The Impact of Economic Partnership Agreements on African, Caribbean and Pacific Countries Imports and Welfare

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Abstract – **This paper estimates the impact on a sample of 34 African, Caribbean and Pacific (ACP) countries of eliminating tariffs on imports from the EU under Economic Partnership Agreements (EPAs), considering trade, welfare and revenue effects. Even assuming 'immediate' complete elimination of all tariffs on imports from the EU, some two-thirds of ACP countries are likely to experience welfare gains; the ACP overall and the average ACP country gain. The overall welfare effect relative to GDP tends to be very small, whether positive or negative. While potential tariff revenue losses are non-negligible, given that countries have at least ten years in which to implement the tariff reductions, there is scope for tax substitution. An important issue is identifying the sensitive products (SPs) to be excluded from tariff reduction. We exclude products where ACP imports compete with the EU (as SPs have to be agreed at the regional ACP level). In general, excluding SPs on these criteria reduced the welfare gain (or increased the welfare loss) compared to estimates where no products are excluded. It remains the case that the ACP overall and on average gains, although only 13 countries (38%) experience a net gain in this scenario (but for another nine the net effect is zero or almost zero). This is to be expected as if ACP products are excluded as SPs the potential trade creation gains are reduced. However, as the exclusion criterion was products that are traded between ACP countries, these import losses would be offset by gains to ACP exporting countries. Perhaps the most surprising result is that even where EPAs imply a welfare loss (on imports), the losses are likely to be very small.**

Key Words **- EU-ACP, Economic Partnership Agreement, ACP Imports**

I. INTRODUCTION

Although the European Union (EU) has provided trade preferences to the former colonies of the African, Caribbean and Pacific (ACP) regions since 1975 under successive Lomé conventions, these preferences have been of limited value (Langhammer, 1992). This is not surprising as trade preferences in general have not provided significant benefits to developing countries (Ozden and Reinhardt, 2003), especially Africa (Brenton and Ikezuki, 2007). One reason for the limited effect is the conditions under which preferences were granted, either restricting the products eligible for full preferences (often excluding products of particular benefit to developing countries) or, especially in the context of EU preferences for the ACP, imposing very restrictive Rules of Origin requirements (thus limiting opportunities for diversification). Another reason relates to policy-induced distortions in the ACP countries, so that actual incentives for production diversification are weak, exacerbating the problem of a narrow

production structure and primary commodity resource base. This is especially true for Africa (but applies more generally to ACP). Furthermore, there is excessive emphasis on expanding manufacturing, and recently services, exports. Thus, it is argued that achieving sustained growth in Africa requires implementing policies to expand exports, and to diversify exports away from dependence on a narrow range of (unprocessed) primary commodities (Commission for Africa, 2005). Trade preferences can play a role, as the experience to date with the US African Growth and Opportunity Act (AGOA) suggests (Frazer and van Biesebroeck, 2007).

This emphasis on diversifying exports can divert attention away from what is required to enhance the competitiveness of existing producers, whether import-competing or traditional exports. In an ACP context, this means addressing the primary sector, especially agriculture, and more generally considering the import side of any trade policy (Morrissey, 2005). This is especially relevant to economic partnership agreements (EPAs) as they will require ACP countries to eliminate tariffs on most imports from the EU, the impact of which will depend primarily on the structure of a country's imports (EPAs include many other provisions and effects, as mentioned below, but the focus here is on ACP imports). There are benefits for products where there are few or no competing domestic producers – consumption gains from increased cheaper imports and potential welfare gains in sourcing imports from more efficient EU producers. There are potential welfare losses, or adjustment costs, where cheap imports from the EU domestic undermine domestic production or displace more efficient producers in the rest of the world.

A specific feature of preferences under Lomé conventions is that they were granted to selected countries that were not required to grant reciprocal concessions to the EU; this was challenged under the rules of the World Trade Organization (WTO) and found to be 'illegal' under WTO rules. To continue preferences, the EU agreed a waiver in the WTO in 2001 to remain in effect until 2008, when a new WTO-compliant regime was to be in place. The Cotonou Agreement proposed introducing reciprocity through the establishment of a series of economic partnership agreements (EPAs), under which the EU and regional groupings of ACP countries offer reciprocal trade preferences to each other, as the new regime. Negotiations between the

EU and ACP regional groups began in October 2003 and entered the final stage in March 2007, with EPAs to be implemented from 2008.

In principle, EPAs offer potential benefits to ACP countries beyond what was available under Lomé conventions. The preferential access to the EU is less restrictive: all ACP countries should have tariff-free access to the EU for almost all products; this should be available once the agreements are in place, and restrictions, such as Rules of Origin requirements, should be less than previously.[1] The ACP member countries should derive some benefit from enhanced regional integration as a precursor to EPAs: even if the actual trade benefits are limited, there are benefits from regional economic co-operation. A range of trade-related policy reform commitments are included in the EU proposals, covering trade facilitation and investment, and perhaps also competition policy and government procurement. If implemented properly these could enhance the business environment in ACP countries, attracting investment and promoting exports. There is an expectation that some increased aid will be made available by the EU to support implementation of and adjustment to EPAs.

There are potential costs to ACP countries through reciprocity as they are required to grant tariff-free access to imports from the EU. Although there is concern in ACP countries that such opening up to import competition from the EU will displace domestic production, it is not obviously the case that there will be adverse effects. The welfare impact of import liberalisation depends on the production and trade structure of the country in question, and as such is an empirical question. Of greater practical concern is the potential loss of revenue from tariffs on imports from the EU. However, ACP countries have at least 10 years to phase in tariff elimination,[2] and even then can continue to exclude a range of designated 'sensitive products' (identifying these is

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[1] The EU proposal for EPAs is a '30% local value added' threshold, compared to the current Cotonou Rules of Origin which are equivalent to a 60% threshold. The details have not been agreed, and some ACP countries favour a 'change of tariff heading' test, i.e. if the activity in the ACP countries changes the tariff classification the exported product is deemed to have origin in that country (Pearson, 2007).

[2] There are ACP proposals to extend the transition period up to 20 years, given that the jurisprudence in relation to Article XXIV of GATT is not definitive and negotiations under Paragraph 29 of the Doha Mandate might be sympathetic to the ACP proposal for more flexibility.

a sticking point in negotiations). Thus, countries do have time to plan both their adjustment to the economic effects of increased imports and the revenue effect of eliminating tariffs. To design such plans they need information on the likely effects at a disaggregated product level. The aim of this paper is to assess the trade, revenue and welfare implications of EPAs on ACP countries' agriculture imports from the EU, applying the analytical framework used by McKay *et al* (2005).

The remainder of the paper is organised as follows. Section 2 reviews the progress of EPA negotiations and discusses some of the existing literature estimating the effects. Section 3 presents the partial equilibrium method used to estimate trade, revenue and welfare effects of introducing an EPA for EU imports to ACP countries. Section 4 provides our estimates, covering the majority of ACP countries except those in the Pacific, and discusses the issue of identifying sensitive products. Finally, section 5 sets out the implications of the analysis and summary conclusions.

