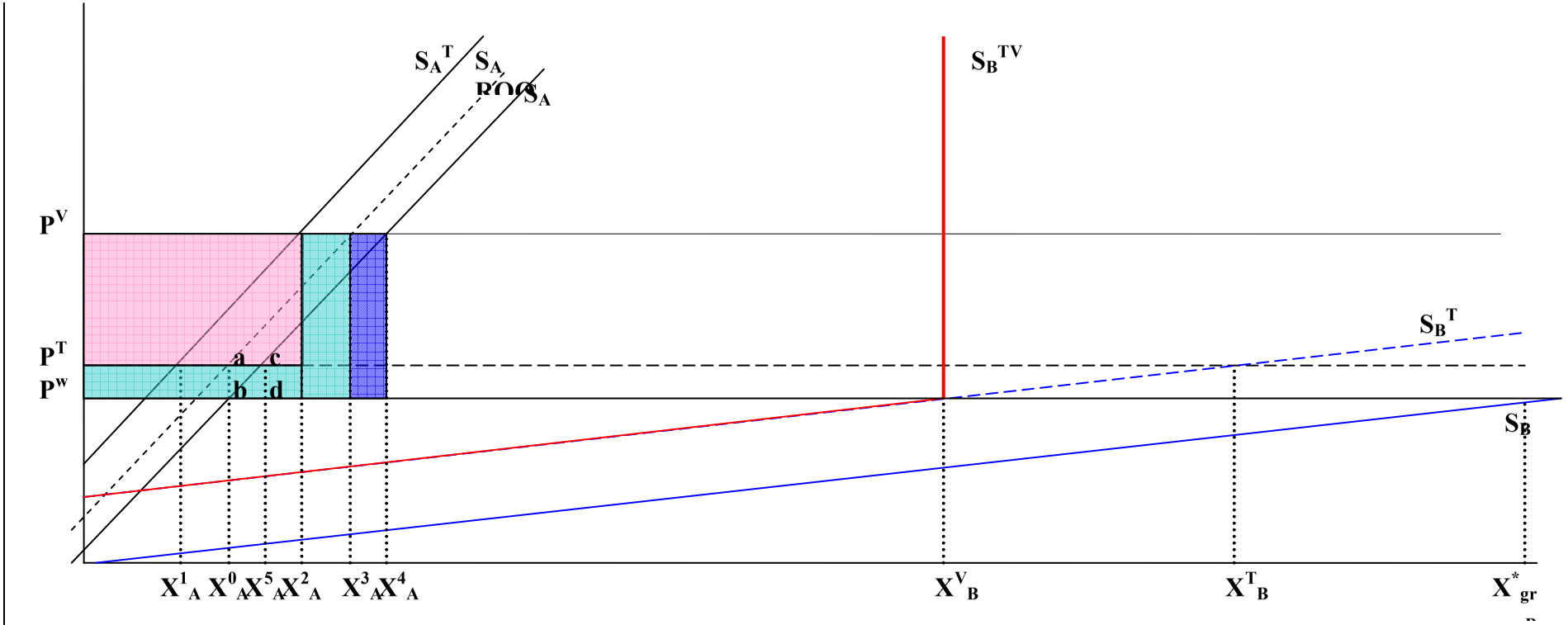
Source: Authors' GTAP model's experiment, 2003.

Table A1 Harmonized Tariff Schedule (HS) Descriptions

HS	DESCRIPTION
TEXTILES	
50	Silk, including yarns and woven fabrics
51	Wool and fine or coarse animal hair, including yarns and woven fabrics; Horsehair, yarn and woven fabric.
52	Cotton, including yarns and woven fabrics.
53	Vegetable textile fibers nesoi; yarns and woven fabrics of vegetable textile fibers nesoi and paper.
54	Manmade filaments, including yarns and woven fabrics.
55	Manmade staple fibers including yarns and woven fabrics
56	Wadding, felt, and nonwovens; special yarns; twine, cordage, ropes and cables and articles.
57	Carpets and other textile floor coverings
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery
59	Impregnated, coated, covered or laminated textile fabrics, textile articles suitable for industrial use.
60	Knitted or crocheted fabrics
63	Made-up textile articles, necoi; needlecraft sets; worn clothing and worn textile articles; rags.
CLOTHING	
61	Articles of apparel and clothing accessories, knitted or crocheted
62	Articles of apparel and clothing accessories not knitted or crocheted.

