An Analysis of the U.S.-SACU FTA Negotiations

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Abstract

This paper analyzes the potential economic effects of bilateral negotiations for an FTA between the United States and the Southern African Customs Union (SACU). The U.S.-SACU FTA bilateral negotiations were initiated in June 2003. But following a number of official meetings, the negotiations were deadlocked over a series of issues of concern to the SACU. The bilateral FTA negotiations have now been replaced by an effort to negotiate a framework agreement covering trade and investment issues and possibly a bilateral FTA at some future time.

To determine whether a bilateral FTA might be in the SACU members' interests, we use the Michigan Model of World Production and Trade to assess the welfare and other economic effects of a bilateral FTA. For modeling purposes, the focus is on the effects of the bilateral removal of trade barriers, which lend themselves most readily to quantification. The conclusion is that the welfare benefits of a bilateral FTA are rather small in both absolute and relative terms, and that the non-trade and dynamic benefits of the SACU FTA are unlikely to alter these results significantly.

To provide a broader perspective on the potential economic effects of a U.S.-SACU FTA, the model is also used to calculate the effects of unilateral tariff removal and global free trade. It is shown that unilateral free trade would result in much larger increases in economic welfare for the United States and SACU as compared to the FTA bilateral trade liberalization. The effects of global (multilateral) free trade are shown to be greater for the United States and SACU as compared to both the bilateral FTA liberalization and unilateral tariff removal. The results suggest accordingly that the interests of the global trading community, including the United States and SACU, could be better served by unilateral and especially multilateral liberalization rather than a bilateral FTA.

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I. Introduction

This paper presents an analysis of the U.S. bilateral free trade agreement (FTA) negotiations with the Southern African Customs Union (SACU), whose members include Botswana, Lesotho, Namibia, South Africa, and Swaziland. The bilateral FTA negotiations were notified to the U.S. Congress by the U.S. Trade Representative (USTR) in November 2002 but have become deadlocked following six official negotiating meetings. In mid-April 2006, a less ambitious program of bilateral negotiations was announced by the USTR, with FTA negotiations possibly to be resumed at some future date..

In Section II following, we present some background information on the SACU member countries, outline the objectives and main features of a U.S.-SACU FTA, and provide a discussion of the conduct and current status of the U.S.-SACU negotiations. Section III briefly describes the main features and data of the Michigan Model of World Production and Trade that we have used to analyze a potential U.S.-SACU FTA, together with the computational modeling results of the FTA on the economic welfare, trade, output, and employment for the United States and the SACU. In Section IV, we provide a broader perspective on a U.S.-SACU FTA that takes into account the potential effects of the unilateral removal of trade barriers by the United States and the SACU, and the effects of global free trade in which all countries/regions covered in the model are assumed to remove their existing trade barriers on a multilateral basis. A summary and concluding remarks are contained in Section V.

[†] Helpful comments on an earlier version of the paper were provided by Greg Schoepfle.

**II. The Context, Main Features, and Current Status
of Negotiations on a U.S.-SACU FTA**

Background Information on the SACU Member Countries

As noted in WTO (2003, p. xvii), the SACU countries differ significantly in terms of their levels of economic scale, structure, and development. Botswana and South Africa are upper middle-income countries, Namibia and Swaziland are lower middle-income countries, and Lesotho is a least developed country. It is noted in World Bank (2003) that the total SACU population, ages 15-64, was 30.8 million in 2001, with South Africa accounting for about 90% of the total. The total SACU labor force was nearly 20 million, with South Africa dwarfing the other SACU countries.

As indicated in WTO (2003, pp. A-1, 57, 58), Botswana had a nominal GDP of $5.3 billion and GDP per capita of $2,970 in 2000/01. The primary sector accounted for 37.4%, the secondary sector, 4.2%, and the tertiary sector, 58.4%, of GDP. Mining products accounted for 90.1% of total commodity exports in 2001, with diamonds accounting for 85.2%. The largest share of exports was to Europe, 84.7%, and the United Kingdom in particular, 66.5%. The United States accounted for 0.7% of Botswana's exports in 2001. Imports were spread across the individual sectors noted, with 76.6% coming from within SACU, presumably mainly from South Africa. The United States accounted for 1.8% of Botswana's imports in 2001. Foreign direct investment (FDI) at the end of 2000 was $1.9 billion and was concentrated in the mining sector. The United States accounted for 1.0% of Botswana's total inward FDI.

According to WTO (2003, pp. A-2, 15, 16), in Lesotho, the primary sector accounted for 17.8%, the manufacturing sector, 15.3%, and utilities and the tertiary sector, 66.8%, of real GDP in 2000-01. In 2000, North America accounted for 59.8% of Lesotho's exports, consisting mainly of textiles and clothing under the provisions of the U.S. African Growth and Opportunity Act (AGOA). Lesotho's imports came primarily from within SACU, some 88.2% of total imports in 2000.

As noted in WTO (2003, pp. A3-155, 159, 160), Namibia's nominal GDP was $3.2 billion and GDP per capita was $1,750 in 2001. The primary sector accounted for 24.2% of real GDP in 2001, the secondary sector, 10.8%, and the tertiary sector, 65.0%. In 2001, mining products accounted for 55.3% of Namibia's total exports (diamonds, 41.4%) and prepared and preserved fish for 24.5%. South Africa accounted for 30.9% of Namibia's total exports and Europe, 55.1%. Namibia's imports were spread across the various sectors, most of which, 86.2%, came from South Africa.

For South Africa, as indicated in WTO (2003, pp. A4-217, 224, 293-96), nominal GDP in 2001 was $102.3 billion and GDP per capita was $2,793. In 2000, agriculture was 3.2% of real GDP, industry, 30.9%, and services, 65.9%. South Africa's exports were $26.1 billion in 2000. Agricultural products were 12.8%, mining products, 21.0%, and manufactures, 52.7%, of total exports. The United States accounted for 9.2%, the EU-15 for 33.1%, East Asia, 14.9%, and Other Africa for 15.3% of total exports. South Africa's imports were $26.6 billion in 2000. Agricultural imports were 6.2%, mining products, 17.0%, and manufactures, 68.7%, of total imports. The United States accounted for 12.0%, the EU-15, 39.8%, the Middle East, 13.8%, and East Asia, 20.9% of total imports. In 2000, the European Union accounted for about 90% of South Africa's total inflow of FDI and the United States, 6.0%. FDI in mining and quarrying was 27.8%, manufacturing, 26.4%, and services, 45.8%, of the inflows in 2000.

For Swaziland, as noted in WTO (2003, pp. A5-351-354), total exports were $694 million in 2001. Exports of agricultural products were 51.5% of total exports and manufactures were 46.8%, especially chemicals and clothing and other consumer goods. South Africa accounted for 91.8% of Swaziland's exports in 2001, and the United States, 4.0%. Total imports were $847 million in 2001. Agricultural products were 22.4% of imports, mining products, 12.6%, and manufactures, 64.3%. South Africa accounted for 94.5% of Swaziland's imports and the United States, 0.2%.

The dominant size of South Africa compared to the other four SACU members and its role as the conduit for intra-SACU trade are evident from the foregoing information. The export composition of the SACU members reflects the presence of significant mineral resource endowments especially for Botswana and Namibia and to some extent for South Africa. The, non-mineral exports of South Africa are diversified. Textile and clothing exports are important for Lesotho. SACU exports go primarily to Western Europe and, within SACU, to South Africa, and the U.S. share of exports is comparatively small. Imports are diversified across sectors and South Africa is the major supplier to the other SACU countries. Most of the foreign direct investment (FDI) inflows in the SACU members come from Western Europe, especially the United Kingdom, and the U.S. share is relatively small.