II. THE STATUS OF EPA NEGOTIATIONS

The Cotonou Agreement between the EU and 71 ACP states was concluded in February 2000 covering various dimensions including economic relations, aid programmes, and trade co-operation, specifically the proposal for EPAs to be implemented over a 10-15 year transitional period starting by 2008 at the latest. The ACP countries were aware that EPAs offer limited benefits, although the situation differs between least developed countries (LDCs) and non-LDCs. The LDCs are entitled to essentially tariff-free access to the EU without committing to reciprocity. The non-LDCs, however, could lose their Lomé-type preferences and would be granted only GSP access if EPAs were not in place. This loss of preferences could significantly undermine export competitiveness and damage major sectors dependent on exports to the EU, such as beef in Namibia and horticulture in Kenya (Stevens, 2007). Thus, non-LDCs have a strong incentive to sign EPAs to maintain preferential access for their exports to the EU.

For ACP countries, the first step was to form themselves into regional groups, some of which are actually more advanced in regional integration than others, and six have emerged: Caribbean, Pacific, Central Africa, West Africa, Southern Africa (SADC) and East and Southern Africa (ESA, from which there is still a possibility of East Africa forming a separate group). It has been a problem for some African countries to decide which group to belong to for purposes of the EPAs.[3]

As the December 2007 deadline approached 35 ACP countries signed EPAs either as a region or individuals, and the remaining 40 countries negotiating EPAs preferred not to sign. Only 15 CARIFORUM and 5 EAC countries signed at regional level while the remainder 15 signed bilateral EPAs with the EU. Only the CARIFORUM EPA is a comprehensive EPA, the rest are *Interim EPAs*. See Appendix table A1. ACP countries that have not signed most of which are least developed took the risk of being relegated to the less advantageous EU's Everything But Arms (EBA) while non-least developed countries can claim only the EU's Generalized System of Preferences (GSP) available to a larger number of non-ACP developing countries.

Interim EPAs represent an intermediate position before a full EPA following inability of ACP countries, for technical and political differences, to finalize comprehensive EPAs as originally foreseen by the Cotonou Agreement at the expiry of the special WTO *Cotonou waiver* on 31 December 2007. Interim EPAs are WTO-compatible arrangements (Article XXIV) designed to provide a continuation of ACP market access to the EU (established under the Cotonou/Lomé conventions) while working towards reaching a comprehensive and developmental EPA by the end of 2008 or mid 2009. Unlike comprehensive or full EPAs which cover a wide range of trade issues, *Interim EPAs* are partial in scope covering only trade in goods.

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[3] SADC is a good example of the complexity in Africa. South Africa, the dominant member, only has ACP 'observer status' and had a free trade agreement with the EU. However, as of December 2006 the EU and South Africa agreed to abandon their Trade and Development Cooperation Agreement (TDCA) and allowed South Africa to become part of SADC in EPA negotiations. Botswana, Lesotho, Namibia and Swaziland are in a customs union with South Africa (SACU), whereas Angola, Mozambique and Tanzania (also in ESA and EAC) are not. It is far from clear how any EPA could treat all members of SADC equally.

Although *Interim EPAs* are presented as involving minimal commitments by ACP countries (the EU offers 100% liberalisation by value of trade as of 1 January 2008) concerning trade in goods they have a wide scope and cover a lot more issues than simply satisfying WTO-compatibility. All *Interim EPAs* contain *Core provisions* concerning the conditions for the elimination of tariffs on goods (with product and timeframe details, see Appendix table A2), trade remedies (Safeguards), and provisions on rules of origin. Some *Interim EPAs* also include provisions for non-tariff measures (including Technical Barriers and Sanitary and Phytosanitary controls). They also include a *Rendezvous clause* which specifies issues for further negotiation (for example, trade in services, investment, government procurement, competition, intellectual property rights, and other areas). The reference to further negotiations in services differs for different *Interim EPA* texts, for example, in the context of Ghana such negotiations will seek to establish a cooperation framework while in the case of SADC countries they will be with a view to liberalize the sector. Other provisions include: third party MFN clause obliging ACP countries to extend to the EU, on a tariff line basis, any more favourable treatment offered by ACP countries to third party developed or major developing country in a new FTA; requesting ACP countries not to increase tariffs; obligation to eliminate existing export taxes and refraining from imposing additional taxes in the future.

For some countries signing *Interim EPAs* can be said to have been influenced by special interest groups within individual countries who stood to lose significant export business with the EU if their countries did not sign (for example, cut flowers, meat, bananas, sugar, fish and services (e.g. tourism and music performances from the Caribbean region)), and also pressure posed by the EU as the deadline loomed.[4]

For Africa at least, existing regional integration arrangements (RIAs) are at best weak, have proved politically difficult to sustain and have generated few clear economic benefits (Lyakurwa *et al*, 1997). While integration can contribute to growth and development, notably by increasing the size of the market and attracting foreign direct investment (FDI), most of the evidence for beneficial effects of RIAs relate to developed or middle-income countries (Schiff and Winters, 2003). The general problem has been that most of the benefits accrue to the largest and richest member, while few economic benefits accrue to the poorest members so deep integration has been difficult to achieve or sustain. This is an underlying problem in EPAs, especially in Africa, where the regional groups include at least one 'large' non-LDC member with (economically) small LDC members. The former stands to gain from securing trade preferences for the EU market whereas the latter have no preferences to gain (beyond what they should be entitled to even without EPAs). It is therefore relevant to assess the impact of reciprocity (offering tariff-free access to imports from the EU), and whether this may differ between LDCs and non-LDCs; we explore this for the agriculture sector.

Whilst it is important for ACP countries to assess the effects of reciprocity on trade, welfare and revenue there are few assessments in the literature of the impact of EPAs. Busse and Grossman (2007) apply a differentiated product partial equilibrium model to analyse the trade and revenue effects of the EU-ECOWAS EPA. They find that the (static) trade effects are quite high (imports from the EU increase

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[4] For example, see: "Kenyan Flower Exporters Upbeat on New EU Trade Deal," (Oct. 2007), http://www.lemali.fr/news/africa-news/ Kenyan-Flower-Exporters-Upbeat-on-New-EU-Trade-Deal-200710049694.html; "Flower Industry May Wilt if EPA Deadline is Missed," Rosalia Omugo, Inter Press Service, (Sept. 2007), http://www.bilaterals.org/article.php3?id_article=9700; "Namibia: Meat Exporters in a Panic Over EU", Wezi Tjaronda (14 May 2007). All accessed March 2008.

http://allafrica.com/stories/200705140353.html; "Demain, sans APE, c'est la douane", Luc Magloire Mbarga Atangana, (Dec.

