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The Impact of Economic Partnership Agreements on ACP Agriculture Imports and Welfare

by

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Abstract

This paper estimates the impact on a sample of 36 ACP countries of eliminating tariffs on agricultural imports from the EU under EPAs, considering trade, welfare and revenue effects. 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, over half of ACP countries are likely to experience welfare gains. However, although most LDCs gain (10 out of 13), most non-LDCs (about 60%) lose. 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. In general, excluding SPs reduced the welfare gain (or increased the welfare loss) compared to estimates where no products are excluded.

Key Words: EU-ACP, Economic Partnership Agreements, ACP Agriculture Imports

***JEL* Classification:** F14, F15, F17

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Outline

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1. 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. As the production structure of the ACP countries is dependent on the primary/agriculture sector, this paper concentrates on the impact of eliminating tariffs on agriculture imports from the EU.

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 2003 and entered the final stage in March 2007, with EPAs to be implemented from 2008. Although complete negotiated agreements will not be in place by 2008, there are various options to sustain the process (Stevens, 2007). It seems quite likely that a 'framework agreement' with commitments and an implementation timetable will be signed by the end of 2007, with the details to be negotiated over another few years.

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

[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).

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 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 agriculture imports to ACP countries. Section 4 provides our estimates, covering the majority of ACP countries, and discusses the issue of identifying sensitive products. Finally, section 5 sets out the implications of the analysis and summary conclusions.

2. THE STATUS OF EPA NEGOTIATIONS (AUGUST 2007)

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). Some African countries have yet to decide which group they are in and some are members of more than one group, e.g., Zambia in ESA and SADC; Tanzania in both of these and also the East Africa Cooperation (EAC).[3] Furthermore, 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

[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.

[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.

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 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.

3. 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).

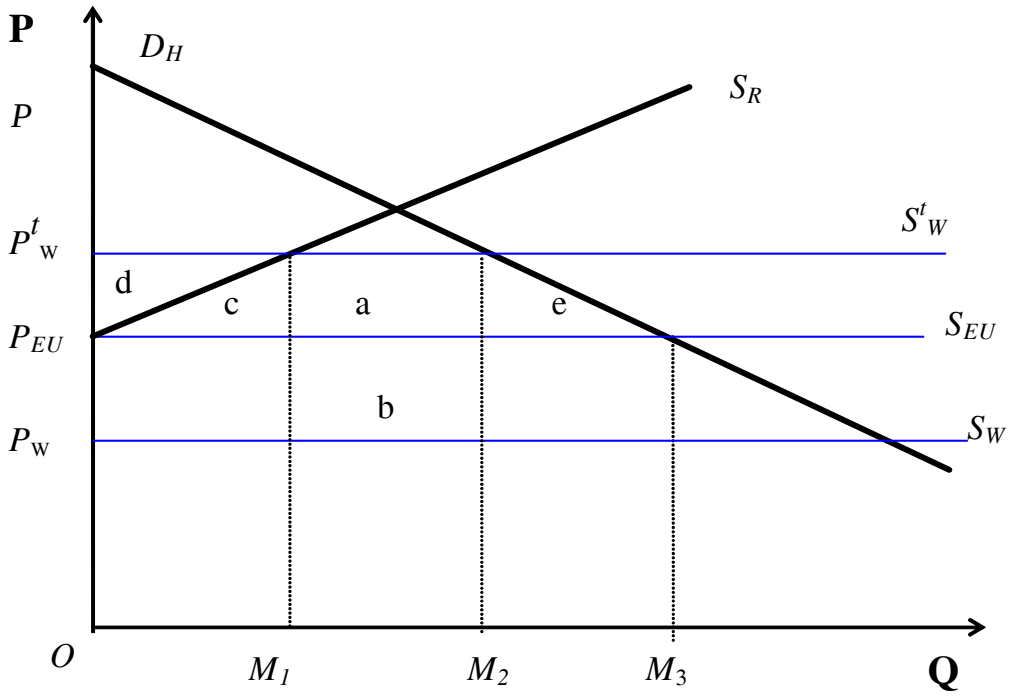
There are limitations, although no approach is without weakness. We do have to make a number of restrictive assumptions, such as on supply and import demand elasticities, although arguably the assumptions are no more restrictive than for alternative methods (and results are quite robust to sensitivity 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).[4] 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.