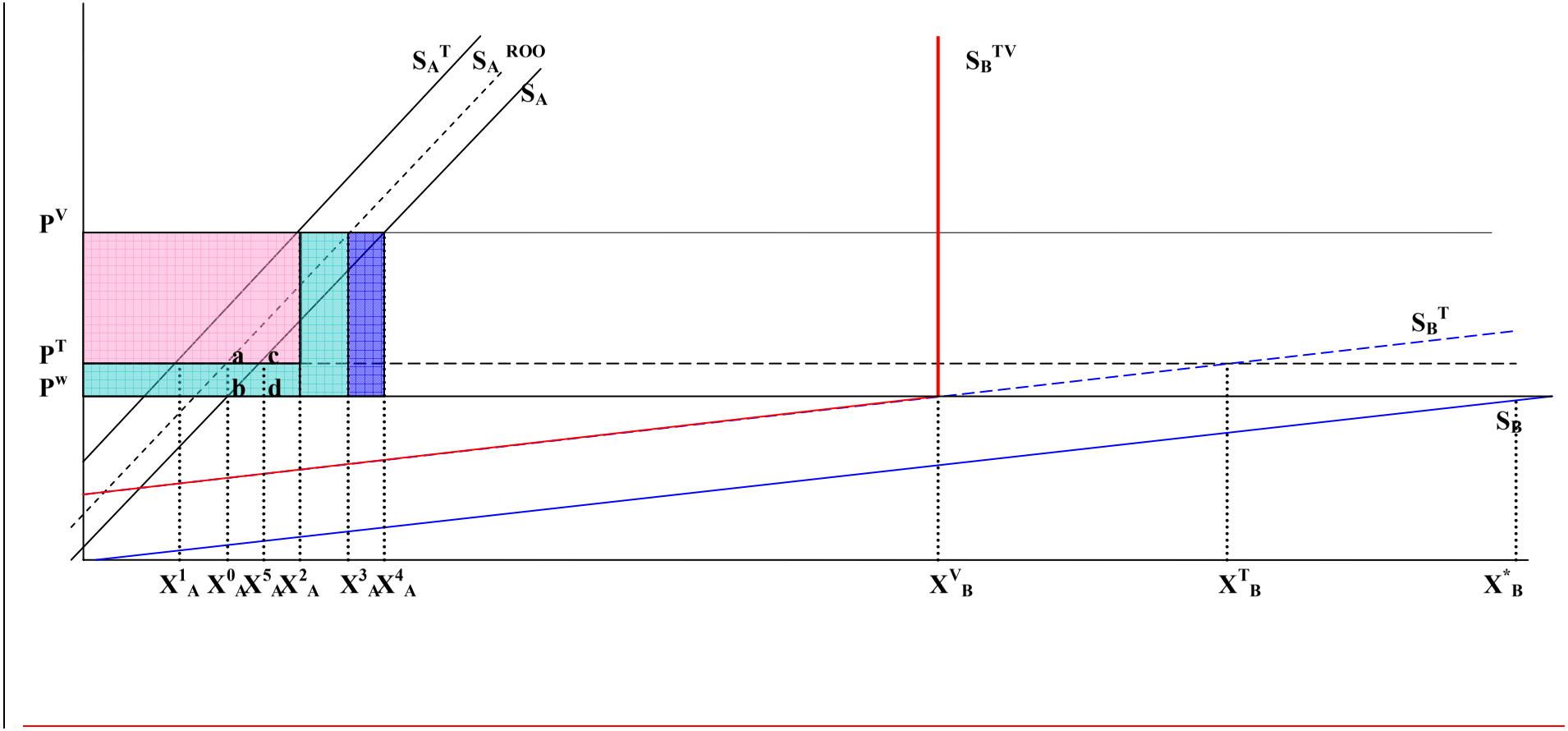
Source: USITC DataWeb.

Figure 1



For AGOA Countries	Price	Exports to World	Rent
Pre-AGOA	P^V	X^2	
AGOA with ROO	P^V	X^3	
AGOA no ROO	P^V	X^4	
AGOA with ROO, 2005	P^T	X^0	P^W P^T ab
AGOA no ROO, 2005	P^T	X^5	P^W P^T cd

Figure 1


S_A^T
S_A^{ROO}
S_A
S_B^{TV}
S_B^T
S_B
P^V
P^T
P^w
a
b
c
d
X^1_A X^0_A X^5_A X^2_A X^3_A X^4_A
X^V_B
X^T_B
X^*_B