

The Impact of ACP–EU EPAs on ECOWAS Countries: An Empirical Analysis of the Trade and Budget Effects

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Introduction

A major objective of the Lomé IV Convention and its precursors was to improve the trade performance of the African, Caribbean and Pacific (ACP) group of countries, with the ultimate aim of promoting their economic growth and development. For that purpose, the European Community (EC) offered non-reciprocal trade preferences to products originating in ACP countries. The Cotonou Agreement, which was concluded in June 2000, provides for a shift from the system of non-reciprocal trade preferences to Economic Partnership Agreements (EPAs) by the end of 2007. ACP countries that enter into EPAs are required to set up a free trade area (FTA) with the European Union (EU). This means that they would have to open up their domestic markets for almost all products from the EU within a twelve-year period, which should last from 2008 to 2020. Apart from a gradual and managed liberalisation of trade barriers *vis-à-vis* EU imports, the main objectives of the EPA process include an enhanced market access for ACP countries to the EU, negotiations on trade in services, a deepening of the regional integration process between ACP countries, and increased co-operation in trade-related areas like competition and investment.

The driving force behind the EU's search for new trading arrangements was the need to ensure World Trade Organisation (WTO) compatibility of future ACP–EU trade relations. Non-reciprocal trade preferences granted under the Lomé Conventions required an exemption from WTO rules, because they were neither available to all developing countries nor restricted to just least-developed

countries (LDCs). At the Fourth WTO Ministerial Conference in Doha, the EU was granted the last waiver under the Lomé Convention allowing it to maintain the preferential tariff treatment for products originating in ACP countries. Accordingly, ECOWAS members and other ACP countries will continue to enjoy duty-free access to EU markets for all industrial and a large part of agricultural products until the end of 2007.

Negotiations on EPAs, which started in September 2002, are expected to be concluded by 31 December, 2007 at the latest. The Cotonou Agreement largely leaves it to the ACP countries to decide on the geographical configuration of future EPAs. Yet the EU is not inclined to negotiate bilateral FTAs with such a large number of countries, but rather prefers to conclude EPAs with various regional groupings of ACP countries. So far, the EU has already started negotiations with all groupings or will start them soon (see Table 1). One of these regional groupings will be the Economic Community of West African States (ECOWAS), on which this study focuses. Founded in 1975, ECOWAS is a regional group of fifteen West African countries that has reduced trade barriers between its members' countries and aims to create a customs union by 2005 with a common external tariff and a common trade policy.¹

An EPA would pose a major challenge to the governments of ECOWAS member states. While ECOWAS countries may benefit from improved or more secure access to EU markets, it is less clear whether ECOWAS countries will be in a position to open up their domestic markets. The fear is that the

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Table 1. Regional grouping in the EPA negotiations and timing of negotiations

Regional grouping	Timing of negotiations
ECOWAS ^a and Mauritania (Western Africa)	Negotiations began in October 2003
CEMAC ^b and Sao Tome and Principe (Central Africa)	Negotiations began in October 2003
16 countries ^c of COMESA (Eastern and Southern Africa)	Negotiations began in February 2004
15 countries ^d of CARIFORUM (Caribbean)	Negotiations began in April 2004
7 countries ^e of SADC (Southern Africa)	Start of negotiations foreseen in July 2004
14 ACP Pacific countries ^f	Start of negotiations foreseen in September 2004

Source: European Union (2004a).

Notes:

^aBenin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo

^bCameroon, Central African Republic, Chad, Republic of Congo, Gabon, and Equatorial Guinea

^cBurundi, Comoros, Djibouti, Democratic Republic of Congo, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Uganda, Zambia, and Zimbabwe

^dAntigua and Barbuda, The Bahamas, Barbados, Belize, Commonwealth of Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago

^eAngola, Botswana, Lesotho, Mozambique, Namibia, Swaziland, and Tanzania

^fCook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Solomon Islands, Samoa, Tonga, Tuvalu, and Vanuatu

elimination of customs duties on essentially all products from the EU will lead to a significant decline in government revenue and to an increase in unemployment, provoking heightened economic insecurity and political instability. Therefore, each government of ECOWAS member states and the grouping as a whole has to assess the likely impact of opening up their domestic markets and thoroughly consider all policy options.

The Cotonou Agreement most certainly acknowledges that some of the ECOWAS countries and the other ACP countries might not be in a position to enter into EPAs. The EU would then examine all alternative possibilities in order to provide these countries with a new framework for trade that is equivalent to their existing situation and in conformity with WTO rules. Under present circumstances, ECOWAS countries that decide not to participate in an EPA would have no other alternative but to export under either the EU's Generalised System of Preferences (GSP) or the Everything But Arms Initiative (EBA).

There is a considerable body of literature on the likely impact of an EPA. Yet most studies discuss various policy options for ACP countries or EU-ACP economic relations in general rather than assess the possible impact of the EPAs on trade flows

or government revenue.² For West Africa, so far the only quantitative assessment of the trade and budget effects has been published by CAPE (2002), a research institute based in Benin.³ Though the study, commissioned by the UEMOA Commission, was limited to the group of eight UEMOA countries,⁴ it forms an important starting point for our own empirical analysis, and we will compare our results with those of the CAPE study.⁵

Accordingly, this study will analyse the impact of the EPA on ECOWAS countries and Mauritania⁶ using a comprehensive dataset that draws on various sources. Importantly, the analysis focuses on the impact of the EPA on West African countries only and not on the European Union, as the effects for the EU are likely to be very small. In particular, it focuses on the trade and budget effects that might occur if West African countries open up their domestic markets for EU imports.

For two reasons, we have refrained from computing the effects if ECOWAS countries do not sign an EPA with the EU, implying that they would switch from ACP to GSP (or EBA) preferences instead. First, the resulting change in tariff preferences from ACP to GSP would harm only the three non-LDCs: Côte d'Ivoire, Ghana and Nigeria. All other West African countries would receive the more generous

EBA preferences. Also, rather than having an impact on the majority of their exports, only very specific products would be affected in these three countries, though at the highly disaggregated product level, the impact could be considerably large. Second, in comparison to the ACP system of preferences, the more restrictive rules of origin in the EU's GSP and EBA schemes have the potential to harm West African exporters both from LDCs and non-LDCs considerably. The computation of changes in the rules of origin, however, is somewhat arbitrary, as it requires assumptions on how importers and exporters will react to differences in the rules of origin.⁷

This study is based on a Friedrich-Ebert-Stiftung/HWWA co-operation to analyse the likely consequences of the EPAs on West African countries and to consider the various policy options available. Preliminary results have been presented and discussed at various joint workshops in Bonn, Brussels and Hamburg in 2003 and 2004. Participants of these workshops, who represented different ministries of trade from ECOWAS countries, the EU Commission, the UEMOA Commission and the ECOWAS Secretariat, provide us with very helpful comments and suggestions.⁸ In comparison to the preliminary study, we extended the analysis to all ECOWAS countries (and Mauritania), except Liberia and Sierra Leone, since we did not get sufficient data for these two countries. Unfortunately, we could not incorporate domestic production, as the data were not available on a comparable level for all West African countries, that is, they are not made comparable by international organisations such as the United Nations Industrial Development Organisation (UNIDO). Likewise, the sometimes significant informal sector had to be excluded, as there is no reliable data or any information on how to estimate its size at the required product level.

Following up on various suggestions and comments, we extended the study to a more disaggregated level, namely we expanded the analysis to the four-digit level of the Harmonised System, which ensures a highly disaggregated approach and enables us to identify the most affected products. Also, based on the results of the study, we added various policy options and recommendations for policymakers in ECOWAS countries. Naturally, the study can-

not cover all issues and aspects that are at stake with respect to the impact of the EPAs on ECOWAS countries. For example, any dynamics of regional integration in West Africa or the impact on poverty or gender issues have not been covered, as the focus is on the direct impact on trade flows and budget revenue. Nevertheless, regarding these effects, we think that the study provides policymakers with important information on the likely impact of the EPAs on ECOWAS countries.

Against this background, the study provides some information on the issues involved in the debate as well as outlining the aims, method and results of our empirical estimation of the effects. To begin with, we highlight some key economic and trade indicators for West African countries, followed by an explanation of the methodology and the data used. Due to data limitations, a partial equilibrium model has been used for the analysis. We present the empirical results, then discuss the results comprehensively and examine the general impact of EPAs on ACP countries. Based on the results, we compare an EPA with other policy options ECOWAS might consider and, finally present basic prerequisites for the EPA option.

Trade flows, data and model structure

Key economic indicators and trade flows

We start the empirical analysis with a rough overview of some economic and social indicators of West African ACP countries. As can be seen from Table 2, ECOWAS countries are relatively poor regarding income levels, measured by gross national income (GNI) per capita. With the exception of Cape Verde, all West African countries have a GNI per capita of below \$1,000. Among the 15 poorest countries in the world measured by GNI per capita, five are from the West African Region (Guinea-Bissau, Liberia, Mali, Niger and Sierra Leone).⁹ Also, the Human Development Index (HDI)¹⁰ for West Africa is among the lowest in the world. If low life expectancy rates, high poverty, infant mortality and illiteracy rates are taken into account as well, the picture of the relatively low levels of development of the region becomes even clearer.

Table 2. Poverty and social indicators of ECOWAS countries and Mauritania

	HDI value	Population mid-year (millions)	GNI per capita	Poverty ¹ (%)	Life expectancy at birth	Infant mortality (per 1000)	Illiteracy rate ² (%)
Country	2001	2002	2002	1993-00	2001	2001	2002
Benin	0.411	6.6	380	-	50.9	94	60
Burkina Faso	0.330	11.8	250	61	45.8	104	74
Cape Verde	0.727	0.5	1,250	-	69.7	29	24
Côte d'Ivoire	0.396	16.5	610	12	41.7	102	49
Gambia	0.463	1.4	270	59	53.7	91	61
Ghana	0.567	20.3	270	45	57.7	57	26
Guinea	0.425	7.7	410	-	48.5	109	-
Guinea-Bissau	0.373	1.4	150	-	45.0	130	59
Liberia	-	3.3	140	-	47.0	157	44
Mali	0.337	11.4	240	73	48.4	141	73
Mauritania	0.454	2.8	280	29	51.9	120	59
Niger	0.292	11.4	170	61	45.6	156	83
Nigeria	0.463	132.8	300	70	51.8	110	33
Senegal	0.430	9.8	460	26	52.3	79	61
Sierra Leone	0.275	5.2	140	57	34.5	182	-
Togo	0.501	4.8	270	-	50.3	79	40
Average ³	0.430		314	49	49.7	109	53

Sources: World Bank (2004ab), UNDP (2003) and HWWA calculations.

Notes:

¹Percentage of population living under US\$1 a day.

²Percentage of population 15 years of age and above that is illiterate.

³Unweighted averages, except GNI per capita, which is weighted by the population.

Table 3 presents key government revenue indicators of West African countries and gives an impression of the importance of customs revenue for each country. The first two columns indicate the net financing requirement of the government. Most West African countries show significant budget deficits of up to almost 12% of GDP. If capital grants¹¹ are excluded, the ability of West African governments to fund their activities from their own revenues becomes more visible. Now, the budget deficits are much larger, indicating the dependency of West African countries on foreign grants.

The third and fourth columns of Table 3 give a first impression of the significance of customs revenue with respect to total GDP and total government revenue for West African countries. In general, customs revenue consists of import and exports duties and other statistical fees, taxes and surcharges related to trade. With respect to the EPA, only import tariffs *vis-à-vis* EU imports will be elimi-

nated. The following analysis will, hence, only concentrate on import duties collected. Import duties as a share of GDP range from 1.1% in Guinea and Niger up to 5.4% in Gambia. Import duties as a percentage of total government revenue, on the other hand, vary from 4.7% in Nigeria to 33.7% in Gambia. Based on these two indicators, Gambia and Cape Verde are highly dependent on import duties to finance government expenditure. Apart from these two countries, the percentages in Benin, Ghana, Senegal and Togo are also relatively high, indicating the potential significance of the impact of the EPA on government revenue if import duties decline to a considerable extent.

