

Institute of Food and Resource Economics

# Overview of Quantitative Analyses of Economic Part- nership Agreements:

Market and Revenue Effects of Liberalization of ACP  
Barriers and Enhanced EU Market Access

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# Table of contents

- Executive Summary ..... 4
  - FOI’s Assignment. .... 4
  - Pressing Issues of Controversy ..... 6
  - General Quantitative Effects on ACPs Aggregately and the EU ..... 7
  - Effects of Alternative EPA Settings and Other EPA-Relevant Developments ..... 9
  
- 1. Assignment Goals, Background, Introduction, and Report Structure ..... 12
  - Background ..... 14
  
- 2. Summary of Key Issues of Controversy in the Literature ..... 17
  - Poor regional integration of ACP product markets. .... 18
  - Focus the EPA negotiating process on trade-implementing services,  
 “Singapore issues,” and other trade-related issues. .... 19
  - Trade creation vs. trade diversion, & other theoretical and  
 methodological issues..... 20
  
- 3. Summary: Economic Impacts of EPAs in the Literature ..... 26
  - Effects on global, ACP, and EU regions: Simulations of EPAs, EPA  
 alternatives, and “sensitive product” exemptions..... 28
  - EPA-induced impacts on African ACPs. .... 34
  - EPA-induced impacts on Caribbean ACPs. .... 39
  - EPA-induced impacts on Pacific ACPs..... 41
  
- 4. Appendix A: Summaries of Reviewed Studies by Categories. .... 43
  - Studies examining prominent issues. .... 43
  - Quantitative with a global and general equilibrium focus..... 47
  - Quantitative Studies With An African Focus..... 58
  - Studies with a Caribbean focus. .... 68
  
- 5. References Reviewed ..... 73

## Executive Summary

### **FOI's Assignment.**

The assignment of the Institute of Food and Resource Economics (FOI) staff is to provide an overview of studies in the literature on quantitative analyses of impacts from Economic Partnership Agreements (EPAs) between the European Union (EU) and six specified groups of 78 designated African, Caribbean, and Pacific (ACP) nations<sup>1</sup>. The report should include an overview of quantitative analyses of the effects on global, ACP regional, ACP national, and EU economies of ACP import liberalization for goods and services, EU market access modifications for imports, and estimates of impacts on ACP operating or fiscal revenues from EPA-elicited declines in tariff collections. FOI should include effect estimates from simulations reflecting alternatives to the EPA proposals, model simulations that reflect EPAs established under alternatively proposed conditions, the effects of regional integration, effects of preference erosion from trade arrangements by EPA participants outside the EPA regions, and economic effects of “sensitive product” scenarios.

FOI staff has identified and reviewed 14 important studies that include academic journal articles as well as reports by government agencies and research institutes (hereafter, reviewed literature). The studies are classified in accordance with two “cuts” or dimensions: by the scope to which the studies’ chosen methods are applied and by geographic focus. The studies are first categorized into three classes of studies based on the scope to which the array of chosen methods are applied: (a) non-quantitative studies that examine either controversial quantitative issues or relevant controversial issues of political or economic note for which the literature has generated empirical studies; (b) studies that apply general equilibrium or GE frameworks to assess global, regional, and ACP impacts; and (c) partial equilibrium or PE studies that forgo global coverage and/or coverage of all proposed EPAs to focus on disaggregated regions or specific ACPs, and on specified economic subsectors or industries of such regions, for the advantage of disaggregated detail. Secondly, studies are also categorized by geographical coverage: those focusing on EPA-induced impacts on ACPs generally, on African ACP regions (most numerous group), on Caribbean ACPs, and on Pacific ACPs.<sup>2</sup>

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<sup>1</sup> There are actually 79 ACP countries, the first 78 countries plus a 79<sup>th</sup>, Cuba, that is not a full member of the group. Throughout, we refer to 78 ACP countries.

<sup>2</sup> No studies with a dedicated Pacific ACP focus were located, although the GE studies with a global focus provided quantitative estimates of EPA-elicited impacts on Pacific ACPs.

The first class contains GE analyses of the economic effects of EPAs that attempt to simulate scenarios of all six proposed EPA agreements concurrently. Because this study is the one that came as close as feasible to analyzing the concurrent implementation of all proposed EPAs, we consider these GE studies as the most complete and that generate a “benchmark” set of comprehensive EPA-induced quantitative impacts on the global, ACP regional (and national), and EU economies. Other study estimates are compared with these chosen GE benchmarks.

The 14 studies are diverse in a myriad of aspects or dimensions. They differ in chosen quantitative approaches, the number of examined EPAs, applied assumptions, baseline/benchmark settings, periods of analysis, geographic focus, differences in result sets reported in page-restricted articles, and the choice of GE or PE frameworks, among others. And consequently, patterns of EPA-induced effects are difficult to delineate and compare across studies, and trends of EPA-elicited influences are difficult to illuminate, even at the nation-specific level.

Basic findings from GE studies suggest that concurrent implementation of the proposed EPAs would be costly for ACPs; the costly EPA-induced ACP effects are highly sensitive to the level of reciprocity chosen; and the EPA scenario would likely incur more costs for ACPs globally than would opting-out of EPA agreements and following Everything-But Arms (EBA)/ Generalized System of Preferences (GSP) scenarios. The PE studies were found to generate EPA-elicited effects on ACP economies that were less adverse than those generated by GE studies. In some cases, the PE studies suggested beneficial EPA-induced effects on some ACPs and ACP regions. One result did characterize the results of all or most of the reviewed studies, were they PE or GE in nature: since ACPs often rely heavily on tariff collections for operating revenues, EPAs will likely generate serious revenue shortfalls from declining ACP tariff collections, suggesting a need for EPA negotiation to focus on procurement of alternative ACP revenue sources.

The remainder of this executive summary unfolds in four sections. First is a brief summary of the pressing EPA-related issues that either deal with quantitative methodological issues or that are non-quantitative in nature for which the literature provided analysis or estimates. Second, a summary of the aggregated EPA-induced quantitative effects on all ACP economies generally and the EU economy is provided. This summary does not provide study-specific estimates, as such estimates are provided in the FOI report that follows. The literature has assumed that generally, ACPs

access granted to EU-sourced imports on “substantially all trade” will likely be approximately 80 percent of such imports (hereafter, ACP reciprocity of 80 percent). Third, a series of quantitative estimates are provided for a number of “alternative runs,” that is simulated scenarios that illuminate quantitative effects of EPA alternatives, and other EPA-relevant and trade-related developments. These alternative runs include quantitative effects on the ACPs and the EU of EPAs implemented under alternative 100 percent and 50 percent ACP reciprocity levels; the EPA alternative to EPA establishment, where LDC ACPs and non-LDC ACPs pursue EU market access under, respectively, the Everything-But-Arms (EBA) or EBA initiative and GSP; simulations permitting ACP exemptions from EPAs of “sensitive products;” simulations estimating effects of ACP integration through liberalization of inter-ACP trade barriers; and effects on EPA influences from preference erosion from EPA parties’ trade arrangements with non-ACP regions. And fourth, a set of “qualitative patterns” of the literature’s quantitative estimates of EPA-induced impacts on specific regions and countries is provided from the review of the very diverse and varied 14 studies.

### **Pressing Issues of Controversy**

Most discussion of EPA-related issues of controversy is provided by the DIIS researchers in their portion of this project. Only three issues are mentioned here in an attempt to focus on those that either were quantitative in nature, or those which were of socio-economic importance and for which the literature provided quantitative estimates. First is regional integration, that is, the liberalization of inter-ACP trade barriers. This issue has been ongoing before the proposition of EPAs and can be considered independently of EPA establishment. Nonetheless, such ACP regional integration through inter-ACP trade barrier liberalization has potentially great economic benefits for ACPs, and generally has a cost for the EU exports in terms of welfare levels.

Second, there are a number of quantitative attempts to estimate the effects of including trade-enhancing services such as financial/banking services, infrastructure improvements, multinational customs systems, multinational markets for utilities, collective strategies for enhance free market efficiency, among others, in order to take adequate advantage of economies of scale that would provide trade-supporting and trade-enhancing services to ACPs. The literature suggests that adding a number of domestic support policies, taxes, and export subsidies to the list of liberalized policies under an EPA would have noticeable net benefits that would vary greatly across ACPs and ACP regions.

And third, there is group of quantitative issues that include trade creation vs. trade diversion, GE vs PE modeling frameworks, and the realism of model assumptions. For the most part, the literature concludes that substantial parts of EPA-elicited trade increases will arise from trade diversion from already established and perhaps more efficient ACP export suppliers. Trade diversion is expected to be particularly pronounced in the Caribbean ACPs insofar as the USA is already the dominant and perhaps more efficient pre-EPA supplier in the Caribbean basin. Another study suggests that in major African regions, only about a third of EPA-elicited trade increases will arise from new trade creation, while two thirds may arise from trade diversion from other current pre-EPA suppliers. Generally, the more comprehensive GE studies appear superior and to generate more reliable results than less comprehensive PE studies. FOI staff provides some rationalizations for using what some believe are unrealistic model assumptions. That is, models should be compared according to their ability to predict information beyond their information sets rather than on the alleged realism of their assumptions.

### **General Quantitative Effects on ACPs Aggregately and the EU**

Generally, the GE studies that capture an expansive set of direct and third country trade effects suggest that the EPAs will not be particularly beneficial to ACP regions and economies, and in fact may be more costly to ACPs than forgoing the option of EPA establishment and having LDC ACPs and non-LDC ACPs pursue EU market access under, respectively, the EBA initiative and GSP preferences. There is a greater proclivity for studies to generate beneficial EPA-induced effects when analytical methods are partial equilibrium in nature and when methods focus on single regions or ACP countries, and on a limited number of sectors. This is likely because the PE studies fail to capture a full array of substitution effects among different sectors, cross-country effects such as preference erosion, and a broader array of efficiency considerations by supplier-countries that are captured by the more broadly focused GE analyses.

The globally oriented quantitative literature that comprehensively examines concurrent implementations of EPAs suggests that the EPAs would be quite costly to the 78 ACPs aggregately. For ACPs aggregately, such literature suggests that the proposed EPAs would result in welfare declines upwards of US\$ 800 million, real GDP declines more than US\$ 180 million, noticeable declines of US\$ 1.2 billion in the aggregate trade balance, and decreases of over US\$ 400 million in regional inter-ACP

trade. Nearly all studies project serious EPA-elicited consequences on ACP operating revenue resources from declining tariff collections. Such EPA-induced revenue consequences are estimated and defined in a number of different fashions in the quantitative literature. One is an EPA-elicited fiscal loss measure that was vaguely defined and related to reduced tariff collections.<sup>3</sup> Such EPA-induced fiscal loss was estimated at -0.7 percent of GDP for the ACPs aggregately. Generally, all studies reviewed, whether GE or PE in nature, projected substantial EPA-induced revenue losses from reduced tariff collections. Such revenue reduction estimates ranged very widely. For example (among others), EPA-elicited revenue reductions ranged for individual ACPs from about 2.5 percent of Nigeria's operating budgets to as high as 10-20 percent for such countries as Ghana, Gambia, and Senegal.

For ACPs generally, EPAs would lead to a drop in domestic production and a rise in imports of manufactured goods, while production and exports of agriculture, food, and natural resource products would modestly increase. Sales from ACP exporters would likely rise at a slower rate on the EU market than growth in EU exports onto ACP markets. The relatively efficient EU exports would consequently gain more from the quasi-duty-free access to the protected ACP markets than ACP exporters have to gain on the EU markets that are already quite open to them.

The GE literature on quantitative EPA impacts suggests global concurrent implementation of the proposed EPAs will impose aggregate ACP costs that increase/decrease with the percentage of EU-sourced imports covered by the agreement (denoted levels of ACP reciprocity). For example, as reciprocity declines from 100 percent to 80 percent for ACPs aggregately: EPA-induced declines in welfare drop from nearly US\$ 2 billion to about US\$ 850 million, and declines in regional trade drop from over US\$ 700 million to a far lower US\$ 400 million.

The EU economy appears a clear winner from EPAs, as ACPs gain little in terms of additional trade to the EU, a market to which ACPs already enjoy liberalized access, and as the EU gains substantial access to ACP markets that are currently rather protected against EU-sourced products. Under an EPA with assumed 80 percent ACP reciprocity, EU welfare rises upwards of US\$ 1.6 billion with a slight 0.1 percent rise in

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<sup>3</sup> We note the Perez's (2006, p. 1008) imprecise definition of fiscal loss. He defines fiscal loss as potential ACP losses added to the elimination of tariffs on the main source of custom revenues leading to a drop in GDP. We did our best to interpret this vague definition and related it to EPA-induced revenue effects.

GDP. As well, EU exports noticeably increase US\$ 1.7 billion, with especially large increases of EU sales to Caribbean and Sub-Saharan African or SSA ACPs.

### **Effects of Alternative EPA Settings and Other EPA-Relevant Developments**

**Alternatives to EPAs and increased flexibility for “sensitive products”:** The primary EPA alternative is where no EPAs are initiated and EU market access is attained under the Everything-But-Arms or EBA initiative for lesser developed country or LDC ACPs and under the Generalized System of Preferences or GSP preferences for the non-LDC ACPs (hereafter denoted the GSP option). A number of simulations where ACP exemptions from EPAs for sensitive products were found.

The GE quantitative literature clearly suggests that the EPA alternative is far less detrimental or costly to the ACPs aggregately. For the ACPs generally under the GSP option: aggregate welfare loss of more than US\$ 450 million would be only about half as under the EPA setting; GDP declines would be only 43 percent of those under the EPA setting; the decline in the aggregate trade balance of more than US\$ 200 million would be less than a fifth of that under the EPA setting; regional trade would rise slightly rather decline by about US\$ 400 million under the EPA setting; and insofar as most tariffs would be collected, drops in revenues would be virtually zero.

Providing ACPs flexibility in reciprocity via permitted exemption of “sensitive products” noticeably softens adverse impacts associated with the EPAs. In fact, the above GSP option coupled with an ability to add 250 Harmonized System or HS tariff lines as “sensitive products” (hereafter the GSP+250 option) greatly reduces adverse costs, and registers some benefits, for the ACPs aggregately. Such a scenario appears superior for ACPs generally than concurrent implementation of the proposed EPAs or under the EPA setting alternative, the GSP option.

The GSP and GSP+250 options appear much more attractive for ACP countries and to the world as a whole: compared with the standard proposal, welfare and output declines would be less; trade balances would improve; public revenues would be preserved; and ACP industrial production would be relatively enhanced. These options lead to a growth in industrial output as ACPs adjust to higher EU tariffs on agricultural exports and switch resources from agro-processing industries to other industrial enterprises. The rise in inter-ACP trade under these two options is due to the option’s higher protection level for ACP-based industries than accorded under the standard EPA option.

The EU clearly fares worse under the EPA alternative (GSP option) than under the EPA scenario. Under the GSP option alternative to the EPAs, EU gains in welfare and GDP are only a fraction (some estimate a fifth) of those achievable under an EPA setting.

**Regional integration.** Some GE analyses attempted to estimate the impacts of inter-ACP trade liberalization, although Perez (2006, p. 1010) contends that such regional liberalization has been occurring for many years and could very well be achieved of its own accord. Hence, the issue may be considered independently of, EPA agreements. Perez (2006, p. 1010) provided the best and most comprehensive GE simulation and found that, as expected, the EU would be the big loser from regional integration, with more than a US\$ 120 million decline in welfare. Aside from modest welfare declines for the SADC region in Africa, regional integration is expected to enhance welfare levels in other ACP regions.

**Quantitative result patterns at the for region-specific and country-specific levels.**

As noted, the 14 studies are very varied and difficult to compare. Yet a number of common qualitative patterns concerning the studies' quantitative estimates of EPA-induced effects do emerge. Specifics on these qualitative patterns emerge from the ensuing quantitative effect summaries, the Appendix A article/report summaries, and from a careful reading of the 14 studies and reports themselves.

- The magnitudes and whether EPA impacts on individual ACPs are positive or negative hinge on two factors. The first factor is the relative macroeconomic profiles of the ACPs before the agreement. For example, trade effects differ depending on if the pre-EPA trade balances are surpluses or deficits and on the size of such surplus and deficit levels. And second, the magnitudes and signs of such EPA-induced impacts on ACP economies depend on if the EU or another region (say the USA in the Caribbean basin) is the dominant and efficient pre-EPA supplier to the ACP economies.
- EPAs will likely elicit substantial trade diversion, especially in Africa and the Caribbean. It has been estimated that in Africa (SACU), two thirds of EPA-induced trade changes will be attributable to trade diversion, while only a third will likely arise from trade creation. As well, studies contend that trade diversion will be particularly severe in Caribbean ACPs where the USA is already the dominant and perhaps lower cost supplier. In fact, one study concludes that for

Caribbean ACPs, enhanced trade liberalizing arrangements with the USA may be more ACP-beneficial than an EPA with the EU.

- Preference erosion from EU trading arrangements with other non-ACP regions, especially in Latin America, will likely noticeably reduce ACP benefits from EPAs with the EU.
- Most studies, be they GE or PE in nature, generally suggest that EPAs will likely be welfare-enhancing for consumers in African, Caribbean, and Pacific ACPs.
- EPA-elicited revenue losses are likely to be severe for most ACPs, although most severe for selected African ACPs and less severe for Caribbean ACPs.

# 1. Assignment Goals, Background, Introduction, and Report Structure

This assignment for FOI staff is to provide an overview of studies in the literature on quantitative analyses of impacts from Economic Partnership Agreements (EPAs) between the European Union (EU) and six specified groups of 78 designated African, Caribbean, and Pacific (ACP) nations. The report should include an overview of quantitative analyses of the effects on global, ACP regional, ACP, and EU economies of

(1) ACP import liberalization for goods and services, including sensitive product scenarios, and

(2) EU market access modifications for goods and services, including any estimated impacts from preference erosion, elimination of special protocols, and sensitive product scenarios; as well as

(3) an overview of estimates of revenue impacts from the lessening of tariffs and import duties inherent under the proposed EPAs.