[4] 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).

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).

Figure 1: Effect of an EU-ACP EPA



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 ΔW) 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.

3.1 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 maximum TD potential (this is therefore unlikely to be the actual impact, but is a useful base for considering sensitive products).

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:

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

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

'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:

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

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:

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

'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:

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

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.

4. EMPIRICAL APPLICATION TO AGRICULTURE IMPORTS

Results are provided for 36 out of 71 ACP countries for which required data were available (the countries are listed in the tables of country summary results; some results are also reported for Cuba and Vanuatu, but we had no GDP data for these countries). We use the most recently available data matching imports and import tariff rates, so for some countries the estimates use data from 2003 (the most recent available), although some go as far back as 1997 (see Appendix Table A1, which also highlights the 13 LDCs in the sample). 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 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 (see www.worldbank.org/trade).

Table 1 summarizes the welfare estimates distinguishing consumption effects (CE), TC&CE and TD&CE. Clearly, as shown above, the latter is always negative and both of the former are positive, so the sign of the overall welfare effect depends on the relative magnitude of the latter. For the sample combined (all countries) the welfare effect is negative but very small, about -0.03% of GDP; the ACP overall loses. However, taking the unweighted mean for the sample (average), the welfare effect is positive and larger, about 0.07% of GDP; the average ACP country gains. While estimates of welfare effect tend to be small relative to GDP, it should be emphasized that these results relate to agriculture imports only. For the larger non-LDC ACP countries, effects in manufacturing may be greater (we leave this to future analysis), although they will remain small relative to GDP. Nevertheless, in respect of agriculture a positive effect on welfare prevails, although the largest countries experience a welfare loss.

Twenty-two countries, 61% of the sample, are estimated to experience a welfare improvement, including the majority of LDCs (11 out of 13, or 85%). Half of these have a relatively low initial share of imports from ROW (40% or less, Appendix Table A1) so the potential for TD is limited. 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 gain varies from 0.7% of GDP in Dominica and Seychelles, 0.5% in Surinam and 0.3% in Guyana to around 0.02% of GDP or less in Antigua & Barbuda, Uganda and Gabon.

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

Country	CE	TC&CE	TD&CE	Welfare
All Countries	**0.009**	**0.053**	**-0.088**	**-0.026**
Antigua & Barbuda	0.025	0.179	-0.186	0.019
Bahamas, The	*0.000*	*0.009*	*-0.693*	*-0.684*
Barbados	*0.017*	*0.412*	*-0.431*	*-0.001*
Belize	*0.057*	*0.086*	*-0.241*	*-0.098*
Benin	0.031	0.054	-0.033	0.053
Burkina Faso	0.008	0.101	-0.057	0.052
Cameroon	0.016	0.080	-0.039	0.058
Central African Rep	0.010	0.091	-0.028	0.073
Cote d'Ivoire	*0.015*	*0.014*	*-0.047*	*-0.017*
Dominica	0.011	0.860	-0.188	0.683
Dominican Republic	*0.005*	*0.000*	*-0.110*	*-0.106*
Gabon	0.035	0.034	-0.066	0.002
Ghana	*0.024*	*0.036*	*-0.171*	*-0.111*
Grenada	0.005	0.305	-0.217	0.092
Guyana	0.027	0.389	-0.079	0.337
Jamaica	*0.002*	*0.170*	*-0.250*	*-0.079*
Kenya	0.004	0.197	-0.126	0.075
Madagascar	0.000	0.045	-0.005	0.041
Malawi	0.000	0.220	0.000	0.220
Mali	*0.002*	*0.026*	*-0.039*	*-0.011*
Mauritius	0.041	0.191	-0.066	0.166
Mozambique	0.002	0.159	-0.046	0.115
Niger	*0.004*	*0.148*	*-0.153*	*-0.001*
Nigeria	*0.019*	*0.024*	*-0.193*	*-0.150*
Papua New Guinea	*0.001*	*0.000*	*-0.064*	*-0.062*
Senegal	*0.027*	*0.033*	*-0.166*	*-0.106*
Seychelles	0.678	0.146	-0.103	0.721
South Africa	*0.000*	*0.004*	*-0.007*	*-0.003*
Sudan	0.006	0.097	-0.015	0.088
Suriname	0.058	0.564	-0.101	0.520
Tanzania	0.001	0.105	-0.071	0.035
Togo	0.016	0.142	-0.061	0.097
Trinidad & Tobago	*0.005*	*0.056*	*-0.117*	*-0.056*
Uganda	0.001	0.052	-0.034	0.018
Zambia	0.000	0.251	0.000	0.251
Zimbabwe	0.000	0.130	-0.005	0.125
Average	**0.032**	**0.150**	**-0.117**	**0.065**