The importance of import duties becomes more apparent if the relative magnitude of imports and protection levels of West African countries *vis-à-vis* imports from the EU are taken into account (Table 4). On average, one half of total West African imports are from the European Union. Yet this figure

Table 3: Key government revenue indicators of ECOWAS countries and Mauritania, 2001

Country	Government deficit (-)/surplus (+)		Import duties	
	(incl. grants)	(excl. grants)	% of GDP	% of government revenue ¹
	% of GDP		% of GDP	
Benin	-1.5	-4.2	2.5	18.1
Burkina Faso	-4.0	-11.3	1.5	12.0
Cape Verde	-5.2	-11.0	5.1	24.8
Côte d'Ivoire	0.9	0.3	1.4	8.2
Gambia	-6.3	-9.8	5.4	33.7
Ghana	-10.1	-14.6	2.7 ³	15.5 ³
Guinea	-4.4	-7.8	1.1	9.4
Guinea-Bissau	-11.7	-26.2	1.7	8.5
Liberia	-	-	-	-
Mali	-5.1	-9.5	1.8	10.7
Mauritania	-1.8	-5.7	2.4	12.8
Niger	-2.4	-7.1	1.1	12.3
Nigeria	-1.5	-1.5	2.3 ³	4.7 ³
Senegal	-2.0	-3.9	3.2	17.8
Sierra Leone	-11.4	-18.6	-	-
Togo	-2.1	-2.6	2.4	17.1
Average ²	-4.6	-8.9	2.5	14.7

Sources: World Bank (2004b), UNCTAD (2004), ITC (2004) and HWWA calculations.

Notes: ¹Excluding grants. ²Unweighted averages. ³2000.

Table 4. Key trade and tariff indicators of ECOWAS countries and Mauritania, 2001

Country	Imports from the EU		Tariff rate	Tariff rate
	% of GDP	% of total imports	total imports	EU imports
			% ²	% ²
Benin	11.3	44.4	12.6	12.6
Burkina Faso	9.9	44.6	11.0	10.5
Cape Verde	31.2	74.3	15.4	15.8
Côte d'Ivoire	11.1	57.4	10.7	10.0
Gambia	36.4	61.8	11.8	11.8
Ghana	25.1	43.1	16.2	18.8
Guinea	9.8	49.0	6.0	6.3
Guinea-Bissau	18.2	59.7	14.2	15.3
Liberia	-	-	-	-
Mali	13.8	36.3	10.6	9.6
Mauritania	17.7	47.5	8.7	8.5
Niger	4.8	28.9	12.9	12.0
Nigeria ¹	6.8	47.9	20.0	19.5
Senegal	19.3	51.8	9.4	10.4
Sierra Leone	-	-	-	-
Togo	12.1	43.0	10.9	10.2
Average ³	16.3	49.3	12.0	12.0

Sources: UNCTAD (2004) and ITC (2004).

Notes: ¹2000. ²Import-weighted averages. ³Unweighted averages.

can be much higher for individual countries, such as Cape Verde (74.3%) and Gambia (61.8%). In these two countries, the share of EU imports in GDP reaches 31.2 and 36.4% of GDP, respectively, which indicates a very high dependency on EU imports to these countries. On the other hand, Niger imports less from the EU (28.9%) in comparison to its neighbours.

The two remaining columns of Table 4 give an impression of the protection levels of West African countries *vis-à-vis* total imports and EU imports with respect to tariff barriers. While the average import tariff rate for all West African countries is 12%, the same figures for total imports and EU imports for Nigeria are 20 and 19.5%, respectively. For the majority of West African countries, the import-weighted tariff rate for EU imports is in the range between 10 and 15%, indicating moderate levels of (tariff) protection.

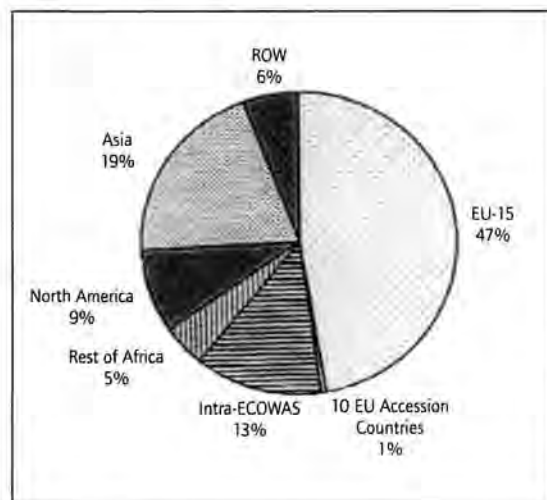
The vast majority of imports in all West African countries consist of manufactured commodities, such as machinery, electrical appliances, cars, trucks, etc. Apart from Guinea-Bissau, the share of manufactures in total imports from the EU in West African countries is even higher than the same figure for total imports from all countries, indicating that these countries predominately import manufactured goods from the EU. Apart from Guinea and Ghana, West African countries apply lower tariff rates on raw materials than on agricultural or manufactured goods.¹²

The EU, conversely, imports predominately agricultural products and raw materials from ECOWAS countries (see Table 6). The trade structure between the EU and West Africa is, thus, fairly typical for developed and developing countries. In

2002, the EU had an overall trade surplus *vis-à-vis* ECOWAS of some \$1.7 billion.

Not surprisingly, imports from France and the United Kingdom, the former colonial powers in West Africa, dominate total imports from the EU (see Figure 1). Other important trading partners are Germany, Italy, and the Benelux countries.

Figure 1. ECOWAS imports from the EU by countries, 2001



Source: ITC (2004)

At the time of concluding the EPA, scheduled for December 2007, West African countries will eliminate tariff barriers on imports for all 25 (or possibly more) EU members. The following analysis, however, will exclusively focus on the 15 members of the European Union in 2001, the base year for trade and tariff data. The ten accession countries that joined the EU in May 2004 will be excluded from the

Table 5. EU-ECOWAS trade structure, 2002

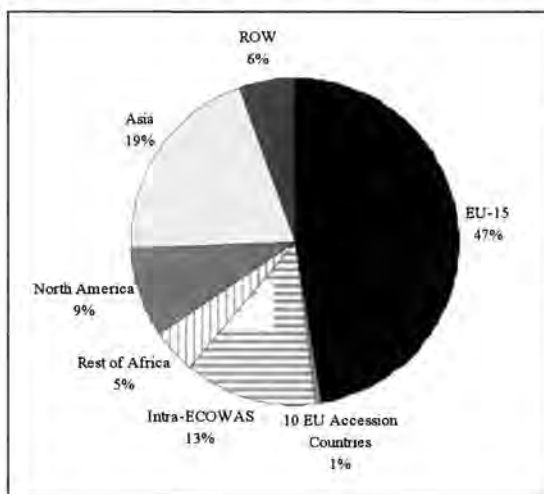
Product category	EU exports to ECOWAS		EU imports from ECOWAS	
	US\$ (millions)	%	US\$ (millions)	%
Agricultural products	1,864	17.0%	2,902	31.3%
Raw materials	806	7.3%	5,231	56.4%
Manufactured goods	8,301	75.7%	1,147	12.3%
Total	10,971	100.0%	9,280	100.0%

Source: ITC (2004).

Note: Mauritania is included in the ECOWAS group.

analysis. The trade and budget effects are thus likely to be larger, depending on imports and duties collected on imports from EU accession countries. For the year 2001, total imports by ECOWAS countries from the ten accession countries were relatively small in comparison to the 15 old EU members (see Figure 2). Their share of total imports only amounted to 1% in 2001, far less than the same figure for the EU-15 (47%). Other important trading partners of ECOWAS countries were Asia (19%), the intra-ECOWAS trade (13%) and North America (9%).

Figure 2. Structure of ECOWAS imports, 2001



Source: ITC (2004).

Data and model structure

On the whole, the quantitative analyses of the impact of an EPA on trade flows are typically performed in either a partial or general equilibrium framework. By their very nature, partial equilibrium models allow highly detailed studies on the impact of trade policy changes to be made. In contrast, general equilibrium models attempt to describe the effects of discriminatory tariff preferences on the economy as a whole and the intersectoral linkages in particular. In most cases, general equilibrium models are thus more suitable to analyse the overall trade and welfare effects. Yet they require a so-called social accounting matrix with detailed information on each of the involved economies, such as sectoral production data or substitution elasticities.

Since the required data is not available for all West African countries, we have to rely on an appropriate partial equilibrium model. More specifically, the model of Verdoorn (1960) will be used to estimate the impact on trade flows and budget revenue in West African countries. Despite its age, it is a suitable partial equilibrium model for the analysis of trade flows in the proposed EPA.¹³ In the spirit of the 'Armington assumption' (Armington 1969), this model assumes product differentiation between supplying countries. Imported goods from different countries are considered to be imperfect substitutes in use. This assumption seems reasonable, since the majority of African imports consist of manufactured goods (see Table 5).

Verdoorn's model is based on the normal assumptions of partial equilibrium analysis, such as no repercussions on exchange rates or incomes due to changing trade flows, iso-elastic import-demand functions, and infinite supply elasticities. The latter assumption, frequently applied in models of international trade, seems appropriate in the case of the European Union, since the EU is relatively large and its exports to ECOWAS countries account for only 0.5% of total EU exports in 2002 (ITC 2004), or other major exporters, such as the United States. Yet it might be some cause for concern for smaller export nations, such as other African countries. In reality, their elasticities of supply are less than infinite. Yet the share of exports to ECOWAS countries in domestic production is usually not very large. For these reasons, expected changes in total domestic production are likely to be small and the assumption of horizontal supply curves seems appropriate.

To analyse the different trade effects the EPA may have, let us consider a particular commodity category (Q), such as shoes. The consumer wishes to maximise his utility

$$(1) \quad U = f[f_1(Q_1, Q_2), Q_3]$$

where the branch of the utility function f_1 is homogeneous. Q_1 and Q_2 denote imports of shoes from preferred and non-preferred countries, and Q_3 represents domestically produced shoes. The assumption of homogeneity of the utility function implies that total imports ($Q_1 + Q_2$) are substituted equally for domestic production. By using import demand elas-

ticities, we can thus employ import data without having to rely on domestic production data. This particular assumption is not only convenient, but rather necessary for the majority of West African countries. To include domestic production in the calculations, we would have to obtain highly disaggregated data at the four-digit level of the International Standard Industrial Classification (ISIC), compiled by the UNIDO (2004). Apart from Senegal, this data is either not available or obsolete. We have thus excluded domestic production in the following analysis of the effects of the EPA on West African countries.

Tariff and trade data, on the other hand, are accessible. The tariffs were obtained from the UNCTAD (2004) Trade Analysis and Information System (TRAINS), which is a comprehensive computerised information system at the tariff-line level using, among others, the Harmonised System (HS) of product classifications. For Cape Verde, Guinea and Gambia, TRAINS does not report any tariff information. Hence, we had to rely on other sources, that is, for Cape Verde we used the national six- to ten-digit HS tariff schedule, provided by the Cape Verde Ministry of Economics (2004), and aggregated it to the four-digit HS level, using the appropriate trade figures.¹⁴ For Guinea, we obtained the HS tariffs from the WTO (2004) Integrated Database, which is a similar database for trade and tariffs, but covers fewer countries and years in comparison to TRAINS.

In the case of Gambia, we could not obtain disaggregated tariffs and thus used the import-weighted tariff rate for total imports, reported by the IMF (2004). Among ECOWAS countries, Sierra Leone and Liberia had to be excluded from the analysis, as tariff data for both countries could not be obtained. Hence, the empirical analysis has been performed for a total of 14 West African countries, that is, 13 ECOWAS countries plus Mauritania. The base year is 2001, or the most recent year for which reliable trade and tariff data were available.¹⁵ Finally, the trade data were extracted from the COMTRADE database, which is available online and on CD-ROM (ITC 2004), and TRAINS (UNCTAD 2004).¹⁶

Verdoorn's model focuses on imports from different sources, that is, imports from preference benefi-

ciaries and from non-beneficiaries. The model is based on two key assumptions. First, the demand function of the preference donor (ECOWAS) for any single good takes the following form:

$$(2) \quad Q_1 + Q_2 = \beta P_1^{\varepsilon\alpha_1} P_2^{\varepsilon\alpha_2}$$

where P_1 and P_2 are the prices of beneficiaries' and non-beneficiaries' imports, α_1 and α_2 are share coefficients ($\alpha_1 = Q_1/(Q_1 + Q_2)$ and $\alpha_1 + \alpha_2 = 1$), β is a parameter and ε represents the elasticity of import demand.