The Main Features of a U.S.-SACU FTA

USTR Robert Zoellick notified the U.S. House and Senate on November 5, 2002 that the Administration intended to initiate free trade negotiations with Sub-Saharan nations:

> "In pursuing a negotiation with SACU, we are responding to Congress' direction, as expressed in the African Growth and Opportunity Act (AGOA) to initiate negotiations with interested beneficiary countries to serve as the catalyst for increasing free trade between the United States and sub-Saharan Africa and for increasing the private sector in the region.
>
> A free trade agreement with SACU would deepen our economic and political ties to sub-Saharan Africa and lend momentum to our development efforts for the region. SACU is the largest U.S. export market in sub-Saharan Africa, accounting for approximately $3.1 billion in exports in 2001. Total two-way trade between the United States and SACU was approximately $7.9 billion in 2001.
>
> Since 2002, U.S. trade preferences provided to sub-Saharan countries through AGOA have contributed significantly to sustainable economic development and poverty alleviation in the region. By moving from one-way trade preferences to a reciprocal free trade agreement, we will build on the success of AGOA – expanding U.S. access to the SACU market, further linking trade to SACU's economic development strategies, encouraging greater foreign direct investment, and promoting regional integration and economic growth.
>
> We plan to use our negotiations with the SACU countries to strengthen growing bilateral commercial ties and to address barriers in these countries to U.S. exports – including high tariffs on certain goods, overly restrictive licensing measures, inadequate protection of intellectual property rights, and restrictions that the

SACU governments impose that make it difficult for our services firms to do business in these markets. We also see the negotiations as an opportunity to advance U.S. objectives for the multilateral negotiations currently underway in the World Trade Organization (WTO). We will also seek to level the playing field in areas where U.S. exporters are disadvantaged by the European Union's free trade agreement with South Africa.

In recent years, the SACU countries have made important strides in implementing economic reforms and in lifting their people out of poverty. A free trade agreement will reinforce the reforms that have taken place, and will encourage additional progress where needed. An enhanced framework of rules governing trade and close cooperation between our governments will have a profound effect in promoting stronger economies, greater respect for the rule of law, sustainable development, and accountable institutions of governance.

SACU governments, businesses, and citizens regard a possible free trade agreement negotiations with the United States from a similarly broad perspective, and consider such a negotiation to be an important opportunity to move their societies forward economically, politically, and socially. …As we move forward, we will focus ongoing bilateral and multilateral development assistance and trade-related technical assistance to support commitments these countries make as part of the FTA, and to strengthen the government institutions in SACU countries that will be responsible for implementing their commitments."

In pursuing bilateral FTAs, the United States uses a common framework covering the issues to be negotiated with the partners involved. This framework, which is patterned after the North American Free Trade Agreement (NAFTA) negotiated in 1992-93, has been updated and adapted for the new FTAs negotiated in recent years and currently in process. In the case of the SACU FTA, the specific U.S. negotiating objectives stated in USTR Zoellick's November 5, 2002 Letter to the House and Senate are as follows:

"*1. Trade in Industrial Goods and Agriculture:*
- --   Seek to eliminate tariffs and other duties and charges on trade between SACU countries and the United States on the broadest possible basis, subject to reasonable adjustment periods for import-sensitive products.
- --   Seek agreement by SACU countries to join the WTO Information Technology Agreement.
- --   Seek to eliminate non-tariff barriers in SACU countries to U.S. exports, including licensing barriers, unjustified trade restrictions that affect new U.S. technologies, and other non-tariff measures identified by U.S. exporters.
- --   Pursue favorable staging of tariff elimination and other market access commitments from SACU countries that improve the

competitive position of U.S. goods vis-à-vis those of the European Union in SACU markets.

-- Pursue fully reciprocal access to the SACU market for U.S. textile and apparel products.

-- Pursue a mechanism with SACU countries that will support achieving the U.S. objective in the WTO negotiations of eliminating all export subsidies on agricultural products, while maintaining the right to provide *bona fide* food aid and preserving U.S. agricultural market development and export credit programs.

-- Seek to eliminate SACU country practices that adversely affect U.S. exports of perishable or cyclical agricultural products, while improving U.S. import relief mechanisms as appropriate.

2. Customs Matters, Rules of Origin, and Enforcement Cooperation:

-- Seek rules to require that customs operations of SACU and SACU countries are conducted with transparency, efficiency, and predictability and that customs laws, regulations, and decisions of SACU and SACU countries are not applied in a manner that creates unwarranted procedural obstacles to U.S. exports.

-- Seek terms for cooperative efforts with the SACU governments regarding enforcement of customs and related issues, including trade in textiles and apparel.

-- Seek rules of origin, procedures for applying these rules, and provisions to address circumvention matters that will ensure that preferential duty rates under the FTA apply only to goods eligible to receive such treatment, without creating unnecessary obstacles to trade.

3. Sanitary and Phytosanitary (SPS) Measures:

-- Seek to have the SACU countries reaffirm their WTO commitments on SPS measures and eliminate any unjustified SPS restrictions.

-- Seek to strengthen collaboration with SACU countries in implementing the WTO SPS Agreement and to enhance cooperation with SACU countries in relevant international bodies on developing international SPS standards, guidelines, and recommendations.

4. Technical Barriers to Trade (TBT):

-- Seek to have the SACU countries reaffirm their WTO TBT commitments and eliminate any unjustified TBT measures.

-- Seek to strengthen collaboration with SACU countries on implementation of the WTO TBT Agreement and create a

procedure for exchanging information with the SACU countries on TBT-related issues.

5. Intellectual Property Rights:

-- Seek to establish standards that reflect a standard of protection similar to that found in U.S. law and that build on the foundations established in the WTO Agreement on Trade-Related Aspects of Intellectual Property (TRIPs Agreement) and other international intellectual property agreements, such as the World Intellectual Property Organization Copyright Treaty and Performances and Phonograms Treaty, and the Patent Cooperation Treaty.

-- Establish commitments for SACU countries to strengthen significantly their domestic enforcement procedures, such as by ensuring that government agencies may initiate criminal proceedings on their own initiative and seize suspected pirated and counterfeit goods, equipment used to make or transmit these goods, and documentary evidence. Seek to strengthen measures in SACU countries that provide for compensation of right holders for infringements of intellectual property rights and to provide for criminal penalties under the laws of SACU countries that are sufficient to have a deterrent effect on piracy and counterfeiting.

6. Trade in Services:

-- Pursue disciplines to address discriminatory and other barriers to trade in the SACU countries' services markets. Pursue an ambitious approach to market access, including enhanced access for U.S. services firms to telecommunications and any other appropriate services sectors in SACU markets.

-- Seek improved transparency and predictability of SACU countries' regulatory procedures, specialized disciplines for financial services, and additional disciplines for telecommunications services and other sectors as necessary.

-- Seek appropriate provisions to ensure that the SACU countries will facilitate the temporary entry of U.S. business persons into their territories, while ensuring that any commitments by the United States are limited to temporary entry provisions and do not require any changes to U.S. laws and regulations relating to permanent immigration and permanent employment rights.

7. Investment:

-- Seek to establish rules that reduce or eliminate artificial or trade-distorting barriers to U.S. investment in SACU countries, while ensuring that investors of SACU countries in the United States are not accorded greater substantive rights with respect to investment protections than U.S. investors in the United States, and to secure for U.S. investors in SACU countries important

rights comparable to those that would be available under U.S. legal principles and practice.

-- Seek to ensure that U.S. investors receive treatment as favorable as that accorded to domestic or other foreign investors in SACU countries and to address unjustified barriers to the establishment and operation of U.S. investments in those countries. Provide procedures to resolve disputes between U.S. investors and the governments of SACU countries that are in keeping with the Trade Promotion Authority goals of making such procedures expeditious, fair and transparent.

8. Electronic Commerce:

-- Seek to affirm that the SACU countries will allow goods and services to be delivered electronically on terms that promote the development and growth of electronic commerce.

-- Seek to ensure that the SACU countries do not apply customs duties in connection with digital products or unjustifiably discriminate among products delivered electronically.

9. Government Procurement:

-- Seek to establish rules requiring government procurement procedures and practices in the SACU countries to be fair, transparent, and predictable for suppliers of U.S. goods and services who seek to do business with the SACU governments.

-- Seek to expand access for U.S. goods and services to SACU government procurement markets.

10. Transparency/Anti-Corruption/Regulatory Reform:

-- Seek to make the SACU countries' administration of their trade regimes more transparent and pursue rules that will permit timely and meaningful public comment before the SACU governments adopt trade-related measures.