These effects are collectively denoted as “Parliament’s requested effect estimates.” Such overviews should identify important proposals submitted by the EU, ACP trading partners, and third parties; outline issues of controversies; discuss the methods taken by the literature’s quantitative studies; and chronicle the assumptions under which the various quantitative studies were conducted.

We have identified 14 important studies that range from academic journal articles to reports compiled by government agencies or research institutes. Generally, there are three basic kinds of studies.

- Rather non-quantitative studies that examine either controversial quantitative issues or relevant controversial issues of political or economic note, and for which the quantitative literature has generated empirical estimates.
- Quantitative studies that focus on global, regional, and ACP impacts with general equilibrium or GE frameworks. These are further subclassified below according to the degree to which the frameworks are applied to the EPA issue: a full treatment of all six proposed EPAs or using a GE model to “par-

tially” address the EPA issue by examining on a subset of the proposed EPAs (perhaps a single EPA of the six proposed).

- Quantitative partial equilibrium or PE studies that forgo global coverage and/or coverage of all proposed six EPAs for the advantage of disaggregated detail. These studies tend to illuminate EPA-induced impacts on specific regions, specific ACP economies, and/or specific economic sectors, subsectors, and/or industries.

The quantitative studies are further sub-classified by geographical coverage: those focusing on global effects of EPAs on all ACPs generally; studies that focus on EPA-induced effects on African ACP regions and economies (the most numerous subcategory); the second most numerous class of studies that focus on EPA-induced effects on Caribbean regions and economies; and finally, a class that focuses on EPA-induced impacts on Pacific ACP regions and economies. No quantitative studies were found with a dedicated Pacific ACP focus, although many of Parliament’s requested effect estimates for Pacific areas were provided in some of the more globally oriented GE studies.

As a result, this report is comprised of the following five sections.

I. This preliminary section discussing assignment goals, background, introduction, and report structure.

II. A section on an array of controversial issues: issues with important socio-economic and/or political content that the proposed EPA negotiations would address, and issues that are quantitative and/or methodological in nature. To avoid undue overlap with DIIS’ research, we limit our coverage of socio-economic and political issues to those for which reviewed quantitative studies have generated estimates/analysis.

III. A section that provides an overview of the above-cited quantitative effects mandated by Parliament’s requested effect estimates. Generally, this is subdivided into effect overviews by GE studies and by PE studies.

IV. Appendix A that provides separate overviews of the 14 reviewed studies. The studies varied widely in terms of applied assumptions, baseline/benchmark settings, period of analysis, geographic focus, breadth of coverage of the six proposed EPAs,

definition of regions (e.g., EU25 and EU27), economic sectors or industries examined, and issues of primary focus. And as a result, covering all such Parliament-requested items for each and every study was not readily possible in the first summary-oriented sections of this report, and could only be cogently provided on an article by article basis in the Appendix. We compiled the Appendix to ensure complete provision of Parliament's requested information for each study, as well as to provide detail-oriented readers with more technical substance on each study or article not easily included in summary-oriented sections II and III above.

V. The final section provides the cited and reviewed References.

## **Background**

The EU currently negotiates Economic Partnership Agreements (EPAs) with six groups of African, Caribbean and Pacific (ACP) Regional Economic Communities (RECs). The deadline for the negotiations is 31 December 2007 as outlined in the Cotonou agreement signed by the parties in June 2000. The Cotonou agreement follows a long chain of cooperation agreements between the EU and ACPs that emerged from the Yaoundé and Lomé conventions, the first one introduced in 1963. Under these conventions, the EU granted non-reciprocal preferential market access to former colonies of member states coupled with pledges of development support. The conventions have achieved limited success as evidenced by the disappointing economic performance of the ACP states over the past four decades. Moreover, the current trade arrangements are incompatible with WTO rules.

The world trading system governed by the General Agreement on Tariffs and Trade (GATT) treaty under the WTO operates under the Most Favored Nations (MFN) principle. According to the MFN principle, trade concessions granted by one member state to another should be automatically extended to all other WTO members. There are, however, two main exceptions to this rule. Countries are allowed to establish free trade areas on a bilateral or regional basis, provided that duties and other restrictive regulations are eliminated on "*substantially all the trade*," and that the agreement should be phased in within "*a reasonable length of time*." The other exception is given by the Enabling Clause, authorizing "*preferential and more favorable treatment to developing countries*." That is, any non-reciprocal preferences should be based on objective criteria.

The Cotonou agreement does not conform to any of the WTO exceptions. As trade preferences are granted by the EU on a non-reciprocal basis, the agreement does not liberalize *substantially all trade* and can therefore not be characterized as establishing free trade areas. Similarly, the agreement does not fall under the Enabling Clause, as it excludes developing countries in Asia and Latin America. For the time being, the rest of WTO has granted the EU-ACP a temporary waiver allowing for the continued trade under the Cotonou preferences. However, the waiver expires by the end of 2007, after which time the trading arrangement should be brought into conformity with the WTO rules.

The solution agreed upon in the Cotonou agreement is Economic Partnership Agreements (EPAs). They entail trade liberalization on a reciprocal basis with a view to establishing free trade areas. The EPAs also contain a development component, under which the EU pledges financial assistance to enhance the capacity of ACP economies to engage in the international trading system. Negotiations take place at a regional level, and EPAs are expected to be signed between the EU and six regional groups of ACP countries. The six groups are the following, although there are discussions and negotiations occurring where the country mixes of some of these regions are not concretely set:

1. West Africa (ECOWAS)
2. Central Africa (CEMAC)
3. East and South Africa (ESA)
4. Southern Africa (SADC)
5. Caribbean (CARIFORUM)
6. Pacific

The regional approach was chosen over bilateral agreements to not only limit the number of partners with whom the EU would negotiate, but to also enable the ACP countries to pool negotiation capacities and to facilitate the creation of Regional Economic Communities (RECs). The RECs are encouraged to form integrated common markets, entailing regional free trade, intensified political cooperation, and common institutional development and harmonization. It is hoped that regional integration within the RECs will facilitate the ACP countries' entry into the international trading system by enlarging markets, facilitating increased international division of labor, and allowing countries to exploit economies of scale. As well, regionalization of small ACP economies is desired to generate reasonable economies for trade-enhancing institutions such as regional multi-nation customs authorities; reliable supplies of rea-

sonably priced utilities such as electricity; reliably supplied and reasonably priced banking and finance services; and reliable infrastructures such as shared port facilities and multi-national road networks.

Due to the present preferences' non-conformity with the WTO rules, the status quo is not an option for future EU-ACP trading arrangements. Should an ACP country choose not to take part in an EPA, the only alternatives presently available are existing WTO-compatible preferential access schemes. The 40 of the 78 ACP countries, which are classified as Least Developed Countries (LDCs), are eligible for full non-reciprocal duty-free access to the EU markets granted by the Everything But Arms initiative (EBA). Though seemingly a favorable option for LDCs, its attractiveness may be limited by the greater stringency of the initiative's Rules of Origin and that countries outside the EPAs will not benefit from the agreements' development assistance package. For non-LDCs the only alternative to the EPA is to start utilizing the Generalized System of Preferences (GSP), under which the EU extends non-reciprocal preferential market access to all developing countries. As the GSP is less generous than the Cotonou preferences, this may constitute a worsening of access to the EU markets.

Negotiations between the EU and ACP regions have been seriously delayed relative to the time tables established in the Cotonou Agreement. The slow progress reflects not only widely diverging views on the contents of the EPAs, but also limited negotiating capacities on the part of ACP regions. Funds of the 9<sup>th</sup> European Development Fund (EDF), which should have been used to prepare the launch of the EPAs, have still not been implemented despite being slated for use between 2003 and 2007 (TNI 6(1), Jan-Feb 2007).<sup>4</sup> Although several ACP regions call for an extension of the WTO waiver on the Cotonou Agreement to allow for ample time to finalize the EPA negotiations, the parties declared their intention of finalizing the negotiations within the deadline on a recent ACP-EU Joint Ministerial Trade Committee Meeting. If the EPAs were not in place by 1 January 2008, the EU warned that LDC and non-LDC ACP countries would be granted respectively EBA and GSP preferences (TNI EPA update March-April 2007).<sup>5</sup>

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<sup>4</sup> See The ACP-EU Trade Website at <http://www.eu-trade.org> generally. More specifically, see <http://www.acp-eu-trade.org/index.php?loc=tni/>, the January-February, 2007 and March-April, 2007 updates.

<sup>5</sup> See The ACP-EU Trade Website at <http://www.eu-trade.org> generally. More specifically, see <http://www.acp-eu-trade.org/index.php?loc=tni/>, the January-February, 2007 and March-April, 2007 updates.

## **2. Summary of Key Issues of Controversy in the Literature**

Many key issues of controversy seem to revolve around fundamental differences in views on the virtue of trade in development. From the perspective of the EU, reciprocal free trade is an important pre-condition for successful economic development, as demonstrated by the rapid export-led growth in Asia. Free trade brings economic growth through improved international division of labor, and facilitates exploitation of comparative advantages and economies of scale. Liberalizing investment rules and removing red tape regulation encourages inflow of Foreign Direct Investment (FDI) bringing in much needed capital. New technology embedded in FDI and imports of intermediate goods would help augment productivity growth. However, free trade is viewed as a necessary, but not sufficient, condition. It is recognized that developing countries may not have the capacity to take advantage of the improved export opportunities and of the development assistance package meant to upgrade ACP countries' institutions, production, and infrastructures. Further, the EU is very concerned that unless such financial assistance is completely decoupled from the EPA negotiations, such negotiations could become all or in part negotiations for money rather than for trade liberalization.

In contrast, ACP countries view reciprocation as a necessary and perhaps not entirely desirable precondition for ACPs in order to obtain WTO conformity of preferential access to the EU market. Some contend that the third world status of many ACPs should entitle them to free access to rich countries' markets without being forced to open their own markets as much to the highly competitive industrial country imports and risk displacement of their nascent industries. Consequently, their trade liberalization commitments should be as limited as possible, taking advantage of all flexibilities allowed by WTO law, such as exempting highly sensitive products, long transition periods and establishment of special safeguard measures. On the other hand, ACP countries place great emphasis on the development component of the EPAs, stressing that increased and reliable financial assistance is crucial for their development prospects irrespective of how much they agree to open up their markets.

The most important issues of controversy were gleaned generally from all cited references, although the following five were particularly helpful in issue delineation: Hinkle, Hoppe, and Newfarmer (2005); Keck and Piermartini (2005); the Overseas Development Institute (2006); Perez (2006), and van Hoestenbergh and Roelfsema (2006).

### Poor regional integration of ACP product markets.

Consider the case of Sub-Saharan Africa or SSA in order to illuminate the nature of this issue. On average, only 15 percent of exports and 10 percent of imports of SSA ACPs originate in that area. There are significant trade barriers among SSA ACPs from high border costs, restrictive rules of origin, poor infrastructure, and continued existence of mutual tariffs on each others' products despite a proliferation of regional agreements. As well, there are examples of poor implementation of inter-SSA ACP regional agreements, inconsistency of tax policies, poor mechanisms of SSA ACP dispute resolution, and of little or no mutual recognition of trade policies.

There is some disagreement to whether or not regional integration is part of an EPA or should be seen in isolation. The regional approach of the EPA negotiations speaks in favour of making closer regional integration a part of an EPA, and Karingi et. al. (2005) argues that regional integration should precede the implementation of free trade agreements with the EU to prepare ACP countries for international competition. On the other hand, in most quantitative studies, incl. Perez (2006), Keck and Piermartini (2007) and Karingi et. al. (2005), regional integration is treated as a separate issue and is not part of the standard EPA option.

Perez (2006, pp. 1009-1010) estimated that full liberalization of all inter-ACP trade for countries within the six EPA regions would generate substantial economic impacts – mostly beneficial although some adverse – as seen from table 1. Such inter-ACP liberalization would generally have modest adverse impacts on the EU27.

**Table 1. Selected Benefits of the Regional Integration for Selected ACP Countries Regions**

Region	Trade balance, millions US\$	GDP% Changes	Welfare changes, millions US\$
SADC	+24	-0.08	-26
SSA	-56	+0.33	+71
Pacific region	-295	+0.34	+157
CARICOM	+3	0	+3
South Africa	-12	0.03	+8
EU27	107	0	-126

Source: Perez (2006, p. 1010)

However, the studies reviewed do not report on the impacts of EPAs combined with regional integration, and the combined impact cannot necessarily be inferred by adding the impacts of isolated EPA and regional integration scenarios. Isolated EPAs between ACP countries and the EU would resemble a “Hub-and-Spoke” trade system, with the EU entering bilateral free trade agreements with each ACP country in isolation and no liberalisation among ACP countries. This is how EPAs are typically modelled in the literature. Such agreements risk substantial welfare reducing trade diversion as south-south trade is redirected towards the EU. In contrast, liberalising inter-ACP trade as part of an EPA would reduce trade diversion and limit any adverse impacts of EPAs on ACP countries.

Additionally, EPA negotiating processes and EPA-induced regional integration can conceivably overcome or improve what is reportedly a constraint to trade: inadequate quality and access levels of such trade-facilitating services as phone services, utility services, financial and banking resources, transport services, etc. Reportedly, 52 percent of surveyed SSA ACP firms reported unreliable electricity as a constraint, as opposed to 24 percent of firms in East Asia (Hinkle, Hoppe, and Newfarmer). ACP countries are often of an inadequate size so as not to offer adequate economies of scale such that services actually provided are of questionable quality, are delivered in unreliable supplies and are exorbitantly priced compared with more affluent areas. EPA negotiations and regional integration plans could focus on creating multinational SSA, ACP markets, regulatory bodies.

**Focus the EPA negotiating process on trade-implementing services, “Singapore issues,” and other trade-related issues.**

The EU proposes deepening the EPAs to not only include reductions of tariff and quantity restrictions, but also liberalization of trade in services and other trade related issues, such as investment rules, intellectual property rights, government procurement, competition policies, and environmental and labor regulation.

Very little quantitative work was found on this issue in the EPA literature, aside from Keck and Piermartini’s (2007, pp. 41-46) GE global analysis of a single EU EPA with the African SADC region. Basically, they simulated a sixth experiment where they added the elimination of a number of trade-relevant policies associated with this issue to their simulation of an EU/SADC EPA, and attributed changes in net welfare movements to the elimination of these trade-related policies and taxes. Results are not that reliable as only a single EPA implementation of the proposed six was exam-

ined. Additionally, results may not be very relevant insofar as the array of added domestic policies, export subsidies, and selected taxes are likely not highly concurred with the set envisioned by van Hoostenberghe and Roelfsema (2006) and Hinkle, Hoppe, and Newfarmer (2005) as comprising this issue. Yet Keck and Piermartini's (2006, pp. 41-46) results suggested that adding a number of domestic support policies, taxes, and export subsidies to the list of liberalized policies would have noticeable quantitative impacts on an EPA's net benefits that would vary greatly across ACPs and ACP regions, and that could be noticeable for selected EPA regions. The biggest winner would likely be the EU. Specifically, transforming the initial EU/SADC EPA through the added liberalization of an array of other barriers and policies that include import barriers, export subsidies, taxes as well as product-specific domestic support and taxes would bolster EU welfare increases substantially from US\$ 600 million to US\$ 1.73 billion, while welfare levels of such SADC ACPs as South Africa, Zimbabwe, Tanzania, and Malawi would be little-altered from those achieved under the initially considered EPA (Keck and Piermartini 2006, pp. 41-46).

### **Trade creation vs. trade diversion, & other theoretical and methodological issues**

A number of methodological and theoretical issues are addressed by the reviewed quantitative studies: (i) the general equilibrium and partial equilibrium approaches, (ii) the realism of underlying model assumptions, and (iii) trade diversion vs. trade creation.

**General equilibrium and partial equilibrium model approaches.** The typical approach to analyze trade policy scenarios is using some applied economic model, i.e. specifying a number of mathematical equations representing the structure of an economy, apply real world data and then see what happens when the values of one or more variables are changed. A whole range of different types of models are available, and the choice among different models involves trade-offs.

The most fundamental choice to make is between a Partial Equilibrium (PE) and a General Equilibrium model. Whereas the GE model represents the whole (possibly global) economy, the PE model reflects only the countries, sectors, or industries of interest to the analyst and therefore ignores any inter-sectoral linkages in the economy. For instance, in analyzing the impact on agriculture of liberalization of food trade, use of a partial equilibrium model would ignore indirect effects on the manufacturing and services sectors. As a consequence of this single sector approach, PE models typically analyze trade policy changes sector by sector or even tariff line by

tariff line, and they therefore ignore potentially important indirect effects of concurrent liberalization of multiple tariffs. Similarly, it is not possible to evaluate welfare implications as only a small part of the economy is accounted for.

Clearly, a GE model is in principle the best model for trade policy analysis. However, a PE model is sometimes more appropriate depending on the objectives of the analysis, due to the somewhat cumbersome use and heavy data requirements of the GE model. Thus, a PE model can be specified at a much more disaggregated level and for a wider range of countries. So there is a tradeoff between a PE model's industry detail and a more aggregated GE model's expanse of coverage.

**Realism of underlying model assumptions.** Another important choice to make relates to the specific assumptions regarding the structure and operation of the economy. Most economic models (GE as well as PE) operate on simplifying assumptions of perfectly functioning neo-classical economies, such as perfect competition on all markets, production characterized by constant returns to scale, fully flexible price adjustments to clear all markets, and costless reallocation of productive resources. Needless to say, such assumptions are not always accurate characterizations of real world economies, particularly developing ones, and often interested parties to research results criticize the unrealism of model assumptions. It is, however, often necessary to make such assumptions due to tractability, data and modeling limitations.