Second, the elasticity of substitution (σ) of preferred and non-preferred imports can be defined as:

$$(3) \quad \frac{Q_1}{Q_2} = \gamma \left(\frac{P_1}{P_2} \right)^\sigma$$

If the tariff (t) is eliminated only on preferred imports Q_1 and supply elasticities are infinite, then the price of the beneficiaries' imports P_1 changes by

$$(4) \quad \frac{\delta P_1}{P_1} = \frac{\delta t}{1+t}$$

Then the total expansion of imports from the preferred country's viewpoint due to the trade preferences can be expressed as follows:¹⁷

$$(5) \quad \frac{\delta Q_1}{Q_1} = (\alpha_1 \varepsilon + (1 - \alpha_1) \sigma) \left(\frac{\delta t}{1+t} \right)$$

The chain reaction comes in two stages: first the tariff is eliminated only on Q_1 , and P_1 falls, and then the consumer substitutes Q_1 for Q_2 . Equation (5) can be rearranged by substituting α_2 for α_1 :

$$(6) \quad \frac{\delta Q_1}{Q_1} = (\varepsilon + \alpha_2(\sigma - \varepsilon)) \left(\frac{\delta t}{1+t} \right)$$

The total change in preferred imports can be split into trade creation (TC) and trade diversion (TD). The former is defined as the change in imports from beneficiaries' countries and consists of the consumption effect, that is, the increase in overall consumption due to lower prices, and the displacement of domestic production.¹⁸ This effect can be determined from the preferred country's point of view as follows:

$$(7) \quad TC = Q_1 \varepsilon \left(\frac{\delta t}{1+t} \right)$$

Similarly, trade diversion is defined as the substitution of preferred for non-preferred imports due to the preferential tariff elimination:

$$(8) \quad TD = Q_1 \alpha_2 (\sigma - \epsilon) \left(\frac{\delta t}{1+t} \right)$$

Finally, the expected change in import duties (ID) is equal to the sum of import duties for imports from preferred countries Q_1 , which are now excluded from import tariffs, and the replacement of imports from non-preferred countries (TD) multiplied by the import tariff:

$$(9) \quad \delta ID = Q_1 t_1 + TD t_2$$

where t_1 and t_2 represent the tariff rates for preferred and non-preferred imports, respectively.

The estimation of trade creation and diversion and the changes in import duties has been conducted at the four-digit HS level. At that level of aggregation, the HS schedule consists of 1,241 goods. In comparison to an estimate at a more aggregated level, this highly disaggregated approach ensures an accurate estimation of trade effects, since it takes – in the case of trade diversion – competition from various countries at an appropriate level into account. Also, it allows the identification of the commodities that are most likely to be affected by the EPA.

As can be seen from (7) and (8), estimation of TC and TD in the differentiated product model requires estimates of import demand and substitution elasticities. Reliable estimates for both elasticities for West African countries at the four-digit HS level are not available. As a remedy, we assumed values for these elasticities. More specifically, we set up three scenarios: low, mid and high. The scenarios differ with respect to the assumed elasticities. To address differences in elasticities that are based on

the degree of homogeneity of the products, we differentiated between agricultural products, raw materials and manufactured goods (see Table 6). In particular raw materials are more likely to be substituted, as they are more similar in comparison to manufactured or agricultural goods. In contrast to the import demand elasticities, the assumed values for the elasticity of substitution are higher, because imports from, for instance, the United States and the EU are more likely to be substituted than EU imports and domestically produced goods. From our perspective, the mid scenario is the most likely outcome of the EPA between ECOWAS countries and the EU. The low and high scenarios, on the other hand, provide lower and upper bound estimates of the trade and budget effects of the EPA.

Elasticities at the four-digit level are usually higher than those at a more aggregated level, as we can expect a higher degree of competition among more similar goods. For example, if two different products (e.g. aeroplanes and motor vehicles) belong to a given category (transport equipment), then we can expect that the elasticity of substitution among imports of motor vehicles from different countries would be higher than the one between motor vehicles and aeroplanes. Only the more disaggregated level allows a differentiation between such goods, implying higher elasticities. In general, our assumed figures are well within the range of similar elasticities of other developing countries.¹⁹

For Gambia, we assumed values for both elasticities at the aggregated level, that is, total imports, as disaggregated tariff data could not be obtained (see Table 7). In comparison to the figures for the other West African countries, both elasticities are lower, as the degree of substitutability is likely to be smaller on a more aggregated level.²⁰

Table 6. Assumed values for the elasticities, four-digit level

Product category (HS chapters)	Import demand elasticity			Elasticity of substitution		
	low	mid	high	low	mid	high
Agricultural products (01–24)	0.4	0.7	1.0	1.0	2.0	3.0
Raw materials (25–27)	0.6	0.9	1.2	2.0	3.5	6.0
Manufactured goods (28–97)	0.8	1.1	1.4	1.8	3.0	4.0

Note: The elasticities refer to the four-digit HS level for all ECOWAS countries and Mauritania except Gambia.

Table 7. Assumed values for the elasticities, total imports, Gambia

Product	Import demand elasticity			Elasticity of substitution		
	low	mid	high	low	mid	high
Total imports	0.5	0.7	0.9	1.3	2.0	2.5

Information on import duties has been obtained from IMF staff reports on each West African country (IMF 2004). Based on the IMF data, we have computed collection ratios, that is, the share of duty collected on the c.i.f. value of imports.²¹ Collection ratios are clustered in the range 5 to 10% in half of West African countries, with Cape Verde and Nigeria above and Ghana and Mali below that range (Table 8). Collection efficiency ratios, defined as the percentage of the collection ratio of import-weighted tariff rates, have also been calculated. They provide information on whether there are particular exemptions, such as special trade preferences, due to export-processing zones, and/or deficiencies in the duty collection due to red tape, smuggling or corruption. Also, since there are no preferential tariff rates for West African countries included in the TRAINS database, the reported import-weighted tariff rates are naturally larger than the collection rates.

By this measure, Guinea and Senegal are particularly good performers, collecting 90% and more of their statutory rates. Ghana, Guinea-Bissau and Mali, on the other hand, have a rather poor record in collection efficiency, with ratios below 35%. Importantly for the empirical results, only the actual collected import duties will be incorporated into the analysis, as these duties are subject to elimination as part of the EPA.²²

Impact assessment for ECOWAS countries and Mauritania

Empirical results

After describing the model and the data used, we turn now to the estimation of the trade and budget effects of the EPA on ECOWAS countries and Mauritania. As a start, we have to make an assumption about the timing of trade liberalisation, as stip-

Table 8. Efficiency of import duty collections, 2001

Country	Collection ratio ¹ (%)	Import-weighted tariff rate (%)	Collection efficiency ² (%)
Benin	9.7	12.6	76.5
Burkina Faso	6.8	11.0	61.3
Cape Verde	12.1	15.4	78.7
Côte d'Ivoire	7.4	10.7	68.8
Gambia	9.2	11.8	78.3
Ghana ³	4.7	16.2	29.1
Guinea	5.4	6.0	89.9
Guinea-Bissau	5.4	14.2	38.2
Mali	4.6	10.6	43.7
Mauritania	6.4	8.7	73.3
Niger	6.9	12.9	53.4
Nigeria ³	15.9	20.0	79.7
Senegal	8.5	9.4	90.0
Togo	8.4	10.9	77.0
Average ⁴	8.0	12.2	67.0

Sources: HWWA calculations based on IMF (2004), UNCTAD (2004) and ITC (2004) data.

Notes: ¹Percentage of duty collected of the c.i.f. value of imports. ²Collection ratio divided by import-weighted tariff rate. ³2000.

⁴n-weighted averages.

ulated in the proposed agreement between ECOWAS countries and the EU. Under the likely terms of the EPA, tariffs will be eliminated within a period of up to 12 years for the most part, although a few import-sensitive goods are likely to be excluded from the agreement. An examination conducted by the WTO's Committee on Regional Trade Agreements suggests that FTAs typically cover between 80 and 95% of the trade between FTA members (WTO 2002). In our analysis, however, we have assumed a complete tariff liberalisation at the time of the base year and focused on the final stage of trade barrier elimination instead of calculating the effects at each stage. Thus, our figures are likely to be upper bound estimates of the static trade and budget effects, depending on how many products will be excluded from the agreement.

As can be seen from Table 9, in the case of a complete tariff liberalisation *vis-à-vis* EU imports in all West African countries, total imports from the EU are expected to increase in the mid scenario in the range of 5.2% (Guinea-Bissau) to 20.8% (Nigeria). Apart from Nigeria, relatively high trade effects can be expected in Benin (increase in total imports by 11.6%), Cape Verde (11.7%), Senegal (11.5%) and Togo (10.9%). The reasons for this outcome are mainly above-average tariff rates for EU imports and/or relatively high import-duty collection-efficiency ratios. In absolute terms, the increase in total imports in Nigeria is by far the largest in West Africa, due to the magnitude of both overall and EU imports.

The low and high scenarios give an impression of the expected range of the trade effects. In general, the results for the high scenario are roughly twice as large as those for the low scenario, since the assumed values for the elasticities in both scenarios are – on average – also roughly twice as large. There are, however, differences at the country level, since the import structure in West African countries differs. This applies in particular to Ghana and Togo, as in both countries imported raw materials from the EU make up a relatively large share in total imports.

Trade creation exceeds trade diversion (in absolute levels) in all scenarios and all West African countries. For trade creation, the increase in EU imports in the mid scenario ranges from 3.6% in

Mali to 12.5% in Nigeria. Again, relatively high trade barriers *vis-à-vis* EU imports are the main reason for the larger trade effects in Nigeria. The trade diversion effects are somewhat smaller. From the perspective of non-preferred imports, the largest decline can be expected (again) in Nigeria with a decrease of \$229 million or 7.6%. At first sight, the larger trade creation figures are somewhat surprising, given the fact that the assumed values for the elasticity of substitution is in all cases larger than the import demand elasticity.²³ This assumption is reasonable, since imports from different sources, say, the European Union and the United States, are much more likely to be substituted than EU imports and domestically produced goods. This holds in particular for manufactured goods like machinery, cars, etc., which make up the bulk of ECOWAS imports. Nevertheless, the results are plausible, if we take into account that the estimation of the trade effects has been performed at the four-digit HS level. At that level of disaggregation, there are only or mostly imports from the EU for a considerable number of products and, thus, no or very small trade diversion effects.²⁴

From an economic point of view, trade creation is welfare improving, as consumers substitute lower cost beneficiary imports for goods produced at home. Trade diversion, on the other hand, will decrease welfare, as a more efficient source of imports will be displaced by a higher cost producer. From this perspective, the EPA between the EU and ECOWAS countries and Mauritania is likely to increase overall welfare levels in West African countries. Yet this does not hold for all products, as at the highly disaggregated level trade diversion can exceed trade creation.

Importantly, these trade effects do not occur immediately after the tariffs have been removed. To begin with, the tariffs are likely to be phased out over a period of 10 to 12 years. The effects would, hence, depend on the timetable of tariff elimination in West Africa. There are further time lags, since relative prices do not adjust immediately after changes in tariff rates. As a consequence, it will take some time before an increase in total EU imports and the replacement of non-EU imports can be observed in ECOWAS countries. The speed of the