-- Seek to ensure that the SACU countries adopt and apply high standards prohibiting corrupt practices that affect international trade and enforce such prohibitions.

11. Trade Remedies:

-- Provide a bilateral safeguard mechanism during the transition period.

-- Make no changes to U.S. antidumping and countervailing duty laws.

12. Labor, including Child Labor:

-- Based upon a review and analysis of their labor laws and practices, establish procedures for consultations and cooperative activities with the SACU countries to strengthen their capacity to

promote respect for core labor standards, including compliance with ILO Convention 182 on the worst forms of child labor, building on technical assistance programs administered by the U.S. Department of Labor.

-- Seek an appropriate commitment from SACU countries to the effective enforcement of their labor laws.

-- Establish that SACU countries will strive to ensure that they will not, as an encouragement for trade or investment, weaken or reduce the protections provided for in their labor laws.

13. Environment:

-- Seek to promote trade and environment policies that are mutually supportive.

-- Seek an appropriate commitment by the SACU countries to the effective enforcement of their environmental laws.

-- Establish that the SACU countries will strive to ensure that they will not, as an encouragement for trade, weaken or reduce the protections provided for in their environmental laws.

-- Seek to assist the SACU countries to strengthen their capacity to protect the environment through the promotion of sustainable development, such as by establishing consultative mechanisms.

14. State-to-State Dispute Settlement:

-- Encourage the early identification and settlement of disputes through consultation.

-- Seek to establish fair, transparent, timely, and effective procedures to settle disputes arising under the agreement.

In addition, the FTA will take into account other legitimate U.S. objectives including, but not limited to, the protection of legitimate health or safety, essential security, and consumer interests."

It should be evident from the foregoing that a U.S.-SACU FTA reflects a myriad of objectives from the U.S. perspective, with a focus on expanding the market access in the SACU for U.S. goods and services and shaping the regulatory environment in the SACU member countries to conform to U.S. principles and institutions. By the same token, the SACU members may be attracted by the more favorable access that the FTA will provide for their exports to the

U.S. market and the opportunities to improve their economic efficiency and to design and implement more effective domestic institutions and development policies.[1]

Conduct and Current Status of the U.S.-SACU Negotiations

The U.S.-SACU FTA talks began in November 2002, and there have been six rounds of formal negotiations between June 2003 and June 2004 and an additional meeting in July 2004. But, as noted in *Inside U.S. Trade* (April 21, 2006), "…the two sides were never able to overcome their different demands on what the scope of the agreement should be, even with the involvement of senior officials. Langton (2005, pp. 4-5) cites a number of reasons for the deadlock:

> "First, the United States and SACU may be focused on different negotiating interests. Per their mandate to pursue comprehensive FTAs, U.S. negotiators have attempted to proceed with negotiations on intellectual property rights, government procurement, investment, and services. However, SACU officials have reportedly argued for these issues to be excluded from the negotiations. They have been more focused on locking in AGOA benefits and achieving deeper market access. Now that Congress has extended the AGOA benefits to 2015 through the AGOA Acceleration Act of 2004 (P.L. 108-274), there may be less incentive for SACU countries to complete an FTA with the United States. Also, the United States and SACU have different views on the inclusion of certain [services] sectors in the negotiations. The United States prefers what is called a negative list, where all [services sectors] are negotiable unless specifically excluded. Meanwhile, SACU prefers a positive list, where the [sectors] to be included in the negotiations are specified in advance, and additional [sectors] may be included in the agreement over time. Finally, the United States and SACU have differed on issues concerning labor rights and environmental regulations.
>
> The Black Economic Empowerment (BEE) program of South Africa may be another significant hurdle to the negotiations. The BEE program involves criteria for companies to increase opportunities for non-white business partners through equity ownership and executive board positions. The BEE program may constitute a trade barrier; U.S. businesses have indicated that they may have difficulty meeting the BEE criteria, and alternate ways of addressing BEE goals have been proposed by U.S. negotiators."

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[1] For further elaboration and analysis of the negotiating issues, prospective benefits, and the asymmetric characteristics and policy implications of a U.S.-SACU FTA, see Leith and Whalley (2004).

Issues of intellectual property rights, involving pharmaceuticals in particular, have been a significant stumbling block in the negotiations. As noted in Avafia (2005, pp. 20-21):

"Given its influential pharmaceutical lobby, the US is interested in ensuring bilateral protection of numerous intellectual property rights (IPR) issues with SACU. The most pressing intellectual property (IP) matters pertain to public health. The five SACU countries have some of the highest HIV/AIDS prevalence rates in the world.

Last year's decision of the TRIPS Council of the WTO created a legal pathway through which developing countries without sufficient domestic capacity to manufacture essential medicines would be able to import generic versions of essential medicines.

The US is particularly interested in ensuring that patent protection in SACU countries is rigorously enforced. Lack of strict IPR enforcement attracted considerable attention during the April 2003 SACU trade policy review. Ambassador Zoellick made it clear that the US is seeking to establish IP standards similar to those found in domestic US law. The US is likely to press for provisions dealing with compensation for patent holders whose IPRs have been infringed and the establishment in SACU countries of criminal sanctions against IPR violations. An indication of US thinking on this point can be seen in the new US-Morocco FTA, which effectively prohibits parallel importation of pharmaceuticals, including essential medicines. …

The South African government recently approved a programme to make antiretrovirals available nationwide, aided by Competition Commission agreements with pharmaceutical giants GlaxoSmithKline and Boehringer to grant voluntary licences to generic manufacturers to produce and distribute antiretrovirals, subject to reasonable conditions (e.g., royalties payable to the patent holders not exceeding 5% of net sale price). The agreement may create a path for producers of generic medicines to manufacture, export, market and distribute their versions of antiretrovirals throughout sub-Saharan Africa. Free trade provisions with the US could clash with these initiatives in pricing essential medicines, and negatively impact SACU area consumers."

In light of the many problems encountered in the bilateral negotiations, the Bush Administration announced, in a USTR press release on April 18, 2006, suspension of FTA negotiations with the SACU countries. Instead, the two sides would seek to negotiate a framework for "trade and investment-enhancing agreements." But, according to Deputy United

States Trade Representative Karan Bhatia, "…the framework would establish a basis and building blocks for pursuing the FTA over the longer term."

Rather than leaving the matter here, assuming that a FTA was to be negotiated, the question is what the economic effects would be for both the United States and the SACU members. This could help the SACU members in particular to decide whether it was in their joint interest to negotiate a bilateral FTA with the United States or to pursue trade liberalization along unilateral or multilateral lines. For analytical purposes, we draw upon the Michigan Model of World Production and Trade. This is a multi-country/multi-sectoral computable general equilibrium (CGE) model of the global trading system that we have used on numerous occasions to analyze the economic effects of multilateral, regional, and bilateral trade negotiations and a variety of other changes in trade and trade policies.

III. The Michigan Model of World Production and Trade

Overview of the Michigan Model

The version of the Michigan Model that we use here covers 18 economic sectors, including agriculture, manufactures, and services, in each of 22 countries/regions. The distinguishing feature of the Michigan Model is that it incorporates some aspects of trade with imperfect competition, including increasing returns to scale, monopolistic competition, and product variety. Some details follow.[2] A more complete description of the formal structure and equations of the model can be found on line at www.Fordschool.umich.edu/rsie/model/ and in Brown, Kiyota, and Stern (2006).

Interpreting the Modeling Results

To help the reader interpret the modeling results that follow, it is useful to review the features of the model that serve to identify the various economic effects to be reflected in the

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[2] See also Deardorff and Stern (1990, esp. pp. 9-46) and Brown and Stern (1989a,b).

different applications of the model. Although the model includes the aforementioned features of imperfect competition, it remains the case that markets respond to trade liberalization in much the same way that they would with perfect competition. That is, when tariffs or other trade barriers are reduced in a sector, domestic buyers (both final and intermediate) substitute towards imports and the domestic competing industry contracts production while foreign exporters expand. Thus, in the case of multilateral liberalization that reduces tariffs and other trade barriers simultaneously in most sectors and countries, each country's industries share in both of these effects, expanding or contracting depending primarily on whether their protection is reduced more or less than in other sectors and countries.