2007) http://www.commodafrica.com/fr/actualites/matieres_premieres /cameroun; and "Bananes - Les producteurs ivoiriens inquiets : Anxieuse attente des Ape", (Nov 2007) http://www.bilaterals.org/article.php3?id_article=10273 . All accessed March 2008.
The African Union Declaration on Economic Partnership Agreements (January 2008) noted that "political and economic pressures are being exerted by the European Commission on African countries to sign Interim Economic Partnership Agreements." However, the EC considers this as a misconception (#1) saying "pressure came from the expectations of other WTO members, including non-ACP developing countries, that the EU and the ACP would respect their commitment to make their trade relations WTO-compatible by 1 January 2008 …" (see EC's "Six common misconceptions about Economic Partnership Agreements (EPAs)" - *Brussels, 11 January 2008* from http://trade.ec.europa.eu/doclib/docs/2008/january/tradoc_137484.pdf . Accessed July 2008)

by over 20 per cent for some products in some countries) although trade creation dominates trade diversion, so the welfare effect is positive for all countries. However, while revenue losses of 4 to 9 per cent are the norm, some countries face much higher losses (among the non-LDCs, Ghana faces the highest revenue loss). Karingi *et al* (2005) use a combination of general and partial equilibrium modeling techniques and conclude that the likely revenue and adjustment will be costly for African countries. However, their estimate of welfare effects is based on consumption effects only, so they found welfare gains for all countries. McKay *et al* (2005) apply the partial equilibrium technique used below to East Africa and conclude that although the welfare effects (excluding revenue loses) are small, whether positive or negative, there are short-run adjustment costs and potentially large revenue losses. They find a negative short-run welfare effect on Tanzania (because the trade diversion effect from the rest of the world dominates) but a small positive short-run effect for Uganda (because the consumption gain dominates and the increase in imports from the EU displaces relatively inefficient imports from Kenya). Kenya is likely to experience a welfare loss, as it loses regional market share and faces increased competition from EU imports, but this must be set against the gains of preferential access to the EU (especially important for the now large horticulture sector).

The EPAs can be WTO-compliant as long as, amongst other conditions, 'substantially all the trade' between partners is liberalised (i.e. subject to zero tariffs). Although there is agreement that this probably means about 80% of trade, it is not at all clear how this should be measured. Is it 80% of tariff lines or of the value of trade, before or after liberalisation? Consequently, it is not clear what proportion of ACP imports from the EU can be excluded from liberalisation, i.e. what proportion can be deemed sensitive products? As exports to the EU typically account for over 60% of total bilateral trade, ACP countries could exclude almost half of their imports from the EU. We assume that ACP countries will have to liberalise at least 70 percent of trade (imports from the EU), and that whole sectors, such as apparel, cannot be omitted. We return to this issue when discussing sensitive sectors.

III. MODELING FRAMEWORK

We apply the partial equilibrium analytical framework used by McKay *et al* (2005) and outline the core features here. This extends the established theoretical framework for analysing the economic (welfare) effect of regional integration (e.g., Balassa, 1974; Lyakurwa *et al*., 1997; Schiff and Winters, 2003) as applied by Panagariya (1998) to consider when small countries (in our case ACP) integrate with large countries (the EU in this case). Two effects are of particular importance in any analysis of the welfare effect of a regional integration agreement (RIA). Beneficial trade creation arises where inefficient production by domestic firms in a member country (ACP) is displaced by tariff-free imports by more efficient producers in another member country (the EU). This increases welfare in total through a more efficient allocation of production within the RIA. On the other hand, trade diversion imposes a welfare loss where trade from more efficient extra-regional suppliers (ACP imports from the Rest of the World, ROW) is diverted to less efficient intra-regional suppliers (the EU). For the RIA as a whole, welfare increases if trade creation is greater than trade diversion. We assume that the EU benefits, although we make no attempt to estimate this, and focus on the effects on ACP countries (and further, here, on agriculture only).

Although partial equilibrium methods are limited and restrictive, they offer a number of advantages over alternative computable general equilibrium (CGE) approaches which make them attractive for our purposes. First, the data requirements are relatively simple: all we need are data on imports for a representative year disaggregated by source (ACP, EU and ROW) and product, whereas CGE analysis requires a model of the structure of the economy. Second, the analysis can be conducted at a high level of product disaggregation, compared to CGE analysis which typically requires sector aggregation, which is especially useful in attempting to identify sensitive products. Third, the estimates are quite easy to interpret as proportional effects on trade volumes and revenues. Fourth and consequently, the results are quite useful for policy-makers and negotiators. Finally, a more general benefit is that estimates can be provided, based on product detail, for a large number of ACP countries (whereas CGE

studies tend to be country-specific or to group countries).

There are limitations, although no approach is without weakness. We do have to make a number of restrictive assumptions, such as on supply and import demand elasticities, although arguably the assumptions are no more restrictive than for alternative methods (and results are quite robust to sensitivity checks). More importantly, the analysis is limited to static trade effects; it does not allow for effects on or responses by domestic producers, or for any effects through factor markets and sector adjustment. Considering such effects would require general equilibrium analysis. Furthermore, the analysis does not account for changes in partner countries (e.g. if they also reduce tariffs) or the global market (e.g. world prices), or for possible changes in demand for exports, for example if trade preferences change (as under an EPA); addressing these issues would require a global model. The partial equilibrium approach does estimate likely first order effects on imports and in principle these could form a basis for more detailed CGE country studies where feasible. Thus, we consider the estimates to be indicative of the potential impact of EPAs on agriculture imports in ACP countries, highlighting products that individual countries may wish to consider in more detail.

We estimate and report results for three effects. Consumption effects arise from increased imports at reduced prices; if the EU is initially the dominant supplier, the EPA results in pure consumption effects only, and this is clearly beneficial. Trade creation (TC) arises in this context when imports from the EU displace imports from other ACP countries; assuming the EU is the more efficient producer, this increases welfare in the importing country (although producers in the exporting ACP country lose).[5] Trade diversion refers to a situation where the elimination of tariffs allows EU suppliers to displace more efficient producers in the ROW; this is likely to arise if pre-EPA the ROW is the dominant supplier.

Figure 1 illustrates the welfare effects of an EPA from the perspective of a small home country member (denoted H) of the RIA among ACP countries that is negotiating with the EU. The larger ACP partner country (R) in the RIA is assumed to have an upward sloping supply curve (being relatively small, this is not unreasonable). There are initially two extra-regional suppliers, the EU and the ROW, both with infinitely elastic supply curves. For a given product: D_H represents the home country's demand for imports, S_R the partner's (upward sloping) supply of exports (to H), and S_{EU} and S_W are the respective extra-regional export supply functions at constant cost (prices P_{EU} and P_W respectively). Assume for convenience that initially $P_{EU} > P_W$ (this would not apply in our case where the EU is initially the dominant supplier), but once tariffs are eliminated the EU can meet all demand at P_{EU} (i.e., S_{EU} is below S_R).

There is a non-discriminatory (*ad valorem*) tariff (t) on extra-regional imports, where $P^t_W = P_W (1 + t)$ and initially H imports OM_2 in total, with OM_1 coming from R and M_1M_2 from ROW (P^t_{EU} is not shown as the EU is assumed to be the higher cost supplier prior). Assuming no domestic production capability welfare (W and change in welfare denoted $\;W$) is defined by the consumer surplus: W for H is initially given by the consumer surplus triangle (the area below D_H and above S^t_W) plus the tariff revenue on extra-regional imports (area $a + b$). Under the EPA, t applies to ROW but not the EU. The relevant supply price is now P_{EU} with the total quantity of imports expanding from OM_2 to OM_3 (the consumption effect). Figure 1 illustrates a case where all imports post-EPA come from the EU. The trade diversion effect is illustrated as M_1M_2, and the trade creation effect OM_1. Different scenarios could be illustrated in separate figures, but it is more useful to consider other possibilities in describing how we estimate the welfare effects.