Table 9. Trade effects of EPA on ECOWAS countries, 2001

Country	Scenario setting	Trade creation		Trade diversion		Total trade effect	
		US\$ (millions)	% of preferred imports	US\$ (millions)	% of non-preferred imports	US\$ (millions)	% of preferred imports
Benin	Low	13.8	5.2%	5.6	1.7%	19.4	7.2%
	Mid	20.4	7.6%	10.7	3.2%	31.1	11.6%
	High	27.0	10.1%	15.5	4.6%	42.6	15.9%
Burkina Faso	Low	9.9	4.0%	5.1	1.7%	15.0	6.1%
	Mid	14.1	5.7%	9.8	3.2%	23.9	9.7%
	High	18.3	7.4%	14.4	4.7%	32.8	13.3%
Cape Verde	Low	11.5	6.3%	2.4	3.7%	13.8	7.5%
	Mid	16.9	9.2%	4.5	7.1%	21.5	11.7%
	High	22.3	12.2%	6.5	10.2%	28.8	15.7%
Côte d'Ivoire	Low	48.4	4.2%	13.1	1.5%	61.5	5.3%
	Mid	69.3	6.0%	25.3	2.9%	94.7	8.2%
	High	90.3	7.8%	35.9	4.2%	126.2	10.9%
Gambia	Low	5.9	4.1%	3.6	4.1%	9.5	6.7%
	Mid	8.2	5.8%	5.8	6.6%	14.0	9.9%
	High	10.6	7.4%	7.2	8.2%	17.7	12.5%
Ghana ¹	Low	31.6	2.5%	21.2	1.3%	52.9	4.2%
	Mid	45.8	3.7%	40.2	2.4%	85.9	6.9%
	High	59.9	4.8%	59.2	3.6%	119.1	9.5%
Guinea	Low	9.8	3.3%	5.2	1.7%	15.0	5.1%
	Mid	14.3	4.9%	10.0	3.3%	24.3	8.3%
	High	18.8	6.4%	15.6	5.1%	34.4	11.7%
Guinea-Bissau	Low	1.1	3.0%	0.1	0.5%	1.2	3.4%
	Mid	1.6	4.5%	0.3	1.1%	1.9	5.2%
	High	2.2	6.0%	0.4	1.5%	2.5	7.0%
Mali	Low	9.3	2.5%	4.3	0.7%	13.6	3.7%
	Mid	13.3	3.6%	8.3	1.3%	21.6	5.9%
	High	17.4	4.7%	11.8	1.8%	29.1	7.9%
Mauritania	Low	6.9	3.9%	2.8	1.5%	9.7	5.5%
	Mid	9.8	5.5%	5.4	2.8%	15.2	8.6%
	High	12.7	7.2%	7.9	4.0%	20.6	11.6%
Niger	Low	3.0	3.2%	1.8	0.8%	4.8	5.1%
	Mid	4.6	4.9%	3.5	1.5%	8.1	8.6%
	High	6.1	6.5%	5.3	2.3%	11.4	12.1%
Nigeria ¹	Low	244.5	8.8%	118.6	3.9%	363.1	13.1%
	Mid	348.3	12.5%	229.1	7.6%	577.4	20.8%
	High	452.1	16.3%	327.6	10.8%	779.7	28.0%
Senegal	Low	49.2	5.5%	16.3	2.0%	65.6	7.3%
	Mid	71.2	8.0%	31.4	3.8%	102.7	11.5%
	High	93.2	10.4%	45.7	5.5%	138.9	15.5%
Togo	Low	6.9	4.5%	3.4	1.7%	10.3	6.8%
	Mid	10.1	6.6%	6.5	3.2%	16.6	10.9%
	High	13.2	8.7%	10.1	5.0%	23.3	15.3%

Source: HWWA calculations

Note: '2000

adjustment to changes in relative prices depends on the behaviour of EU and non-EU exporters and West African importers and/or wholesalers. If there is less competition, relative prices will adjust more slowly and, hence, any changes in the import structure and domestic production will take their time.

Apart from the impact on trade flows, the tariff elimination will lead to a decline in import duties and, hence, total government revenue. In absolute terms, the decline in import duties in the mid scenario ranges from \$2.2 million in Guinea-Bissau to \$487.8 million in Nigeria (see Table 10). As a share of total import duties, the decrease will be largest in Cape Verde, with a decline of 79.9%. More importantly, import duties can be a significant source of total government revenue. A considerable decline might then affect the public financial positions of West African governments and their ability to provide public goods. From this perspective, Cape Verde and Gambia will be particularly affected with an estimated decline in total government revenue in the mid scenario of 19.8 and 21.9%, respectively. As a share of GDP, the percentage figures for both countries amount to 4.1 and 3.5, which are very large numbers. Based on these calculations, both countries would face a severe impact on their economies.²⁵

The reasons for the far above average (relative) decline in import duties and government revenues are Cape Verde's and Gambia's relatively large share of EU imports to their GDP, their dependence on import duties to finance public expenditures, and their relatively high collection efficiency ratios (see Table 11).

In contrast to Cape Verde and Gambia, the overall impact on government revenue would be somewhat smaller in other West African countries. Still, considerable effects can be expected in Ghana and Senegal with a decline in government revenue in the magnitude of 10 to 11% (see Table 10). If we take into account that these countries already have relatively large budget deficits (see Table 3), the importance of the impact of the EPA on government revenue becomes clearly visible.

In comparison to the trade effects, the differences in changes in import duties in the low and high scenarios in Table 10 are much smaller, since

EU imports will be duty free after an EPA comes into force and only small losses in import duties are due to trade diversion effects. The precision of the estimated losses in import duties is therefore much higher. This is, however, not the case in Ghana, where import duties will decline between \$80 million and \$102 million. In this country, large trade diversion effects occur in a single product category (petroleum oils, HS heading 2710), implying a severe impact on government revenue.

An important advantage of the partial equilibrium approach is the ability to identify the most affected products of the EPA at a fairly disaggregated level. To single out the sensitive products and product categories, we have sorted the disaggregated effects both by absolute changes in import duties and by changes in total EU imports. For losses in import duties, Table 12 lists the five most important products for each country at the four-digit HS level.²⁶ Though the products can vary significantly from country to country, there are a few products that are among the top five most affected products in a number of countries, such as motor cars for the transport of people (HS heading 8703) and of goods (8704), milk and cream (0402), cane or beet sugar (1701), and petroleum oils (2710). Despite the fact that the results are partly driven by identical tariff protection rates for UEMOA countries for EU imports, a few similar categories can be found in the other ECOWAS countries as well. Above all, this applies to motor cars and petroleum.

In addition to the budget effects, we identified those products for which far-above-average trade effects are likely to occur due to the EPA. Among the numerous products affected, we also identified (more aggregated) product groups to single out groups of similar products. For this exercise, we were able to sort the total trade effects by absolute or relative changes. To ensure that both indicators for changes in EU imports, that is, absolute and relative changes, were taken into account simultaneously, we standardised both indicators in a first step:

$$(10) \quad z_{ij} = \frac{X_{ij} - \mu_j}{\omega_j}$$

where the standardised score (z) of product i on indicator j (1, 2), namely absolute and relative changes

Table 10. Decline in import duties in ECOWAS countries, 2001

Country	Decline in import duties				
	Scenario setting	US\$ (millions)	% of total import duties	% of total government revenue ²	% of GDP
Benin	Low	26.7	46.0%	8.3%	1.13%
	Mid	27.6	47.4%	8.6%	1.16%
	High	28.3	48.7%	8.8%	1.19%
Burkina Faso	Low	16.8	45.0%	5.4%	0.68%
	Mid	17.5	46.8%	5.6%	0.71%
	High	18.2	48.5%	5.8%	0.73%
Cape Verde	Low	23.5	78.0%	19.4%	3.99%
	Mid	24.0	79.9%	19.8%	4.09%
	High	24.5	81.5%	20.2%	4.17%
Côte d'Ivoire	Low	81.2	54.4%	4.5%	0.78%
	Mid	82.9	55.5%	4.6%	0.80%
	High	84.3	56.5%	4.6%	0.81%
Gambia	Low	13.5	63.8%	21.5%	3.47%
	Mid	13.8	65.0%	21.9%	3.54%
	High	14.0	65.8%	22.1%	3.58%
Ghana ¹	Low	80.3	58.7%	9.1%	1.61%
	Mid	90.8	66.4%	10.3%	1.82%
	High	102.4	74.9%	11.6%	2.06%
Guinea	Low	16.3	50.6%	4.8%	0.55%
	Mid	16.7	51.6%	4.9%	0.56%
	High	17.0	52.7%	5.0%	0.57%
Guinea-Bissau	Low	2.14	65.2%	5.5%	1.08%
	Mid	2.16	65.8%	5.6%	1.09%
	High	2.18	66.3%	5.6%	1.09%
Mali	Low	16.0	34.3%	3.7%	0.60%
	Mid	16.6	35.6%	3.8%	0.63%
	High	17.1	36.7%	3.9%	0.65%
Mauritania	Low	11.4	47.8%	6.1%	1.13%
	Mid	11.8	49.3%	6.3%	1.17%
	High	12.1	50.5%	6.5%	1.20%
Niger	Low	6.3	28.3%	3.5%	0.32%
	Mid	6.6	29.6%	3.6%	0.34%
	High	6.9	30.8%	3.8%	0.35%
Nigeria ¹	Low	460.1	49.7%	2.4%	1.12%
	Mid	487.8	52.7%	2.5%	1.19%
	High	512.8	55.4%	2.6%	1.25%
Senegal	Low	85.8	58.6%	10.4%	1.85%
	Mid	87.9	60.0%	10.7%	1.89%
	High	89.7	61.3%	10.9%	1.93%
Togo	Low	12.5	41.8%	7.2%	0.99%
	Mid	12.9	43.2%	7.4%	1.02%
	High	13.3	44.6%	7.6%	1.06%

Source: HWWA calculations.

Notes: ¹2000. ²Excluding grants.

Table 11. Combined tariff, trade and government revenue indicators, 2001

Country	Imports from the EU in % of total imports	Import-weighted tariff rate EU imports (%)	Import duties in % of total government revenue	Import duty collection efficiency ratio in %
Benin	44.4	12.6	18.1	76.5
Burkina Faso	44.6	10.5	12.0	61.3
Cape Verde	74.3	15.8	24.8	78.7
Côte d'Ivoire	57.4	10.0	8.2	68.8
Gambia	61.8	11.8	33.7	78.3
Ghana	43.1	18.8	15.5	29.1
Guinea	49.0	6.3	9.4	89.9
Guinea-Bissau	59.7	15.3	8.5	38.2
Mali	36.3	9.6	10.7	43.7
Mauritania	47.5	8.5	12.8	73.3
Niger	28.9	12.0	12.3	53.4
Nigeria	47.9	19.5	4.7	79.7
Senegal	51.8	10.4	17.8	90.0
Togo	43.0	10.2	17.1	77.0
Average	49.3	12.0	14.7	67.0

Sources and Notes: See Tables 3, 4 and 10.

in total EU imports, was derived from the actual score (x) minus the arithmetic mean of this indicator for all products (μ) adjusted by the standard deviation (ω) of the indicator over all products.

The standardised values were combined by taking the unweighted arithmetic mean of both scores:

$$(11) \quad \text{Standardised changes in } Q_1 = \frac{\sum_{j=1}^2 z_{ij}}{2}$$

A higher standardised score implies that both relative and absolute changes will occur in this product category. After this procedure we obtained a list of all products at the four-digit level (HS heading). To identify which product groups are most likely to be affected by the EPA, we computed the occurrence of the top 100 four-digit products at the two-digit level (HS chapters) and divided the number by the total number of headings per chapter.

As can be seen from Table 13, if 20 to 33% of all four-digit categories per HS chapter are listed in the top 100, we observe a moderate impact at the two-digit level (figures in *italic*). For the more affected products, ranging from greater than 33% up to 50%, the figures are given in **bold type**. The figures for the most affected commodities with relative occurrences

of greater than 50 up to 100% are shown in heavy type.²⁷

The results clearly indicate that a few product categories are sensitive in almost all West African countries with respect to changes in trade flows. More specifically, apparel and clothing (HS chapters 61 and 62), other made up textile articles (63), and footwear, gaiters and the like (64), will be highly affected by an EPA. To a lesser degree, but still considerably affected are: sugars and sugar confectionery (17), preparations of cereal, flour, starch/milk (19), essential oils and resinoids (33), soap and organic surface-active agents (34), manufactures of straw, esparto and other (46), cotton (52), carpets and textile floor coverage (57), knitted or crocheted fabrics (60), cars, trucks, motorbikes (87), furniture, bedding, mattress (94), and toys, games and sports requisites (95). For these products, the changes in total imports, measured in absolute and relative terms, are far above average.

Looking at these product categories, we have to keep the limitations of our approach in mind, that is, we excluded domestically produced goods. Therefore, the identification of the most affected product categories is related only to changes in total imports. Domestically produced goods will, thus, not auto-

Table 12. Top five most affected products, budget effects, 2001

Benin Meat & edible offal, poultry (0207) Worn clothing (6309) Motor cars, vehicles, for transport of (8703) Milk and cream (0402) Woven fabrics of cotton (5208)	Burkina Faso Motor cars, vehicles, for transport of people (8703) Petroleum oils etc., not crude (2710) Cane or beet sugar (1701) Motor vehicles, for transport of goods (8704) Motorcycles, sidecars (8711)	Cape Verde Beer made from malt (2203) Motor cars, vehicles, for transport of people (8703) Waters, sweetened/flavoured (2202) Meat, edible offal, of poultry (0207) Glazed ceramic flagstones and paving (6908)
Côte d'Ivoire Motor cars, vehicles, for transport of people (8703) Fish (0303) Milk and cream (0402) Petroleum oils etc., not crude (2710) Iron and steel products (7210)	Ghana¹ Petroleum oils etc., not crude (2710) Worn clothing (6309) Motor cars, vehicles, for transport of people (8703) Milk and cream (0402) Artificial corundum etc. (2818)	Guinea Petroleum oils etc., not crude (2710) Cane or beet sugar (1701) Motor cars, vehicles, for transport of people (8703) Cigars, cigarettes, cigarillos (2402) Wheat and meslin (1001)
Guinea-Bissau Motor cars, vehicles, for transport of people (8703) Beer made from malt (3203) Soya-bean oil (1507) Waters, sweetened/flavoured (2202) Wine of fresh grapes (2204)	Mali Motor cars, vehicles, for transport of people (8703) Cane or beet sugar (1701) Malt extract etc. (1901) Cigars, cigarettes, cigarillos (2402) Insulated wire, cable etc. (8544)	Mauritania Motor cars, vehicles, for transport of people (8703) Automatic data processing machines (8471) Tubes, pipes etc. of cast iron (7303) Parts of machinery (8431) Soya-bean oil (1507)
Niger Cane or beet sugar (1701) Wheat or meslin flour (1101) Cigars, cigarettes, cigarillos (2402) Milk and cream (0402) Motor cars, vehicles, for transport of people (8703)	Nigeria¹ Motor cars, vehicles, for transport of people (8703) Rice (1006) Extracts, essences of coffee, tea (2101) Medicaments (3004) Electrical transformers, static converters etc. (8504)	Senegal Motor cars, vehicles, for transport of people (8703) Petroleum oils etc, not crude (2710) Cane or beet sugar (1701) Malt extract etc. (1901) Soya-bean oil (1507)
Togo Petroleum oils etc., not crude (2710) Motor cars, vehicles, for transport of people (8703) Cigars, cigarettes, cigarillos (2402) Insulated wire, cable etc. (8544) Meat, edible offal of poultry (0207)		

Notes: Four-digit HS codes in parenthesis. ¹2000.