Worldwide, these changes cause increased international demand for all sectors. World prices increase most for those sectors where trade barriers fall the most. This in turn causes changes in countries' terms of trade that can be positive or negative. Those countries that are net exporters of goods with the greatest degree of liberalization will experience increases in their terms of trade, as the world prices of their exports rise relative to their imports. The reverse occurs for net exporters in industries where liberalization is slight – perhaps because it may already have taken place in previous trade rounds.

The effects on the welfare of countries arise from a mixture of these terms-of-trade effects together with the standard efficiency gains from trade and also from additional benefits due to the realization of economies of scale. Thus, we expect on average that the world will gain from multilateral liberalization, as resources are reallocated to those sectors in each country where there is a comparative advantage. In the absence of terms-of-trade effects, these efficiency gains should raise national welfare measured by the equivalent variation for every country,[3] although some factor owners within a country may lose, as will be noted below. However, it is

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[3] The equivalent variation is a measure of the amount of income that would have to be given or taken away from an economy before a change in policy in order to leave the economy as well off as it would be after the policy change has taken place. If the equivalent variation is positive, it is indicative of an improvement in economic welfare resulting from the policy change.

possible for a particular country whose net imports are concentrated in sectors with the greatest liberalization to lose overall, if the worsening of its terms of trade swamps these efficiency gains.

On the other hand, although trade with imperfect competition is perhaps best known for introducing reasons why countries may lose from trade, actually its greatest contribution is to expand the list of reasons for gains from trade. Thus, in the Michigan Model, trade liberalization permits all countries to expand their export sectors at the same time that all sectors compete more closely with a larger number of competing varieties from abroad. As a result, countries as a whole gain from lower costs due to increasing returns to scale, lower monopoly distortions due to greater competition, and reduced costs and/or increased utility due to greater product variety. All of these effects make it more likely that countries will gain from liberalization in ways that are shared across the entire population.[4]

The various effects just described in the context of multilateral trade liberalization will also take place when there is unilateral trade liberalization, although these effects will depend on the magnitudes of the liberalization in relation to the patterns of trade and the price and output responses involved between the liberalizing country and its trading partners. Similarly, many of the effects described will take place with the formation of bilateral or regional FTAs. But in these cases, there may be trade creation and positive effects on the economic welfare of FTA-member countries together with trade diversion and negative effects on the economic welfare of non-member countries. The net effects on economic welfare for individual countries and globally will thus depend on the economic circumstances and policy changes implemented.

In the real world, all of the various effects occur over time, some of them more quickly than others. However, the Michigan Model is static in the sense that it is based upon a single set of equilibrium conditions rather than relationships that vary over time. The model results

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[4] In perfectly competitive trade models such as the Heckscher-Ohlin Model, one expects countries as a whole to gain from trade, but the owners of one factor – the "scarce factor" – to lose through the mechanism first explored by Stolper and Samuelson (1941). The additional sources of gain from trade due to increasing returns to scale, competition, and product variety, however, are shared across factors, and we routinely find in our CGE modeling that both labor and capital gain from multilateral trade liberalization.

therefore refer to a time horizon that depends on the assumptions made about which variables do and do not adjust to changing market conditions, and on the short- or long-run nature of these adjustments. Because the supply and demand elasticities used in the model reflect relatively long-run adjustments and it is assumed that markets for both labor and capital clear within countries,[5] the modeling results are appropriate for a relatively long time horizon of several years – perhaps two or three at a minimum. On the other hand, the model does not allow for the very long-run adjustments that could occur through capital accumulation, population growth, and technological change. The modeling results should therefore be interpreted as being superimposed upon longer-run growth paths of the economies involved. To the extent that these growth paths themselves may be influenced by trade liberalization, therefore, the model does not capture such effects.

Benchmark Data

Needless to say, the data needs of this model are immense. Apart from numerous share parameters, the model requires various types of elasticity measures. Like other CGE models, most of our data come from published sources.

The main data source used in the model is "The GTAP-6.0 Database" of the Purdue University Center for Global Trade Analysis Project (Dimaranan and McDougall, 2005). The reference year for this GTAP database is 2001. From this source, we have extracted the following data, aggregated to our sectors and countries/regions:[6]

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[5] The analysis in the model assumes throughout that the aggregate, economy-wide, level of employment is held constant in each country. The effects of trade liberalization are therefore not permitted to change any country's overall rates of employment or unemployment. This assumption is made because overall employment is determined by macroeconomic forces and policies that are not contained in the model and would not themselves be included in a negotiated trade agreement. The focus instead is on the composition of employment across sectors as determined by the microeconomic interactions of supply and demand resulting from the liberalization of trade.

[6] Details on the sectoral and country/region aggregation are provided in Brown, Kiyota, and Stern (2004) and are available on request. Because of data constraints, the SACU is represented in the aggregate since the GTAP data are not broken down for the individual SACU members other than Botswana and South Africa.

- Bilateral trade flows among 22 countries/regions, decomposed into 18 sectors. Trade with the rest-of-world (ROW) is included to close the model.

- Input-output tables for the 22 countries/regions, excluding ROW

- Components of final demand along with sectoral contributions for the 22 countries/regions, excluding ROW

- Gross value of output and value added at the sectoral level for the 22 countries/regions, excluding ROW

- Bilateral import tariffs by sector among the 22 countries/regions

- Elasticity of substitution between capital and labor by sector

- Bilateral export-tax equivalents among the 22 countries/regions, decomposed into 18 sectors

The monopolistically competitive market structure in the nonagricultural sectors of the model imposes an additional data requirement of the numbers of firms at the sectoral level, and there is need also for estimates of sectoral employment.[7] The employment data, which have been adapted from a variety of published sources, will be noted below.

The GTAP-6.0 2001 database has been projected to the year 2020, which is when we assume that the Doha Round currently underway will have been completed and fully implemented. In this connection, we extrapolated the labor availability in different countries/regions by an annual-average, weighted-population growth rate that varies by country/region. All other major variables have been projected, using an average weighted growth rate of GDP of 3.1 percent.[8] In the computational scenarios to be presented below, we use these extrapolated data as the starting point to carry out our liberalization scenarios for the U.S.-SACU bilateral FTA and for the accompanying unilateral and global free trade scenarios.

The GTAP 6.0 (2001) base data for tariffs and the estimated tariff equivalents of services barriers are broken down by sector on a global and bilateral basis for the United States and SACU

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[7] Notes on the construction of the data on the number of firms and for employment are available from the authors on request.

[8] The underlying data are drawn from United Nations and World Bank sources and are available on request. For a more elaborate and detailed procedure for calculating data extrapolations, see van der Mensbrugghe (2005) and related documents.

in Table 1. The post-Uruguay Round tariff rates on agriculture, mining, and manufactures are applied rates and are calculated in GTAP by dividing tariff revenues by the value of imports by sector. For the United States, the highest import tariffs for manufactures are recorded for textiles, wearing apparel, and leather products & footwear, both globally and bilaterally. The SACU tariff rates on textiles, wearing apparel, and leather products & footwear are can also be seen to be relatively high. Other SACU sectors with relatively high tariff rates include non-metallic minerals and transportation equipment..

The services barriers are based on financial data on average gross (price-cost) margins constructed initially by Hoekman (2000) and adapted for modeling purposes in Brown, Deardorff, and Stern (2002, 2003). The gross operating margins are calculated as the differences between total revenues and total operating costs. Some of these differences are presumably attributable to fixed costs. Given that the gross operating margins vary across countries, a portion of the margin can also be attributed to barriers to FDI. For this purpose, a benchmark is set for each sector in relation to the country with the smallest gross operating margin, on the assumption that operations in the benchmark country can be considered to be freely open to foreign firms. The excess in any other country above this lowest benchmark is then taken to be due to barriers to establishment by foreign firms.