Naturally, such simplifying assumptions ignore potentially important implications of trade liberalization. For instance, the models predict that elimination of import tariffs benefit the consumers on the implicit assumption that the full import price reduction is transmitted directly to consumers. In reality, if this price transmission is less than perfect, e.g. due to monopolistic importers absorbing part of the price reduction, the estimated benefits of import liberalization could be overestimated. Similarly, if domestic producers lack the capacity to expand production to take advantage of new export opportunities, e.g. due to inefficient capital markets, the real gains from improved market access could be reduced relative to model predictions.

Most models also ignore potentially important welfare-improving factors. If the domestic market is characterized by imperfect competition caused by increasing returns to scale, the model predictions do not account for pro-competitive effects of increased imports and/or efficiency improvements due to scale economies made possible by export expansions. The models are typically static, and do not include dynamic aspects of trade, such as capital accumulation caused by rising incomes and capital inflows

and technology improvements embedded in imports and Foreign Direct Investment (FDI).

Given these limitations, a natural question arises: How much faith can we put in the results? All economic analyses are characterised by some degree of uncertainty. The way to deal with this is to be aware of the limitations and interpret the results accordingly. Whether a country gains US\$ 100 million or US\$ 150 million from a given policy experiment is less significant than two important insights that can be drawn from the results:

1. Most quantitative studies report results of multiple scenarios based on the same model and the same basic assumptions. The scenarios vary only slightly with respect to a single or a few policy experiments or assumptions. For instance, Perez (2006) run a whole range of simulations, including one specifying EPAs between the EU and ACP countries and one where ACP countries are granted EBA or GSP preferences. By examining the results of one scenario *relative* to the other, one can isolate the impact of the choice of trade regime. If, e.g. the model used by Perez underestimates the outcome of an EPA, it is likely to also underestimate the outcome of alternative options, whereas the difference between the results of two scenarios remains valid.
2. The analyses highlight key issues and the central mechanisms linking changes in trade policies to economic welfare impacts. In addition to asking whether countries gain or lose from an EPA we also want to know *why* they do so. By reforming trade policies countries typically gain through lower import prices (benefiting firms and consumers) and expanded export opportunities (to the benefit of export firms and workers). However, they may also lose if fiercer import competition drives domestic firms out of business, without providing sufficient off-setting export opportunities. Which of the opposite forces dominate is an empirical question and depends on the size of initial tariffs, trade flows and the relative importance of the different sectors of the economy among other things. The simulations may indicate which sectors drive the main results (as winners or losers) and should therefore receive the most attention in the negotiations. Please note that although we recognise the importance of telling the whole story (results as well as the most important drivers), the studies reviewed in this report do not always provide the needed information.

Finally, an important point to recall on realism of assumptions is one that is increasingly forgotten. Milton Friedman<sup>6</sup> helped to resolve this issue of the unrealism of a model's underlying assumptions long ago for the economics profession. He noted that when judging two models, the criterion should not be the realism of the underlying assumptions but rather on the accuracy with which the two models predict or project information beyond their information sets. Consider two models of a particular market under each of two cases, econometric and deterministic frameworks. Friedman's logic suggests that in judging the two competing econometric models, one should not judge them based on imposed assumptions of, say, perfect or imperfect competition, but rather on which model predicts most accurately beyond the sample (smallest prediction errors). For two competing deterministic models of a market, one should likewise not judge them based on the realism of the perfect vs imperfect competition assumptions, but rather on which model is most accurately validated and simulates most reliably. Friedman noted that often the underlying model assumptions of perfect competition are criticized when applied to imperfectly competitive markets. He demonstrated that a model could appropriately embody assumptions that may be deemed descriptively inaccurate in his classic essay by noting that it is not important if the modeled market is perfectly or imperfectly competitive, but rather it is important and assumption-validating should market agents behave as if the unrealistic assumption (i.e. a perfectly competitive market) holds. And hence, this is where the intuition and "artfulness of modeling" of the researcher enters: to choose assumptions, however descriptively inaccurate, that render a model that predicts market behavior most accurately

**Trade diversion vs. trade creation.** A key objective of trade policy analysis is estimating welfare consequences of liberalization scenarios. Economic theory maintains that multilateral trade liberalization is generally welfare enhancing (assuming perfectly functioning markets and ignoring adjustment costs) as improved international division of labor facilitates exploitation of each country's comparative advantage. However, welfare impacts of regional or bilateral trade liberalization are more ambiguous. Welfare gains derive from *trade creation*, which is expansion in international trade caused by replacement of higher-cost domestic production with lower cost imports. From this is deducted welfare losses from *trade diversion*, implying that

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<sup>6</sup> Friedman, Milton. "The Methodology of Positive Economics." Essay on Positive Economics," in Milton Friedman. *Essays on Positive Economics* (Chicago, IL, USA: University of Chicago Press, 1953). This paragraph's material is based on and inspired by this essay without repeated citations that are implied.

higher cost imports from the preferential trade partner replaces lower cost imports from third countries outside the agreement.

It should be noted that the use of the terms trade creation and trade diversion has become somewhat confused since their introduction by Viner (1950). In many studies (e.g. Busse and Grossman, 2004; Karingi et. al., 2005), any decline in imports from third parties caused by the preferential trade agreement is characterized as trade diversion, whether or not the shifts in trade are welfare-reducing. This is based on the implicit assumption that before the agreement enters into effect, the country imports from the lowest or most efficient cost supplier and that any shift in imports caused by the agreement would consequently imply replacement of low cost with higher cost imports. This assumption holds if pre-EPA international trade is characterized by Most Favored Nations (MFN) tariffs, i.e. identical tariffs on imports from all countries. However, in a world of overlapping preferential trade agreements, this is no longer valid.

Consider a thought experiment, in which Nigeria considers engaging in a free trade agreement with the EU. Suppose the EU supplies clothes at a lower cost (border costs excluding import tariffs) than Ghana. With MFN tariffs, Nigeria would import clothes from the EU and eliminating tariffs on imports from the EU would only result in expansion of trade between the two parties (trade creation). Alternatively, if Nigeria and Ghana were already part of the same free trade area, Nigeria could source its imports of clothes from Ghana despite the fact that the EU is a lower cost supplier, if the tariffs imposed on EU imports are high enough to outweigh the EU's cost advantage. In this case, establishing a Nigeria-EU FTA would cause a welfare-improving shift in the sourcing of clothes imports from high cost Ghana to low cost EU. Such a shift in import sourcing should not be characterized as trade diversion in the original sense – on the contrary, it reverses the trade diversion caused by the Nigeria-Ghana FTA. One should therefore be careful in formulating conclusions on welfare consequences on the basis of trade diversion and trade creation.

Unfortunately, quantitative studies that address this issue use definitions of trade diversion that are open to ambiguity, and/or that vary across studies. Nonetheless, the van Hoestenburgh and Roelfsema (2006) paper noted that recent empirical studies suggest that trade diversion effects could conceivably dominate trade creation effects of some proposed EPAs such that short term and medium term ACP welfare levels may well decline from the EPAs. EPAs could lead to displacement of domestic production without concurrent creation of domestic employment opportunities, and as

perhaps cheaper non-EU trade is diverted to the EU25. This is a key issue of focus for many of the quantitative studies of EPA agreement implementations.

A detailed presentation of quantitative impacts of trade diversion is available below in the quantitative effect summary section, as well as in the relevant appendicized article summaries. We refer to a few examples here. First and for ACPs aggregately, the GE analyses by Perez (2006) and Cernat, Onguglo, and Ito (2007) suggest that trade diversion will likely account for substantial portions of EPA-elicited trade changes. Second, Sandrey's (2006) PE analysis of an EU/SACU EPA using the WITS/SMART model suggested that only about a third of the EPA-induced trade increase of 4 billion South African rands would arise from trade creation, while most or about two thirds would be trade diversion. And in their PE analysis of an EPA between the EU and six Caribbean countries, Gasiorek and Winters (2004) concluded that insofar as the USA is already the dominant and perhaps most efficient supplier to the Caribbean basin, any EPA between the EU and the six countries of focus would likely result primarily in trade diversion from the perhaps more efficient USA towards the EU.

### 3. Summary: Economic Impacts of EPAs in the Literature

As noted above, four kinds of studies were located and reviewed here, and each set is further subclassified based on geographical coverage. First, there are quantitative studies that address global effects of economic partnership agreements or EPAs on the world and on all ACPs generally. Two such studies were located and reviewed here: Perez (2006)<sup>7</sup> and Cernat, Onguglo, and Ito (2007), with the latter being less encompassing than the Perez (2006) study as explained below. Second, there are quantitative studies that focus primarily on illuminating EPA-induced effects on African ACPs economies or regions. This category has the largest number of studies. Third is the second most numerous class of studies that focus on EPA-induced effects on Caribbean regions or economies. And fourth, we attempted to compile a group of quantitative studies on EPA-induced effects on Pacific ACP regions and countries. And since none were found, the globally-oriented first group of studies on ACPs and the global economy provide some estimated EPA effects on Pacific ACPs. In turn, these purely quantitative studies are further sub-classified by whether they employ a partial equilibrium or general equilibrium (“PE” or “GE”) analytical approach:

(1) The first class contains GE analyses of the economic effects of the EPA issue by simulation of scenarios of all six EPA agreements concurrently. The most “successful” GE analysis of the EPA issue was that of Perez (2006), who adapted the GTAP6 model to analyze the *concurrent* implementation of as many of the six proposed EPAs as the model’s aggregations and database would allow, and cautioned readers of certain limitations on result reliability based on these limitations (see Appendix A’s article summary). Throughout, we consider this the one study that came as close as feasible to analyzing the concurrent implementation of the six proposed EPAs. Cernat, Unguglo, and Ito (2007) was a second study that attempted to use GTAP in the same way, but, for reasons not explained in the paper, were unable to model as many of the proposed EPAs with the GTAP6 model as Perez (2006). And as a result, the Cernat, Onguglo, and Ito (2007) study excluded analysis of three proposed EPAs with all/most of Southern, Central, East, and West African ACPs. Although an attempt to

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<sup>7</sup> Perez (2006) generally attempted to use GDAP-6 to model concurrent EPA implementations on the following aggregations: South Africa; rest of the Southern African Development Congress or SADC; the Sub-Saharan African or SSA region; North Africa; CARICOM; as well as two GTAP nation aggregates that included both ACP and EPA-non-relevant non-ACP countries, “Other developing” and “Other developed” regions. Perez (2006) forthrightly requests readers to note that due to the limitations of GTAP-6 aggregation patterns, some of these regions have non-ACP nations not germane to EPAs, and contends that this

conduct a full GE analysis, this latter study's concentration on analysis of the effects of only three concurrent EPAs (SADC, Pacific ACPs, and Caribbean ACPs) was more limited in scope than the Perez study (Cernat, Unguglo, and Ito 2007, pp. 16-17).

(2) The second sort of "GE" analyses tend to use a true CGE world model, but, as with Keck and Piermartini (2007), use it to analyze a "partial" EPA setting: usually of a single EPA. Naturally, the global effects, effects of preference erosion, third country effects, and even the EPA-member country impacts of a one or perhaps two EPAs will likely differ greatly in sign and degree from the more comprehensive analyses of Perez (2006) or Cernat, Onguglo, and Ito (2007) who analyzed multiple concurrent EPA implementations.

(3) Finally, there is a wide array of PE studies concentrating on the effects of a single EPA on specific country/countries and/or on specific industries or sectors of those countries. Comprehensiveness of global coverage is sacrificed for the advantage of disaggregated details.

As a result, we contend that the Perez (2006) study, and to a lesser extent the Cernat, Onguglo, and Ito (2007) study, are the most comprehensive and reliable attempts at estimating EPA-induced effects. Because of the difference in ACP coverage by EPAs, the difference in quantitative approaches, the difference in the degree that studies are partial and general equilibrium in nature, "EPA-induced effects" are difficult to characterize and often incomparable across studies, even at the nation-specific level. In turn, pressures to limit page lengths were apparent in many reviewed studies, especially the academic journal articles, and this led to different authors having chosen different subsets of economic variables to report, which further complicates the establishment of inter-study comparisons and delineation of trends. Consequently, we attempt to summarize across studies and study groups as best as one can, although careful understanding of the nature and limitations of such comparisons is available only through perusal of the individual article summaries toward the end of this report (Appendix A) and ultimately perusal of the cited articles/reports themselves.

## **Effects on global, ACP, and EU regions: Simulations of EPAs, EPA alternatives, and “sensitive product” exemptions.**

Generally, the GE studies that capture an expansive set of direct and third country trade effects suggest that the EPAs will not be particularly beneficial to ACP regions and economies. We found that there is a greater proclivity for studies to generate positive EPA-induced estimates when analytical methods are partial equilibrium in nature and when methods focus on single regions or ACP countries, and on limited sectors of such economies. This is likely because the GE studies are able to capture substitution effects among different sectors, and a broader array of efficiency considerations by supplier-countries not addressed or captured by the more narrowly focused PE analyses (see Cernat, Onguglo, and Ito 2007).

In this subsection, we provide a review of the literature’s estimates of the more macro-oriented and/or global effects induced by EPAs and other relevant simulated scenarios as requested by Parliament. This section includes overviews of quantitative effects, generated primarily by Perez (2006), and to a lesser extent from Cernat, Onguglo, and Ito (2007), that address a number of Parliament’s more specific requests. These reviewed results include influences of simulations reflecting alternatives to the EPA proposals, model simulations that reflect EPAs established under alternatively proposed conditions, the effects of regional integration, and economic effects of “sensitive product” scenarios. More specifically, this section provides overviews of the following:

- Concurrent implementation of proposed EPAs on the 78 ACPs generally. This is table 2’s “standard option” that simulates the concurrent implementation of the proposed EPAs under 80 percent reciprocity, assumed by Perez to be the most plausible definition of “substantially all trade.”
- Perez’s (2006) simulated concurrent implementation of the proposed EPAs on the ACPs under alternative levels of ACP reciprocity: under 50 percent and 100 percent reciprocity levels in addition to the above standard option under 80 percent reciprocity.
- Perez’s (2006) experiment to quantify the effects of forgoing EPAs altogether, called the “GSP option” where EPAs are not implemented and the LDC ACPs revert to EBA and non-LDC ACPs proceed under GSP preferences.

- Perez’s (2006) alternative scenario whereby ACPs exempt 250 additional HS lines to account for “sensitive products” (denoted the “GSP+250” option in table 2). This is the GSP scenario modified with ACP product exemptions for 250 HS lines to permit flexibility to exempt sensitive products.
- An alternative scenario that liberalizes the inter-ACP trade barriers to illuminate benefits of regional integration, one of the important issues of controversy surrounding the EPA proposals in the literature. This scenario of full inter-ACP regionalization may well be part of the ultimate outcomes of the EPAs. The inter-ACP trade liberalization is treated as a separate issue and is not added to Perez’s standard option so as to illuminate the specific influences of regional trade liberalization apart from pure EPA effects.
- And EPA-induced effects on the European Union.

**Table 2. Standard scenario 1 EPA vs GSP and GSP+250 options, principal findings.**

Region	Effect	Standard EPA option	GSP option	GSP+250 option
ACPs:	Welfare, millions US\$	-851	- 459	- 51
	Real GDP millions US\$	- 183	- 79	- 9
	Trade balance, millions, US\$	- 1223	+ 234	+ 26
	Fiscal loss (%GDP)	0.7%	0%	0%
	Regional Trade, millions US\$	- 407	+ 60	+ 7
EU27	Welfare, millions US\$	+ 1638	+376	+ 49
	Real GDP, millions US\$	+71	+ 33	+ \$9
Tl. World	Welfare, millions US\$	+263	- 31	0

See Perez (2006, page 1014, table 12)

**Global EPA-induced effects on ACPs:** It is interesting to note that Perez’s (2006) GE analysis concluded that the EPA’s would be quite costly to the 78 ACPs aggregate, and in fact, more costly than the alternative scenarios of the “GSP” option and the “GSP+250” options. For all ACPs, the standard EPA option scenario would incur EPA-elicited declines in welfare of US\$ 851 million, in real GDP of US\$ 183 million, in the trade balance of US\$ 1.2 billion, and of US\$ 407 million in regional inter-ACP trade. Aggregate ACP fiscal losses were not reported, although the following regional estimates demonstrate that such losses are not trivial. That is, fiscal losses from EPA-induced declines in tariff collections would range as a percentage of ACP regional GDP levels from -0.2 percent for CARICOM, to -1.0 percent for the SADC,

to -1.6 percent for Pacific ACPs.<sup>8</sup> These fiscal losses noticeably decrease/increase as the level of reciprocity decreases/increases (Perez 2006, p. 1008).

Perez (2006) further concluded that the six concurrently implemented EPAs would, for all ACPs globally, lead to a drop in domestic production and a rise in imports of manufactured goods, while production and exports of agriculture, food, and natural resource products would rise, albeit modestly. A number of reasons were provided (Perez 2006, pp. 1006-1009). Sales from ACP exporters would likely rise at a slower rate on the EU market than growth in EU exports onto ACP markets. The relatively efficient EU exports would consequently gain more from the quasi-duty-free access to the protected ACP markets than ACP exporters have to gain on the EU markets that are already quite open to them (Perez 2006, pp. 1006-1009).

Additionally, the decline in trade balances of both the EU and ACPs may seem surprising or even incongruous as EU firms indeed bolster ACP-bound exports and ACP firms bolster EU-bound exports. The reason for declines in EU and aggregate ACP trade effects lie in third country effects. The total exports rise by less than the rise in total imports for both the EU and aggregate ACP region. More specifically, EU firms export more towards ACP countries, but at the expense of non-ACP ROW markets and even its own inter-EU trade; ACPs export more to the EU but less among themselves; and the non-ACP countries export less to the ACPs but sell more to non-ACP markets and even to the EU (Perez 2006, p. 1006). These trade flow changes in turn lead to shrinkage of ACP output levels, largely from declines in heavy and light manufactured goods.