Source: HWWA calculations.

matically be displaced to the same extent. In general, the trade-creation effect consists of two effects: the consumption and the production effect. The latter relates to the displacement of domestically produced goods by more competitive preferred imports, whereas the former gives information on the change in total consumption, since import prices will decline due to the EPA. As there is no or very little domestic production in ECOWAS countries for a

number of EU imports, the production effect is zero or very close to zero for numerous manufactured goods, such as cars or electrical machinery. For the identification of the most sensitive products regarding domestically produced goods, one has to compare the production structure in each West African country with the list of changes in total imports.

Likewise, though we do incorporate collection efficiency ratios to control for tariff preferences and

Table 13. Relative frequency of HS chapter occurrence (%), trade effects top 100, 2001

HS no.	HS chapters	Benin	Burkina Faso	Cape Verde	Côte d'Ivoire	Ghana ¹	Guinea	Guinea-Bissau	Mali	Mauritania	Niger	Nigeria ¹	Senegal	Togo
01	Live animals	0	0	0	0	0	0	0	0	0	0	0	0	0
02	Meat and edible meat offal	10	0	30	0	0	0	10	0	0	0	0	0	10
03	Fish & crustacean, mollusc and other	0	0	14	14	0	0	0	0	0	0	14	0	14
04	Dairy products, birds' eggs	10	0	10	10	10	0	10	10	10	10	10	0	10
05	Products of animal origin	0	0	0	0	0	0	0	0	0	0	0	0	0
06	Live tree and other plants, bulb, roots	0	0	0	0	0	0	0	0	0	0	0	0	0
07	Edible vegetables and certain roots	0	0	7	0	0	0	0	0	0	0	0	7	0
08	Edible fruit and nuts	7	0	0	0	7	0	0	0	0	0	0	0	0
09	Coffee, tea and spices	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Cereals	0	0	0	13	0	13	0	0	0	0	25	13	0
11	Malt, starches	11	11	0	0	0	11	11	0	0	11	0	0	0
12	Oil seed, oleaginous fruits	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Lac, natural gums, resins	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Vegetable plaiting materials	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Animal/vegetable fats and oils	0	0	0	0	5	0	5	0	5	0	0	10	0
16	Preparations of meat, fish or crust	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Sugars and sugar confectionery	0	25	25	25	0	25	50	25	0	25	25	25	25
18	Cocoa and cocoa preparations	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Preparations of cereal, flour	0	0	20	20	0	0	20	40	0	20	0	20	0
20	Preparations of vegetable, fruit, nuts	11	0	0	0	0	0	0	0	0	0	0	0	0
21	Miscellaneous edible preparations	0	0	17	17	0	0	33	17	0	0	17	17	0
22	Beverages, spirits and vinegar	0	0	33	11	0	0	33	0	0	0	0	0	0
23	Residues and food industry waste	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Tobacco and manufactured tobacco	0	0	0	0	0	33	0	33	33	33	33	0	33
25	Salt, sulphur, earth and stone	3	7	3	3	0	13	7	7	3	7	3	3	3
26	Ores, slag and ash	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mineral fuels, oils	6	6	6	6	13	6	0	6	6	6	6	13	6
28	Inorganic chemicals	0	0	0	0	0	6	0	0	0	0	0	0	0
29	Organic chemicals	0	0	0	0	0	5	0	0	0	0	0	0	0
30	Pharmaceutical products	0	0	0	0	0	0	0	0	0	0	17	0	0
31	Fertilisers	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Tanning/dyeing extract, tannins	0	20	13	0	20	7	13	7	0	20	7	0	7
33	Essential oils and resinoids	43	0	43	14	57	0	14	29	29	43	29	0	29
34	Soap, organic surface-active agents	14	29	29	0	14	0	57	0	0	43	29	14	43
35	Albuminoidal substances	0	0	0	0	29	0	0	0	0	0	0	0	0
36	Explosives, pyrotechnic products	0	17	0	17	17	0	17	0	33	17	17	0	17
37	Photographic plates, films and rolls	0	0	0	14	14	14	14	0	0	0	0	0	0
38	Miscellaneous chemical products	4	4	0	4	4	0	0	4	0	0	4	0	4
39	Plastics and articles thereof	15	12	12	4	12	31	15	15	15	19	15	8	4
40	Rubber and articles thereof	6	0	18	6	0	12	0	6	12	6	18	0	0

Table 13 (continued)

HS no.	HS chapters	Benin	Burkina Faso	Cape Verde	Côte d'Ivoire	Ghana ¹	Guinea	Guinea-Bissau	Mali	Mauritania	Niger	Nigeria ¹	Senegal	Togo
41	Raw hides and skins	0	0	18	0	0	0	0	0	0	0	0	0	0
42	Articles of leather, saddlery, etc.	17	0	17	17	33	17	17	33	17	0	17	17	17
43	Furskins and artificial fur	0	0	0	0	0	0	0	0	0	0	0	0	0
44	Wood and articles of wood	5	5	14	0	19	5	5	5	10	5	0	10	5
45	Cork and articles of cork	0	0	0	0	0	0	0	0	0	0	0	0	0
46	Manufactures of straw, esparto/other	0	50	0	50	0	0	0	0	50	0	50	50	0
47	Pulp of wood, fibrous cellulose	0	0	0	0	0	0	0	0	0	0	0	0	0
48	Paper and paperboard, art. of paper	13	17	0	17	4	0	9	9	9	9	4	4	4
49	Printed books, newspapers, pictures	9	0	0	0	0	0	0	0	0	0	0	0	9
50	Silk	0	0	0	0	0	0	0	0	0	0	14	14	0
51	Wool, fine/coarse animal hair	0	0	0	0	0	0	0	0	0	0	0	0	0
52	Cotton	25	33	0	33	8	0	8	17	42	25	50	33	25
53	Other vegetable textile fibres	0	0	0	9	0	0	0	0	9	0	0	9	0
54	Man-made filaments	13	13	13	13	13	13	0	0	13	0	25	25	13
55	Man-made staple fibres	25	25	6	31	25	19	6	0	25	13	19	13	19
56	Wadding, felt and non-woven, yarns	0	11	11	11	0	33	11	0	0	0	0	0	11
57	Carpets and other textile floor cover	20	0	40	20	0	0	0	20	0	40	0	0	0
58	Woven fabrics, tufted textile fabrics	27	27	0	18	27	9	0	0	18	9	18	45	0
59	Impregnated, coated, cover/laminate	9	9	0	18	18	9	9	18	0	18	0	18	9
60	Knitted or crocheted fabrics	0	50	0	100	50	0	0	50	0	0	100	0	0
61	Articles of apparel and clothing accessories	71	41	0	41	94	65	12	29	47	29	53	47	71
62	Articles of apparel and clothing accessories, not knitted or crocheted	59	29	82	35	94	53	35	12	47	53	47	59	59
63	Other made up textile articles	50	30	0	30	10	30	40	60	60	60	10	40	50
64	Footwear, gaiters and the like	50	50	83	33	17	0	50	83	83	33	0	50	83
65	Headgear and parts thereof	14	0	14	14	57	14	0	14	0	0	0	0	14
66	Umbrellas, walking-sticks	0	0	0	33	33	0	33	33	0	0	0	33	33
67	Feather preparations, artificial flowers	25	0	25	0	50	25	0	0	0	0	75	25	25
68	Articles of stone, plaster, cement	7	20	0	7	0	7	13	7	7	7	7	0	7
69	Ceramic products	14	14	21	14	0	14	14	29	36	21	29	14	7
70	Glass and glassware	20	10	15	15	5	10	10	5	5	5	15	15	15
71	Natural/cultured pearls, stones	0	6	6	6	0	0	0	6	0	6	6	17	0
72	Iron and steel	7	7	0	7	0	3	3	10	14	10	7	0	10
73	Articles of iron or steel	15	15	8	12	8	8	31	35	15	19	15	12	12
74	Copper and articles thereof	0	5	0	0	0	0	0	5	0	5	0	0	5
75	Nickel and articles thereof	0	0	0	0	0	0	0	0	0	0	0	0	0
76	Aluminium and articles thereof	6	6	0	0	0	13	0	0	6	13	0	19	19
78	Lead and articles thereof	0	0	0	0	0	0	0	17	0	0	0	0	0
79	Zinc and articles thereof	0	0	0	0	0	0	0	14	0	0	0	14	0

Table 13 (continued)

HS no.	HS chapters	Benin	Burkina Faso	Cape Verde	Côte d'Ivoire	Ghana ¹	Guinea	Guinea-Bissau	Mali	Mauritania	Niger	Nigeria ¹	Senegal	Togo
80	Tin and articles thereof	0	14	0	0	14	0	0	0	0	14	0	0	0
81	Other base metals, cermets	0	0	0	0	0	0	0	0	0	0	0	0	0
82	Tool, implement, cutlery, spoons	7	27	0	0	20	13	20	0	0	7	20	0	0
83	Miscellaneous articles of base metal	9	0	0	9	9	18	18	0	0	0	0	0	9
84	Machinery, boilers	1	1	4	4	0	8	5	6	7	5	5	1	1
85	Electrical machinery equipment	8	15	23	27	0	13	25	15	15	13	8	13	21
86	Railway/tramway locomotives	0	0	0	0	0	11	0	0	11	0	0	0	0
87	Cars, trucks, motorbikes, bikes, etc.	13	38	31	25	6	31	31	31	31	13	25	25	6
88	Aircraft, spacecraft, parts thereof	0	0	0	0	0	20	0	0	0	0	0	0	0
89	Ships, boats and floating structures	0	0	0	13	0	0	0	0	0	0	13	0	0
90	Optical and photo instruments	0	0	0	0	0	0	3	0	0	3	0	0	3
91	Clocks and watches, parts thereof	21	21	7	0	7	14	7	29	0	14	0	29	14
92	Musical instruments	0	11	0	0	0	0	0	11	0	0	0	11	11
93	Arms and ammunition	14	0	14	0	14	0	0	0	0	14	0	0	0
94	Furniture, bedding, mattress	0	17	67	33	33	0	33	50	33	50	33	33	17
95	Toys, games and sports requisites	25	38	50	13	0	13	38	25	25	13	13	13	13
96	Miscellaneous manufactured articles	11	17	17	17	33	6	6	11	0	11	6	17	11
97	Works of art, collectors' pieces	17	0	0	0	0	0	0	0	0	0	17	17	0

Source: HWWA calculations.

Note: ¹2000.

inefficiencies in duty collection, we do not have the required information at the four-digit level. The estimation of the trade and budget effects and the identification of the most affected products have, thus, to be taken with caution, since the impact cannot be estimated with a very high level of accuracy at the disaggregated level.

Discussion of the results

Our empirical results are based on a number of important features of the analysis, such as the partial equilibrium model and key assumptions about both market structure and consumer behaviour. Using a partial equilibrium model, we restrict the analysis to the static welfare effects of economic integration, that is, we only focus on the static trade and government revenue effects caused by changes in relative prices. Other static welfare effects of economic integration, for example, economies of scale, are not included in the analysis. These may arise in ECOWAS

countries, since their economies are relatively small and domestic firms may not reach the minimum efficiency scale, that is, the output level at which average costs per unit are minimised.