That is, the barrier is modeled as the cost-increase attributable to an increase in fixed cost borne by multinational corporations attempting to establish an enterprise locally in a host country. This abstracts from the possibility that fixed costs may differ among firms because of variations in market size, distance from headquarters, and other factors. It is further assumed that this cost increase can be interpreted as an ad valorem equivalent tariff on services transactions generally. It can be seen that the constructed services barriers are considerably higher than the import barriers on manufactures. While possibly subject to overstatement, it is generally acknowledged that many services sectors are highly regulated and thus restrain international services

transactions. This can be seen in the last four rows covering the services sectors in Table 1 for both the United States and SACU.

The value and shares of U.S. exports and imports of goods and services for 2001 are broken down by sector according to destination and origin in Table 1. U.S. exports to SACU in 2002 totaled $6.4 billion, with the largest values recorded for chemicals, machinery & equipment, transportation equipment, and services. The sectoral shares of U.S. exports to the SACU are relatively small, ranging between 0.1% and 1.0%. Overall, U.S. exports to the SACU were 0.5% of total U.S. exports. U.S. imports from SACU totaled $9.6 billion in 2001, with the largest values recorded for chemicals, metal products, transportation equipment, and services. Imports of metal products were 3.5% of U.S. imports, while the remaining sectoral shares were mostly less than 1%. Imports from SACU were 0.5% of total U.S. imports.

SACU exports totaled $54.4 billion and total imports were $34.0 billion in 2001. The United States accounted for 13.1% of total SACU exports and 12.2% of total SACU imports. The sectoral values and shares of the United States in SACU exports and imports are also provided in Table 1, and it is evident that the United States accounts for sizable shares in a number of sectors. As already noted, a significant proportion of SACU member trade is channeled through South Africa. Also, trade with the European Union is quite important.

Employment by sector is indicated in the last two columns of Table 1. More than 80% of U.S. employment is in the services sectors and the remainder spread across agriculture and manufacturing. In the SACU, agriculture accounts for 25.3% of total employment, manufactures for 8.9%, and services for 65.8%. Information on the stock of U.S. foreign direct investment (FDI) abroad is indicated in Table 2 for 2004. The total is $5.0 billion, one-third of which is in manufacturing and the remainder in services and other industries. A further breakdown of the source and sectoral coverage of FDI in SACU member countries has been indicated in the background information given above.

With the foregoing by way of background, we turn now to our computational analysis, which will focus on the economic effects on the United States and the SACU of the bilateral removal of trade barriers on agricultural products, manufactures, and services as the result of a U.S.-SACU FTA. Depending on the details of the FTA negotiations, many of these bilateral barriers would be removed immediately, but some would be phased out over longer periods of time. For modeling purposes, however, we assume that all barriers are removed at the same time rather than in phases.

Computational Results of a U.S.-SACU FTA

The global welfare effects of the bilateral removal of agricultural protection, manufactures tariffs, and services barriers are indicated in Table 3a. It can be seen that there are negligible effects on economic welfare with the bilateral removal of agricultural protection. U.S. economic welfare is increased by $1.6 billion with the bilateral elimination of manufactures tariffs and $11.0 billion with the bilateral elimination of services barriers. The total improvement of U.S. economic welfare is $12.6 billion, which is 0.07% of U.S. GDP. The real returns to U.S. capital and the real return to labor are increased negligibly. Global economic welfare rises by $14.6 billion. Economic welfare for the SACU is increased by $2.2 billion (1.0% of GDP). The real return to capital rises by 0.4% and the real return to labor by 0.7%.

The sectoral effects on exports, imports, gross output, and employment are indicated in Table 3b. The percentage increases in U.S. sectoral exports to SACU are all considerably below 1%. The largest absolute increases in U.S. sectoral exports are in chemicals ($108 million), transportation equipment ($357 million), machinery & equipment ($118 million), trade & transport ($175 million), and other private services ($257 million). Total U.S. exports are increased by $1.3 billion. The increases in U.S. imports from SACU are very small in percentage terms. The largest absolute increases in U.S. imports are in textiles and wearing apparel ($289

million), trade & transport services ($662 million), other private services ($181 million), and government and related services ($137 million). Total U.S. imports are increased by $1.3 billion.

Total SACU exports are increased by $1.2 billion, with the largest increases in food, beverages & tobacco ($52 million), textiles and wearing apparel ($439 million), and services ($995 million). The percentage increases in SACU exports are sizable in textiles and wearing apparel and services. SACU imports increase by $1.2 billion, with the largest increases in agricultural products and food, beverages & tobacco ($82 million), chemicals ($126 million), transportation equipment and machinery & equipment ($377 million), and services ($479 million). There are significant percentage increases in several SACU import sectors.

There are small increases in U.S. sectoral gross outputs, except for wearing apparel.[9] The sectoral percentage changes in U.S. employment are very small. In terms of number of workers, there are employment increases particularly in U.S. agriculture and food, beverages & tobacco (389 workers), wood and wood products and chemicals (385 workers), metal products (551 workers), transportation equipment (1,080 workers), machinery & equipment (569 workers), and other private services (361 workers). There are employment declines in textiles (-579 workers), wearing apparel (-352 workers), trade & transport (-2,180 workers) and government and related services (-614 workers). These employment changes are determined by changes in outputs and by capital-labor substitution and broadly reflect U.S. comparative advantage.

Gross outputs in the SACU increase especially in textiles (6.1%) and wearing apparel (23.3%), and there are small percentage changes in other sectors. It is evident that labor and capital are attracted to textiles and wearing apparel, with increases of 3,471 and 27,135 workers in these sectors as well as in trade & transport services (401 workers). Employment declines in all other sectors, especially agriculture and food, beverages & tobacco (-6,418 workers), metal products, transportation equipment, machinery & equipment, and other manufactures (-7,075

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[9] It may be noted that changes in gross output will reflect the combined changes in sectoral exports and imports and domestic consumption resulting from the removal of the trade barriers. Changes in gross output may therefore be positive or negative as our computational results indicate.

workers), and construction and other services (-13,344 workers). These sectoral employment changes may accordingly reflect SACU comparative advantage. While the U.S.-SACU FTA would be phased in over a period of years, the SACU employment shifts noted suggest a possible need for programs of assistance for dislocated workers who would change employment between sectors. Adjustment costs would thus have to be factored into the assessment of the welfare effects of the U.S.-SACU FTA.

The effects on bilateral U.S. trade with SACU and other trading partners are provided in Table 3c. U.S. bilateral exports to SACU and bilateral imports from SACU increase by $1.4 billion and $1.2 billion, respectively. There are indications of trade diversion, but the amounts involved appear small.

Our modeling results just described reflect the bilateral elimination of barriers to trade in agricultural products, manufactures, and services. As noted in the discussion of the main features and objectives of the U.S.-SACU FTA, there are a number of non-trade features that are covered as well. While no allowance has been made for these other features, as discussed above, there has been concern especially from the SACU members about the potentially detrimental effects of the restrictions involving intellectual property rights, in particular access to low-cost pharmaceuticals. While there may be benefits from some particular non-trade features, the relatively small size of the benefits calculated from a bilateral FTA suggests that these non-trade benefits are likely also to be fairly small. It should also be noted that no account has been taken of possible increases in U.S. foreign direct investment in the SACU members in response to the incentives provided by the bilateral liberalization, and no allowance has been made for possible increases in capital formation and economic growth and improvements in productivity in the United States and the SACU members. But again, these effects are likely to be small. It can be said therefore that while our modeling results may constitute a lower bound to the welfare changes due to a U.S.-SACU bilateral FTA, it remains unclear how significant any beneficial non-trade and growth effects of the SACU FTA may be.

IV. Welfare Comparisons of a U.S.-SACU Bilateral FTA, Unilateral Free Trade, and Global Free Trade

Having analyzed the economic effects of a bilateral U.S.-SACU FTA, we now consider whether the U.S. and SACU economic interests would be more or less enhanced by unilateral free trade and global (multilateral) free trade as compared to the adoption of a bilateral FTA. The welfare comparisons are indicated in Table 4 and can be summarized as follows:

1. Global economic welfare is increased by $770.6 billion with U.S. unilateral free trade and by $31.0 billion with SACU unilateral free trade, as compared to U.S.-SACU FTA liberalization of $14.6 billion.