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*; 'All countries' is combined total and 'average' is sample mean (unweighted).

The overall welfare effect is negative for 14 countries (indicated in italics in the table), almost 40% of the sample; six in the Caribbean, seven in Africa and PNG, the only Pacific country included.[5] It is interesting to note that only two of these countries are LDCs, Mali and Niger; LDCs are far less likely to experience negative welfare effects. A clear majority (86%) of those experiencing welfare losses are non-LDCs, over half (52%) of the non-LDCs in the sample. In general, countries experiencing welfare losses sourced over 55% of agriculture imports from ROW (Appendix Table A1) and were the only countries with such high import shares from ROW.[6] The exceptions are Mali (36% from ROW), Cote d'Ivoire (38%), Nigeria (43%) and Senegal (52%), the implication being 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 agriculture imports from the ROW (note that we consider welfare impacts excluding revenue effects).

For the ACP sample overall, agriculture imports from the EU increase by 18% of their pre-EPA level, equivalent to 5% of total agriculture imports; the mean increase is 35% (heavily influenced by three large outliers) and 6% respectively (Table 3 below). Countries with an estimated welfare loss experience relatively high percentage increases in EU imports relative to the initial value (over 40% in four cases and 20-40% in another five, i.e. 9 out of 13); Mali (4%), South Africa (9%), Cote d'Ivoire and Senegal (12%) are the major exceptions (Table 3). In contrast, countries with estimated welfare gains exhibit relatively low percentage increases, below the all country average (18%) in 11 cases (from 22).[7] The increase in imports from the EU as a percentage of total imports shows no clear pattern comparing welfare gainers and losers. 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).

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

[6] Cuba and Vanuatu also had very high import shares from ROW and are likely to experience a negative welfare impact (not included in tables 1 and 2 due to missing GDP data). Antigua & Barbuda and Tanzania were the only countries with high ROW import shares (at least 60%) that did not have a negative welfare impact; both had quite low initial EU import shares (less than 15%), suggesting limited capability of the EU to displace ROW imports.

[7] Cuba and Vanuatu are omitted from these numbers).

While the welfare effects are most likely to be positive, the revenue impacts are always negative; on average the revenue loss is equivalent to 25% of tariff revenue from agriculture imports, although small relative to GDP (Table 4 below). Fourteen countries (37% of the sample of 38) could lose at least 30% of revenue on agriculture imports, typically equivalent to at least 0.2% of GDP (but tariff structures and revenue totals vary considerably). At one extreme is the Seychelles, where the loss of 76% of agriculture tariff revenue is equivalent to 2.5% of GDP; whereas Benin loses a similar proportion of tariff revenue, this is only equivalent to 0.5% of GDP (still relatively large). For countries estimated to experience a welfare gain, this is typically more than offset by the revenue loss (relative to GDP). However, there are important exceptions at the lower end: among LDCs, Mali and Zambia experience no tariff losses: Mali's welfare loss is not exacerbated, whereas Zambia's welfare gain is not offset. There are other countries that had low or zero tariffs on affected agriculture products, such as Bahamas, Jamaica, Malawi and Zimbabwe, where revenue losses are zero or negligible. Zambia is an interesting case: almost all agriculture imports come from the ACP (especially South Africa) and only 2% from the EU (Appendix table A1). These imports are already tariff free so there is no revenue loss (Table 4). As the EU has limited capacity to displace these ACP imports so although imports from the EU almost double this is only equivalent to a 2% increase in agriculture imports (Table 3); the welfare gain on TC provides the total welfare gain of 0.25% of GDP (Table 1).