More importantly, we have excluded growth and location effects from the analysis. Based on the theory of economic integration, increased competition may improve the economic growth performance of members (Baldwin and Venables, 1995). In principle, trade liberalisation may foster competition as protection levels decrease and may force domestic firms to innovate to increase their competitiveness. Both, in turn, are likely to increase productivity rates of domestic firms and, hence, income rates and national income. Also, ECOWAS countries may attract higher inflows of foreign direct investment, due to the preferred access to the EU, if multinational enterprises use West African countries as an export location to serve European or other African markets. This would increase capital stocks in ECOWAS countries and boost growth rates.

In addition, the EPA may lead to or promote technological spillovers between the EU and ECOWAS countries, either as a consequence of increased trade volumes or because of policies designed to encourage scientific interchange. But integration may also lead to pro-competitive effects, which relate to more incentives to innovate and the reduction of duplication in research and, thus, a more efficient allocation of resources in research and development activities. In sum, all these effects, if they occur, would boost growth rates of ECOWAS countries.

Location effects, which have also been excluded, arise as a consequence of the location of production in space. Economic theory predicts that geographic concentration is due to the interaction of increasing returns to scale, transport costs and demand. There is, however, a trade-off between scale economies and transport costs: if scale economies are large enough, producers prefer to locate in a single place, leading to the agglomeration of industry; if transport costs are large enough, producers want to locate close to consumers, and production will not be concentrated in a single location, leading to a more sparse structure.

Any change in the medium- or long-term growth rate of ECOWAS countries would naturally change trade flows and budget revenue: Higher growth rates would lead to increased imports, from EU and non-EU sources, and enhance import duties collected by the government. As a consequence, our analysis underestimates the impact on trade flows and overestimates the effects on budget revenues. The positive effects on the latter depend, in turn, on the size and growth rate of non-EU imports, since European products will be duty free if the EPA comes into force. Yet it is impossible to provide any estimate of the magnitude of the growth effects, since they are quite difficult to compute and the results depend on a number of assumptions that may not be valid in West Africa. Yet the assumptions for the growth effects and those made in our analysis will have an enormous impact on the final outcome of the impact of the EPA on ECOWAS countries. A careful discussion of the underlying assumptions is, thus, crucial for the interpretation of the results.

To begin with, traditional international trade

theory predicts that ECOWAS countries are not likely to suffer from opening up their domestic markets. In fact, it would rather be in their own interest to refrain from imposing trade restrictions, as in this way they could increase their own prosperity. When trade is liberalised, consumers in ECOWAS countries face lower prices of both imported and domestically produced goods. The beneficiaries of free trade may be not only households, whose real incomes rise as prices fall, but also firms, whose international competitiveness is increased by the purchase of cheap investment and intermediate goods or whose domestic sales rise owing to the positive real-income effects.

It cannot be denied that domestic producers might face increased competition from EU suppliers. If domestic producers have a comparative advantage, they can survive by raising their productivity level. If they fail, they will be compelled to cut production and employment or finally give up. In a process of structural adjustment, production factors will be reallocated to other industries where domestic comparative advantages exist and can be tapped. For the economy as a whole, so the theory goes, increased productivity and structural adjustment could increase production and employment and raise overall welfare. This is particularly the case if trade creation is large enough to compensate for welfare-reducing trade diversion. Since this is true for the EPA case, trade liberalisation would not appear to be a major problem for ECOWAS countries.

Yet traditional trade theory (and our model) is based upon a number of assumptions that do not always adequately reflect reality. In particular, it assumes perfect competition, meaning that all agents are price takers in product and factor markets. Additionally, production functions for all products exhibit constant returns to scale. Thereby, the possibility that large firms can abuse their market power or that there are any agreements between firms that restrict competition is excluded. The theory further assumes that factors can move at no cost between industries within a country and that factor returns adjust to ensure full employment. This means that there are no adjustment costs for reallocating resources from producers displaced by imports to other domestic industries. In those circumstances, the

role governments have to play is rather limited. In particular, there is no need for government revenue.

Workers who are displaced from import-competing sectors and thus forced to move to other sectors of the economy may have to forego income and incur other costs while they search for employment elsewhere and/or undergo retraining. Moreover, trade liberalisation may lead to the destruction of much of the productive capacity, as investments of capital may have been sunk into certain economic activities and cannot easily be transferred to other activities. In fact, if one steps out of the ideal world of traditional foreign trade theory, welfare losses as a result of trade liberalisation cannot be ruled out. For instance, the domestic-distortions approach points out that opening up to free trade may lead to overall losses rather than gains when factor-market imperfections or market failures exist. Endogenous growth models show that, under the conditions of monopolistic competition and increasing returns to scale, international openness can lead to permanently reduced rates of growth, for instance, when trade diverts the country's resources away from activities that display economies of scale or other benefits. Under the conditions of oligopolistic competition prevailing on world markets, it could be attractive for governments to create a competitive advantage for domestic industries by using trade restrictions.

Moreover, the estimated trade and budget effects only occur if European exporters lower their export prices in line with the tariff elimination. Yet if EU exporters are 'pricing to market', that is, leaving market prices unchanged and increasing their profits if tariffs are eliminated, the importing country would lose import duties without gaining the advantage of lower import prices. From the importing country's point of view, economic welfare would thus definitely decrease. In general, this outcome is more likely to occur in less competitive markets, where the degree of competition among suppliers is less severe. Even though we cannot predict the market behaviour of international companies operating in Africa, this outcome has to be taken into account for the interpretation of the results.

In addition to theoretical reasoning, empirical studies that test the trade-drives-growth hypothesis have arrived at different conclusions. Some studies

suggest that economies with more open-trade policies tend to perform better than those with more restrictive trade policies.²⁸ In contrast, other studies find little empirical evidence that open-trade policies – in the sense of lower tariff and non-tariff barriers to trade – are significantly associated with economic growth. Rodrik (2001) and Rodrik and Rodriguez (2000) claim that the causality runs from growth to trade, not vice versa. Countries that have achieved long-term growth have usually combined the opportunities offered by world markets with a growth strategy designed to unlock the potential provided by domestic institutions and investors.

In contrast to these findings, Winters et al. (2004) are somewhat more optimistic in their survey of the literature. Although there remains a residual ambiguity about the links between trade and growth, there is strong evidence for the beneficial impact of trade liberalisation on productivity. Concerns that trade liberalisation has generally adverse effects on employment or wages of the poor, or on government spending on the poor due to falling fiscal revenue, are not well founded, even though specific instances of each of these problems can be identified. As to the particular impact on poverty, which is an important issue in ECOWAS countries, Winters and associates could not draw simple general conclusions about the relationship between trade liberalisation and poverty. According to their findings, the beneficial effects of trade liberalisation are based on a number of important assumptions and/or circumstances, such as good governance and strong local institutions that facilitate price effects of liberalisation.

For trade liberalisation in Sub-Saharan Africa, Ng and Yeats (2000) expressed considerable reservations regarding the functioning of resource reallocation, structural adjustment and increased competitiveness. Based on a simple average, the net revealed comparative advantage change for ECOWAS countries between 1990 and 1998 was zero, implying that – despite trade liberalisation and structural adjustment – West African countries did not develop a revealed comparative advantage in the 1990s. In contrast, they were found to have more comparative disadvantages in 1998 than in 1990.

Based on these findings, it becomes clear that

the EPA would involve a number of advantages and disadvantages for West African countries. Governments of ECOWAS member states, hence, must carefully analyse the exact conditions and effects of the EPA in each country and for each major sector and consider all policy options available.

Policy options and EPA prerequisites

EPAs in comparison to other policy options

Basically, ECOWAS and its members can accept the EU's EPA offer or abstain from it and make use of unilateral, non-reciprocal trade preferences instead, which the EU is already granting. In addition, they can continue to manage gradual liberalisation of their trade regime in the framework of ECOWAS/UEMOA, and finally, they can liberalise unilaterally or in the course of current multilateral trade negotiations. Let's focus on EU preferences first.

Since the Cotonou preferences will not be available after 2007 due to their incompatibility with WTO rules and the phasing out of the final waver, LDCs among ECOWAS countries could opt for EBA preferences while non-LDCs could refer to the GSP. How do EBA and GSP preferences compare to market-access conditions under an EPA? In order to answer this question, we should have a look at these preferential systems in more detail.

The EBA initiative took effect on 5 March, 2001 and was later incorporated into the revised GSP scheme. It provides duty-free access to imports of all products (except arms and munitions) from LDCs without any quantitative restrictions. Only three products were not liberalised immediately: bananas, rice and sugar. They will be given duty- and quota-free access by January 2006, September 2009, and July 2009, respectively. In the meantime, duties on these products will be gradually reduced (Olarreaga and Ng 2002). Moreover, there are duty-free tariff quotas for rice and sugar, which will be increased annually.

It is an open question whether an EPA will entail an increase in market-access preferences that ECOWAS countries are already enjoying under the Cotonou Agreement, as the scope for additional trade preferences is rather limited on the Community side, mainly due to the political sensitivity of

liberalising trade in agricultural products. Under such conditions, least-developed ECOWAS countries would have little incentive to participate in an EPA, as they benefit from the more favourable EBA preferences, which will gradually become even more generous in the future, when residual tariffs and quotas on bananas, rice and sugar will be phased out.

However, LDCs might hesitate to opt for EBA because its rules of origins are more stringent than those under the Cotonou Agreement (Brenton, 2003; Brenton and Manchin, 2003) and possibly also under an EPA. Under the EBA producers in least-developed ACP countries have to use fewer imported materials, parts and components from other ACP countries (in order not to lose eligibility for duty- and quota-free access to the EU under the cumulation of origins rules) than they would be allowed to use under the Cotonou Agreement and presumably also under an EPA. Due to lack of published data on inter-regional production links and the use of the cumulation provision, it remains unclear how relevant this issue really is for individual ECOWAS LDCs. Nonetheless, the topic has to be clarified in EPA negotiations. While cumulation of different ECOWAS origins would not be a problem, ECOWAS countries could urge the EU to concede cumulation at least from other EPA groupings to preserve existing and allow for future interregional production networking and unrestricted preferential market access in the EU.

LDCs have to consider another disadvantage of EBA preferences. They are granted unilaterally by the EU and can be withdrawn in general or selectively on the basis of the general safeguard clause.²⁹ Thus, LDCs do not hold a legal right to use them. In contrast, under the EPA, LDCs would be given the right to export on the terms that have been agreed upon in a binding internal treaty and for which arbitration is possible.

Moreover, opting for EBA preferences would imply forgoing an opportunity to enter into a phase of more serious structural adjustment, which these countries cannot escape from anyway if integration into the world economy is an integral part of their development strategy. Although there are many risks involved, which have been mentioned above, an EPA could be perceived as an historic chance to

implement such a policy, if handled with care. Current and future initiatives for structural adjustment, which are frequently subject to an extremely controversial internal debate, could find better domestic support and would thus be more sustainable (lock-in-effect).

Considering the low level of development and the related vulnerability to fundamental policy changes and external shocks, LDCs certainly need a transitional phase with a proper timing and of tariff reductions and complementary reforms and adjustments required. Reliable external commitments regarding technical as well as financial support could encourage them in their decision-making and facilitate the implementation of trade liberalisation. Financial support is particularly needed to offset customs revenue losses, which could be sizeable in a number of West African countries, as the empirical analyses in the previous sections have shown. Opting for EBA preferences, however, might reduce LDCs prospects for such assistance as compared to an EPA, which would explicitly include related EU commitments. However, it may well be that in the EPA negotiations the EU will not agree on a fiscal compensation which exceeds previous levels of aid flows.

Due to LDCs being a majority among the ECOWAS countries, the whole EPA project depends on their participation. To get them into an EPA, the EU not only needs to offer an EBA-like product coverage and equivalent preferential margins, but also has to go even beyond by providing less restrictive and simplified rules of origin, concessions in trade of services and sufficient financial support to cover part of the adjustment costs, and effective technical assistance to manage the whole process of structural change.

Since the ECOWAS EPA as a free trade agreement does not allow for differential treatment of members in trade issues, Côte d'Ivoire, Ghana and Nigeria – as the only non-LDCs in ECOWAS – have to compare the EPA terms for LDCs described above with the conditions under the GSP.³⁰ As to EU market access, non-LDCs would be better off opting for an EPA. This is because EPA terms need to equal EBA terms to satisfy the LDCs. Moreover, EBA terms are clearly much more favourable than

GSP conditions. This holds true not only in quantitative terms but also because size, structure, preferential margin, list of beneficiaries and other conditions of the GSP are subject to a periodic review process and can be modified at discretion or totally withdrawn by the EU. Secured EU market access is a strong argument in favour of an EPA. It provides ECOWAS producers a more stable long-term framework for export-oriented investment decisions. Côte d'Ivoire, Ghana and Nigeria have to balance these EPA advantages with the ambiguous effects of opening up their own markets for EU exports and the challenges of adjustment and structural change. Moreover, it is an open question whether the EU is ready to compensate for revenue losses from tariff reductions and final elimination of the same size as in the case of ECOWAS LDCs at all.