2. With unilateral free trade, U.S. economic welfare increases by $514.6 billion (2.9% of GDP) compared to $12.6 billion (0.1% of GDP) with a bilateral U.S.-SACU FTA. SACU unilateral free trade increases SACU welfare by $12.5 billion (5.7% of GDP) compared to $2.2 billion (1.0% of GNP) with a U.S.-SACU FTA.

3. Global (multilateral) free trade increases total economic welfare by $3.5 trillion compared to $770.6 billion and $31.0 billion with unilateral U.S. and SACU free trade and $14.6 billion with a bilateral U.S.-SACU FTA.

4. With global free trade, U.S. economic welfare rises by $824.6 billion (4.6% of GDP) compared to $514.6 billion (2.9% of GDP) with unilateral free trade and $12.6 billion (0.1% of GDP) with a bilateral U.S.-SACU FTA. SACU welfare increases by $15.8 billion (7.2% of GDP) with global free trade compared to $12.5 billion for SACU unilateral free trade and $2.2 billion for bilateral U.S.-SACU FTA liberalization.

These calculations clearly show that multilateral trade liberalization offers potentially far greater increases in economic welfare for the United States and the SACU and other countries/regions in the global trading system as compared to a bilateral U.S.-SACU FTA and unilateral liberalization. This would be the case even if there would be less than complete free trade globally. That is, if existing trade barriers in the ongoing Doha Development Agenda negotiations were to be reduced, for example, by one-third or one-half, the resulting global and national gains would be proportionally lower. But these welfare gains would still far exceed the welfare gains from a bilateral U.S.-SACU FTA and would serve to offset the negative welfare effects of any trade diversion resulting from a U.S.-SACU FTA. This would almost certainly

remain true even if there are other benefits from the non-trade aspects of the U.S.-SACU FTA and possible increases in capital accumulation and productivity.

V. Summary and Conclusions

This paper has been designed to analyze the potential economic effects of bilateral negotiations for an FTA between the United States and the Southern African Customs Union (SACU). The U.S.-SACU FTA bilateral negotiations were initiated in June 2003. But following a number of official meetings, the negotiations were deadlocked over a series of issues of concern to the SACU. The bilateral FTA negotiations have now been replaced by an effort to negotiate a framework agreement covering trade and investment issues and possibly a bilateral FTA at some future time.

To help determine whether a bilateral FTA might be in the SACU members' joint interests, we have used the Michigan Model of World Production and Trade to assess the welfare and other economic effects of a bilateral FTA. For modeling purposes, the focus was on the effects of the bilateral removal of trade barriers, which lend themselves most readily to quantification. The non-trade aspects of the FTA may also be important but are intrinsically more difficult to incorporate into a modeling framework. The conclusion was that the welfare benefits of a bilateral FTA are rather small in both absolute and relative terms, and that the non-trade and dynamic benefits of the SACU FTA are unlikely to alter these results significantly.

To provide a broader perspective on the potential economic effects of a U.S.-SACU FTA, the model was also used to calculate the effects of unilateral tariff removal and global free trade. It was shown that unilateral free trade would result in much larger increases in economic welfare for the United States and SACU as compared to the FTA bilateral trade liberalization. Finally, the effects of global (multilateral) free trade were shown to be greater for the United States and SACU as compared to both the bilateral FTA liberalization and unilateral tariff removal. Our results suggest accordingly that the interests of the global trading community, including the

United States and SACU, could be better served by unilateral and especially multilateral liberalization rather than a bilateral FTA.[10]

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[10] This conclusion is reinforced in Brown, Kiyota, and Stern (2006) in which the negative effects of overlapping FTAs negotiated or in process by the United States and Japan are contrasted with the benefits that unilateral or multilateral free trade may provide.

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Table 1. Post-Uruguay Round Tariff Rates, Trade and Employment by Sector for the United States and SACU countries

United States	Tariff		Exports (million $)		Exports (%)		Imports (million $)		Imports (%)		Employment	
	Global	SACU	World	SACU	World	SACU	World	SACU	World	SACU	%	Workers
Agriculture	0.9	1.2	50,349	69	100.0	0.1	33,010	129	100.0	0.4	2.4	3,559,337
Mining	0.0	0.0	10,290	42	100.0	0.4	111,592	271	100.0	0.2	0.4	615,851
Food, Beverages & Tobacco	2.4	3.8	46,542	101	100.0	0.2	55,629	200	100.0	0.4	1.5	2,154,563
Textiles	5.5	6.3	20,188	41	100.0	0.2	49,506	398	100.0	0.8	0.6	844,752
Wearing Apparel	10.0	12.1	8,180	12	100.0	0.1	81,210	483	100.0	0.6	0.4	615,892
Leather Products & Footwear	7.3	0.2	3,087	7	100.0	0.2	35,945	39	100.0	0.1	0.1	91,748
Wood & Wood Products	0.2	0.2	44,893	179	100.0	0.4	101,316	154	100.0	0.2	1.5	2,236,392
Chemicals	1.6	0.2	164,557	835	100.0	0.5	173,616	612	100.0	0.4	1.9	2,717,185
Non-metallic Min. Products	3.1	0.0	22,210	161	100.0	0.7	32,066	83	100.0	0.3	0.5	723,522
Metal Products	1.0	0.1	53,550	140	100.0	0.3	103,585	3,664	100.0	3.5	2.1	3,120,179
Transportation Equipment	1.1	0.0	176,010	1,731	100.0	1.0	306,458	685	100.0	0.2	1.5	2,245,828
Machinery & Equipment	0.6	0.0	446,615	1,540	100.0	0.3	596,748	593	100.0	0.1	3.6	5,335,171
Other Manufactures	1.2	0.1	23,522	101	100.0	0.4	91,602	947	100.0	1.0	0.4	519,173
Elec., Gas & Water	0.0	0.0	1,170	3	100.0	0.3	3,364	17	100.0	0.5	1.0	1,529,309
Construction	9.0	9.0	4,380	4	100.0	0.1	1,222	1	100.0	0.1	7.1	10,406,472
Trade & Transport	27.0	27.0	99,462	548	100.0	0.6	132,696	925	100.0	0.7	26.7	39,103,833
Other Private Services	31.0	31.0	175,301	543	100.0	0.3	111,727	223	100.0	0.2	12.3	18,105,155
Government Services	25.0	25.0	70,759	360	100.0	0.5	33,156	200	100.0	0.6	36.0	52,786,155
Total			1,421,064	6,417	100.0	0.5	2,054,450	9,624	100.0	0.5	100.0	146,710,516

SACU	Tariff		Exports (million $)		Exports (%)		Imports (million $)		Imports (%)		Employment	
	Global	U.S.	World	U.S.	World	U.S.	World	U.S.	World	U.S.	%	Workers
Agriculture	2.2	4.3	1266.6	72.4	100.0	3.2	792	45	100.0	5.7	25.3	5,011,163
Mining	0.0	0.0	2,825	44	100.0	3.5	1,767	27	100.0	1.5	1.7	329,366
Food, Beverages & Tobacco	0.0	0.0	3,035	111	100.0	4.1	1,898	69	100.0	3.7	1.1	215,250
Textiles	11.3	17.5	1,557	43	100.0	32.1	974	27	100.0	2.8	0.4	72,659
Wearing Apparel	15.4	4.8	724	12	100.0	53.3	453	7	100.0	1.6	0.6	125,624
Leather Products & Footwear	8.5	9.2	552	7	100.0	10.3	345	5	100.0	1.4	0.2	32,206
Wood & Wood Products	1.8	3.3	2,339	193	100.0	3.9	1,463	121	100.0	8.2	1.1	214,752
Chemicals	2.6	3.7	7,200	874	100.0	11.7	4,503	547	100.0	12.1	0.9	173,072
Non-metallic Min. Products	5.1	3.2	1,442	199	100.0	9.1	902	125	100.0	13.8	0.4	77,981
Metal Products	2.9	4.6	3,415	148	100.0	19.1	2,136	93	100.0	4.3	1.1	216,126
Transportation Equipment	13.7	6.8	7,718	1,762	100.0	14.5	4,827	1,102	100.0	22.8	0.5	90,247
Machinery & Equipment	2.1	2.2	14,211	1,592	100.0	9.3	8,888	996	100.0	11.2	0.9	186,884
Other Manufactures	4.2	3.0	1,145	105	100.0	13.1	716	66	100.0	9.2	0.1	26,186
Elec., Gas & Water	0.0	0.0	44	3	100.0	2.7	27	2	100.0	8.0	0.7	140,047
Construction	1.0	1.0	50	4	100.0	7.8	31	2	100.0	7.1	7.4	1,456,748
Trade & Transport	11.0	11.0	3,318	548	100.0	19.3	2,075	343	100.0	16.5	16.3	3,233,912
Other Private Services	17.0	17.0	2,822	543	100.0	13.9	1,765	339	100.0	19.2	7.3	1,447,819
Government Services	4.0	4.0	716	360	100.0	30.8	448	225	100.0	50.3	34.1	6,741,237
Total			54,380	6,622	100.0	13.1	34,009	4,141	100.0	12.2	100.0	19,791,280