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 preliminary analysis of excluding SPs here we assume that 20% of agriculture 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. We consider below the appropriate criteria (in welfare terms) to be applied in future analysis, but here consider two criteria that seem to appeal to policy-makers in ACP countries. The ACP countries are negotiating as regional groups so they will have to agree a common list of SPs; our first criterion is to define as SPs any products where other ACP countries account for a large proportion of imports and the EU is already a competitor.[8] As they

[8] Although imports from the ACP account for 20-30% of agriculture imports in 16 (42%) of the sample of ACP countries and over 30% in a further five (13%), peaking at 84% for Malawi and 92% for Zambia (Appendix

are particularly concerned about revenue losses, the second criterion applied (if the first does not exclude 20% of imports) is to define as SPs products where tariffs are initially high and there is little scope for tax substitution. Often, imports of alcoholic beverages face the highest tariffs; as these can easily be replaced with Excise Duties, and often do not compete directly with domestic producers, they are not suitable candidates for SP status. In principle one wants do identify products where there is potential for competitive domestic production (even if this has not been fully realised). However, we do not have data on domestic production at the product level, so assume that high tariffs are to protect domestic producers.[9] Although short-term welfare analysis suggests that the consumer gains from tariff reductions will off-set the producer losses so there is a net welfare gain, it should not be assumed that domestic producers are necessarily uncompetitive in a longer-term perspective.[10]

Table A1), this does not apply at each product level. We focus on products where the EU competes with ACP as a supplier, as only in these cases is there scope for TC.

[9] A related issue is the possibility or perception that imports are subsidized, where particularly high tariffs are justified to support domestic producers. For example, the EAC Secretariat applies sensitivity status where products face 'unfair' competition from subsidized imports, e.g. sugar and wheat from the EU. Thus sugar has a common external tariff of 100% and Milk (various forms) has a CET of 60%, whereas the maximum CET for non-sensitive products is 25%.

[10] This can not be addressed within our partial equilibrium framework, and indeed is only partially incorporated in CGE models. This criterion does help to identify SPs so one can then, at a country level, seek information on the potential for domestic production (and the possibility that imports from the EU benefit from subsidies).

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

Country	CE	TC&CE	TD&CE	Welfare
All Countries	**0.006**	**0.024**	**-0.043**	**-0.013**
Antigua & Barbuda	0.016	0.129	-0.116	0.029
Bahamas, The	*0.000*	*0.009*	*-0.575*	*-0.567*
Barbados	*0.005*	*0.083*	*-0.132*	*-0.044*
Belize	0.044	0.000	-0.042	0.001
Benin	0.022	0.014	-0.032	0.005
Burkina Faso	*0.005*	*0.044*	*-0.054*	*-0.005*
Cameroon	0.006	0.056	-0.041	0.021
Central African Rep	0.008	0.000	0.000	0.008
Cote d'Ivoire	*0.010*	*0.010*	*-0.047*	*-0.027*
Dominica	0.004	0.303	-0.235	0.071
Dominican Republic	*0.005*	*0.000*	*-0.059*	*-0.054*
Gabon	0.021	0.029	-0.042	0.008
Ghana	*0.013*	*0.039*	*-0.132*	*-0.079*
Grenada	*0.000*	*0.055*	*-0.158*	*-0.103*
Guyana	0.009	0.177	-0.088	0.097
Jamaica	*0.001*	*0.133*	*-0.172*	*-0.037*
Kenya	*0.004*	*0.047*	*-0.053*	*-0.002*
Madagascar	0.000	0.004	-0.002	0.002
Malawi	0.000	0.129	0.000	0.129
Mali	0.001	0.019	-0.019	0.001
Mauritius	*0.002*	*0.039*	*-0.049*	*-0.009*
Mozambique	0.002	0.083	-0.043	0.042
Niger	*0.003*	*0.076*	*-0.139*	*-0.060*
Nigeria	0.013	0.024	-0.011	0.026
Papua New Guinea	0.001	0.000	0.000	0.001
Senegal	*0.016*	*0.015*	*-0.152*	*-0.122*
Seychelles	0.598	0.009	-0.036	0.570
South Africa	*0.000*	*0.002*	*-0.007*	*-0.004*
Sudan	0.000	0.015	-0.011	0.004
Suriname	*0.010*	*0.078*	*-0.091*	*-0.002*
Tanzania	0.001	0.065	-0.036	0.030
Togo	0.006	0.080	-0.061	0.025
Trinidad & Tobago	*0.002*	*0.019*	*-0.067*	*-0.046*
Uganda	*0.000*	*0.022*	*-0.032*	*-0.010*
Zambia	0.000	0.111	0.000	0.111
Zimbabwe	0.000	0.014	-0.006	0.008
Average	**0.023**	**0.054**	**-0.076**	**0.001**