In their more limited analysis, Cernat, Onguglo, and Ito (2007, pp. 17-18) reported largely positive welfare changes from EPA-induced tariff reductions: welfare increases of US\$ 94 million for Pacific ACPs, US\$ 145.4 million for Caribbean ACPs, and US\$ 526 million for SADC countries. This study only reported an abbreviated set of net welfare results with little or no explanation.

**Effects of EPAs under different levels of ACP Reciprocity:** Noting the above table, Perez (2006) also implemented a number of alternative runs based on the propor-

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<sup>8</sup> We note the Perez's (2006, p. 1008) imprecise definition of fiscal loss. He defines fiscal loss as potential ACP losses added to the elimination of tariffs on the main source of custom revenues leading to a drop in GDP. We did our best to interpret this vague definition and related it to EPA-induced revenue effects.

tion of HS lines of ACP imports of EU products granted reciprocity (hereafter, degree of reciprocity): 80 percent (deemed most plausible and his standard EPA option), 50 percent, and 100 percent, the latter two of which Perez (2006) conjectures are not plausible EPA options. He suggests that under a global setting of full implementation of all proposed EPAs, the level of ACP reciprocity on EU-sourced imports (hereafter, reciprocity) noticeably affects the level of EPA-induced welfare impacts on all ACPs generally world wide. For example (Perez, 2006):

- Under the standard EPA option with 80 percent reciprocity, ACP welfare would fall US\$ 851 million, and inter-ACP trade would fall US\$ 407 million;
- Welfare would fall by a far lesser US\$ 309 million and inter-ACP trade would decline by a more moderate US\$ 179 million under 50 percent reciprocity.
- Adverse ACP impacts would rise noticeably under full 100 percent reciprocity. Welfare would fall US\$ 1.89 billion and inter-ACP trade would fall by US\$ 734 million.

Important findings by Perez (2006) suggest (i) that concurrent implementation of the proposed EPAs would be costly for ACPs, (ii) the costly EPA-induced ACP effects are highly sensitive to the level of reciprocity chosen, and (iii) the EPA scenario would likely incur more costs for ACPs globally than would opting-out of EPA agreements and following EBA/GSP alternative scenarios.

**Comparative Effects of simulated EPA Setting Alternatives:** Table 2 summarizes Perez’s (2006) effects for the “GSP option scenario” alternative to establishing the proposed EPAs, where the LDC ACPs continue with EBA and the non-LDC ACPs proceed under GSP preferences in the EU market. Clearly, Perez’s findings suggest that the ACPs aggregately would be far less worse-off under this GSP option than under the standard EPA option. Under the GSP option, aggregate ACP welfare losses would be US\$ 459 million compared with US\$ 851 million under EPAs; GDP losses would be a less severe US\$ 79 million as compared with US\$ 183 million under EPAs; the aggregate trade balance would actually increase by US\$ 235 million as opposed to a US\$ 1.22 billion decline under the standard EPA option; and fiscal losses would be about zero.

Perez (2006, pp. 1012-1013) further notes that contrary to the EPA proposals, the GSP option leads to a growth in industrial output as ACPs adjust to higher EU tariffs on agricultural exports and switch resources from agro-processing industries to other industrial enterprises. The rise in inter-ACP trade under the GSP option is due to the option's higher protection level for ACP-based industries than accorded under the standard EPA option. Fiscal losses are lessened to or near zero under the GSP option as tariffs on EU imports continue to be collected.

**Sensitive Product Simulations for all ACPs:** The final column in the table suggests that increasing ACP flexibility by lessening reciprocity to permit ACP exclusion of an additional 250 HS tariff lines of "sensitive products"<sup>9</sup> is generally, by far, the least costly scenario for ACPs aggregately than the EPA and alternative GSP simulations. More pointedly, Perez's final simulation suggests this is optimal for the ACPs. More specifically, Perez's final simulation of the GSP option plus exemption of 250 sensitive product lines suggests that aggregately across all ACPs: no appreciable fiscal losses would arise; welfare would drop by only US\$ 51 million, a fraction of the other two scenarios' loss estimates; GDP loss would be a negligible US\$ 9 million; and the trade balance would actually increase by US\$ 26 million rather than decline. Perhaps as interesting, the table suggests that the GSP+250 or "sensitive product" scenario would be far less beneficial to the EU than the EPA and GSP simulations.

Perez (2006, pp. 1013-1014) explains that abandoning Cotonou preferences and the potential of the EPAs for the GSP+250 scenario would leave the preferences that ACP exporters currently enjoy on EU markets effectively undiminished. So the trade effects of this proposal noted in table 2 are muted. A US\$ 100 million decline in ACP exports to EU markets are largely offset by an increase in ACP sales to non-EU and fellow ACP markets, which in turn combines with a modest drop in ACP imports, so as to generate a slight positive improvement in the table 2's ACP trade balance.

**Increased ACP Integration:** Perez's (2006) fourth scenario focuses on the important issue in the literature of ACP impacts of enhanced regional integration via liberalization of inter-ACP barriers. Perez concludes that there are substantial benefits but such enhanced integration benefits have little or nothing to do with EPA implementa-

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<sup>9</sup> Unfortunately, Perez (2006, p. 1005) does not exactly define which 250 lines are exempted other than that "These extra tariffs are the lines where the weighted difference between the Cotonou and GSP tariffs are the largest for the non-LDC ACP exporters." Perez (2006, p. 1013) does however label this scenario as an attempt to discern effects of exempting "sensitive products."

tion. Liberalizing inter-ACP trade barriers boost ACP regional trade by US\$ 1.9 billion and enhance aggregate welfare US\$ 200 million (Perez 2006, p. 1009).

**EPA-Induced Effects on the EU and Global Economy:** Perez's (2006) analyses suggest that EU27 and world economies fare more positively relative to the ACPs with the concurrent implantation of the proposed EPAs. Perez (2006) and Cernat, Onguglo, and Ito (2007) generated a number of impacts of concurrent implementation of multiple EPAs on the EU and global economies:

- Results suggest that EU27 exports increase a net US\$ 1.7 billion. Among the regional changes leading to this net total, EU exports to the SSA very noticeably rise by US\$ 6.42 billion; to the CARICOM region rise by US\$ 2.24 billion; to the Pacific region rise by US\$ 1.24 billion; and to the SADC rise US\$ 677 million. Meanwhile, EU exports to fellow EU27 members and to the non-ACP ROW fall US\$ 8.88 billion.
- Under Perez's (2007, p. 1007) standard EPA run, the EU economy would fare well: although the trade balance would fall US\$ 249 million, GDP would rise 0.1 percent and EU27 net welfare would rise US\$ 1.64 billion. Cernat, Onguglo, and Ito's (2007) estimate for EPA-induced EU welfare gain was much larger: about US\$ 5 billion.
- As expected, Perez (2006, p. 1007) suggests that concurrent implementation of the proposed EPAs would generate EU effects, that are generally beneficial, but would decline with the percentage of ACP reciprocity granted to EU-sourced imports. Implementation of the proposed EPAs would generate: GDP increases of 0.1 percent under the standard EPA option (80 percent reciprocity) and 0.01 percent under 50 percent reciprocity; declines in the trade balance of US\$ 230 million under 80 percent reciprocity and US\$ 79 million under 50 percent reciprocity; and net welfare increases of US\$ 1.64 billion under 80 percent reciprocity and US\$ 765 million under 50 percent reciprocity (Perez 2007, pp. 1006-1008).
- Overall, EU exports of manufactured goods (light, heavy, industrial) to ACP countries would rise, as would EU27 imports of ACP farm, processed food, and natural resource products (Perez 2007, pp. 1006-1008).

- Under Perez's (2007) standard EPA option, world trade volumes rise on net US\$ 3.39 billion.

### **EPA-induced impacts on African ACPs.**

Perez (2006, p. 1007) estimated that under a global setting of full implementation of all proposed EPAs, Africa would not generally fare well. For the SSA, GDP would likely drop 1.4 percent; the balance of trade would fall by US\$ 753 million; and welfare would drop US\$ 612 million. For South Africa, GDP would drop 0.44 percent, the balance of trade would rise US\$ 97 million; while the country's welfare level would fall US\$ 126 million. In their GTAP analysis of selected EPAs with African regions (primarily the SADC region), Cernat, Onguglo, and Ito (2007) on the other hand estimated a rise in SADC African welfare from US\$ 526 million to US\$ 772 million from EPAs, although their analysis was far less encompassing than Perez's (2006) and included only three EPA implementations. They acknowledged that GTAP regional aggregation, data, and other limitations led to the inclusion of EPA effects on only a limited number of African regions, and to the outright exclusion from their analysis of implemented EPAs for many West, Central, and Southern African countries. As a result, Cernat, Onguglo, and Ito (2007, p. 16) admit the potentially incomplete nature of their own results.<sup>10</sup>

There seems some consensus over a wide range of African-oriented quantitative studies (Appendix A) on how the African trade patterns mix will be altered through EPA implementation. EPA agreements will likely lead to increases in African imports of EU and ROW manufactured goods (light and heavy), while African exports of processed food and some farm and natural resource products would modestly increase (Perez 2007; Keck and Piermartini's 2007; Karingi et. al (2005), among other studies).

Perez (2006) suggests that under a global setting of full implementation of all six proposed EPAs, the level of ACP reciprocity on EU-sourced imports (hereafter, reciprocity) affects the level of EPA-induced impacts on African countries with marked sensitivity. For the SSA, he estimated that GDP would drop by 1.4 percent with 80 percent reciprocity and by only 0.4 percent with 50 percent reciprocity; the trade balance would fall US\$ 753 million with 80 percent reciprocity and by only US\$ 437

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<sup>10</sup> It was not evident from the two studies why Perez (2006) was able to obtain a more comprehensive coverage of the effects of the 6 proposed EPAs that Cernat, Onguglo, and Ito (2007) were not able to obtain, even though both used the GTAP-6 model.

million with 50 percent reciprocity; and welfare levels would decline by US\$ 612 million under 80 percent reciprocity as compared with only a drop of US\$ 167 million under 50 percent reciprocity. For South Africa: GDP would fall 0.44 percent under 80 percent reciprocity and by only 0.2 percent under 50 percent reciprocity; the balance of trade would rise US\$ 97 million under 80 percent reciprocity and by US\$ 40 million under 50 percent reciprocity; and welfare levels would fall US\$126 million under 80 percent reciprocity and by a lesser US\$ 54 million under 50 percent reciprocity.

There are a number of PE studies, with less expansive global and product/sector foci, that provided more regionally-specific and market/industry-specific effects from EPAs. Quite varied in geographic and applied methods, and given their inability to capture a more comprehensive array of GE cross-country and economy-wide effects as captured by Perez (2006), EPA-induced effects on African countries and sectors/industries from PE analyses are often generally more positive and beneficial to ACP economies than the GE efforts. This notwithstanding, some PE analyses projected a number of EPA-induced regional costs, especially concerning declines in ACP operating revenues from reduced tariff collections. As well, the PE study findings should consequently be taken with more caution (see Cernat, Unguglo, and Ito 2007). The bullets below do overlap across regions somewhat due to differences in regional aggregations across these less comprehensive studies.

**West Africa: Côte Ivoire, Ghana, Nigeria, Senegal, among others:** Busse and Grossman (2004) estimated EPA-induced effects on West African economies in terms of trade creation, trade diversion, and on tariff revenues. For an array of West African countries, they formulated a series of demand equations for some 1250 HS tariff lines at the 4-digit level, and then zeroed-out tariffs on EU-sourced imports. They acknowledged that their overall positive nation-specific benefits attributed to EPA agreements should be taken cautiously given the limitations of their partial equilibrium approach. EPA-induced increases in West African imports of EU goods range from 5 percent in Guinea Bissau to more than 20 percent in Nigeria.

- Substantial EPA-induced declines in country-specific West African tariff revenues were estimated by Busse and Grossman (2004) and by Karingi et al's (2005) PE analyses. For Nigeria, Busse and Grossman (2004) estimated revenue losses of US\$ 488 million equal to a 2.5 percent drop in the fiscal budget for Nigeria, compared with US\$ 427 million by Karingi et al (2005). For the Côte Ivoire, Busse and Grossman estimated EPA-induced

revenue losses of US\$ 83 million equal to a 4.6 percent decline in fiscal budget, as compared with the US\$ 112 million estimate of Karingi et al (2005). For Ghana, Busse and Grossman (2004) estimated EPA-induced revenue losses of US\$ 91 million equal to 10 percent drop in the fiscal budget for Ghana, as compared to US\$ 194 million estimate of Karingi et al (2005). Busse and Grossman (2004) estimated EPA-induced revenue losses that comprised from 10 to 20 percent of national budgets for the Gambia, Cape Verde and Senegal.

- **Tanzania and Uganda:** Milner, Morrissey, and McKay (2005) developed a static PE method to assess short run welfare, trade, and revenue impacts of EU/African EPAs and then applied the framework to 96 8-digit HS sectors for Tanzania and Uganda. They demonstrated that whether EPA effects are positive or negative hinge on which country/region, the EU or a non-EU country/region, were the efficient and dominant supplier before the EPA implementation. Generally an EPA with Uganda would enhance overall welfare by an amount equal to 0.5 percent of GDP as the country would incite pronounced consumption effects as imports rise and as less efficiently produced imports are replaced with more efficiently EU-sourced goods. An EU/Tanzania EPA would result in net losses equal to about 0.5 percent of GDP. Consumers in both countries would likely benefit from the EPAs.
- **Malawi, Mozambique, Tanzania, Zambia, Zimbabwe:** Wobst (2003) did not analyze an African EPA scenario precisely: rather, he conducted a model simulation with some aspects that resembled an EPA implementation to such an extent that other EPA-oriented studies have cited his work. As a result, we include it in this study. Wobst (2003) used a world CGE model and analyzed the impacts of reduced African import tariffs on five southern African countries of focus: Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe. Wobst imposed a 50 percent reduction in such tariffs which may mimic some aspects of an EPA with the five focused nations. However, readers should be aware that Perez (2006) deems this 50 percent reciprocity too low to be plausible for the SAT requirement of EPAs, and the tariff reductions are offered on all imports and not just those that are EU-sourced. So this Wobst (2003) scenario generates results that may be useful, but not exactly comparable, to those attributed to an EPA with the EU. He showed that the degree of liberalization impacts hinges on

an African country's macroeconomic profile. Imports rise more than 2.4 percent for Malawi and Zimbabwe with relatively low pre-agreement trade deficits and by less (0.4 to 1.4 percent) for Mozambique and Tanzania with larger initial pre-agreement trade deficits. Without reporting specifics, he noted that the tariff cuts generally influenced the nations' consumption patterns, but to different degrees and in different directions depending on macroeconomic structure. Wobst (2003) did not actually report declines in revenues from the tariff cuts. Rather, he suggested that eliminating tariffs on EU-sourced imports would have negative impacts on nation-specific revenue collections in line with the following operating government income shares attributed to pre-cut tariff collections: about 13 percent for Malawi and Mozambique; about 7 percent for Tanzania; and from 27 to 30 percent for Zambia and Zimbabwe. Wobst's (2003, pp. 82-82) suggest that tariff cut-induced revenue cuts are related positively to such proportions.

- **South Africa to proxy SACU:** Sandrey (2006) used the partial equilibrium WITS/SMART model to estimate the trade diversion and revenue impacts on South Africa between the EU and the Southern African Customs Union (SACU). He further offered the proviso that because some 98 percent of the SACU imports are channeled through South Africa, then monitoring EPA-induced effects on South Africa is a reasonable proxy for reflecting EPA impacts on SACU. The EU/SACU EPA would increase EU imports by 4.3 billion rands (R) of which 63 percent or R2.7 billion comprises trade diversion and with only a third or R1.6 billion reflecting trade creation. He concluded that the EPAs would likely have noticeably adverse consequences on SACU revenue collections: the EPA could elicit a 30 percent decline in the SACU revenue pool from pre-EPA levels, and in turn, imply severe budget revenue declines for such nations as Lesotho and Swaziland that heavily rely on the pool.
- **SADC and South Africa:** In their GTAP analysis of an EPA between the EU and SADC, Keck and Piermartini (2006) conclude that the single EPA will generate primarily positive effects for the SADC economies. As Perez (2006) concluded more generally, Keck and Piermartini (2006, pp. 23-27) suggest that the African countries will export more agricultural, textile, processed food, and natural resource products at the expense of manufactured goods. African imports will surge for Malawi and Zimbabwe. Overall, EPA-elicited welfare changes were generally positive. For Malawi,

EPA-induced welfare increases reach about US\$ 60 million, substantially in part from efficiency gains. EPA-induced gains in welfare were registered for Botswana (US\$ 100 million) and Zimbabwe (US\$ 260 million), gains that were driven primarily by terms of trade improvements. The big welfare gainer from the EPA is South Africa, with increases reaching about US\$ 400 million, as allocative efficiency gains exceeded improvements in the terms of trade (Keck and Piermartini 2006, pp. 23-27). Tanzania, Mozambique, and Zambia had little or no change in welfare. Under the EPA, EU welfare rises US\$ 596 million, SADC welfare rises by about US\$ 560 million (Keck and Piermartini 2006, p. 41).

Keck and Piermartini (2007) provide some indications for SADC African economies of inter-regional liberalization and from preference erosion that may arise from EU liberalizations with other non-ACP regions such as Mercosur. They found that the EPA would have generally positive impacts on the SADC region. One outstanding result concerning intra-SADC liberalization emerges: South Africa would particularly benefit insofar as adding intra-SADC liberalization concurrently to an EU/SADC EPA would increase South African welfare gains by more than US\$ 300 million from gains of US\$ 1.2096 billion under the EPA to US\$ 1.5147 billion.