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[5] This differs slightly from the standard TC case as the displaced producers are not in the importing country (whose welfare is being measured) but in another ACP country (so the producer loss is not included in the estimates). As the EU would only displace ACP suppliers if the tariff-free EU price is lower than the ACP supplier price, it is assumed that in this case the EU is more efficient. This is not valid if there are other factors distorting EU export prices (such as agriculture subsidies).
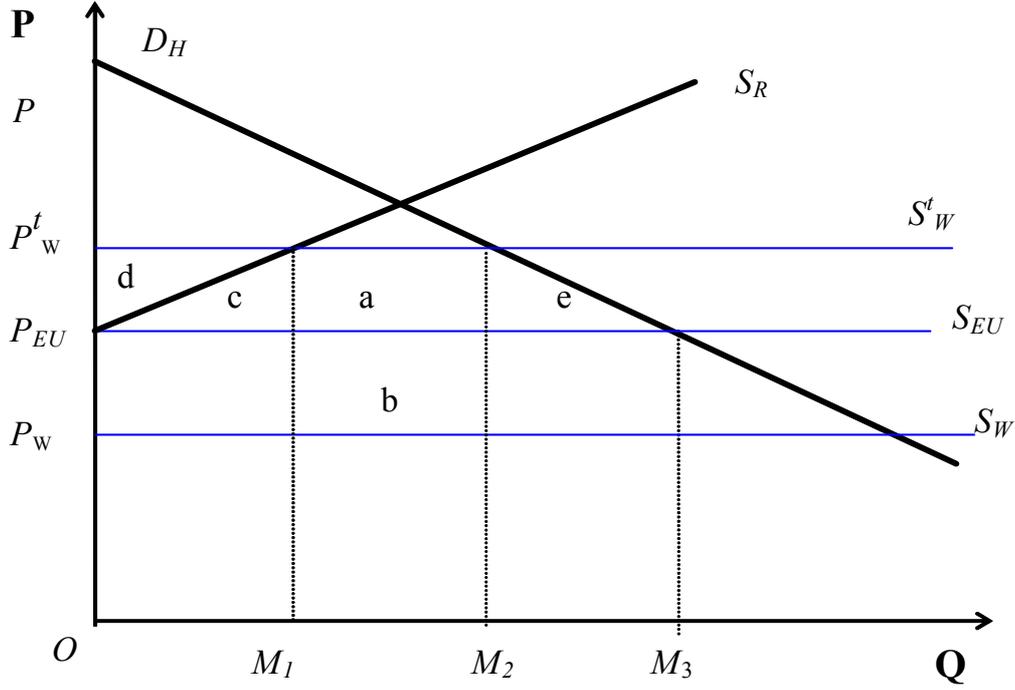
Fig. 1: Effect of an EU-ACP EPA

A. Estimating Trade and Welfare Effects

In estimating effects we begin with the trade data and allocate imports by product into one of three cases. If initially the EU is the dominant supplier (accounting for at least 40% of imports), we assume that all effects are consumption gains (consumption effects only). If the ACP is initially a significant supplier (accounting for at least 20% of imports), we allow for the TC of the EU displacing ACP imports. If initially the ROW is the dominant supplier (accounting for at least 40% of imports), we assume that at zero tariffs the EU can displace all imports from the ROW to estimate the <u>maximum</u> TD potential (this is therefore unlikely to be the actual impact, but is a useful base for considering sensitive products).

1. Consumption Effects Only (CE)

If the EU is initially the dominant supplier we can interpret this as $P^t_W = P^t_{EU}$ in Figure 1; imports increase by M_2M_3 and we measure the welfare gain as area *e*. The consumption effect alone (ΔC^M) is estimated relative to existing EU import volumes as

(where elasticities are the modulus, although of course a reduction in tariffs implies an increase in import demand):

$$\Delta C^M = \left(\frac{t}{1+t}\right).\eta_M^d.M_0^{EU} \qquad (1)$$

where *t* is current tariff imposed on imports from the EU, η_M^d is the price elasticity of demand for imports, M_0^{EU} is the existing value of imports from the EU.

As an EPA entails elimination of tariffs on imports from the EU, the tariff revenue loss on imports ($M_0^{EU} = OM_2$) and welfare effects can be estimated as follows:

$$\Delta R^C = -t.M_0^{EU} \qquad (2)$$

$$\Delta W^C = (\tfrac{1}{2})t.\Delta C^M \qquad (3)$$

2. 'Trade Creation' with Consumption Effects (TC&CE)

For the case where an ACP partner supplies a relatively significant share of imports one can estimate the effects of trade creation with consumption effects by considering the case where the ACP price lies over the relevant range between P_{ROW}^t and P_{EU}. In this case all ACP imports (OM_1) will be replaced by imports from the EU. The maximum value of trade creation with consumption effects (ΔTC_M^C) obtains where the price of ACP imports is as high as the tariff-inclusive price of imports from the EU. Thus:

$$\Delta TC_M^C = (\tfrac{1}{2})\left(\frac{t}{1+t}\right)\eta_M^d . M_0^{ACP} \qquad (4)$$

where M_0^{ACP} is the current value of imports from ACP.

Welfare effects of trade creation with consumption effects can be estimated as the combination of the maximum value of trade created by the displacement of ACP exports to partner country j and consumption effects of trade creation defined in equation (4) as follows:

$$\Delta W_{TC}^M = \left(M_0^{ACP}\right)t + (\tfrac{1}{2})\left(t.\Delta TC_M^C\right) \qquad (5)$$

3. 'Trade Diversion' with Consumption Effects (TD&CE)

Relevant cases of trade diversion occur where more efficiently produced imports from the ROW (M_1M_2) are displaced by relatively less efficiently produced commodities from the EU due to an EPA. Commodities for which the ROW is a dominant supplier pre-EPA can be taken to indicate that the ROW is more efficient than the EU. Where an EPA leads to $P_{EU} < P_{ROW}^t$ under the prevailing constant production cost conditions the EU becomes the sole supplier to country j, and total import diversion will be the upper limit of trade diversion. Obviously, not all imports will be diverted from ROW, and we assume the EU must initially be supplying a

reasonable share of imports of a product (at least 20%) to have a capacity for TD. The consumption effects due to trade diversion (ΔTD_M^C) can be estimated in a similar way by assuming (in the absence of information about the level at which the post-EPA EU price will settle relative to P_{ROW}^t and P_{ROW}) that on average the post-EPA price of imports from the EU lies midway between the two. Thus:

$$\Delta TD_M^C = (\tfrac{1}{2})\left(\frac{t}{1+t}\right)\eta_M^d . M_0^{ROW} \qquad (6)$$

Evidently trade diversion will be associated with tariff revenue loss since country j switches from taxed ROW sources to duty free EU sources. The tariff revenue loss due to trade diversion (with consumption effects) is given by:

$$\Delta R_{TD}^C = -t.M_0^{ROW} \qquad (7)$$

Using the assumption that P_{EU} lies halfway between P_{ROW}^t and P_{ROW}, the welfare impact of trade diversion with consumption effects can be estimated as the combination of consumption effects (from equation 6) and tariff revenue effects (from equation (7):

$$\Delta W_{TD}^M = (\tfrac{1}{2})\left[\left((\tfrac{1}{2})t.\Delta TD_M^C\right)-\left(t.M_0^{ROW}\right)\right] \qquad (8)$$

In the context of Figure 1 we are effectively measuring $b - e$ minus revenue loss ($a + b$). In general, rather than imposing assumptions on the welfare effects of (fiscal adjustments associated with) the revenue loss, we will report the welfare effects excluding the revenue losses, which are reported separately.