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

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

Country	Including SPs		Excluding SPs	
	dMAeu/MAeu	dMAeu/MA	DMAeu/MAeu	dMAeu/MA
All Countries	**18.036**	**5.343**	**11.013**	**3.263**
Antigua & Barbuda	26.021	3.868	15.750	2.341
Bahamas, The	180.135	5.359	152.885	4.548
Barbados	46.795	7.056	16.178	2.439
Belize	25.384	6.477	13.823	3.527
Benin	13.150	9.112	9.918	6.872
Burkina Faso	14.397	4.504	9.655	3.021
Cameroon	14.994	7.485	8.415	4.201
Central African Rep	15.825	9.124	8.262	4.764
Cote d'Ivoire	11.756	6.224	7.150	3.785
Cuba	11.328	3.820	5.726	1.931
Dominica	30.248	6.236	17.352	3.578
Dominican Republic	31.889	4.865	22.215	3.389
Gabon	17.437	10.157	11.712	6.822
Ghana	19.589	6.455	13.290	4.379
Grenada	23.407	3.969	11.689	1.982
Guyana	25.408	5.314	13.788	2.884
Jamaica	47.042	4.607	32.768	3.209
Kenya	50.111	8.935	25.069	4.470
Madagascar	5.135	1.145	1.099	0.245
Malawi	63.476	2.187	31.425	1.083
Mali	4.393	2.208	2.425	1.219
Mauritius	14.180	3.340	3.477	0.819
Mozambique	38.928	2.599	24.122	1.610
Niger	17.110	3.960	12.557	2.906
Nigeria	20.459	9.800	13.894	6.655
Papua New Guinea	140.592	1.134	20.735	0.167
Senegal	11.518	4.984	7.888	3.413
Seychelles	44.694	27.404	36.597	22.440
South Africa	9.342	2.471	6.660	1.762
Sudan	17.059	3.877	3.905	0.887
Suriname	16.441	6.003	5.677	2.073
Tanzania	39.657	5.127	18.572	2.401
Togo	14.948	5.492	6.892	2.532
Trinidad & Tobago	27.056	4.753	15.061	2.646
Uganda	12.866	2.652	6.927	1.428
Vanuatu	107.902	3.308	11.817	0.362
Zambia	97.637	2.008	32.945	0.678
Zimbabwe	53.289	6.372	12.574	1.504
Average	**35.83**	**5.64**	**17.66**	**3.29**

Notes: Figures in % give change in agriculture imports from the EU (dMAeu) relative to initial level of agriculture imports from the EU (MAeu) and initial total agriculture imports (MA).

Table 4: Revenue Effects of EPA (Agriculture)