Keck and Piermartini's (2007) results also suggest a number of noticeable effects that arise from preference erosion from a concurrent arrangement between the EU and South America's Mercosur region. Citing these results is meant to be illustrative, insofar as such agreements as with Mercosur are not related to EPA negotiations. As well, there are other potential EU trading arrangements that could conceivably influence the EPA through preference erosion. Yet effects of preference erosion from such concurrent agreements are an important issue in the literature: that is, effects achievable by an EPA may well be reduced by preference erosion from such an agreement as the EU/Mercosur agreement, and should be investigated. Given the concurrent implementation of the EU/Mercosur agreement, Keck and Piermartini (2007) suggest that Zimbabwe's gains in welfare of US\$257.2 million under the EPA would drop US\$ 44 million to US\$ 213.5 million. As well, such a concurrent EU/Mercosur arrangement would likely only slightly decrease South African welfare gains of US\$ 1.2096 under the EPA to US\$ 1.1549 billion.

- **Sub-Saharan Africa or SSA:** Karingi et. al. (2005) also employed GTAP to assess EPA tariff reciprocation on the SSA region. They estimated EPA-elicited welfare gains of US\$ 8 billion amounting to 3.4 percent of regional GDP. Compared with other studies like Perez (2006), these welfare gains seem very high. The largest gains (US\$ 6.1 billion) are attributed to expanded employment of labour. Perez (2006) uses the standard GTAP assumption of constant employment, implying that labour will transfer between economic sectors leaving the total number of people employed constant. In contrast, Karingi et. al. (2005) assumes that labour supply is fully elastic, reflecting underemployment of labour in SSA. With increased production, idle labour is brought into employment generating substantial welfare gains. While SSA manufacturing industries face increased competition from unfettered EU import access, new export opportunities for key SSA sectors arise with the opening of EU markets. Some de-industrialization is expected, as output of formerly protected SSA manufacturing industries is displaced, and while SSA industries in clothing, textiles, and agro-processing are given a “shot in the arm” under the EPA. Similar declines in manufacturing industries and stimulation in farm, textile, and natural resource industries were found for other African regions by Perez (2006), Keck and Piermartini (2007) and Gasiorek and Winters (2004).

### **EPA-induced impacts on Caribbean ACPs.**

Perez (2006, p. 1007) estimated that under a global setting of full implementation of all proposed EPAs, CARICOM economies would face high levels of adverse effects. The trade balance would decline US\$ 249 million, GDP would decline 0.34 percent, and overall regional welfare levels would drop by US\$ 81 million. As with the African ACPs, local production of manufactured goods would likely drop while imports of these goods would rise, a finding verified for specific Caribbean countries below by Greenaway and Milner (2003, p. 12). Cernat, Onguglo, and Ito (2007) reported a positive EPA-induced range of welfare effects, here of from US\$ 145 million to US\$ 182 million for the CARICOM nations. (The latter results should be cautiously considered for previously cited reasons.)

Perez (2006, p. 1008) estimated that EPA-induced losses in Caribbean ACP revenue would generate fiscal losses measured as a percentage of GDP, and such losses would be sensitive to the degree of Caribbean ACP reciprocity granted to EU-sourced imports. Under the standard EPA scenario (80 percent reciprocity), EPA-induced fiscal

losses would be -0.2 percent of GDP -- a percentage loss level that would fall to -0.1 percent under 50 percent reciprocity and climb to 0.5 percent under 100 percent reciprocity. Of all of Perez's (2006) estimated fiscal losses for regional EPAs, the estimates were lowest for the CARICOM EPA.

Perez (2006) suggests that under a global setting of concurrent implementation of all proposed EPAs, the level of ACP reciprocity on EU-sourced imports affects the level of EPA-induced impacts on Caribbean countries with marked sensitivity. For the CARICOM region, Perez (2006) estimated that GDP would drop by 0.30 percent with 80 percent reciprocity and by only 0.2 percent with 50 percent reciprocity; the trade balance would fall US\$ 249 million with 80 percent reciprocity and by a far less US\$ 96 million with 50 percent reciprocity; and welfare levels would decline by US\$ 81 million under 80 percent reciprocity as compared with a drop of US\$ 42 million under 50 percent reciprocity.

There are a number of PE studies with less expansive global and product/sector foci, that provided more regionally-specific and market/industry-specific effects from EPAs. Quite varied in geographic and applied methods, and given their inability to capture a more fuller panoply of GE effects captured in more GE efforts of Perez (2006) Cernat, Unguglo, and Ito (2007), the EPA-induced effects on Caribbean countries and sectors/industries are often generally more positive than the GE efforts. Consequently, we again note that readers would be well-advised to take the PE study findings with relatively more caution (see Cernat, Unguglo, and Ito 2007).

- **Antigua & Barbuda, The Bahamas, Jamaica, St. Kitts & Nevis, St. Lucia, Trinidad & Tobago:** Gasoriek and Winters (2004) provided some general and non-empirical insights of EPA-induced effects on CARICOM countries. They combined graphical analysis and a heuristic analysis of HTS trade flow data at the HS 6-digit level to provide a non-empirical set of likely EPA-induced effects for six Caribbean economies of focus. In Appendix A's summary of the reviewed articles, we examine some concerns over the reliability of this study's findings due to the non-empirical nature of the analysis. Nonetheless, Gasoriek and Winters' (2004) generated three results that provide an effective qualitative summary of what other more precise and empirical studies concluded concerning Caribbean economic impacts of EPAs. First, liberalization by the six focus Caribbean economies with the USA, the current dominant and likely lower cost supplier, may well be more beneficial than an EPA with the EU. Second,

much of the EPA-induced trade will likely not arise from trade creation but rather from diversion from US and other possibly lower-cost suppliers. And finally, they contend that market power in the six Caribbean economies is important and may preclude a maximally equitable distribution of EPA-generated benefits.

- **Barbados, Belize, Dominica, Grenada, St. Kitts & Nevis, St. Lucia, Trinidad & Tobago, and St. Vincent:** Greenaway and Milner developed a partial equilibrium or PE framework to assess the economic effects of reciprocated EPA liberalization with nine focus Caribbean countries in the 15-country CARICOM group. Their partial analysis provided nation-specific effect estimates for Caribbean countries. For the nine focus Caribbean countries, EU imports of focus country-sourced goods would rise from 14.7 to 15.7 percent; inter-CARICOM trade would drop noticeably by 21 to 28 percent; and trade diversion would be a serious factor as imports from non-EU ROW fall by from 40 to 57 percent. True trade creation would range from 2.5 percent to 12.8 percent of EPA trade changes for the focus countries. Individual country imports of EU-sourced goods would soar and increase by 167 percent for St. Vincent to as high as 3,906 percent for Jamaica. As found by Perez, Caribbean countries would purchase noticeably more manufactured goods from the EU. Greenaway and Miller (2003) suggested that tariff declines are estimated as very substantial and would range from 62 to 78 percent for nine Caribbean countries.

#### **EPA-induced impacts on Pacific ACPs.**

No studies focusing solely on the EPA-induced impacts on the Pacific ACP economies were located. EPA-induced impacts on Pacific ACPs were from EPAs were obtained from global GE analyses of Perez (2006) and Cernat, Onguglo, and Ito (2007). Perez (2006) estimated that under a global setting of concurrent implementation of all proposed EPAs, Pacific ACP economies would face adverse effects. GDP would fall 1.9 percent; the trade balance would drop US\$ 97 million; and the region's welfare level would decline US\$ 134 million. Cernat, Onguglo, and Ito (2006) suggested that EPA effects would include a rise in Pacific ACP welfare of from US\$ 95 million to US\$ 147 million. For reasons previously noted, the Cernat, Onguglo, and Ito (2007) estimates of EPA-induced impacts on Pacific ACP economies should be cautiously considered.

Perez (2006) suggests that under a global setting of full implementation of all six proposed EPAs, the level of ACP reciprocity on EU-sourced imports (hereafter, reciprocity) has some effect on the level of EPA-induced impacts on Pacific ACP countries. For Pacific ACP's, he estimated that GDP would decline 1.9 percent under 80 percent reciprocity and by 1.3 percent under 50 percent reciprocity; the trade balance would fall US\$ 97 million under 80 percent and US\$ 93 million under 50 percent levels of reciprocity; and welfare levels would fall by US\$ 134 million under 80 percent and by US\$98 million under 50 percent levels of reciprocity.

EPA-induced losses in Pacific ACP revenue losses would have the largest fiscal losses for any EPA region examined by Perez (2006, p. 1008). Under the standard EPA scenario (80 percent reciprocity), EPA-induced fiscal losses would be -1.6 percent of GDP -- a percentage loss level that would fall to -1.2 percent under 50 percent reciprocity and climb to 2.1 percent under 100 percent reciprocity.

### **Studies examining prominent issues.**

#### ***Hinkle, Hoppe, and Newfarmer (2005).***

Hinkle, Hoppe, and Newfarmer (HHN 2005) did not implement an analytical or empirical analysis of EPA effects. Rather, they present a synopsis or survey of a number of background issues germane to EPA negotiation, implementation, and associated market/economy effects. They first summarize progress of the Cotonou Agreement's framework of EU25 EPAs to be negotiated between the EU25 and six groups of 78 ACP nations, which we do not repeat here. They then orient the rest of the article towards groups of issues and challenges of EPAs with groups of sub-Saharan African ACP countries (hereafter SSA ACPs). Such issues and challenges are categorized into the following five areas or "large issues."

**Issue 1: Poor integration of African ACP product markets.** They cite that on average, only 15 percent of exports and 10 percent of imports of Sub-Saharan African ACPs (SSA ACPs) originate in that area. There are significant trade barriers among SSA ACPs from high border costs, restrictive rules of origin, poor infrastructure, continued existence of mutual tariffs on each others' products despite a proliferation of regional agreements, poor implementation of inter-SSA ACP regional agreements, inconsistency of tax policies, poor mechanisms of SSA ACP dispute resolution, and little or no mutual recognition of trade policies.

**Issue 2: High and variant SSA ACP average MFN tariffs:** SSA ACP average MFN tariffs are perhaps 2-3 times higher than other more competitive developing country average tariffs. There exists very high and widely applied peak tariffs, and a high proclivity to apply such peak tariffs, to all or most SSA ACP imports that compete with domestic production. As a result, movements to a common external tariff or CET are complicated. For example, Nigeria's average tariffs are perhaps three times those of UEMOA,<sup>11</sup> a group of western sub-Saharan African ACPs. Failure to adequately address these tariff peaks in EPA negotiations and implementation processes may simply divert trade from non-EU25 sources to EU25 sources, such that EU25 market shares will remain inefficiently high, and consumers will not receive potential

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<sup>11</sup> UEMOA is Union Économique et Monétaire Ouest Africaine, and includes Benin, Burkina Faso, Ivory Coast, Gueinea-Bissau, Mali, Niger, Senegal, Tome and Principe, and Equitorial Guinea.

benefits from reduced prices. This may exacerbate potential revenue losses as trade is diverted from revenue-generating non-EU25 sources to EU25 sources that generate lower tariffs or zero tariffs.

**Issue 3: Falling tariff revenue from EPA's.** HHN note that on average, tariff revenues comprise 1 percent of GDP and 7-10 percent of operating revenues for the SSA ACP region, with revenue loss estimates comprising up to 20 percent of operating revenues for individual SSA countries. They note that EU25 products comprise some 40 percent of the area's imports. The envisioned EPAs with SSA ACPs could reduce overall regional government revenue by sizeable proportions. Interestingly, they provide a rare set of qualifications to this issue by noting that there is a high likelihood that this issue of EPA-induced revenue loss may well be overstated for four reasons. First, there are currently numerous and widespread tariff exemptions among SSA ACPs, and an EPA's elimination of these will conceivably soften the revenue loss. Second, the SSA ACPs have some leeway in exempting those imports that generate high levels of tariff revenue from the EPAs, so as to soften an EPA's revenue loss effect. Third, some of the SSA ACPs could regain EPA-induced tariff revenue loss through imposition of domestic excise or VAT taxes. And fourth, EPA implementation could take up to 12 years, which would afford SSA ACPs ample time to devise/find compensatory revenue sources.

**Issue 4: Focus the EPA negotiating process on trade-implementing services and "Singapore issues":** EPA negotiating processes and EPA-induced regional integration can conceivably overcome or improve what is seen as a constraint to trade: inadequate quality and levels of access of such trade-facilitating services as phone services, utility services, financial and banking resources, transport services, etc. For example, Hinkle, Hoppe, and Newfarmer cite a World Bank study that suggests that 52 percent of surveyed SSA ACP firms reported unreliable electricity as a constraint, as opposed to 24 percent of firms in East Asia. Generally, ACP countries are small and do not offer adequate economies of scale such that services are of questionable quality, inadequately supplied, and exorbitantly priced compared with more affluent areas. EPA negotiations and regional integration plans should focus on creating multinational SSA ACP markets, regulatory bodies, and the "Singapore issues" of competition-enhancement, investment, and government procurement plans.

**Issue 5: Infrastructure, institutions, and aid for trade:** SSA ACP countries have well-known problems of inadequate roads, railroads, port services, and trade-related institutions that burden ACP exporters with higher than necessary costs and various

trade bottlenecks. The authors note that the EU has pledged 300 million euros annually for “aid for trade,” while having insisted that such assistance not be discussed during EPA negotiations for fear that the negotiations will transform from discussion for freer trade to discussions for money. As a result, some reportedly feel that these issues are not being adequately addressed by and/or focused on by EPA negotiations.

*van Hoestenbergh and Roelfsema (2006)*

Van Hoestenbergh and Roelfsema (vHR 2006) set out to explore the nature and effects of EPAs between the EU25 and 78 ACP countries. Yet this study is not an empirical study of EPA effects. The paper rather sets out to explore the nature and effects of EPAs through a discussion of related theory and some empirical studies that estimated EPA effects. We do not summarize their reviews of the literature here as our overall study has considered many of the studies addressed by vHR and in more empirical detail. The value of the vHR study is the discussion of underlying EPA issues that need to be addressed by the EU25 and ACP governments in the negotiating process. In setting out to canvas the major EPA-related issues and to explore the nature and economic effects of EU EPAs with ACP countries, vHR make a thesis that economic effects of such EPAs can easily be overestimated insofar as EPAs will not appreciably increase aggregate ACP market access to EU25 markets by much, and because existing empirical studies on trade liberalization suggest a potentially negative effect on less developed countries’ development. They acknowledge however that EPAs are of potential use in implementing development-enhancing changes: establishment of regional institutions, reforms in developing nations, reform of EU subsidization schemes for large industries, promotion of increased private sector role in development through enhanced foreign direct investment, among others.

VHR summarize six principal issues confronting the EPA process. The organization of this discussion is a bit vague, and while some of these issues are indeed inter-related, we summarize the issues as a through e below.

- a. **Non-displacement of ACP production:** There is the EU25 argument that many of the ACP-bound exports (especially of final industrial products) are not displacing or precluding ACP domestic production.
- b. **EU non-tariff barriers:** Some argue that there are allegedly excessive and unwarranted EU non-tariff barriers that preclude ACP exports into EU25 markets.

- c. **“Configuration issues” of EPA negotiations:** Another issue is the “configuration” of the EPA process such that it is a balanced mix of offensive and defensive interests of both sides, while the ACP side hosts, as well, disparate and non-homogeneous incentives. In turn, this configuration issue encompasses a number of sub-issues: combining differing national priorities into a regional ACP group consensus; different ACP allegiances by differing memberships in negotiation groups; and the ACP groupings’ frequent inclusion of LDCs and non-LDC countries. The latter sub-issue concerns the basic incentives for EPAs with the EU25: LDC members already have EBA preferences in EU25 markets and are not as incited to enter EPA negotiations as non-LDC countries, while non-LDC countries tend to promote EPAs to acquire those same preferences enjoyed by the LDCs. Such issues of configuration of the EPA negotiating processes are daunting and may “dilute” regional incentives to negotiate EPAs with the EU25.
  
- d. **Who are beneficiaries of EPA-induced benefits?** Before focusing on the fourth issue, distribution of EPA-induced benefits, VHR summarize the two well-known sources of ACP benefits from EPAs. The first is a rise in real ACP income as import prices decline. VHR note that under assumptions of a small ACP and no protection-induced terms of trade or TOT gains for the ACP, EPA-induced revenue loss may be compensated by a lump sum payment to the government, and net benefits will arise if the decline in import prices are less than the lump sum payments. And second is an EPA-induced rise in ACP efficiency, whereby, increased cheaper imports will displace higher-cost domestic production, and incite resources for the latter to more efficient and lower cost uses. They then note that unless efficiency gains ultimately render workers enhanced wages from productivity gains and in ACP sectors with comparative advantage, the ACP’s domestic and foreign owners of capital may well pocket the EPA-induced benefits.
  
- e. **Revenue loss:** VHR discuss the general consensus in the literature that potential ACP government revenue losses from EPAs are high and should be carefully considered in the negotiating process.
  
- f. **Trade diversion vs. trade creation:** VHR note the theoretical underpinnings and some recent empirical studies that suggest trade diversion effects could conceivably dominate trade creation effects of some proposed EPAs

such that short term and medium term ACP welfare levels may well decline from the EPAs. EPAs could lead to displacement of domestic production without concurrent creation of domestic employment opportunities, and as perhaps cheaper non-EU25 trade is diverted to the EU25.

VHR finish up with a discussion of dynamic, institutional, and political effects that is basically a political discussion on the need to have better politics in the ACPs render trade-conducive institutions that lay a ground work for a network of trade-facilitating services in the ACPs (banking, finance, capital markets etc).