IV. EMPIRICAL APPLICATION TO ACP IMPORTS

Results are provided for 34 out of 71 ACP countries using the most recently available data matching imports and import tariff rates; for most countries the estimates use data from 2005 or 2006, though for some the data are earlier (the countries and years are listed in the tables of country summary results; some

results are also reported for Cuba and Surinam, but we had incomplete data for these countries). Data on the value of imports (cif) and import tariff rates were constructed from COMTRADE data at the 5-digit level in SITC format showing commodity description, country of origin and values. The data were then aggregated across categories and source to obtain intra-ACP, ACP-EU and ACP-ROW values for the 4-digit SITC level. The import tariff rates used were Most Favoured Nation (MFN) rates as we did not have data on customs duty revenue collected (implicit tariffs). The 8-digit HS MFN tariff rates data were first transformed to the 6-digit level and then to the SITC format using an HS (6-digit) to SITC (4-digit) concordance. The trade elasticities used were obtained from Stern *et al* (1976) supplemented by elasticities from the GTAP/World Bank database.

A.   Estimation Results

Table 1 summarizes the welfare estimates distinguishing consumption effects (CE), TC&CE and TD&CE. Clearly, as shown above, the latter is always negative (or zero for Burkina Faso) and both of the former are positive (or zero in some cases), so the sign of the overall welfare effect depends on the relative magnitude of the latter. For the sample combined (all 34 countries) the welfare effect is positive but very small, at 0.01% of GDP (due entirely to CE); the ACP overall gains. The unweighted mean for the sample (average) is also a positive welfare effect of 0.005% of GDP (comprising a combination of effects); the average ACP country gains. Overall, 22 countries (two-thirds) experience a net gain and 12 (one third) experience a net loss (indicated in italics). The welfare effects will depend on what is happening at an individual product level, in terms of both the ability of the EU to displace suppliers from ACP or ROW and the responsiveness of imports to a reduction in tariffs (as this determines CE).The countries that gain tend to have a relatively low initial share of imports from ROW (mostly less than 50%, compared to mostly over 60% for losers, Appendix Table A1) so the potential for TD is limited. Similarly, the countries that gain tend to have a relatively higher initial share of imports from the EU.

Table 1: Composition of Trade Effects (as % GDP)

Notes: Figures report consumption effects (CE) only, trade creation (TC) from ACP and trade diversion (TD) from ROW. Countries with overall welfare losses are highlighted in *italics*; LDCs highlighted in **bold**; 'All countries' is combined total and 'average' is sample mean (unweighted).

Country	CE	TC&CE	TD&CE	Welfare
All Countries (34)	0.010	0.000	0.000	0.010
Antigua & Barbu	*0.005*	*0.005*	*-0.015*	*-0.004*
Bahamas	*0.000*	*0.000*	*-0.023*	*-0.023*
Belize	*0.003*	*0.000*	*-0.008*	*-0.004*
Benin	0.009	0.002	-0.005	0.006
Burkina Faso	0.003	0.001	0.000	0.004
Cameroon	0.007	0.005	-0.004	0.008
Central Africa R	0.002	0.003	-0.004	0.001
Cote D'ivoire	0.013	0.001	-0.004	0.011
Dominica	*0.003*	*0.008*	*-0.015*	*-0.004*
Dominican Rep	*0.001*	*0.000*	*-0.007*	*-0.005*
Gabon	0.019	0.001	-0.004	0.016
Ghana	0.009	0.001	-0.010	0.001
Grenada	0.004	0.016	-0.017	0.003
Guyana	0.004	0.024	-0.018	0.011
Jamaica	*0.000*	*0.002*	*-0.011*	*-0.008*
Kenya	0.007	0.002	-0.005	0.004
Madagascar	*0.002*	*0.001*	*-0.004*	*-0.001*
Malawi	0.004	0.010	-0.002	0.012
Mali	0.004	0.003	-0.001	0.006
Mauritius	0.020	0.003	-0.010	0.014
Mozambique	0.002	0.006	-0.005	0.003
Niger	0.004	0.008	-0.004	0.007
Nigeria	0.020	0.002	-0.019	0.003
Papua New Guin	*0.000*	*0.000*	*-0.001*	*-0.001*
Senegal	0.017	0.001	-0.008	0.010
Seychelles	0.081	0.012	-0.030	0.062
South Africa	0.013	0.000	-0.006	0.006
Sudan	*0.003*	*0.000*	*-0.005*	*-0.002*
Tanzania	*0.005*	*0.003*	*-0.009*	*-0.001*
Togo	0.006	0.007	-0.008	0.005
Trinidad & Tobgo	*0.001*	*0.000*	*-0.006*	*-0.005*
Uganda	*0.001*	*0.002*	*-0.004*	*-0.001*
Zambia	0.001	0.006	-0.002	0.005
Zimbabwe	0.004	0.013	-0.006	0.011
Average	0.008	0.005	-0.008	0.010

For the 13 least developed countries (LDCs) in the sample (highlighted in bold), only four (30%) experience an overall welfare loss (Madagascar,

Sudan, Tanzania and Uganda), due to relatively high diversion from the ROW (relatively high TD&CE), although the figure is very small (typically 0.001% of GDP). Thus, 70% of LDCs experience a gain, ranging in magnitude from just over 0.01% of GDP (Malawi), to a rounded 0.01% (Benin, Mali, Niger, and at 0.005% Togo and Zambia), to only 0.001% in CAR. The majority of LDCs gain, and the gains tend to be greater than the net losses in absolute magnitude.

Thirteen of the 21 non-LDC countries, almost two thirds, are estimated to experience a welfare improvement, ranging from 0.06% of GDP in the Seychelles, over 0.01% in six other countries, and just 0.001% in Ghana. Seven non-LDCs experience a welfare loss, the largest in absolute magnitude being the Bahamas at -0.02% of GDP, and the other losses are less than 0.01% of GDP. As with LDCs, the majority of non-LDCs gain, and the gains tend to be greater than the net losses in absolute magnitude

The overall welfare effect is negative for 12 countries, 60% of which are non-LDCs; seven in the Caribbean, four in Africa (all LDCs) and PNG, the only Pacific country included.[6] In general, countries experiencing welfare losses sourced over 55% of

imports from ROW (Appendix Table A3) and were the only countries with such high import shares from ROW. The implication is that the EU has a relatively strong capacity to displace some of these ROW imports and the import responsiveness (elasticities) are relatively low in those products where the EU is dominant. In sum, the losers are more likely to be non-LDCs that initially have a relatively high share of imports from the ROW (note that we consider welfare impacts excluding revenue effects). Nevertheless, a positive effect on welfare prevails.

For the ACP sample overall and on average, imports from the EU increase by 8% of their pre-EPA level, equivalent to 3% of total imports (Table 3 below). Countries with an estimated welfare loss experience relatively low percentage increases in EU imports compared to the ACP average (Table 3). The implication is that these increases in imports are displacing imports from the ROW (to the extent that

this does not occur in practice, we overestimate the adverse welfare impact). Although the increase in imports from the EU as a percentage of total imports shows no clear pattern comparing welfare gainers and losers, the gainers are more likely to experience an above average increase in imports from the EU (typically of products they were already importing from the EU). This highlights the fact that it is not the change in total imports that matters, but structure of trade within the products affected (specifically, the balance between CE and TD).