Sources: Tariff and trade data are adapted from Francois and Strutt (1999); Brown, Deardorff and Stern (2002); and Diamaranan and McDougall (2005).

Employment data are adapted from ILO website (2005); UNIDO (2005); and World Bank (2005).

Table 2. Stock of U.S. Foreign Direct Investment Abroad, 2004

(Percent of Total FDI Stock and Millions of U.S. Dollars)

			World Mil.	SACU Mil.
Mining			101,477	120
Utilities			18,985	0
Manufacturing	Total		428,235	1,679
	Of which	Food	26,021	14
		Chemicals	107,908	511
		Primary and fabricated metals	26,328	-15
		Machinery	24,543	193
		Computer and electronic products	58,615	4
		Electrical equipment, appliances, and components	12,392	n.a.
		Transportation equipment	48,418	762
Wholesale trade			136,949	436
Information			56,422	1,468
Depository institutions			68,100	n.a.
Finance (except depository institutions) and insurance			370,965	51
Professional, scientific, and technical services			42,110	113
Other industries			840,755	n.a.
Total			2,063,998	4,966

			World %	SACU %
Mining			4.9	2.4
Utilities			0.9	0.0
Manufacturing	Total		20.7	33.8
	Of which	Food	1.3	0.3
		Chemicals	5.2	10.3
		Primary and fabricated metals	1.3	-0.3
		Machinery	1.2	3.9
		Computer and electronic products	2.8	0.1
		Electrical equipment, appliances, and components	0.6	n.a.
		Transportation equipment	2.3	15.3
Wholesale trade			6.6	8.8
Information			2.7	29.6
Depository institutions			3.3	n.a.
Finance (except depository institutions) and insurance			18.0	1.0
Professional, scientific, and technical services			2.0	2.3
Other industries			40.7	n.a.
Total			100.0	100.0

Notes: 1) FDI data for SACU refer only to South Aftica.

2) n.a. means not available.

Source: Adapted from U.S. Bureau of Economic Analysis (2005, Table 10.3).

Table 3a. Global Welfare Effects of U.S.-Southern African Customs Union (SACU) FTA (Billions of U.S. Dollars and Percent)

	Agricultural Protection		Manufactures Tariffs		Services Barriers		Total		Real Returns	
	%	Bil.	%	Bil.	%	Bil.	%	Bil.	Capital	Labor
Japan	0.00	0.01	-0.00	-0.07	0.00	0.01	-0.00	-0.05	-0.00	-0.00
United States	0.00	0.01	0.01	1.62	0.06	10.99	0.07	12.63	0.01	0.00
Canada	0.00	0.00	0.00	0.03	-0.00	-0.01	0.00	0.02	-0.00	-0.00
Australia	0.00	0.00	-0.00	-0.01	0.00	0.01	0.00	0.01	0.00	0.00
New Zealand	0.00	0.00	-0.00	-0.00	0.00	0.00	0.00	0.00	-0.00	-0.00
EU and EFTA	0.00	0.02	-0.00	-0.17	0.00	0.06	-0.00	-0.08	-0.00	-0.00
Hong Kong	0.00	0.00	0.00	0.00	-0.00	-0.01	-0.00	-0.00	-0.00	-0.00
China	0.00	0.00	-0.00	-0.01	-0.00	-0.01	-0.00	-0.02	-0.00	-0.00
Korea	0.00	0.00	-0.00	-0.01	0.00	0.00	-0.00	-0.01	-0.00	-0.00
Singapore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-0.00
Taiwan	0.00	0.00	-0.00	-0.02	0.00	0.00	-0.00	-0.02	-0.00	-0.01
Indonesia	0.00	0.00	-0.00	-0.01	0.00	0.00	-0.00	-0.00	-0.00	-0.00
Malaysia	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Philippines	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.01	-0.01	-0.01
Thailand	0.00	0.00	-0.00	-0.01	-0.00	-0.00	-0.00	-0.01	-0.01	-0.00
Rest of Asia	0.00	0.00	-0.00	-0.03	0.00	0.00	-0.00	-0.03	-0.00	-0.00
Chile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-0.00
Mexico	0.00	0.00	0.00	0.01	0.00	-0.01	0.00	0.00	-0.00	-0.00
Central America and the Caribbean (CAC)	0.00	0.00	-0.00	-0.01	0.00	-0.00	-0.00	-0.01	-0.01	-0.01
South America	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	-0.00	-0.00
Morocco	0.00	0.00	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Southern African Customs Union (SACU)	0.03	0.07	0.20	0.44	0.76	1.67	1.00	2.19	0.37	0.66
Total		0.12		1.77		12.73		14.63		

Table 3b. U.S.-Southern African Customs Union (SACU) FTA: Change in Exports, Imports, Outputs, and Number of Workers
(Percent, Millions of Dollars, and the Number of Workers)

	Exports (Percent)		Imports (Percent)		Output (Percent)		Employment (Percent)	
	U.S.	SACU	U.S.	SACU	U.S.	SACU	U.S.	SACU
Agriculture	0.04	-0.10	0.03	3.40	0.01	-0.06	0.01	-0.10
Mining	0.01	-0.48	0.01	0.57	0.02	-0.30	0.01	-0.42
Food, Beverages & Tobacco	0.14	1.32	0.09	3.20	0.01	0.16	0.00	-0.43
Textiles	0.06	18.18	0.28	-0.01	-0.05	6.07	-0.06	4.69
Wearing Apparel	0.20	31.81	0.16	-2.94	-0.03	23.32	-0.05	21.59
Leather Products & Footwear	0.19	0.01	-0.01	0.94	0.05	0.11	0.04	-0.65
Wood & Wood Products	0.07	-0.08	0.00	2.51	0.01	0.23	0.01	-0.43
Chemicals	0.06	-0.08	-0.00	1.89	0.02	0.07	0.01	-0.53
Non-metallic Min. Products	0.07	-0.35	0.00	1.92	0.02	-0.29	0.01	-0.70
Metal Products	0.04	-0.62	-0.01	1.11	0.02	-0.60	0.02	-1.13
Transportation Equipment	0.18	-0.42	-0.02	3.29	0.05	-1.08	0.04	-1.94
Machinery & Equipment	0.02	-0.47	0.01	0.90	0.01	-0.65	0.01	-1.16
Other Manufactures	0.06	-0.65	-0.01	1.54	0.03	-0.68	0.02	-1.23
Elec., Gas & Water	0.00	-0.12	-0.00	0.81	0.01	-0.15	0.00	-0.36
Construction	0.00	1.66	0.03	0.88	0.01	0.18	0.00	-0.15
Trade & Transport	0.16	12.73	0.45	4.39	0.00	1.07	-0.01	0.01
Other Private Services	0.13	9.74	0.15	8.53	0.01	0.29	0.00	-0.35
Government Services	0.05	18.19	0.37	6.36	0.00	0.29	-0.00	-0.07