### **Quantitative with a global and general equilibrium focus.**

#### ***Cernat, Onguglo, and Ito (2007)***

Cernat, Onguglo, and Ito (COI 2007) begin by noting the ongoing debate over the potentially negative impact of proliferation of regional trade agreements (RTAs) on individual development, and on the stability of the world's overall multilateral trading system. They then introduce the Kemp-Wan theorem in an attempt to render WTO-compatibility consistent with formation of RTAs. More specifically, the Kemp-Wan theorem states that, given the world's current multilateral system and the proposed formation of an RTA, there exists a set of common external tariffs (CETs) that may be chosen by the RTA region that would render welfare and trade patterns of the non-member RTA countries unchanged. The Kemp-Wan model endogenizes the determination of CETs by the RTA members after the RTA's implementation. And insofar as the RTA members' CETs are endogenized, COI conclude that RTA regionalism can be a building block for multilateralism under certain circumstances. COI note that despite the conceptual appeal of the Kemp-Wan model, the framework has been criticized as of little practical value, insofar as RTA members often do not consider lowering external tariffs with non-members as RTA implementation is finalized. COI note the analytical potential for Kemp-Wan application to the currently unfolding pattern of EU25 EPAs with the 78 ACP countries and the Doha round. They note that this potential is enhanced when one considers possible alteration of GATT Article XXIV in order to effect EPA negotiations and implementation rules that ensure WTO-compatibility and within a framework of Kemp-Wan optimality. As a result, COI aim to (1) reconcile the more stringent criteria forwarded by certain WTO members with principles of "less than reciprocity" advocated by some developing coun-

tries, and (2) to assess the Kemp-Wan admissibility of proposed EPAs in the context of Doha negotiations.

In the second portion of the study, the authors review the various proposals to reform GATT article 24, particularly from the viewpoint of what constitutes “substantially all trade” for EPAs, and how an ACP should most effectively separate-out “sensitive products” for EPA exemption. They review the proposals with focus on both viewpoints: of ACPs, as well as developed countries. They then demonstrate how the proposals would affect an exemplified ACP, Tanzania. COI reviewed the implications on Tanzania’s choices of sensitive products for EU25/Tanzania EPA exemptions based on (i) minimization of import surges focused on overall import and the line-by-line approach (in the Harmonized Tariff Schedule); (ii) on a criterion that minimizes tariff revenue losses; and (iii) on a product selection pattern that maximizes consumer surplus. To do so, COI modified the SMART model, an ex ante partial equilibrium model, measuring the first-round impact of trade policy changes, and noted that while the PE nature precluded beneficial analytical insights on economy-wide and inter-industry effects, the SMART model’s advantage is in its provision of a wealth of disaggregated detail on Tanzanian industry. However, these discussions are written in a highly dense manner, and are not easily understood, particularly on exactly what was done with the SMART model. This overly condensed section could perhaps have been expanded into a separate article or at least an appendix. As a result, a full summary of this material is beyond the scope of this survey. The overall important point is that COI review three alternative “benchmark” standards by which to choose “sensitive products.” They conclude that the three different substantially all trade or SAT definitions provide different choices in discerning a set of acceptable EPA sensitive product exemptions.

The authors then turn to more expansive analyses of EPAs on EU, ACP regional, and other economies, while linking the Kemp-Wan theorem with the potential alterability of GATT article XXIV so as to endogenize CET tariffs needed to maintain non-member import levels at pre-RTA (here pre-EPA) levels. In so doing, they hope to render simulated EPA conditions that render enhanced global welfare. They engaged the well known GTAP6 CGE model (with database version 6 and a 2001 base year). Assumptions include perfectly competitive final and intermediate good markets; an Armington demand framework under preference homotheticity for final and intermediate goods where consignments for a particular good from different sources are considered imperfect substitutes; fixed production coefficients (with constant returns to scale); perfect labor mobility; and open international capital and financial markets.

They simulated four scenarios for a modified GTAP model aggregated into 20 regions and 19 sectors – two baseline scenarios under a standard closure and two Kemp-Wan scenarios under a modified GTAP closure where tariffs applied by EPA members on non-EPA regions are endogenized under a constraint of unaltered levels of pre-agreement non-EPA import levels. More specifically, the GTAP scenarios are as follows: (a) base 1 where EU/EPA merchandise tariffs are eliminated; (b) base 2 where inter-ACP protection is eliminated along with EU/EPA merchandise tariffs; (c) Kemp-Wan 1 with Kemp-Wan conditions and a full intra-ACP tariff liberalization; and (d) Kemp-Wan 2 scenario with only Kemp-Wan conditions (and no inter-ACP tariff liberalization). COI note that by simulating a base and Kemp-Wan scenario, it is possible to disentangle trade creation and diversion effects on non-members. Results of the base scenarios emerge from both trade creation and diversion, while Kemp-Wan results account only for trade creation.

Due to GTAP6 database limitations, they limit focus of these simulations on a Pacific ACP region, Caribbean ACP region, the EU, and the SADC African ACP region. They provided a number of qualifications on their results. First, separate simulations were precluded for three proposed EU25 EPAs with West Africa, Central Africa, and East/Southern Africa. Second, results capture effects on tariffs but cannot capture the deeper EPA dimensions envisioned for EPAs generally by the ACPs and the EU: regional integration measures, regional competition policy, investment concessions, regional customs and trade facilitation policies, dispute settlement mechanisms, etc. (among others). So estimated welfare effects are incomplete.

The ranges basic welfare results (in changes of US\$) for the four scenarios for the relevant EU/ACP EPAs are as follows for the regions of primary focus:

<b>Table A.1. Welfare results from COI.</b>		
	Base 1 (EU/ACP liberalization only) – base 2 (EU/ACP liberalization + inter-ACP liberalization)	Kemp-Wan 1 (EU/ACP liberalization only) – Kemp-Wan 2 (EU/ACP liberalization + inter-ACP liberalization)
	----- Changes, millions, US dollars -----	
Pacific ACP region	95 to 147	542 to 697
Caribbean ACP region	145 to 182	269 to 298
SADC African region	526 to 772	1,411 to 1,497
EU	About 5 billion for both scenarios	About 3.9 billion for both scenarios

Source: Cernat, Onguglo, and Ito (2007).

As well, the authors provide endogenously determined tariffs on non-EPA-members or external tariffs needed to ensure that there is no change in pre-EPA imports of non-

members, so as to avoid welfare reductions from EPA implementations. Given the 20 regions and the 19 sectors modeled under the four scenarios, summarizing these optimal tariffs is beyond this report's purview. And at this point, perhaps the proscribed external tariffs are not that useful, given that the Doha round impasse, and given that the endogenously determined external tariffs reported for non-members are bound, rather than applied.

### *Overseas Development Institute (2006)*

The Overseas Development Institute (ODI 2006) published a useful overview of the nature of quantified effect estimates of regional trade agreements or RTAs and Economic Partnership Agreements or EPAs. ODI starts out by noting that most studies on EPAs conclude that EPAs are welfare-enhancing, as the increased and cheaper imports from tariff reduction augment consumer welfare more than the collective welfare declines by governments from declining tariff revenues, by domestic producers whose production is displaced, and by comparatively disadvantaged exporters whose sales are displaced by comparatively advantaged exporters. Basically, most studies on EPAs reviewed by ODI suggest that welfare-enhancing trade creation dominates welfare-reducing trade diversion. They further note that the nature and degree of reviewed studies' EPA impacts hinge on a number of caveats that require readers to take study conclusions with caution: on assumed market parameters needed to service the model; that most models of EPAs are static and ignore important potential dynamic effects; that often the studies over-predict welfare impacts on consumers as market power of some producers/importers prevent price declines that are one-for-one with tariff reductions; and that many employed model results are of compromised validity due to important market details that are ignored. ODI provides particular caution regarding compromised reliability of some EPA studies due to the use of static models that exclude EPA benefits on growth and productivity from regional integration; output impacts from productivity effects; and potential effects that EPAs and RTAs may have on foreign direct investment over time. Mention is also made of the potential and substantial benefits from EPA liberalization of barriers on services, while most studies cannot gauge such EPA-induced benefits from services liberalization adequately, if at all.

### *Perez (2006)*

Perez (2006) begins by reviewing the WTO incompatibility of the Cotonou preference regime between the EU and its ACPs, and the current and ongoing evolution of a series of EPA negotiations among the EU and six groups of 78 ACP countries. He notes the likely costs to many ACPs, including, among others, soaring EU access into ACP markets as tariffs on EU goods are eliminated; likely falling domestic prices; possible harm to ACP domestic producers; potential loss of ACP efficiency and ACP welfare declines as EU imports divert lower-cost non-EU export sales; and ACP revenue losses as increasing shares of imports become duty-free. Perez also notes that some have stated that EPAs may be more costly to ACPs than the primary EPA alternative where lesser LDC ACPs pursue nearly duty-free EU market preferences under EBA while non-LDC ACPs pursue such access under GSP. Perez aims to compare the effects of the different existing EPA and non-EPA options of giving-up the Cotonou preferences. Perez provides comparable sets of effects for the three EPA preference alternatives, as well as for the two primary alternative scenarios (runs 5, 6) to EPAs.

Perez's chosen model is the GTAP6 framework, with its 87 countries and 57 sectors. He modified model by aggregating it into 10 regions and 12 sectors (see Perez's annexes 1 and 2 that are too detailed to present here). He assumes a classical closure that represents a global economy with constant returns to scale, perfect competition, and systematic adjustment between supply and demand through prices. The following assumptions/database adjustments are also made: a 2001 baseline; conditions implemented to reflect the EU27 enlargement; the multi-fiber agreement is assumed to be phased-out; and the data base has been modified to reflect a projected setting for 2018 when EPAs will have been fully implemented. As well, he assumed that multi-lateral liberalization has been achieved: tariff reductions of 36 percent for developed and 24 percent for developing countries; that agricultural subsidies have been eliminated; that domestic agricultural support levels have been cut to 20 percent; and that full ACP economic integration has been achieved. EPA-induced tariff changes were calculated at the HS 6-digit level and aggregated according the GTAP's classification.

Perez forthrightly points-out GTAP's two limitations in assessing EPA-induced effects. First, preferential tariffs have been included in GTAP only since the latest version was released in 2005. And second, GTAP's data base has statistical weaknesses for EPA effect assessment. Only a small subset of the ACPs are individually disaggregated; some regions such as the "other SSA" region included a 35 ACP aggregation; and some GTAP Caribbean and Pacific regions host, among ACPs, non-ACP countries not relevant to EPAs .

Peres simulates six GTAP scenarios in order to empirically estimate and illuminate various aspects of EPA-induced effects.

- **Scenario 1, Reference run for an EPA:** ACPs eliminate tariffs on 80 percent of EU-sourced imports (i.e., 80 percent “reciprocity”), while the EU provides duty-free access to ACPs. Perez denotes this as the most standard and plausible EPA proposal in line with EU-interpreted WTO requirements and should give the best available EPA-induced effects as available from GTAP.
- **Scenario 2, Increased asymmetry run:** ACPs eliminate tariffs on only 50 percent of EU-sourced imports (50 percent reciprocity), while the EU provides duty-free to ACPs. Perez contends this would reflect an alternative run with added ACP flexibility.
- **Scenario 3, Genuine FTA run:** All tariffs on EU/ACP trade are eliminated (i.e., 100 percent reciprocity).
- **Simulation 4, regional integration run:** Effects from elimination of ACP regional tariffs are isolated in order to assess effects of full liberalization of ACP trade. This is an alternative run aimed at illuminating the effects of increasing regional integration.
- **Scenario 5, GSP option run:** ACP countries leave tariffs unchanged. Rather than establish EPAs, the LDC ACPs access the EU under EBA preferences, and the non-LDC access the EU under GSP preferences. This is the “GSP option” and is considered the alternative to the EPA scenarios.
- **Scenario 6, GSP + 250 option run:** Scenario 5 plus a GSP enlargement where 250 added tariff lines are reduced to zero for each ACP to account for sensitive products. Denoted as “GSP+250”, this attempts to estimate ACP and EU impacts of delegating ACPs flexibility to exempt sensitive products.

Issues of focus are defined by the scenarios. The first is to estimate the sets of effects from scenario 1 that Perez feels is the most probable EPA scenario (with 80 percent reciprocity more likely than 100% reciprocity of ACPs on EU27 imports). The sec-

ond is an attempt to register by how much the EPA-induced costs on ACPs are deflected with varying levels of sanctioned ACP flexibility in reciprocity on EU imports: 50, 80, and 100 percent. Third, while Perez does not estimate EPA-induced revenue losses per se, he does provide some “fiscal loss” estimates that are ACP collective losses from ACP-induced tariff collection declines and drops in GDP. The fourth scenario is useful in discerning the relative impacts of not opting to establish EPAs but rather have the LDC ACPs proceed with EBA and the non-LDC ACPs proceed with GSPs after December 2007. The fifth scenario is useful in quantifying “sensitive product” scenarios.

We focus on the first or reference scenario results given that Perez labeled this as the most plausible and directly reflective of the future EPA agreements. Important results and insights from other scenarios are also provided on a more summary basis. Generally, the efficient and diversified EU exporters have more to gain from the protected ACP markets than ACP exporters have to gain from the already largely accessible EU market. The EPA reflected by scenario 1 would enhance ACP agricultural output slightly and decrease substantially ACP industrial output, with these effects markedly more pronounced as the level of ACP reciprocity increases from 50 percent, to scenario 1’s 80 percent, and to scenario 3’s 100 percent.

**Main EPA results (scenario 1) and relevant comparisons:** Results from scenario 1 taken by Perez as reflective of a most plausible EPA include:

- Sales from ACP exporters rise at a slower rate on the EU market than growth in EU exports onto ACP markets. The relatively efficient EU exporters gain more from quasi-duty free access to the protected ACP markets than ACP exports have to gain in the EU markets already widely accessible to them. ACP terms of trade decline within a range of -0.2 percent to as high as -0.65 percent for Pacific ACPs and 0.52 percent for Sub-Saharan African ACPs (Perez 2006, p. 1007).
- Trade balances decline for many ACP areas, including by US\$ 249 million for the CARICOM region, US\$ 97 million for Pacific ACPs, and by as much as US\$ 753 million for the SSA region. North and South African ACPs realize modest trade balance increases, while the EU’s trade balance declines by US\$ 230 million. EU27 export sales to the ACPs rise by US\$ 10.6 billion, while total ACP sales to the EU27 rise US\$ 1.4 billion.

- Generally, the EPA would elicit sharp drops in heavy industrial exports, and lead to modest increases in exports of agricultural, processed food, and natural resource products. Sector-specific ACP trade balances increase US\$ 244 million for vegetables, oilseeds and other crops; US\$ 226 million for natural resources; and US\$ 100 million for textile clothing products. ACP trade balances decline by US\$ 1.1 billion for heavy industrial products; and US\$ 913 million for light and medium manufactures.
- ACP GDP levels generally fall by 0.34 percent for CARICOM, 1.9 percent for Pacific ACPs, 0.03 percent for North Africa ACPs, 0.39 percent for South Africa, and by 1.4 percent for the SSA region. EU27's GDP rises 0.1 percent.
- The EPA induces a net US\$ 0.9 billion decline in overall ACP welfare. While the EU27 welfare rises by US\$ 1.64 billion, ACP welfare levels decline from the EPAs. ACP welfare declines include US\$ 81 million for CARICOM, US\$ 134 million for Pacific ACPs, US\$ 27 million for North African ACPs, US\$ 126 million for South Africa, and by US\$ 612 million for the SSA region. EU27's welfare drops by US\$ 81 million.
- Fiscal losses from forgone tariff collections and GDP declines were severe: 1 percent for the SSA region, 0.4 percent for the SADC region, 0.2 percent for CARICOM, and as high as 1.6 percent for Pacific ACPs.<sup>12</sup>
- Perez's EPA settings have adverse implications for inter-ACP trade. Under EPA settings, as EU exporters gain a competitive edge in ACP markets, overall regional ACP trade falls by US\$ 407 million under Perez's most plausible scenario 1 with 80 percent reciprocity. This is compared with a far less regional trade decline of US\$ 179 million under 50 percent reciprocity (scenario 2) and a far higher decline of US\$ 734 million under full 100 percent reciprocity (scenario3).
- It is interesting to note that Perez's (2006) GE analysis concluded that the EPA's would be quite costly to the 79 ACPs aggregately, and in fact, more costly than the alternative scenarios of the "GSP" and "GSP+250" options.

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<sup>12</sup> We note the Perez's (2006, p. 1008) imprecise definition of fiscal loss. He defines fiscal loss as potential ACP losses added to the elimination of tariffs on the main source of custom revenues leading to a drop in GDP. We did our best to interpret this vague definition.

For all ACPs, the standard EPA option scenario would incur EPA-elicited declines in welfare of US\$ 851 million, in real GDP of US\$ 183 million, in the trade balance of US\$ 1.2 billion, and of US\$ 407 million in regional inter-ACP trade. Aggregate ACP fiscal losses were not reported, although the following regional estimates demonstrate that such losses are not trivial. That is, fiscal losses” from EPA-induced declines in tariff collections would range as a percentage of ACP regional GDP levels from -0.2 percent for CARICOM, to -1.0 percent for the SADC, to -1.6 percent for Pacific ACPs.<sup>13</sup> These fiscal losses noticeably decrease/increase as the level of reciprocity decreases/increases (Perez 2006, p. 1008).

- Perez (2006) further concluded that the six concurrently implemented EPAs would, for all ACPs globally, lead to a drop in domestic production and a rise in imports of manufactured goods, while production and exports of agriculture, food, and natural resource products would rise, albeit modestly. A number of reasons were provided (Perez 2006, pp. 1006-1009). Sales from ACP exporters would likely rise at a slower rate on the EU market than growth in EU exports onto ACP markets. The relatively efficient EU exports would consequently gain more from the quasi-duty-free access to the protected ACP markets than ACP exporters have to gain on the EU markets that are already quite open to them.
- Additionally, the decline in trade balances of both the EU and ACPs may seem surprising or even incongruous as EU firms indeed bolster ACP-bound exports and ACP firms bolster EU-bound exports. The reason for declines in EU and aggregate ACP trade effects lie in third country effects. The total exports rise by less than the rise in total imports for both the EU and aggregate ACP region. More specifically, EU firms export more towards ACP countries, but at the expense of non-ACP ROW markets and even its own inter-EU trade; ACPs export more to the EU but less among themselves; and the non-ACP countries export less to the ACPs but sell more to non-ACP markets and even to the EU (Perez 2006, p. 1006).