While the welfare effects are most likely to be positive, the revenue impacts are always negative; overall and on average the revenue loss is equivalent to 31% of tariff revenue from imports, just below one per cent of GDP (Table 4 below). Eight countries (22% of the sample of 36) could lose at least 30% of revenue on imports, typically equivalent to over 1% of GDP (but tariff structures and revenue totals vary considerably). Three of these are LDCs, although two (Burkina Faso at -29% and Mali at -34%) are at the lower end of losses. At the higher extreme are CAR, Dominican Republic and Senegal where losses could exceed 50% of tariff revenue, equivalent to 1.3%, 1.6% and 14.6% of GDP respectively (Table 4). However, for 11 countries the potential loss of tariff revenue is less than ten per cent of the pre-EPA level.

B. Treatment of Sensitive Products

As the requirement is to liberalise 'substantially all trade' this allows ACP countries to exempt sensitive products (SPs) from liberalisation. As discussed above, tariffs can be maintained on 20-30% of products. For convenience, in the analysis of excluding SPs here we assume that 20% of imports can be excluded. There are no clear criteria for which products will be classed as SPs, and indeed this an issue on which negotiations have made very little progress. The ACP countries are negotiating as regional groups so they will have to agree a common list of SPs; our criterion is to define as SPs any products imported from the EU where other ACP countries account for at least five per cent of imports.[7] As long as the EU is already a competitor

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[6] Unfortunately, data availability for the small Pacific islands was very limited. South Africa is included although it only has observer status in the ACP.

[7] We also applied a 'revenue protection' criterion of defining as SPs products on which tariffs were initially high. However, as it is usually the case that either tax substitution is possible (such as

in these markets the effect of exclusion will be to reduce CE gains, eliminate TC gains but possibly reduce TD losses. The net impact will depend on the combination of trade effects. For many ACP countries regional imports are a large share of the total (Table A1), typically the EU is not a competitor for these products so there is no need to exclude them as SPs. Although the possibility of the EU becoming a potential competitor under zero tariffs must be considered, the total imports excluded as SPs cannot exceed 20% of total imports from the EU (for the purposes of our estimates).

The estimates of the composition of welfare effects when the criterion is applied to exclude SPs are shown in Table 2. It remains true that the ACP overall gains; although the 'all countries' ACP gain falls to a negligible 0.002% of GDP, the average gain falls only slightly to 0.008% of GDP. As expected, the TC gain is eliminated and the TD&CE loss falls, although the CE gain declines only marginally. This clearly reflects our (plausible) choice of SP criterion in excluding products imported from the ACP. It also follows from this choice that the estimated gain for most countries declines, while the estimated welfare loss tends to increase. Nevertheless, the welfare effects in most cases are quite small (and there are welfare gains for the ACP exporters that are not included).

Table 3 shows the trade effects of excluding SPs. Unsurprisingly, the percentage increase in imports from the EU is reduced, but only slightly: for all countries, from 8% (equivalent to a 3.1% increase in total imports) to 7% (2.7%); on average, from 8% (2.2% on total) to 6% (1.7%). There is no evident pattern relating the net welfare impact, how this changes when SPs are excluded, and the proportional trade effects. Although the change in trade effects comparing inclusion to exclusion of SPs tend to be large for the countries experiencing a welfare reversal, this is not always the case. For example, excluding SPs the trade effects are much smaller for CAR and Mozambique, and roughly halved for Nigeria, but only slightly lower for Guyana.

Table 2: Welfare Effects excluding SPs (as % GDP)

Notes: As for Table 1, except here Sensitive Products (SPs), classified as products that are impor5ed from other ACP countries, have been excluded, i.e. tariffs on imports from EU are not eliminated for these products.

Country	CE	TC&CE	TD&CE	Welfare
All Countries (34)	0.009	0.000	-0.007	0.002
Antigua & Barbuda	*0.004*	*0.000*	*-0.009*	*-0.005*
Bahamas	*0.000*	*0.000*	*-0.023*	*-0.023*
Belize	*0.003*	*0.000*	*-0.007*	*-0.003*
Benin	0.005	0.000	-0.004	0.002
Burkina Faso	0.003	0.000	0.000	0.002
Cameroon	0.006	0.000	-0.004	0.003
Central Africa Rep	*0.000*	*0.000*	*-0.003*	*-0.003*
Cote D'ivoire	0.012	0.000	-0.003	0.009
Dominica	*0.002*	*0.000*	*-0.008*	*-0.006*
Dominican Rep	*0.001*	*0.000*	*-0.007*	*-0.005*
Gabon	0.015	0.000	-0.003	0.012
Ghana	0.007	0.000	-0.006	0.001
Grenada	*0.003*	*0.000*	*-0.010*	*-0.007*
Guyana	*0.004*	*0.000*	*-0.011*	*-0.007*
Jamaica	*0.000*	*0.000*	*-0.008*	*-0.008*
Kenya	0.006	0.000	-0.003	0.002
Madagascar	*0.002*	*0.000*	*-0.003*	*-0.001*
Malawi	0.002	0.000	0.000	0.001
Mali	0.002	0.000	-0.001	0.001
Mauritius	0.017	0.000	-0.006	0.010
Mozambique	*0.000*	*0.000*	*-0.001*	*-0.001*
Niger	0.002	0.000	-0.003	0.000
Nigeria	*0.011*	*0.000*	*-0.017*	*-0.007*
Papua New Guinea	*0.000*	*0.000*	*-0.001*	*-0.001*
Senegal	0.014	0.000	-0.006	0.008
Seychelles	0.075	0.000	-0.010	0.065
South Africa	0.013	0.000	-0.006	0.006
Sudan	*0.003*	*0.000*	*-0.005*	*-0.002*
Tanzania	*0.002*	*0.000*	*-0.006*	*-0.004*
Togo	*0.004*	*0.000*	*-0.007*	*-0.002*
Trinidad & Tobago	*0.001*	*0.000*	*-0.006*	*-0.005*
Uganda	*0.000*	*0.000*	*-0.002*	*-0.002*
Zambia	0.000	0.000	0.000	0.000
Zimbabwe	0.001	0.000	-0.001	0.000
Average	0.007	0.000	-0.006	0.008

Excises) or tariffs are unambiguously welfare reducing (such as food imports), this would not be the optimal criterion in welfare terms.

Table 3: Trade Effects of EPA on Imports from EU (%)

Notes: Figures in % give change in imports from the
  EU (dMeu) relative to initial level of imports
  from the EU (Meu) and initial total imports (M).