Country	Including SPs		Excluding SPs	
	dTR/TRA	dTR/GDP	dTR/TRA	dTR/GDP
All Countries	**-25%**	**-0.11%**	**-16%**	**-0.07%**
Antigua & Barbuda	-19%	-0.21%	-13%	-0.15%
Bahamas, The	0%	0.00%	0%	0.00%
Barbados	-8%	-0.16%	-3%	-0.07%
Belize	-33%	-0.39%	-25%	-0.29%
Benin	-74%	-0.49%	-51%	-0.34%
Burkina Faso	-31%	-0.14%	-23%	-0.10%
Cameroon	-49%	-0.24%	-23%	-0.11%
Central African Rep	-48%	-0.19%	-40%	-0.16%
Cote d'Ivoire	-57%	-0.27%	-38%	-0.18%
Cuba	-27%		-16%	
Dominica	-13%	-0.25%	-4%	-0.08%
Dominican Republic	-18%	-0.06%	-16%	-0.05%
Gabon	-56%	-0.42%	-37%	-0.29%
Ghana	-31%	-0.25%	-22%	-0.17%
Grenada	-8%	-0.10%	-2%	-0.02%
Guyana	-19%	-0.33%	-9%	-0.16%
Jamaica	-4%	-0.03%	-3%	-0.02%
Kenya	-9%	-0.05%	-8%	-0.04%
Madagascar	-10%	-0.01%	-7%	-0.01%
Malawi	-1%	0.00%	-1%	0.00%
Mali	-41%	-0.10%	-22%	-0.05%
Mauritius	-27%	-0.24%	-4%	-0.03%
Mozambique	-7%	-0.03%	-5%	-0.02%
Niger	-13%	-0.11%	-6%	-0.05%
Nigeria	-27%	-0.20%	-20%	-0.15%
Papua New Guinea	-2%	-0.01%	-2%	-0.01%
Senegal	-49%	-0.47%	-27%	-0.26%
Seychelles	-76%	-2.52%	-66%	-2.18%
South Africa	-27%	-0.01%	-15%	-0.01%
Sudan	-20%	-0.04%	-1%	0.00%
Suriname	-33%	-0.51%	-12%	-0.18%
Tanzania	-10%	-0.03%	-5%	-0.01%
Togo	-43%	-0.25%	-17%	-0.10%
Trinidad & Tobago	-14%	-0.07%	-9%	-0.04%
Uganda	-14%	-0.03%	-9%	-0.02%
Vanuatu	-2%		0%	
Zambia	0%	0.00%	0%	0.00%
Zimbabwe	-6%	-0.01%	-4%	-0.01%
Average	**-24%**	**-0.002%**	**-15%**	**-0.001%**

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

The estimates of the composition of welfare effects when these criteria are applied to exclude SPs are shown in Table 2. It remains true that the ACP overall loses, although the 'all countries' negative welfare effect is only about -0.01% of GDP. It is also still true that the average ACP country gains (as do the majority of individual countries, 66%), but the average welfare gain falls to a negligible 0.001% of GDP. Although the TD&CE loss tends to fall, from -0.09 to -0.04 of GDP for all countries or from -0.12 to -0.08 on average, this is more than offset by reductions in welfare gains. The CE gain declines on average from 0.03 to 0.02 (and for all countries from 0.009 to 0.006), and the TC&CE gain declines more significantly, from 0.15 to 0.05 on average and from 0.05 to 0.02 for all countries. This clearly reflects our (plausible) choice of SP criterion in excluding products imported from the ACP.

The number of countries estimated to experience a welfare loss increases from 14 to 16 (44% of sample), although only ten countries had a negative welfare effect in both sets of estimates. For four countries excluding SPs reversed a negative welfare impact to a positive one: Mali, Belize, Nigeria and PNG. The composition of the changes is different in each case, but driven by a lower TD loss. In PNG, the negative TD effect is eliminated, leaving a small positive CE effect. In Nigeria, although the CE gain falls slightly the TD loss is significantly reduced. In Belize and Mali all effects are smaller but the TD loss is reduced the most. However, for six countries excluding SPs resulted in a positive effect becoming negative: Burkina Faso, Grenada, Kenya, Mauritius, Surinam and Uganda. In all cases this is driven by much lower TC gains, reflecting the exclusion of ACP imports from tariff reductions. 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 3 shows the trade effects of excluding SPs. Unsurprisingly, the percentage increase in imports from the EU is significantly reduced: for all countries, from 18% (equivalent to a 5% increase in total agriculture imports) to 11% (3%); on average, from 36% (7% on total) to 18% (3%). Relative to total agriculture imports, the percentage increase in imports from the EU is roughly halved, overall and for most individual countries. For some countries the decline is dramatic (e.g. PNG), although for a few it is quite small in proportional terms (e.g. Benin, Jamaica).