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<sup>13</sup> We note the Perez’s (2006, p. 1008) imprecise definition of fiscal loss. He defines fiscal loss as potential ACP losses added to the elimination of tariffs on the main source of custom revenues leading to a drop in GDP. We did our best to interpret this vague definition and related it to EPA-induced revenue effects.

These trade flow changes in turn lead to shrinkage of ACP output levels, largely from declines in heavy and light manufactured goods.

- Important findings by Perez (2006) suggest (i) that concurrent implementation of the proposed EPAs would be costly for ACPs, (ii) the costly EPA-induced ACP effects are highly sensitive to the level of reciprocity chosen, and (iii) the EPA scenario would likely incur more costs for ACPs globally than would opting-out of EPA agreements and following EBA/GSP alternative scenarios.

#### **Other important EPA results under levels of ACP reciprocity or flexibility:**

- Results from scenario 2 suggest that increased ACP flexibility in reciprocating on 50 percent rather than on 80 percent, of its EU-sourced imports noticeably reduces adverse EPA effects on ACPs. Compared with scenario 1, scenario 2's, with increased ACP flexibility, results in about half the increase in EU27 sales to the ACPs (US\$ 5.5 billion); ACP export sales to the EU rise noticeably less (by US\$ 0.6 billion); ACP welfare declines by US\$ 0.3 billion (about a third of the first scenario's estimates). Flexibility of the scenario 2 particularly decreases the ACP welfare loss in non-SADC SSA regions.
- The fourth scenario focuses on the important issue of poor ACP market integration and high mutual trade barriers. The experiment simulates complete elimination of trade barriers among the 78 ACPs, and tends to confirm the positive ACP benefits of such liberalization with Perez (2006, p. 1009) having specifically noted that such gains are not necessarily related to EPAs. Liberalizing inter-ACP barriers would boost regional trade by US\$ 1.9 billion and enhance aggregate ACP welfare by a collective net US\$ 200 million.
- Fiscal losses are markedly escalated by extension of ACP reciprocity from scenario 1's 80 percent of EU imports to 100 percent of such imports. Fiscal losses as percentages of GDP from foregone tariff collections and GDP declines rise: from 1 percent to 1.7 percent for the SSA region; from 0.4 percent to 1.4 percent for the SADC region; from 0.2 percent to 0.5 percent for CARICOM, and from 1.6 percent to 2.1 percent for Pacific ACPs. And likewise, increasing ACP flexibility to only 50 percent of EU imports

markedly reduces ACP fiscal losses, but the problem does not disappear completely.

### Important findings concerning alternatives to EPAs:

**Table A. 2. Standard scenario 1 EPA (assumed most plausible) vs GSP options, principal findings across ACPs collectively:**

Region	Effect	Standard EPA option	GSP option	GSP+250 option
ACPs:	Welfare, millions US\$	-851	- 459	- 51
	Real GDP millions US\$	- 183	- 79	- 9
	Trade balance, millions, US\$	- 1223	+ 234	+ 26
	Fiscal loss (%GDP)	0.7%	0%	0%
	Regional Trade, millions US\$	- 407	+ 60	+ 7
EU27	Welfare, millions US\$	+ 1638	+376	+ 49
	Real GDP, millions US\$	+71	+ 33	+ \$9
Tl. World	Welfare, millions US\$	+263	- 31	0

See Perez (2006, page 1014, table 12).

- Under the GSP option, the balance of trade improves US\$ 97 million for the SADC region, US\$ 88 million for the SSA, US\$ 41 million for Pacific ACPs, and a slight US\$ 8 million for CARICOM ACPs. EU27's trade balance declines US\$ 107 million. Declines in GDP and welfare are particularly deep for the SADC region. While EU27 GDP is little affected, GDP levels decline for many ACP regions: by 1.3 percent for the SADC region, 0.4 percent for the SSA; 0.8 percent for Pacific ACPs; and 0.3 percent for the CARICOM region. And while welfare increases by US\$ 376 million for the EU27, welfare declines for most ACP regions: by US\$ 176 million for the SADC, US\$ 149 million for the SSA, US\$ 78 million for the CARICOM region, and US\$ 56 million for Pacific ACPs.
- The GSP option has an opposite, positive, though modest effect on inter-ACP trade, unlike the negative EPA-induced effects in scenario 1 (as well as 2 and 3). Fiscal losses are not nearly as deep as under EPAs, since tariffs under the GSP option are still collected. Globally, the GSP option is better: global welfare declines by only US\$ 31 million as compared with the US\$ 263 million decline in the standard EPA setting under scenario 1.

- Scenario 6 or the GSP+250 option would leave preferences protection for ACPs in EU27 markets virtually unchanged, and so trade varies little under this proposal. This setting provides the most satisfactory welfare, GDP, fiscal, and trade balance results for all ACP subgroups.
- The GSP and GSP+250 options appear much more attractive for ACP countries and to the world as a whole: compared with the standard proposal, welfare and output declines would be less; trade balances would improve; public revenues would be preserved; and ACP industrial production would be relatively enhanced.

## **Quantitative Studies With An African Focus.**

### ***Busse and Grossman (2004)***

Busse and Grossman use a partial equilibrium model to estimate impacts from an EPA with the EU on West African economies in terms of trade creation, trade diversion and tariff revenues. The model consists of import demand functions at the four digit level of the Harmonized System (HS) classification (around 1240 goods) for each West African country. Assuming no changes in income and exchange rates and perfectly elastic import supplies, they analyze the consequences of eliminating tariffs on all goods imported from the EU. Thus the scenario represents a complete and unilateral trade liberalization by West Africa.

The analysis is based on trade data from the UNCTAD Trade Analysis and Information System (TRAINS), from the WTO Integrated Database and from the COM-TRADE database. However, instead of simulating an elimination of official tariff rates provided by TRAINS, they calculate collection ratios from IMF data, defined as the duty collected as a share of the value of imports. The difference between the two numbers, captured by a collection efficiency ratio, is caused by tariff exemptions such as special trade preferences and/or deficiencies in the duty collection due to red tape, smuggling or corruption. In their data, the collection efficiencies range from 43.7 percent in Mali to 90 percent in Senegal, with an average of 67 percent. Thus, when calculating tax revenue implications from the EPA, Busse and Grossman (2004) take into account that the countries' tariff schedules do not always represent the tariff revenues that actually reaches the treasury.

Busse and Grossman (2004) find that trade creation effects are generally larger than the trade diversion effects. As the former is associated with positive welfare impacts and the latter with negative consequences, they find it possible for the EPA to yield overall positive welfare gains to the West African countries. However, they also note that such a conclusion cannot be made on the basis of their analysis alone due to limitations of their partial equilibrium approach. The increase in imports from the EU ranges from 5.2 percent in Guinea-Bissau to more than 20 percent in Nigeria, due to large differences in initial tariffs and collection efficiencies. In absolute terms, the largest declines in tax revenues are experienced by Nigeria (US\$ 488 million), Ghana (US\$ 91 million) and Côte d'Ivoire (US\$ 83 million). However, relative to the total government budget, the impacts on Nigeria (2.5 percent) and Côte d'Ivoire (4.6 percent) are relatively insignificant. In contrast, Gambia and Cape Verde face huge losses of tax revenue, around 20 percent, as does Senegal and Ghana (around 10 percent).

***Karingi et. al. (2005) [African Trade Policy Centre (ATCP)]***

African Trade policy Centre (ATCP) is a Canadian funded research project under the United Nations Economic Commission for Africa (UNECA). ATCP has produced a number of studies on the economic consequences for African countries of the EU-Africa Economic Partnership Agreements, including Karingi et. al. (2005) on all Sub-Saharan Africa (SSA), Karingi et. al. (2006) on the COMESA countries and Hamouda et. al. (2006) on Ethiopia. We limit the survey to Karingi et. al. (2005), which provide an overview of their results.

Karingi et. al. (2005) employ a general equilibrium (GE) model to analyze welfare consequences of alternative EPA options as well as a partial equilibrium (PE) model to elaborate further on the results and to provide estimates of the tax revenue implications. The GE model used is the standard Global Trade Analysis Project (GTAP) model, a static neo-classical model with a global coverage, embodying perfect competition on all markets, which is specifically designed to analyze international trade issues. They simulate three scenarios: 1) SSA reciprocation of EU preferential tariffs, 2) deeper regional integration without reciprocation and 3) the establishment of an SSA-EU free trade area.

The reciprocation scenario involves lowering SSA tariffs faced by EU exporters to the level of EU tariffs applied to SSA exports. For a range of commodities, notably sugar, cereals and livestock, EU tariffs are actually higher than SSA tariffs, and no change is

simulated. The scenario thus implies a unilateral tariff reduction on the part of Sub-Saharan Africa. Not surprisingly, the reciprocation scenario yields welfare losses to Sub-Saharan Africa, estimated at US\$ 564 million (corresponding to 0.01% of GDP). As EU exporters gain increased access to SSA markets, they displace previously protected manufacturing industries, reducing national income and risking de-industrialization. Although consumers experience lower prices, this effect is not large enough to outweigh the decline in income.

The regional integration scenario simulates elimination of all intra-SSA tariffs and trade barriers. Note that due to lack of disaggregated data, the GTAP database used in the simulations aggregates most Sub-Saharan countries into regional blocs – the scenario can only eliminate trade barriers between such blocs and not within them. The simulation is therefore likely to underestimate the extent of regional integration. Nevertheless, Karingi et al (2005) find that regional integration has an overall positive welfare impact on Sub-Saharan Africa, estimated at US\$ 1.2 billion (corresponding to 0.5% of GDP). The gains derive mainly from improved efficiency as regional integration enables countries to better utilize their comparative advantages. Though not possible to analyze in the present model framework, the authors note that these welfare gains could be expanded through exploitation of economies of scale and capacity building.

The final FTA scenario specifies complete and reciprocal trade liberalization between the EU and Sub-Saharan Africa.<sup>14</sup> The FTA scenario has the largest positive welfare impact on SSA of the three scenarios considered, around US\$ 8 billion (3.4% of GDP). Although manufacturing industries in SSA face increased competition from unrestricted EU imports, as in the first scenario, new export opportunities for key SSA sectors arise with the opening of EU markets. Some de-industrialization is expected, mainly in the heavy manufacturing industries, but other industries, such as clothing, textiles and agro-processing, are set to expand. Most agricultural sectors are expected to experience large gains with liberalization of EU agricultural imports, in particular sugar and cereals.

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<sup>14</sup> It is not completely clear from the article whether the FTA scenario also includes intra-SSA trade liberalisation (as in the regional integration scenario) to create an EU-SSA free trade area, or Sub-Saharan Africa is treated as a single regional bloc. In the latter case, the scenario would resemble individual bilateral free trade agreements between the EU and each SSA country rather than a regional free trade area. Results would presumably differ between these two possibilities.

In addition to the GE analyses, Karingi et. al. (2005) employ the WITS/SMART partial equilibrium model to explore more deeply the reciprocation scenario. The other two scenarios are ignored due to limitations of the PE model. The authors estimate tax revenue implications for all SSA countries individually. In absolute terms, the countries most affected by tax revenue losses are Nigeria (US\$ 427 million), Ghana (US\$ 194 million), Cameroon (US\$ 149 million), and Côte d'Ivoire (US\$ 112 million). However, only absolute numbers are reported so it is difficult to evaluate the impact of trade liberalization relative to the state budgets. Similarly, the value of tax revenue losses does not give a clear indication of the threats to development, as the availability of alternative government revenue sources vary from country to country. For instance, Nigeria may well be less adversely hit by the tax revenue losses than Ghana due to the larger economy and the greater potential for tax diversification (e.g. oil revenues)

Karingi et. al. (2005) conclude generally in favor of EPAs involving deep liberalization of EU SSA trade, as long as they involve reduction/elimination of barriers to EU imports of key commodities of interest to SSA, such as primary agricultural commodities (particularly sugar and cereals), processed food and textiles/clothing. Unilateral SSA trade liberalization should not be an option. However, the authors advocate careful sequencing of the trade liberalization efforts, by first introducing regional integration of the SSA economies and only after an extended adjustment period (possibly longer than the 10-12 years suggested by the WTO) opening up to SSA imports.<sup>15</sup> Also, they note a possible threat the SSA development efforts from tax revenue losses of trade liberalization.

### ***Keck and Piermartini (2007)***

Keck and Piermartini (2007) modified the GTAP model to focus on assessing the economic benefits and costs of the following alternative scenarios of trade liberalization with the EU and countries comprising the Southern African Development Committee (hereafter SADC)<sup>16</sup>: (1) the base case of an FTA or EPA<sup>17</sup> between the EU25

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<sup>15</sup> Note that their quantitative analyses provide no ground for concluding on the sequencing of trade liberalisation. The models used are static and do not take adjustment periods into consideration. From the results, one can conclude that both regional integration and full EU-SSA free trade are beneficial to the Sub-Saharan African economies, but the results do not suggest whether one should be introduced before the other.

<sup>16</sup> This region is defined as Botswana, South Africa, Mozambique, Malawi, Zambia, Zimbabwe, Tanzania, and two subaggregates, "rest of SACU" and "rest of SADC" (Keck and Piermartini 2007, p. 7).

and SADC; (2) a simulated SADC free trade area to isolate impacts of liberalization efforts among the focused African nations themselves; (3) a combined liberalization scenario of an EU25/SADC EPA plus an SADC free trade area to capture simultaneous impacts of both liberalization settings; (4) a combined liberalization scenario of an EU25/SADC EPA plus an EU25/Mercosur FTA to assess the impacts on EPA-induced benefits of EU25 trade preference disciplines with other regions; (5) a partial EU25/SADC EPA where agricultural barriers are liberalized by only 50 percent; and (6) a more complete EU25/SADC EPA that liberalizes not only import barriers, but a host of export/domestic subsidies and taxes as well.

Having engaged the sixth version of the GTAP model and its database (base year 2001), a number of modifications and/or assumptions were necessary for a more realistic analysis of any current EU25/SADC economic partnership agreement that should emerge. The authors modify the GTAP model: for preference erosion for bilateral agreements and regional FTAs; to account for the expanded EU25; and to account for pooling of tariff revenues by SADC nations (tariff revenue pooling). They also ran a number of alternative scenarios under varying assumptions and key parameter values in order to provide an array of sensitivity results that are not chronicled here.

The main issues focused on by the analysis emerge fairly well from the scenario definitions and modifications chosen for imposition on the GTAP baseline, as well as from the modifications needed for the GTAP model: (a) effects of an EU25/SADC EPA on area and national economies; (b) effects of liberalization of inter-regional tariffs; (c) effects of any own-SADC liberalization on overall EPA benefits; (d) effects of EU liberalization with outside regions on the effects of the EU25/SADC EPA; (e) effects on SADC area and national economies of a partial reduction in agricultural barriers; and (f) effects on the EPA benefits of additional liberalization from elimination of a host of export/import subsidies, domestic support schemes, and taxes. As well, the issue of lost national operating revenues for SADC nations from reduced tariff collections, and the issues of tariff revenue pooling/sharing are important issues of focus.

The paper is rather lengthy to comprise a journal article, when one considers the six substantial simulated scenarios, and then the numerous simulations and sensitivity analyses under alternative assumptions and values for key parameters. And while the authors do an adequate job in heuristically summarizing the study results with bar

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<sup>17</sup> Keck and Piermartini appear to use the terms FTA, EPA, and preference arrangement with a loose interchangeability. We will use EPA as much as possible to avoid any definitional confusion in our summary.

charts, specific values and results widely vary across SADC countries and are difficult to extract from appendicized tables following the article's main text. Results are reported in a scattered and unsystematic manner, with trends difficult to discern. As a result, we summarize primarily the base case scenario of an economic partnership agreement between the EU25 and the SADC, while providing some of the more important and/or interesting findings from the other scenarios. Effects are denominated in deflated 2001 dollars.

**Trade effects:** As expected, and owing to the current SADC preferences in the EU25, exports do not change much, although there is some rise in imports in all countries/regions. EPA-induced import increases are evident for heavy and light manufactures, while generally, EPA-induced exports of SADC processed food products increase.

**Welfare effects:** Base case results suggest that EU-induced welfare in the SADC area rises by \$1.2 billion, with South Africa and Zimbabwe being particularly noticeable winners as welfare is augmented by both favorable terms of trade and allocative efficiency movements. Particularly large welfare losses are projected for Tanzania and Botswana mainly from lost tariff revenues. EU welfare would be expected to rise nearly \$600 million from the EPA.

**Other issues:** As expected, an EPA that partially reduces agricultural SADC protection by 50 percent would lead to substantial drops in welfare from levels projected for the base case's full agricultural barrier elimination, with reduced benefits particularly evident for Zimbabwe and Botswana. Overall under an EPA with partial agricultural liberalization, base case SADC welfare increases would register at \$927.4 million, a level about 20 percent below the base case levels.

EU25 negotiations with Mercosur that are concurrent with the EU25/SADC EPA would noticeably reduce benefits to SADC countries from the EPA. Not only is the EU25 the most important source of Mercosur imports, but is also one of Mercosur's principal export destinations, such that any EU25 FTAs with non-SADC regions would likely divert trade away from EU-SADC EPA participants.

### ***Milner, Morrissey, and McKay (2005)***

Milner, Morrissey, and McKay (MMM 2005) developed a static, partial equilibrium method of assessing short run welfare, trade, and revenue impacts of reciprocal EU

economic partnership agreements with African, Caribbean, and Pacific countries (ACPs). The rather simple, static, and short run equilibrium method was chosen for its practical use at a market-specific disaggregation level that permits the focus on markets or sectors of primary importance to ACPs, and one that has data requirements in line with limited ACP data resources. They then apply the method to analyze the effects of an EPA between the EU on each of two single East African Cooperation (EAC) countries, Tanzania and Uganda. Readers should note that each of the two simulations are one-country analyses of tariff changes that would arise from a larger regional EPA.