Country	Including SPs		Excluding SPs	
	dMeu/Meu	dMeu/M	dMeu/Meu	dMeu/M
All Countries	0.080	0.031	0.069	0.027
Antigua & Ba	0.084	0.010	0.076	0.009
Bahamas, The	0.015	0.000	0.014	0.000
Belize	0.162	0.009	0.160	0.008
Benin	0.114	0.044	0.068	0.026
Burkina Faso	0.044	0.013	0.037	0.011
Cameroon	0.120	0.040	0.106	0.036
Central Africa	0.056	0.012	0.009	0.002
Cote d'Ivoire	0.103	0.040	0.095	0.037
Cuba	0.081	0.020	0.078	0.020
Dominica	0.041	0.005	0.029	0.004
Dominican Re	0.050	0.006	0.050	0.006
Gabon	0.157	0.105	0.124	0.083
Ghana	0.063	0.023	0.050	0.018
Grenada	0.041	0.006	0.030	0.004
Guyana	0.044	0.004	0.040	0.004
Jamaica	0.010	0.001	0.008	0.001
Kenya	0.104	0.026	0.081	0.020
Madagascar	0.031	0.007	0.026	0.006
Malawi	0.048	0.007	0.021	0.003
Mali	0.046	0.014	0.018	0.006
Mauritius	0.105	0.036	0.085	0.029
Mozambique	0.036	0.005	0.009	0.001
Niger	0.074	0.018	0.047	0.011
Nigeria	0.232	0.077	0.126	0.042
Papua New G.	0.064	0.001	0.064	0.001
Senegal	0.079	0.041	0.068	0.035
Seychelles	0.270	0.090	0.249	0.083
South Africa	0.065	0.035	0.065	0.035
Sudan	0.045	0.010	0.045	0.010
Tanzania	0.087	0.015	0.032	0.006
Togo	0.047	0.020	0.036	0.015
Trinidad & To	0.026	0.003	0.020	0.002
Uganda	0.013	0.002	0.004	0.001
Zambia	0.032	0.004	0.006	0.001
Zimbabwe	0.094	0.007	0.031	0.002
Average	0.077	0.022	0.057	0.017

Table 4 confirms that the revenue impact is reduced by excluding SPs, but agin the overall effect is small; from an average/overall of 31% of tariff revenue to 28%, or from 0.9% of GDP to 0.8%. Nevertheless, even with SPs excluded some countries can anticipate large revenue losses: four countries lose over 40% of revenue, 14 countries lose 10-30%, but 12 lose 5% or less. For those countries that are likely to experience large losses, it is important to begin planning how to recoup the losses.

Table 4: Revenue Effects of EPA (Imports)

Notes: Figures give change in tariff revenue (dTR) as a
  percentage of initial tariff revenue on imports
  (TR) and GDP.

Country	Including SPs		Excluding SPs	
	dTR/TR	dTR/GDP	dTR/TR	dTR/GDP
All Countries	-31%	-0.90%	-28%	-0.81%
Antigua & Barb	-12%	-0.63%	-9%	-0.49%
Bahamas, The		-0.02%		-0.01%
Barbados	-11%	-0.44%	-11%	-0.42%
Belize	-37%	-0.87%	-25%	-0.58%
Benin	-19%	-0.23%	-13%	-0.16%
Burkina Faso	-29%	-0.69%	-25%	-0.60%
Cameroon	-13%	-0.26%	-1%	-0.03%
Central Africa R	-53%	-1.25%	-48%	-1.15%
Cote d'Ivoire	-24%		-23%	
Cuba	-6%	-0.42%	-3%	-0.19%
Dominica	-8%	-0.14%	-8%	-0.14%
Dominican Rep	-59%	-1.64%	-50%	-1.40%
Gabon	-27%	-0.98%	-21%	-0.76%
Ghana	-7%	-0.46%	-4%	-0.28%
Grenada	-8%	-0.52%	-6%	-0.38%
Guyana	-3%	-0.09%	-1%	-0.04%
Jamaica	-22%	-0.62%	-16%	-0.43%
Kenya	-16%	-0.19%	-12%	-0.14%
Madagascar	-7%	-0.36%	-3%	-0.14%
Malawi	-21%	-0.17%	-13%	-0.11%
Mali	-34%	-2.12%	-23%	-1.46%
Mauritius	-8%	-0.21%	-1%	-0.04%
Mozambique	-19%	-0.44%	-10%	-0.23%
Niger	-24%	-1.33%	-19%	-1.06%
Nigeria	-5%	-0.05%	-5%	-0.05%
Papua New Gui	-43%	-1.45%	-36%	-1.20%
Senegal	-51%	-14.55%	-47%	-13.43%

Seychelles	-43%	-1.09%	-43%	-1.09%
South Africa	-15%	-0.15%	-15%	-0.15%
Sudan		-0.29%		-0.10%
Suriname	-12%	-0.41%	-4%	-0.15%
Tanzania	-24%	-0.55%	-19%	-0.43%
Togo	-5%	-0.08%	-4%	-0.06%
Trinidad & Tob	-5%	-0.07%	-2%	-0.02%
Uganda	-4%	-0.10%	-1%	-0.01%
Zambia	-12%	-0.77%	-2%	-0.12%
Zimbabwe	-20%	-0.96%	-15%	-0.77%
Average	-31%	-0.90%	-28%	-0.81%

Tanzania	-0.00123	-0.00360	Increased Loss
Uganda	-0.00135	-0.00156	Increased Loss
Bahamas	-0.02299	-0.02280	Loss Reduced
Belize	-0.00416	-0.00342	Loss Reduced
Dominican Rep	-0.00545	-0.00534	Loss Reduced
Jamaica	-0.00802	-0.00758	Loss Reduced
Trinidad and Tob	-0.00505	-0.00492	Loss Reduced
Benin	0.00627	0.00189	Reduced Gain
Burkina Faso	0.00357	0.00231	Reduced Gain
Cameroon	0.00800	0.00256	Reduced Gain
Cote D'ivoire	0.01071	0.00884	Reduced Gain
Gabon	0.01633	0.01198	Reduced Gain
Ghana	0.00102	0.00097	Reduced Gain
Kenya	0.00423	0.00237	Reduced Gain
Malawi	0.01173	0.00120	Reduced Gain
Mali	0.00559	0.00100	Reduced Gain
Mauritius	0.01424	0.01043	Reduced Gain
Senegal	0.01021	0.00797	Reduced Gain
South Africa	0.00606	0.00604	Reduced Gain
Zambia	0.00489	0.00015	Reduced Gain
Zimbabwe	0.01106	0.00025	Reduced Gain
Papua New Guin	-0.00034	-0.00034	No change

Table 5 summarizes the effect on welfare estimates of excluding SPs: 79% of countries are worse-off under our classification of SPs, either because the extent of welfare loss is increased (7 countries), a gain becomes a welfare loss (6) or the welfare gain is lower (14). Only 20% of countries are better-off, because the welfare loss is reduced (5); in one case the welfare gain is greater (Seychelles) and PNG experiences no change. There is no obvious particular feature that distinguishes the countries gaining by excluding SPs from those losing, although the gainers tend to have relatively low initial shares of imports from the ACP and none is an LDC. The number of countries estimated to experience a welfare loss increases from 12 to 18 (53% of sample), as for six countries the gain was reversed to a loss (listed in Table 5). It is important to emphasize that whilst excluding ACP products from tariff reductions reduces potential gains in importing countries, from the (regional) ACP perspective this may be more than offset by producer gains in exporting countries.