As to the unilateral, regional and multilateral option to liberalise trade, some specific issues are particularly worth considering in the process of EPA negotiations and decision-making. Regional integration processes between developing countries have been suffering from unsatisfactory progress, ineffectiveness, and a lack of sustainability so far. EPA negotiations could become an external driving force that will push regional organisations to rationalise and harmonise their regional trade arrangements, thus strengthening the regional integration process and economies of the region, and assisting Sub-Saharan Africa in becoming a more active partner in the global economy (De la Rocha, 2003). EPAs are also meant to stimulate related new efforts. As intra-regional commitments would be locked into EPAs, regional groupings could benefit in terms of impact and credibility (European Commission, 2004a). This effect can also be used by ECOWAS countries. Intra-regional negotiations have already been accelerated in line with the EPA timetable, and an agreement was achieved to put in place a customs union in 2007, just before the EPA with the EU becomes effective.

The EPA process is also closely interrelated with trade liberalisation on the global level. The outcome of the WTO Doha Round could have far-reaching consequences for EPA negotiations and EPA alternatives. A lowering of MFN tariffs, for instance, would reduce the preferential margin of

both the EU and ECOWAS countries. Moreover, EBA and GSP preferences as alternative policy options for them would be similarly affected. This could tempt ECOWAS countries to undermine related progress in the Doha Round. Apart from the question of whether ECOWAS countries actually hold sufficient bargaining power to prevent the EU from making respective multilateral concessions, adjustment to preference erosion is going to be necessary sooner or later in any case (Hinkle and Schiff, 2004b). If ECOWAS countries understand the EPA project primarily as a concept for providing a new impetus for urgently needed structural adjustment and strengthening of international competitiveness combined with EU commitments for related financial support, it would be somewhat contradictory to try to escape from this strategy again.

Instead of impeding progress in multilateral liberalisation, ECOWAS countries could take part actively. This could be beneficial to them in areas where they liberalise EU imports under an EPA at the expense of non-preferred suppliers of other countries. Such trade diversion implies welfare losses due to the switch to less efficient (non-EU) producers, and, in the case of 'pricing to market', a transfer of tariff revenues forgone to EU exporters. Both effects could be limited by respective multilateral concessions or unilateral tariff reductions for non-EU imports. Though this might imply further government revenue losses to ECOWAS countries, the negative effects of trade diversion would certainly be limited and competition between exports to West Africa increased.

Moreover, ECOWAS could join and support initiatives of other developing countries aiming at liberalising market access in developed countries in key areas of their interest. In particular, pressure on the EU as well as on other developed countries has to be increased in order to reduce or eliminate, among other things, agricultural export subsidies and domestic support for agricultural production of specific interest to ECOWAS and other developing countries. Thus, the Doha negotiations could mitigate EPA negotiations, where the same issues are at stake, but ECOWAS countries would not have enough bargaining power to achieve related concessions from the EU. EPA negotiations could also

benefit from the multilateral trade round if progress were achieved in re(de)fining the rules for regional integration. This would allow for a WTO-compatible design of the EPA and avoid reconfiguration and related transaction costs afterwards. Therefore, for ECOWAS countries a timetable that places EPA decisions after an agreement in the Doha Round would be favourable. However, it remains to be seen whether results can really be achieved in line with this schedule.

Basic prerequisites for the EPA option

Given the severe analytical restrictions in our case, it appears to be difficult to select from the various options discussed above on a purely rational economic basis. This is particularly true since the general matter of trade liberalisation is still the subject of considerable, but inconclusive academic debate. The orthodox view, largely guided by traditional theory, is that free-trade orientation is responsible for fast and sustained economic growth. Developing countries should therefore focus on opening up their domestic markets and pursue domestic policies that support economic development. The opposing view, as taken by Rodrik (2001) and others, is that good governance should be placed above openness. Above all, developing countries need to improve their institutions of conflict management in order to maintain macroeconomic stability. If complementary policies and institutions are not in place domestically, openness will not work. At worst, this will cause instability, increasing inequality and social conflict.

The concept of 'mainstreaming of trade' or 'integration of trade', as contained in Poverty Reduction Strategy Papers, may be regarded as a possible compromise between the two approaches mentioned above. It involves the integration of trade-policy issues into the overall framework of a country's development strategy. For trade reform to be successful it must be accompanied by complementary policies. Accordingly, trade liberalisation should be implemented in conjunction with other reforms.³¹ It stands to reason that the role of governments is not diminished by the need to mainstream trade into the national development strategy. Firstly, the open-

ing up of domestic markets needs to be well designed, with special attention to country specifics and capabilities. Secondly, complementary policies and institutions have to be tailored to domestic needs and objectives as well as to trade liberalisation.

To control for the obvious risks involved in the EPA project, ECOWAS and its members have little choice but to take up these suggestions. This is a particularly important matter, as the record of previous structural adjustment policies was not satisfying in many cases. Therefore, if they go for an EPA with the EU, it appears it will be indispensable to take structural adjustment more seriously and to manage the process more properly. This includes, among other things:

- preparing for EPA market access negotiations with the EU;
- designing suitable timing and sequencing;
- identifying and implementing complementary measures; and
- reforming the tax and fiscal system.

As to EPA negotiations, ECOWAS countries have to decide on the coverage of the proposed free trade agreement with the EU in line with their individual comparative advantages and disadvantages. This requires the targeting of goods and services where temporary or indefinite protection of ECOWAS industries would still be needed for them to either become internationally competitive (infant industry protection) or, for example, maintain national autarchy in certain areas. In particular, areas have to be identified where the EU inhibits the utilisation of comparative advantages of ECOWAS countries by protectionistic trade practices both on international and on ECOWAS markets. Remaining areas without multilateral concessions of the EU in the Doha Round should be added to the EPA negotiation agenda to try to achieve at least preferential concessions. For example, possibilities could be explored of whether the EU could consider specific interests of ECOWAS countries when applying safeguard measures such as anti-dumping and sanitary and phytosanitary regulations. Services, which are not covered by this study, should also be included in

EPA negotiations. Proper timing and sequencing in services appears to be even more important than in agricultural and industrial trade, since liberalisation of service imports will require complementary domestic regulatory reforms that will take their time (Hinkle and Schiff, 2004a).

As to timing and sequencing, the phasing of tariff reductions should earn utmost attention. It is widely accepted that the existence of inter-sectoral adjustment costs calls for a 'gradualist' approach to reductions in trade-protection measures. ECOWAS countries have to establish a timetable for the progressive removal of trade barriers that helps the economy to adjust to increased competition from the EU with a minimum of economic and social upheavals. In sectors where the EU competition could have destructive effects, gradual implementation of trade liberalisation would be necessary in order to preserve domestic production and enable it to build competitiveness or to specialise in 'niche' production that does not compete with EU imports (PricewaterhouseCoopers 2004). Of course, it will not be an easy task for governments of ECOWAS member states to reach an agreement on a common timetable and the final product coverage, because they might wish to follow different strategies, depending on their particular interests.

A 'gradualist' approach is also needed because it takes time to implement the complementary measures that are required to ease the inter-sectoral adjustment process and the reduction or elimination of direct and indirect barriers to trade. Some complementary measures need to be taken well in advance while others could accompany trade liberalisation, depending on the economic, political, social and institutional capacity to absorb adjustment costs. In general, there is no standard solution for the sequencing problem. Complementary adjustment policies typically involve, among other things, labour-market reforms to enhance the mobility of the workforce both between and within industries and training programmes to provide qualified employees for export-oriented companies. Programmes for private-sector development should be considered. This comprises, among other things, technological support to improve the ability of firms to compete against imports. Moreover, improve-

ments in the environment for domestic and foreign investors should be envisaged, as well the installation of an effective domestic competition policy. Furthermore, the 'hard and soft' trade-related infrastructure should be enhanced, including trade facilitation measures, such as the reform of customs administration. There is probably also a need to establish social safety nets that compensate displaced workers and provide the poor with a minimal standard of living below which they should not fall. And finally, macroeconomic stability is a pre-condition for promoting economic development by trade liberalisation.

Complementary measures are also urgently required to ensure that moving from a restrictive to an open trade regime does not lead to a fiscal shock and macroeconomic instability. Therefore, unavoidable short- and medium-term losses in government revenue need to be cushioned. In a number of ECOWAS countries, a more or less comprehensive tax or fiscal reform is required. It is widely accepted that foreign-trade taxes should be replaced with domestic indirect taxes. In theory, it is easy to replace import duties with domestic taxes. An import duty is, for instance, conceptually equivalent to an value added tax on the domestic consumption and a value added subsidy on the domestic production of that product (Tanzi, 1995). In case of large revenue losses, additional measures may be required, including cuts of low priority or inefficient expenditures (Hinkle and Schiff, 2004b). In practice, however, it is extremely difficult to balance the need for government revenue with efficiency considerations. The ability of developing countries to collect domestic taxes for public expenditure programmes will depend not only on the enactment of appropriate tax legislation but also, more important, on the enforcement of compliance (Todaro and Smith, 2003). Tax evasion and avoidance are serious problems in collecting taxes. Given these difficulties, the costs of tax administration have to be taken into account when ECOWAS countries are forced to modify their tax structure.

Tax and fiscal reforms are particular areas where the EU could provide support for the effectiveness of structural adjustment in ECOWAS countries induced by an EPA. This would be in accordance

with the Cotonou Agreement, which earmarks transitional support (budgetary support, technical assistance) for this purpose. It is agreed that special consideration will be given to countries that face budgetary adjustments due to regional integration and EPAs (European Commission, 2004a). In the EPA negotiations, the ECOWAS countries should explicitly ask the EU to provide grant-financing for tariff revenue losses until the tax reform is completed in all ECOWAS countries. Also, the EU should assist the LDCs for a longer time to provide them with an incentive to ensure that LDCs benefit as much from the EPAs as the non-LDCs.

EU support could also cover additional trade-related measures. For instance, there is a need to modernise customs administration in ECOWAS and its members. It is necessary to ensure the smooth cross-border transport of goods and to reduce/eliminate delays and unnecessary additional transport costs. Another starting point for EU support could be capacity building dedicated to allowing West African exporters to be able to fulfil the conditions required to access European markets (Price-waterhouseCoopers, 2004). There is a particular need for activities related to sanitary and phytosanitary measures.

To wind up, ECOWAS countries are facing an enormous challenge when assessing an EPA with the EU and considering alternative policy options. A final decision has to be taken under a high degree of uncertainty. This is mainly due to severe analytical restrictions in balancing economic and non-economic costs and benefits. It appears that the commitment to structural adjustment of each country, as well of the regional grouping as a whole, plays a decisive role in decision-making. There are less challenging alternatives to an EPA, like taking further advantage of unilaterally granted EU preferences. This would sustain full autonomy as to the size and depth of trade liberalisation and related structural adjustment measures. On the other hand, an EPA could be considered as an historic chance to lock in economic reforms, which are required anyway if integration into the world economy is part of the development strategy. Thus, an EPA would provide an impetus to implement such a policy effectively. However, lessons from other regional integra-

tion projects including the European case illustrate the need for a gradual and country-specific approach in trade liberalisation and a proper sequencing of complementary, compensatory and institutional measures to counter possible negative repercussions of integration. Trade liberalisation is not necessarily the first step, but should be well prepared and perceived as a part of an overall package of reforms.