MMM developed a single sector model for a homogeneous market that examines the short run welfare effects of preferential trading arrangements for a small home country (the ACP), a trade partner country (EU), and a residual rest of the world or ROW. The method formally dichotomizes the welfare changes from such EPAs into three effects: consumption, trade diversion, and trade creation effects. The authors use the method and analysis of these three effects to formally demonstrate that whether the EPA results in positive or negative welfare effects for an ACP sector depends on which modeled regions had been the more efficient (low-cost) suppliers before the EPA's implementation. And hence, the net effect on ACP welfare from the EPA hinges on how the modeled sectors of the economy are classified in terms of whether the ROW or the EU is the efficient supplier prior to the EPA's implementation. Also evident from analysis of the three effects is the estimated size of the short run EPA-induced ACP loss of tariff revenue -- an important political issue of EPAs for many ACP governments that depend on tariff collections for sizeable portions of operating revenues. The static MMM framework assumes sector markets that are perfectly competitive where the domestic and imported products are identical (fully substitutable). An EPA between the EU and the ACP is assumed to cover all EU/ACP trade flows, and where all EU-sourced imports are imported by the ACP duty free. MMM then applied the framework to Tanzania and Uganda, and in each case, 8-digit trade flow and tariff data (from the Harmonized Tariff Schedule or HTS) for each ACP were aggregated-up into 96 flows defined for a 2-digit HTS level. As required of the static framework, the 96 sectors or markets were, for each country, classified or identified according to which region is the most efficient supplier before the EPA implementation. MMM contend that this identification of ACP sectors that are most likely to be EPA-affected is a prime advantage of the static framework

Analyses generated a number of major findings. The EPA-generated different net welfare changes for the two countries: a loss in welfare equal to 0.5 percent of GDP

for Tanzania and a 0.05 percent of GDP increase for Uganda. Consumers gain substantially in both countries from EPA-induced consumption and trade creation effects. And finally, Tanzania loses 0.4 percent in GDP from loss in revenue, while Uganda revenue rises slightly by an amount equal to about 0.1 percent of GDP. MMM suggest that Uganda fares relatively better than Tanzania because Uganda experiences a relatively larger boon in consumption as a greater increase in imports of EU products displaces goods produced by relatively inefficient EAC-sourced suppliers.

### *Sandrey (2006)*

Sandrey (2006) uses a PE model (WITS/SMART model) to estimate the trade diversion and revenue impacts on South Africa of an EPA between the EU and the Southern African Customs Union or SACU, under two assumptions: (i) the SACU's 2005 import scenario,<sup>18</sup> and (ii) the EPA's preferences will be those of the Trade, Development and Cooperation Agreement (TDCA) tariffs which remain high on motor vehicles and parts. Since about 98 percent of total SACU imports come in through South Africa, the results are deemed a reasonable proxy for an analysis of effects on the SACU multi-nation region.<sup>19</sup> He also estimates trade and revenue effects of other potential FTAs between South Africa (and hence SACU) and China, the USA, and India. We do not address the estimated effects of these latter potential trade agreements here, as they are tangential to this review's mandate. The analysis focuses primarily on the EPA-induced effects on South African and SACU imports and tariff collections, without reporting EPA-induced effects on exports to the EU and the ROW.

The main issues of focus reflect the two classes of estimated results. Sandrey focuses on the degrees that an EPA reflected by the TDCA tariff preferences granted to the

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<sup>18</sup> More specifically, Sandrey (2006, p. 6) uses a line-by-line approach to examine the trade creation and diversion impacts for the nation of South Africa of the recent TDCA. As well, he calculates the South African impacts for potential SACU FTAs that involve China and the USA. His analysis took the imports into Southern Africa during 2005 and assessed the potential duties against these imports using the relevant line in the 2006 SACU tariff schedule. Sandrey (2006, p. 6) notes that his analysis slightly overestimates the tariff collection rates since the SACU schedule is a "live" document and that 2006 rates are falling vis-à-vis the 2005 rates, and since for practical purposes, he ignored what he labeled as the "vexing" question of rebates. We will not report results concerning liberalized Southern African preferences on Chinese and American products, as these are tangential issues to this report's mandate.

<sup>19</sup> This point was provided in a private email communication from Dr. Ron Sandrey received by FØI staff on July 19, 2007.

EU by South Africa and SACU will (i) create trade, (ii) divert trade, and (iii) reduce collected tariff revenues for SACU ACPs. Sandrey's results suggest:

- A South African (SACU)/EU EPA as defined above will increase EU exports into the region by 4.3 billion South African rands or R4.3 billion.
- Most of this change in trade, R2.7 billion or 63 percent, is trade diverted from other possibly lower cost suppliers, while just over a third is EPA-induced trade creation.
- The assumed South African (SACU)/EU EPA will likely have markedly adverse consequences on revenue collections. Revenues into the SACU tariff pool would drop by nearly 30 percent from pre-EPA levels. This, in turn, is a serious decline in ACP revenue sources for such countries as Lesotho and Swaziland that rely on such tariff pool funds for more than half of their operating revenues.

### ***Wobst (2003)***

Wobst (2003) does not specifically analyze the effects of an EPA. Rather, he used a 12-sector computable general equilibrium or CGE model to investigate the impact of alternative domestic and global trade liberalization scenarios on intersectoral changes, foreign trade opportunities, macroeconomic growth, and welfare of five Southern African countries: Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe. One of his five simulations is useful in characterizing certain qualitative effects that would be elicited by an EPA between the EU and African countries, and a number of EPA analyses have cited Wobst's results as useful. As well, some insightful findings into the nature of effects of tariff reductions on specific countries that differ in economic structure do emerge, and appear very germane and useful to those pondering country-specific EPA effects. Other studies that do directly assess EPA-induced effects on African ACPs have found Wobst's work useful and relevant. As a result, we summarize Wobst's findings and results for the scenario that is most relevant, though not exactly representative, of an EPA between the EU and certain African ACP countries.

Wobst provided a model that accounts for different macroeconomic profiles across the countries in terms of overall structure, whether countries are land-locked or not, population density, various social indicators, and political systems. He makes a variety of assumptions on the model and its closure for the five countries. The model assumes a detailed product differentiation scheme, where each product is separable into

domestic production, domestic supply, imports, exports, and product for (non-marketed) domestic use. All five countries are serviced with equations that fully link it to the world markets of focus. Assumptions are made so that the CGE model captures own-household consumption to reflect countries and/or sectors with high incidences of rural living, and specific market margins for domestic supply, exports, and imported commodities. Wobst notes that the five focus economies feature different institutional characteristics and consumption patterns so that the CGE model closure was chosen to prevent diverse macro reactions to a common economic shock. More specifically, he assumed that foreign savings is fixed, and that imports and exports adjust through changes in the real exchange rate. As well, he assumes that government consumption and investment demand are fixed shares of absorption, where the government account balance is achieved through adjusting direct tax rates, and that the savings/investment balance is achieved through adjustment of a country's marginal proportion to save. Elasticities of substitution for production and foreign trade functions are assumed to vary across sectors but not across the five countries.

Two primary issues are addressed. First, Wobst shows the differentiation that tariff reductions have on individual countries that vary in macroeconomic profile. Second, he focuses on potential revenue loss, although he does not report revenue loss estimates generated or implied by the model.

He simulated a 50 percent drop in all import tariffs in each of the five specific countries without any adjustment for lost tariff revenues. However, readers should be aware that Perez (2006) deems this 50 percent reciprocity too low to be plausible for an EPA, and the tariff reductions are offered on all imports and not just those that are EU-sourced. So this Wobst (2003) scenario generates results that may be useful, but not exactly comparable, to those attributed to an EPA with the EU. As well, Wobst's results provide insight on how effects of tariff reductions, and hence perhaps an EPA's tariff reductions for all or some of the countries, will vary due country-specific differences in macroeconomic and market structures noted above. Some of these insights may be useful when considering country-specific effects of EU/African EPAs. The results were very different across countries and include the following:

- Wobst (2003) suggested that eliminating tariffs on EU-sourced imports would have negative impacts on nation-specific revenue collections from pre-cut tariff collections: about 13 percent for Malawi and Mozambique; about 7 percent for Tanzania; and from 27 to 30 percent for Zambia and Zimbabwe. Wobst (2003, pp. 82-82) suggest that tariff cut-induced reve-

nue cuts are related positively to such proportions, as well as to the differences in effects from differences in macroeconomic profiles across the five countries.

- Imports generally rise, and in negatively correlated pattern with the initial trade deficit. That is, the tariff reductions elicit larger import increases of more than 2.4 percent for countries such as Malawi and Zimbabwe with relatively low trade deficits. Imports rise by less (0.4 percent to 1.4 percent) for Mozambique and Tanzania with large initial pre-cut trade deficits.
- Tariff cuts induce generally modest changes in consumption that vary in direction and sign depending on patterns/shares of marketed and non-marketed consumption across the five countries. However, Wobst does not report specific analysis on these results.
- Wobst mentioned that sectoral effects of the tariff cuts do vary but does not provide specific insights.
- There is no “typical or archetypical” African economy even in a confined area, such that tariff cuts will have effect patterns that vary widely by country.

Generally, Wobst’s work had the potential of providing specific patterns of differentiation of effects from tariff cuts across countries based on differences in macroeconomic and market profiles noted above. However, apparently from space limitations in a journal article, he did not elaborate on many specifics, and his results were provided mostly by non-specific bar charts.

### **Studies with a Caribbean focus.**

#### ***Gasiorek and Winters (2004).***

Gasiorek and Winters (2004) focused specifically on EU EPAs with Caribbean ACP economies. Their estimation of the impacts of such EPA agreements unfolds in three parts. They first lay a background for their analysis by reviewing the post-2003 history of the EPAs’ evolution and the establishment of six themes or issues identified as germane to EPAs: market access; agriculture, including fisheries; services trade; trade issues; development issues; and such legal issues as dispute settlement. They

reviewed the Caribbean economies, including structure and performance. As well, they reviewed the various Caribbean trading arrangements with the USA, the EU, and trading arrangements among the Caribbean basin countries themselves.

In the second part, they devised a static, theoretical, and non-empirical graphical framework for discerning the probable effects on Caribbean economies of implementing EPAs with the EU. Their static model assumes four sources of import supply from the EU, US, other Caribbean nations, and the residual rest of the world or ROW. They further assumed that the imported products are identical across countries, as opposed to frequently encountered Armington models of imperfectly substitutable and origin-differentiated goods. Their graphical analysis suggests that there would be EPA-induced welfare gains for a Caribbean economy (1) when the EU is the sole supplier and has a price-elastic export supply schedule; (2) where other Caribbean economies are the sole suppliers; and (3) where the focused Caribbean economy has a market supply dominated by the EU and non-EU suppliers, and where the EU's supply action is paramount in marginal import price formation. On the other hand, Gasiorek and Winters outline other scenarios under which an EPA would likely result in welfare and/or revenue losses for the Caribbean basin, where non-EU suppliers such as the USA dominate and currently pay tariffs. Such an EPA would result in substantial trade diversion towards the EU rather than in any new trade creation.

The weakness of the paper appears to be a disconnect between the graphical theoretical model above and the paper's third section on "results": there is no real empirical analysis but instead a rather heuristic analysis of aggregated trade flow data (6-digit levels, Harmonized Tariff Schedule) for the six Caribbean countries of focus.<sup>20</sup> Basically, they tabulate and classify trade flow data for the six economies in order to match or concord patterns to the situations 1-3 above implied by the graphical analysis, and to then obtain EPA effects implied by the graphical analysis. There is no direct empirical modeling of the Caribbean economies. They only informally concord data-suggested conditions with the graphical model implications.

The overriding issue addressed from proposed EU EPAs with the six economies is the likely tariff revenue loss for the Caribbean governments that often rely heavily on such collected duties for major portions of operating expenses. The authors conclude that in cases of high revenue losses, the EPA negotiation process with the country should focus on finding alternative sources of governmental operating revenue. Other

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<sup>20</sup> Trinidad and Tobago, the Bahamas, Jamaica, St. Kitts & Nevis, St. Lucia, and Antigua & Barbuda.

issues touched upon include levels of EPA-induced trade diversion: the pros and cons of Caribbean economic integration from inter-governmental cooperation or by establishment of multi-government institutions; the effects that levels of competition or imperfect competition have on EPA-induced benefits; and the role of development assistance within EPA frameworks.

Gasoriek and Winters arrived at a number of conclusions for proposed EPAs between the EU and the six Caribbean economies of focus. First, revenue losses are likely to be severe, necessitating a serious focus by negotiation processes on how the Caribbean governments are to procure alternative sources of operating revenues. Second, the US is frequently a more dominant supplier in the focused economies than the EU, and perhaps liberalization with the US will have more benefits than EPAs with the EU. Third, given the results of heuristic tabular analysis of Caribbean economy trade flow data, the prospects are high for EPA-induced trade diversion rather than EPA-induced benefits from trade creation for all or most of the six economies. And finally, Gasiorek and Winters note market power is an important factor. They conclude that cases where there is a high probability of trade diversion coupled with high levels of imperfect competition, the EPA could simply lead to a switch in supply towards EU sources with little or no decline in price.

### ***Greenaway and Milner (2003)***

Greenaway and Milner (2003) developed a partial equilibrium or PE framework to assess the economic effects of reciprocated liberalization of an EPA with CARICOM and the EU. Although CARICOM has 15 countries,<sup>21</sup> the authors focus on selected 9 Caribbean countries. They specify a set of equations to measure five EPA-induced effects, and then “match up” the equations to trade data for each of 9 Caribbean countries (hereafter focus countries) to obtain empirical country-specific welfare estimates of the EPA. They focus on how the agreement’s liberalization of EU imports will influence trade, production, and revenue of the CARICOM region, and the sensitivity of the effects to levels of substitutability among locally produced and imported products. They present graphical analyses of a CARICOM/EU EPA under two basic scenarios: where locally produced and imported products are perfect and imperfect substitutes.

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<sup>21</sup> The CARICOM region was formed in 1973 and has the following 15 members: Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts & Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad & Tobago.

In their setting where domestic and imported products are perfect substitutes, Greenaway and Milner assume that an EU/CARICOM EPA is instituted onto a perfectly competitive setting where the EU is less efficient a supplier than the ROW; CARICOM “own-suppliers” have increasing production costs; EU and ROW supply curves to the CARICOM are both flat or horizontal; and that there is already a pre-EPA regional trade agreement or RTA among CARICOM economies where there is a non-discriminatory ad valorem tariff on extra-regional imports. The authors demonstrate that EPA-induced welfare impacts are ambiguous, and that there are three trade effects which are possible: a trade expansion effect; a trade diversion effect from the ROW (e.g. the USA) to the less efficient EU; and a possible effect where less trade is diverted from the less efficient CARICOM partner suppliers to the more efficient EU. Their analysis suggests that the more efficient the EU is relative to the ROW, the greater are the prospects of welfare improvement and the smaller the prospects of trade diversion costs. Lost revenue possibilities are also depicted.

Their second graphical scenario assumes that product consignments are not perfect substitutes but rather differentiated by origin. All three regions (EU, ROW, and CARICOM) are assumed constant and equal cost suppliers. They demonstrate that EPA-induced effects are qualitatively similar to those under the perfect substitution scenario with the proviso that welfare effects are far less clear-cut.

There are two primary issues of focus by Greenaway and Milner. First is the large trade diversion effects likely for the 9 focus countries from a CARICOM/EU EPA. And second, there would likely be serious EPA-induced tariff revenue losses for the nine focus countries.

The authors then formulate the following five equations for EPA-induced effects for each focus country: a direct consumption trade creation effect; an equation for trade creation-induced displacement of regional trade; a trade diversion displacement of extra regional trade; a fiscal effect; and a welfare effect. All equations are driven by the import demand and import source substitution elasticities which were proxied by Greenaway and Milner as best as the prior literature permitted and/or by the GTAP behavioral parameter file. They then took the five equation model and applied them to 1997 or 1998 SITC digit-2 data for a large array of product groups for the following 9 Caribbean countries: Barbados, Belize, Grenada, Jamaica, St. Lucia, Trinidad and Tobago, St. Vincent, Dominica, and St. Kitts & Nevis. They assumed that elasticity values for a particular product group were identical across the 10 focus countries by “matching up” import demand and import source substitution elasticities with the fo-

cused countries' 2 digit HS code with the trade data to the degree as was feasible. Two major concerns or criticisms emerge. First, there is a complete lack of explanation of the source of the equation specifications, and because of space considerations, we refer readers to the article directly for these specifications. And second, little explanation emerges as to exactly how the equations were applied and "matched up" to the data in order to estimate the five EPA-induced effects on the 10 Caribbean countries.

From the five effect equations for each of the 9 focus countries, the following effects were reported as EPA-induced:

- Trade creation on existing EU import levels (1997-98) increased from 14.7% to 15.7 percent for all focus countries.
- Inter-CARICOM imports drop noticeably by from 21 percent to 26 percent for all nine focus countries.
- Trade from the non-EU ROW drops from 40 percent to as much as 57 percent for all focus countries.
- Focus country imports from the EU soar by 167 percent for St. Vincent to as high as 3906 percent for Jamaica.
- Trade creation as a percent of then-current 1997 imports ranges from 2.5 percent for Belize to as high as 12.8 percent for Grenada.
- Overall imports rise from 1.5 percent to 3.1 percent for all focus countries.
- And tariff or customs revenue declines are very substantial and range within the range of 62 – 78 percent for all focus countries.
- An EPA would result in less petroleum and beverage products being traded intra-regionally. The 9 focus countries would purchase noticeably more manufactured products from the EU.

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