Table 5: Gainers and Losers from Excluding SPs (% GDP)

Country	dW	dW(SP)	Outcome
Seychelles	0.06250	0.06484	Gain Increased
Grenada	0.00331	-0.00718	Gain Reversed
Guyana	0.01052	-0.00724	Gain Reversed
Mozambique	0.00283	-0.00104	Gain Reversed
Niger	0.00735	-0.00032	Gain Reversed
Nigeria	0.00281	-0.00662	Gain Reversed
Togo	0.00529	-0.00248	Gain Reversed
Antigua & Barb	-0.00429	-0.00485	Increased Loss
Central Africa R	-0.00008	-0.00292	Increased Loss
Dominica	-0.00425	-0.00628	Increased Loss
Madagascar	-0.00059	-0.00087	Increased Loss
Sudan	-0.00224	-0.00225	Increased Loss

V. CONCLUSIONS AND PROPOSED EXTENSIONS

Our analysis suggests that ACP countries should not be excessively concerned about the impact of EPAs: even assuming 'immediate' complete elimination of all tariffs on agriculture imports from the EU, and when excluding up to 20% of imports as sensitive products, almost half of ACP countries are likely to experience welfare gains. When not excluding SPs, most LDCs (nine out of 13) and non-LDCs (14 out of 21) gain.[8] As is typical with estimates of welfare impacts, the overall effect relative to GDP tends to be very small, whether positive or negative. This is the most important conclusion: even excluding SPs, with the exception of the Bahamas (-0.02%) all estimated losses are less than 0.01% of GDP, as are

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[8] As our partial equilibrium method only considers the welfare effect on imports, and hence on countries as importers, we do not allow for the potential loss of ACP regional exporters displaced by competition from the EU in regional markets. As non-LDCs are more likely to be regional exporters, albeit in manufacturing (not considered here) rather than agriculture, our estimates may understate their losses. On the other hand, it is the non-LDCs who stand to gain most from increased trade preferences in access to the EU under an EPA.

all estimated gains (with the exception of the Seychelles at 0.07%). While potential tariff revenue losses are non-negligible, given that countries have at least ten years in which to implement the tariff reductions, there is scope for tax substitution.

An important issue, as yet unresolved, in EPA negotiations is identifying the sensitive products (SPs) to be excluded from tariff reduction. We excluded products where ACP imports compete with the EU as this protects regional trade and SPs have to be agreed at the regional ACP level. In general, excluding SPs on these criteria reduced the welfare gain (or increased the welfare loss) compared to estimates where no products are excluded: most LDCs (seven out of 13) and non-LDCs (10 out of 21) lose, although in both cases it is effectively an even split between winners and losers. This was to be expected as if ACP products are excluded as SPs the potential trade creation gains are reduced. We leave it to future further analysis to consider other SP criteria. In particular, as trade diversion is the major source of welfare losses for an individual country, in welfare terms it may be optimal to treat some products imported from the rest of the world as SPs, as the EU is unlikely to be the globally most efficient supplier.

An inherent limitation of our partial equilibrium approach is that we cannot allow for effects on domestic producers. Nevertheless, the partial approach does help to identify products where the trade and welfare effects are likely to be large. We could extend the analysis to list specific products for which effects seem relatively large; country analysis could then relate this to production data (in some cases, we would be able to refer to other country-specific CGE studies). Finally, the focus of our analysis did not permit including estimates of the potential benefits to ACP countries of enhanced preferential access for their exports to the EU under EPAs, or indeed of the gains to regional exporters of excluding regionally traded products as SPs. Even if these export gains are small in welfare, they could potentially offset the small welfare losses of losing countries (and increase the gains of others). According to our estimates, EPAs do not represent a significant adverse concern to ACP countries.

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APPENDIX TABLE A1: ACP Countries who have signed EPAs

Nature of EPA	Regional EPA (20)	Bilateral EPAs (15)	Not signed (40)[9]
Full EPA	All CARIFORUM: Antigua & Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Rep., Grenada, Guyana, Haiti, Jamaica, St Kitts & Nevis, St Lucia, St Vincent & Grenadines, Suriname, Trinidad & Tobago	None	None
Interim EPA	East African Community: (Burundi, Kenya, Rwanda, Tanzania, Uganda)	None	None
		Remaining ESA countries (excluding some EAC): Comoros, Madagascar, Mauritius, Seychelles, Zimbabwe	Djibouti, Eritrea, Ethiopia, Malawi, Sudan, Zambia
		Central Africa: Cameroon	Central African Rep., DR Congo, Chad, Equatorial Guinea, Gabon, Rep. of Congo, São Tomé
		Pacific: Fiji, Papua New Guinea	Cook Is., Kiribati, Marshall Is., Micronesia, Nauru, Niue, Palau, Samoa, Solomon Is., Tonga, Tuvalu, Vanuatu
		SADC (SACU excluding South Africa): Botswana, Lesotho, Namibia, Swaziland; Mozambique	Angola
		West Africa: Ivory Coast, Ghana	Benin, Burkina Faso, Cape Verde, Gambia, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo

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[9] Three more ACP countries, East Timor, Cuba and Somalia, were not negotiating EPAs.

APPENDIX TABLE A2: EPA Trade of Liberalization Commitments

Source: "EU-ACP EPAs: State of Play and Key Issues for 2008," *EC Staff Working Paper* (2008).

Country	Proportion (%) of imports from EU committed to liberalization	Period (Years) for Tariff Elimination
CARIFORUM	87	25
East African Community	82	25
Cameroon	80	15
Comoros	80	15
Madagascar	80	15
Mauritius	96	15
Seychelles	98	15
Zimbabwe	80	15
Fiji	81	15
Papua New Guinea	88	First date of implementation
SACU	86	15
Mozambique	81	15
Ghana	81	15
Ivory Coast	81	15

APPENDIX TABLE A3: Imports by Source

Notes: The countries highlighted in **bold** are classified as LDCs; Year refers to the year for which data were used.

Country	Year	ACP	EU	ROW
Antigua and Barbuda	2005	16%	11%	72%
Bahamas, The	2001	1%	2%	96%
Belize	2006	3%	5%	92%
Benin	2005	27%	38%	34%
Burkina Faso	2004	35%	30%	35%
Cameroon	2006	36%	34%	30%
Central African Republic	2005	29%	21%	50%
Cote d'Ivoire	2006	32%	39%	28%
Cuba	2004	1%	25%	74%
Dominica	2006	33%	13%	55%
Dominican Republic	2001	1%	13%	86%
Gabon	2006	8%	67%	25%
Ghana	2006	20%	36%	44%
Grenada	2005	24%	15%	62%
Guyana	2006	36%	10%	54%
Jamaica	2006	15%	10%	76%
Kenya	2004	13%	25%	62%
Madagascar	2006	11%	23%	65%
Malawi	2006	62%	15%	23%
Mali	2004	45%	31%	24%
Mauritius	2006	10%	35%	55%
Mozambique	2006	47%	14%	39%
Niger	2005	33%	24%	43%
Nigeria	2003	5%	33%	62%
Papua New Guinea	2003	1%	2%	97%
Senegal	2006	13%	52%	36%
Seychelles	2006	11%	33%	56%
South Africa	2006	3%	53%	44%
Sudan	2005	2%	23%	75%
Suriname	2000	0%	0%	0%
Tanzania	2006	18%	17%	65%
Togo	2005	17%	42%	41%
Trinidad and Tobago	2006	18%	11%	72%
Uganda	2006	24%	19%	57%
Zambia	2006	61%	12%	28%
Zimbabwe	2005	76%	7%	17%