Endnotes

1. Within ECOWAS, a (sub-)group of eight countries has achieved deeper integration by forming the West African Economic and Monetary Union (WAEMU or, the French abbreviation, UEMOA), that is, they have agreed on principles of closer economic relations including a common currency.
2. See Hinkle and Schiff (2004a) and Schiff and Winters (2002) for an overview of policy options and several studies on EPAs. On behalf of the European Commission, PricewaterhouseCoopers (2004) conducted several studies on the EPAs, including the West African region, but did not perform an extensive empirical analysis of the expected effects.
3. CAPE stands for Cellule d'Analyse de Politique Economique.
4. UEMOA consists of Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo.
5. Other studies, such as Bussolo (1999) and McKay et al. (2000) focused on Southern and Eastern Africa, respectively. Both analysed the trade and welfare impact and discussed policy options for the regions.
6. Though Mauritania left ECOWAS in 1999, it will be included in the following analysis, as it will take part in trade negotiations and the (West African) regional EPA with the EU.
7. See Brenton (2003) and Brenton and Manchin (2003) for a (verbal) analysis of the impact of EU rules of origin within the EBA and GSP systems of preferences.
8. Also, the authors would like to thank Karl Wolfgang Menck, who contributed parts to Section 1 and Section 4, and Franziska Jerosch and Eva Soebbeke for their excellent research assistance. Very helpful suggestions and comments were provided by Thomas Baunsgaard, Lawrence Hinkle, Jeffrey Lewis, Marcelo Olarreaga, Maurice Schiff and various seminar participants at a World Bank trade seminar in Washington, DC. Special thanks to the UEMOA Commission and ECOWAS Secretariat for providing data. The usual disclaimer applies.
9. The ranking of countries does not change much, if GNI per capita in PPP US\$ is used instead of current US\$.
10. The HDI is a summary assessment of human development, measuring the average achievements in a country in three basic dimensions of human development: (1) A long and healthy life, as measured by life expectancy at birth; (2) knowledge, as measured by the adult literacy rate (with two-thirds weight) and the combined primary, secondary and tertiary gross enrolment ratio (with one-third weight); and (3) a decent standard of living, as measured by GDP per capita (PPP US\$). See UNDP (2002) for details.
11. Grants are non-compulsory transfers, received by government units from other government units or international organisations (IMF, 2001).
12. In 2000, Ghana had very high tariffs for petroleum products of up to 89% in place.
13. It can be shown that the model of Verdoorn is a simplified version of the more general partial equilibrium model of Clague (1971, 1972). See Busse (1996) and Busse and Koopmann (2002) for details.
14. An overview of data sources for all variables used in the analysis is provided in Busse et al. (2004).
15. For some West African countries, tariff and trade data for 2002 and 2003 are available. As the most recent trade figures at the disaggregated level are subject to frequent revisions, we preferred to use the 2000 and 2001 figures. The base year for Ghana and Nigeria is 2000, for all other countries 2001.
16. Trade data in TRAINS, however, is limited to import data and those years for which tariffs and some non-tariff barriers are available.
17. See Busse et al. (2004) for details.
18. The basic concepts of trade creation and trade diversion have been established in the literature by the seminal contribution of Viner (1950).
19. For a survey of trade elasticities, see Sawyer and Sprinkle (1999). More recent estimates are provided by Galloway et al. (2003) and Kee et al. (2004).
20. Again, these assumed values for Gambia are similar to the estimated figures for other developing countries at this level of aggregation.
21. The abbreviation c.i.f. stands for cost, insurance and freight. In international trade statistics, imports are usually reported c.i.f.
22. In the past, several studies that analysed the impact of trade liberalisation in developing countries relied on import-weighted tariff rates to compute trade, budget and welfare effects. Their estimates are likely to be biased if collection ratios and import-weighted tariff rates differ.
23. This holds even for the differences between the elasticity of substitution and the import demand elasticity, since ϵ is subtracted from σ in the trade diversion formula.
24. In contrast to trade creation, the trade diversion formula includes the share of non-beneficiary imports α_2 . Since EU imports make up – on average – half of total West African imports, TD declines.
25. These calculations are based on the assumption that there will be no other policy changes, such as transfers from abroad or changes in domestic taxes to make up for the loss of government revenues.
26. The comprehensive tables for each country, including the estimated effects for all products at the four-digit level, can be found on the enclosed CD-ROM.
27. Importantly, the following results do not change much if we focus on the top 50 instead of the top 100.
28. See Winters et al. (2004) for a survey of the literature.
29. A safeguard clause enables the EU Commission to suspend tariff preferences and reintroduce common customs tariff duties where a product originating in a beneficiary country is imported on terms which cause, or threaten to cause, serious difficulties to a Community producer of like or directly competing products (European Union, 2004b).
30. As compared to current Cotonou preferences, an EPA would provide them even more favourable access to EU markets if the EPA includes EBA-like terms (except for rules of origins).
31. Winters et al. (2004: 107) also share this view by saying: 'The impact of trade liberalisation particularly on poverty will depend on the environment in which it is carried out, including the policies that accompany it. It depends on the country context.'

References

- Armington, Paul (1969) 'A Theory of Demand for Products Distinguished by Place of Production', *International Monetary Fund Staff Papers*, Vol. 16, pp. 159–78.
- Baldwin, Richard and Anthony Venables (1995) 'Regional Economic Integration' in Gene Grossman and Kenneth Rogoff (eds) *Handbook of International Economics*, Vol. III, Elsevier, Amsterdam, pp. 1597–644.
- Bilal, Sanoussi (2002) 'On the Compatibility of Doha and Cotonou', *Trade Negotiations Insights*, Vol. 1, No. 4, December.
- Brenton, Paul and Miriam Manchin (2003) 'Making EU Trade Agreements Work: The Role of Rules of Origin', *World Economy*, Vol. 26, No. 5, pp. 755–69.
- Brenton, Paul (2003) 'Integrating the Least Developed Countries into the World Trading System: The Current Impact of EU Preferences under Everything But Arms', *Journal of World Trade*, Vol. 37, No. 3, pp. 623–46.
- Busse, Matthias (1996) 'NAFTA's Impact on the European Union', *Aussenwirtschaft*, Vol. 51, No. 3, pp. 363–82.
- Busse, Matthias, Axel Borrmann and Harald Großmann (2004) *The Impact of ACP-EU EPAs on ECOWAS Countries: An Empirical Analysis of the Trade and Budget Effects*, Prepared for the Friedrich-Ebert-Stiftung, July, <http://fesportal.fes.de/pls/portal30/docs/FOLDER/COTONOU/DOWNLOADS/FESDOWNLOADS/CONFERENCEPAPERS/HWWA+EPA+STUDY+29.7.04.PDF>
- Busse, Matthias and Georg Koopmann (2002) 'The EU-Mexico Free Trade Agreement: Incentives, Context and Effects', *Journal of World Investment*, Vol. 3, No. 1, pp. 97–126.
- Bussolo, Maurizio (1999) *Regional or Multilateral Agreements? An Evaluation of Southern-Africa Trade Policy Scenarios*, Overseas Development Institute, mimeo.
- CAPE (2002) *Impact des Accords de Partenariat Economique (APE) et les Scenarii des Ajustements preliminaires: Cas de l'UEMOA*, Cotonou, mimeo.
- Cape Verde Ministry of Economics (2004) *Cape Verde National Tariff Schedule*, obtained on computer file.
- Clague, Christopher (1971) 'Tariff Preferences and Separable Utility', *American Economic Review*, Vol. 61, No. 2, pp. 188–94.
- Clague, Christopher (1972) 'The Trade Effects of Tariff Preferences', *Southern Economic Journal*, Vol. 38, No. 3, pp. 379–88.
- De la Rocha, Manuel (2003) *The Cotonou Agreement and its Implications for the Regional Trade Agenda in Eastern and Southern Africa*, World Bank Policy Research Working Paper 3090, June 2003, Washington, DC.
- European Commission (2004a) *Economic Partnership Agreements, Means and Objectives*, June 2004, Internet Posting: <http://trade-info.cec.eu.int/doclib/html/115007.htm>.
- European Commission (2004b) *User's Guide to the European Union's Scheme of Generalised Tariff Preferences*, June 2004, Internet Posting: <http://europa.eu.int/comm/trade/gsp/gspguide.htm>.
- European Union (2004a) *DG Trade: Economic Regional Trade Agreements*, Brussels, June 2004, Internet Posting: <http://trade-info.cec.eu.int/doclib/html/111588.htm>.
- European Union (2004b) *Scheme of generalised tariff preferences from 2002 to 2004*, Brussels, June 2004, Internet Posting: <http://europa.eu.int/scadplus/leg/en/lvb/r11015.htm>
- Galloway, Michael, Christine McDaniel and Sandra Rivera (2003) 'Short-run and Long-run Industry-level Estimates of U.S. Armington Elasticities (2003)', *North American Journal of Economics and Finance*, Vol. 14, No. 1, pp. 49–68.
- Hinkle, Lawrence and Maurice Schiff (2004a) *Economic Partnership Agreements between Sub-Saharan Africa and the EU: A Development Perspective on Their Trade Components*, World Bank Africa Region Policy Report, World Bank, Washington, DC.
- Hinkle, Lawrence and Maurice Schiff (2004b) 'Economic Partnership Agreements between Sub-Saharan Africa and the EU: A Development Perspective', *The World Economy*.
- IMF (2001) *Government Finance Statistics Manual 2001*, IMF Statistics Department, Washington, DC.

- IMF (2004) *IMF Staff Reports for African Countries, Article IV Reports and Statistical Annexes*, IMF, Washington, DC.
- ITC (2004) *Trade Analysis System PC-TAS 1998–2002*, ITC (International Trade Centre) and United Nations Statistics Division, Trade Data on CDROM.
- Kee, Hiau Looi, Alessandro Nicita and Marcelo Olarreaga (2004) *Import Demand and Export Supply Elasticities*, World Bank, Washington, DC.
- McKay, Andrew, Chris Milner and Oliver Morrissey (2000) *The Trade and Welfare Effects of a Regional Economic Partnership Agreement*, CREDIT Research Paper 00/08, University of Nottingham.
- Ng, Francis and Alexander Yeats (2000) *On the Recent Trade Performance of the Sub-Saharan Countries: Cause for Hope or More of the Same?* World Bank Africa Region Working Paper Series, No. 7, World Bank, Washington, DC.
- Olarreaga, Marcelo and Francis Ng (2002) 'Tariff Peaks and Preferences' in Bernard Hoekman, Aaditya Mattoo, Philip English (eds), *Development, Trade, and the WTO: A Handbook*, World Bank, Washington, DC, pp. 105–13.
- PricewaterhouseCoopers (2004) *Sustainability Impact Assessment (SIA) of the EU-ACP Economic Partnership Agreements: Regional SIA West African ACP Countries*, PwC, Paris.
- Rodrik, Dani (2001) 'Trading in Illusions', *Foreign Policy*, No. 123, March/April, pp. 54–62.
- Rodrik, Dani and Francisco Rodriguez (2000) 'Trade Policy and Economic Growth: A Sceptic's Guide to the Cross-national Evidence', in Ben Bernanke and Kenneth Rogoff (eds) *NBER Macroeconomics Annual 2000*, MIT Press, Cambridge, Mass, pp.261–325.
- Sawyer, Charles and Richard Sprinkle (1999) *The Demand for Imports and Exports in the World Economy*, Ashgate, Aldershot.
- Schiff, Maurice and Alan Winters (2002) 'Regionalism and Development: The Implications of World Bank Research for ACP and Latin American Countries', *Journal of World Trade*, Vol. 36, No. 3, pp. 479–99.
- Tanzi, Vito (1995) *Taxation in an Integrating World*, The Brookings Institution, Washington, DC.
- Todaro, Michael and Stephen Smith (2003) *Economic Development*, Eighth Edition, Addison-Wesley, Boston.
- UNCTAD (2004) *Trade Analysis and Information System (TRAINS)*, Online Access to the Tariff Database of the UNCTAD.
- UNDP (various issues) *Human Development Report*, various issues, UNDP, New York.
- UNIDO (2004) *International Yearbook of Industrial Statistics 2004*, UNIDO, Geneva.
- Verdoorn, Petrus (1960) 'The Intra-Bloc Trade of Benelux', in E.A.G. Robinson (ed.) *The Economic Consequences of the Size of Nations*, Macmillan, New York, pp. 291–329.
- Viner, Jacob (1950) *The Customs Union Issue*, Carnegie Endowment for International Peace, New York.
- Winters, Alan, Neil McCulloch and Andrew McKay (2004) 'Trade Liberalization and Poverty: The Evidence So Far', *Journal of Economic Literature*, Vol. 42, March, pp. 72–115.
- World Bank (2004a) *World Development Indicators 2004*, Data on CD-ROM World Bank, Washington, DC.
- World Bank (2004b) *African Development Indicators 2004*, World Bank, Washington, DC.
- WTO (2002) *Committee on Regional Trade Agreements, Coverage, Liberalization Process and Transitional Provisions in Regional Trade Agreements*, WTO Document WT/REG/W/46, June 2004, Internet Posting: www.wto.org/english/tra top_e/region_e/regcom_e.htm.
- WTO (2004) *WTO Integrated Database*, Online Access to the Tariff Database of the WTO.