Table 4 confirms that the revenue impact is significantly reduced by excluding SPs, from an average of about 24% of agricultural tariff revenue to 15%, equivalent to a negligible proportion of GDP (0.001% on average, although -0.07% overall). Nevertheless, even with SPs excluded some countries can anticipate large revenue losses: the Seychelles (66% of TRA) and Benin (51%) are the extreme, but 10 countries still lose 20-50% of agriculture tariff revenue, and another six lose over 10%. Three countries have zero revenue losses, and another 11 lose 5% or less.

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

Country	dW	dW (SP)	Country	Dw	dW (SP)
Increased Loss (5)			**Reduced Gain** (14)		
Barbados	-0.001	-0.044	Benin	0.053	0.005
Cote d'Ivoire	-0.017	-0.027	Cameroon	0.058	0.021
			Central African Rep	0.073	0.008
Niger	-0.001	-0.060	Dominica	0.683	0.071
Senegal	-0.106	-0.122	Guyana	0.337	0.097
South Africa	-0.003	-0.004	Madagascar	0.041	0.002
Gain Reversed (6)			Malawi	0.220	0.129
Burkina Faso	0.052	-0.005	Mozambique	0.115	0.042
Grenada	0.092	-0.103	Seychelles	0.721	0.570
Kenya	0.075	-0.002	Sudan	0.088	0.004
Mauritius	0.166	-0.009	Tanzania	0.035	0.030
Suriname	0.520	-0.002	Togo	0.097	0.025
Uganda	0.018	-0.010	Zambia	0.251	0.111
			Zimbabwe	0.125	0.008
Loss Reduced (5)			**Loss Reversed** (4)		
Bahamas, The	-0.684	-0.567	Belize	-0.098	0.001
Dominican Republic	-0.106	-0.054	Mali	-0.011	0.001
Ghana	-0.111	-0.079	Nigeria	-0.150	0.026
Jamaica	-0.079	-0.037	Papua New Guinea	-0.062	0.001
Trinidad & Tobago	-0.056	-0.046			
			Gain Increased (2)		
			Antigua & Barbuda	0.019	0.029
			Gabon	0.002	0.008

Table 5 summarizes the effect on welfare estimates of excluding SPs: 69% of countries are worse-off under our classification of SPs, either because the extent of welfare loss is increased (5 countries), a gain becomes a welfare loss (6) or the welfare gain is lower (14). Just over 30% of countries are better-off, either because the welfare loss is reduced (5), a loss becomes a gain (4) or the welfare gain is greater when SPs are excluded (only two countries). There is no obvious particular feature that distinguishes the countries gaining by excluding SPs from those losing, although the gainers tend to have relative low initial shares of imports from the ACP and only one (Mali) is an LDC. Only Antigua & Barbuda and Jamaica source more that 20% of imports from the ACP, whereas Bahamas, Belize, Dominican Republic, Nigeria and PNG imports less than 10% from the ACP. All LDCs except Mali are made worse off by this method of classifying SPs, although ten (including Mali, 77% of LDCs) nevertheless experience welfare gains.

Finally, it can be noted that we did conduct some sensitivity analysis by allowing the elasticities used to vary to give upper and lower bound estimates (see Appendix Table A2). While the magnitude of trade (import) and CE effects differed, this did not alter the sign or relative size of overall or country effects. Our results can be considered as indicative of the likely trade, welfare and revenue effects for agriculture imports.

5. 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, over half of ACP countries are likely to experience welfare gains. However, although most LDCs gain (10 out of 13), most non-LDCs (about 60%) lose.[11] As is typical with estimates of welfare impacts, the overall effect relative to GDP tends to be very small, whether positive or negative. The largest gains (when SPs are not excluded) are 0.7% of GDP for Dominica and Seychelles, but most

[11] 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.

gains are less than 0.1% of GDP. The Bahamas experiences the largest loss, about 0.6% of GDP, but almost all estimated losses are less than o.1% of GDP. 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. In our preliminary estimates, we applied two criteria: excluding products where ACP imports compete with the EU (as SPs have to be agreed at the regional ACP level) and, where this does not reach the 20% of imports threshold for SPs, omitting some products subject to high tariffs (where tax substitution options were limited). In general, excluding SPs on these criteria reduced the welfare gain (or increased the welfare loss) compared to estimates where no products are excluded. 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.