	Exports (Value)		Imports (Value)		Output (Value)		Employment (Number of Workers)[a]	
	U.S.	SACU	U.S.	SACU	U.S.	SACU	U.S.	SACU
Agriculture	21	-4	11	29	33	-12	336	-5,468
Mining	1	-40	6	16	37	-76	60	-1,477
Food, Beverages & Tobacco	75	52	55	82	114	52	53	-950
Textiles	14	200	148	-0	-117	442	-579	3,471
Wearing Apparel	18	239	141	-20	-63	293	-352	27,135
Leather Products & Footwear	6	0	-3	6	13	2	41	-207
Wood & Wood Products	34	-2	2	39	108	39	137	-953
Chemicals	108	-3	-6	126	249	22	248	-958
Non-metallic Min. Products	18	-2	-0	23	36	-14	99	-574
Metal Products	26	-128	-14	33	215	-215	551	-2,596
Transportation Equipment	357	-19	-58	251	593	-172	1,080	-1,855
Machinery & Equipment	118	-25	30	126	273	-109	569	-2,282
Other Manufactures	16	-52	-6	17	32	-64	125	-342
Elec., Gas & Water	0	-1	-0	0	53	-40	23	-536
Construction	0	0	0	0	128	30	43	-2,331
Trade & Transport	175	687	662	161	83	831	-2,180	401
Other Private Services	257	175	181	267	527	168	361	-5,332
Government Services	43	133	137	51	22	141	-614	-5,146
Total	1,286	1,209	1,286	1,209	2,337	1,317	0	0

a) Changes in employment sum to zero because of assumption of full employment.

Table 3c. U.S.-Southern African Customs Union (SACU) FTA: Changes in Bilateral Trade Flows (Millions of Dollars)

From		To JPN	USA	CAN	AUS	NZL	EUN	HKG	CHN	KOR	SGP	TWN	IDN	MYS	PHL	THA	ROA	CHL	MEX	CAC	SAM	MCC	SAC	ROW	Exports
Japan	JPN	0	2	-0	-0	-0	-8	-0	-6	-1	-0	0	1	-1	0	-0	-0	-0	0	0	-0	-0	-28	-3	-44
United States	USA	-16	0	-3	-1	-0	-29	-6	-9	-4	1	-1	-4	-1	-4	-3	-18	0	-4	-11	-4	-0	1,412	-9	1,286
Canada	CAN	-2	6	0	-0	-0	-5	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-1	0	-0	-0	0	-1	-4
Australia	AUS	0	2	0	0	0	-0	0	-0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-0	1
New Zealand	NZL	-0	0	-0	-0	0	-0	0	-0	-0	-0	-0	-0	0	-0	-0	0	0	-0	-0	-0	-0	-0	-0	-1
EU and EFTA	EUN	-0	24	1	-0	-0	0	0	2	0	0	2	-1	-0	0	0	-4	0	1	2	1	-0	-122	-4	-100
Hong Kong	HKG	-1	-0	-0	-0	-0	-3	0	-3	-0	-0	-1	-0	-0	0	-0	-0	-0	-0	0	-0	-0	-2	-0	-11
China	CHN	-4	1	-0	-1	-0	-7	-1	0	-3	-1	-4	-0	-1	0	-0	-0	-0	0	0	-0	-0	-10	-3	-36
Korea	KOR	-2	1	-0	0	-0	-3	-0	-0	0	-0	-0	0	-0	0	-0	-0	0	-0	-0	-0	-0	-7	-2	-13
Singapore	SGP	-1	2	-0	-0	-0	-2	-0	-0	-0	0	0	0	-1	0	0	-0	-0	0	0	-0	-0	0	-1	-3
Taiwan	TWN	-2	0	-0	0	-0	-2	-0	0	-0	-0	0	0	-0	0	-0	-0	-0	-0	0	-0	-0	-6	-0	-11
Indonesia	IDN	-1	-0	-0	-0	-0	-1	-0	-0	-0	-1	-1	0	-0	-0	-0	-0	-0	-0	0	-0	-0	-0	-1	-5
Malaysia	MYS	-0	0	-0	-0	-0	-1	-0	-0	-0	-1	0	-0	0	0	-0	-0	-0	0	0	-0	-0	-2	-0	-4
Philippines	PHL	-0	0	-0	-0	-0	-1	-0	-0	-0	-0	-0	-0	-0	0	-0	-0	-0	-0	0	-0	-0	-0	-0	-3
Thailand	THA	-1	0	-0	-0	-0	-1	-0	-0	-0	-0	-0	-0	-0	0	0	-0	-0	-0	0	-0	-0	-2	-1	-6
Rest of Asia	ROA	-1	-1	-0	-0	-0	-3	-0	-0	-1	-1	-2	-0	-1	-0	-0	0	-0	0	0	-0	-0	-19	-2	-31
Chile	CHL	-0	-0	0	0	0	-0	0	-0	0	0	-0	-0	0	-0	-0	0	0	0	0	0	-0	-1	-0	-0
Mexico	MEX	-1	4	-0	-0	-0	-3	-0	-0	-0	-0	-0	-0	-0	0	-0	-0	-0	0	0	-1	-0	-2	-0	-5
Central America and the Caribbean	CAC	-1	-2	-0	-0	-0	-2	-0	-0	-1	-0	-0	-0	-0	-0	-0	-0	-0	-0	0	-1	-0	-0	-1	-9
South America	SAM	-0	3	-0	-0	-0	-4	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0	0	0	-0	-3	-1	-7
Morocco	MCC	0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0	0	0	0	0	0	0	-0	0	-1	-0	-1
Southern African Customs Union	SAC	-11	1,247	0	3	0	-16	-2	-18	-1	1	-4	-0	1	-1	-2	-7	0	-0	-0	-0	-0	0	17	1,209
Rest of the world	ROW	-1	-4	-0	-0	-0	-7	-0	-1	-1	-0	-0	-0	-0	-0	-0	-1	-0	-0	-0	-1	-0	5	0	-11
Imports		-44	1,286	-4	1	-1	-100	-11	-36	-13	-3	-11	-5	-4	-3	-6	-31	-0	-5	-9	-7	-1	1,209	-11	

Table 4. Computation of Welfare Effects of Bilateral FTAs, Unilateral Free Trade, and Global Free Trade (Billions of Dollars and Percent)

Bilateral Free Trade			Unilateral Free Trade			Global Free Trade		
US-SACU	Welfare		*United States*	Welfare			Welfare	
	(U.S.$)	(% of GNP)		(U.S.$)	(% of GNP)		(U.S.$)	(% of GNP)
United States	12.6	0.1	United States	514.6	2.9	United States	824.6	4.6
SACU	2.2	1.0	Global	770.6		SACU	15.8	7.2
Global	14.6		*SACU*	Welfare		Global	3547.0	
				(U.S.$)	(% of GNP)			
			SACU	12.5	5.7			
			Global	31.0				

Global Free Trade: Decomposition

Agricultural Protection	Welfare		*Manufactures Tariffs*	Welfare		*Services Barriers*	Welfare	
	(U.S.$)	(% of GNP)		(U.S.$)	(% of GNP)		(U.S.$)	(% of GNP)
United States	-2.4	0.0	United States	63.8	0.4	United States	763.2	4.2
SACU	-1.9	-0.9	SACU	9.3	4.3	SACU	8.3	3.8
Global	65.9		Global	832.0		Global	2649.0	

Table A. Labor Force of SACU Countries

SACU	(1,000) Population ages 15-64, total							(1,000) Labor force, total						
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
Botswana	799	823	848	873	900	927	937	658	678	697	714	730	744	756
Lesotho	1,047	1,065	1,083	1,101	1,119	1,138	1,152	759	777	794	810	824	838	852
Nambia	838	861	885	909	934	960	973	654	667	680	694	708	724	739
South Africa	23,767	24,367	24,983	25,615	26,264	26,930	27,166	15,288	15,646	15,992	16,329	16,657	16,983	17,214
Swaziland	488	503	520	537	555	573	583	320	332	345	359	372	383	394
Total	26,939	27,619	28,318	29,035	29,772	30,528	30,811	17,679	18,099	18,507	18,906	19,292	19,672	19,954

Source: World Bank (2003).