The analysis presented here was limited to agriculture products, it would be useful to include manufactures as the welfare effects may be larger and different, especially for non-LDCs who have greater domestic production and regional exporting capacity. Furthermore, including manufactures would allow us to place estimates for agriculture into an overall context for ACP countries, especially given that most will have a comparative advantage in agriculture or lightly processed products. 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. We intend to incorporate country estimates of these benefits in future analysis.

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APPENDIX TABLE A1: Agriculture Imports by Source

Country	Year	ACP	EU	ROW
Antigua and Barbuda	1999	22.95%	14.87%	62.19%
Bahamas, The	2001	2.54%	2.98%	94.48%
Barbados	2001	25.01%	15.08%	59.91%
Belize	2001	7.80%	25.52%	66.68%
Benin	2001	7.89%	69.29%	22.81%
Burkina Faso	2001	28.43%	31.29%	40.28%
Cameroon	2002	12.68%	49.92%	37.40%
Central African Republic	2003	22.43%	57.66%	19.92%
Cote d'Ivoire	2002	9.12%	52.94%	37.94%
Cuba	2001	0.52%	33.72%	65.76%
Dominica	2002	40.14%	20.62%	39.25%
Dominican Republic	2001	0.27%	15.26%	84.47%
Gabon	2000	7.96%	58.25%	33.79%
Ghana	2000	12.54%	32.95%	54.51%
Grenada	2001	27.38%	16.96%	55.67%
Guyana	2001	28.58%	20.92%	50.51%
Jamaica	2002	20.59%	9.79%	69.61%
Kenya	2002	28.54%	17.83%	53.63%
Madagascar	2003	25.03%	22.29%	52.68%
Malawi	2001	83.87%	3.44%	12.68%
Mali	1998	14.13%	50.25%	35.61%
Mauritius	2002	26.25%	23.56%	50.19%
Mozambique	2001	40.35%	6.68%	52.98%
Niger	2003	20.94%	23.14%	55.92%
Nigeria	2000	8.88%	47.90%	43.22%
Papua New Guinea	2003	0.84%	0.81%	98.36%
Senegal	2002	4.90%	43.27%	51.83%
Seychelles	2001	9.20%	61.32%	29.48%
South Africa	2001	11.29%	26.46%	62.26%
Sudan	1997	23.09%	22.72%	54.18%
Suriname	2000	23.19%	36.51%	40.30%
Tanzania	2000	25.38%	12.93%	61.70%
Togo	2002	21.69%	36.74%	41.57%
Trinidad and Tobago	2002	11.14%	17.57%	71.30%
Uganda	2002	29.87%	20.62%	49.52%
Vanuatu	2000	15.14%	3.07%	81.80%
Zambia	2002	92.45%	2.06%	5.49%
Zimbabwe	2001	57.03%	11.96%	31.01%

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

Appendix Table A2: Summary Effects of Excluding SPs, Agriculture (%)

	Sensitive Products Included			Sensitive Products Excluded		
All	**Lower**	**Middle**	**Upper**	**Lower**	**Middle**	**Upper**
CE/MA	2.56	**2.84**	3.12	1.74	**1.93**	2.12
dM/MAeu	16.23	**18.04**	19.84	9.91	**11.01**	12.11
dM/GDP	0.14	**0.15**	0.17	0.08	**0.09**	0.10
dTR/TRA	-25.36	**-25.41**	-25.46	-16.32	**-16.34**	-16.36
dTR/GDP	-0.11	**-0.11**	-0.11	-0.07	**-0.07**	-0.07
dW/GDP	-0.03	**-0.03**	-0.02	-0.01	**-0.01**	-0.01

Notes: Figures are in % and give: CE relative to total agriculture imports (MA); change in agriculture imports from the EU (dM) relative to initial level of agriculture imports from the EU (MAeu) and GDP; change in tariff revenue (dTR) as a percentage of initial tariff revenue on agriculture imports (TRA) and GDP; and overall change in welfare (dW) relative to GDP. Lower and upper estimates reduce (increase) elasticities by 10% respectively.