ECONOMIC AND SOCIAL IMPACTS OF THE PROSPECTIVE EU-ECOWAS ECONOMIC PARTNERSHIP AGREEMENTS:

THE EVIDENCE FROM COTE D'IVOIRE

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[1] This is a research paper, and hence it represents research in progress. The views expressed in this paper should be attributed to the author. Comments are welcome.

ABSTRACT

The Economic Community of West African states (ECOWAS) is currently engaged in negotiations with the European Union over the successor agreement to the Lome IV Convention which grants non-reciprocal preferential access to the European market for exports of African Caribbean and Pacific countries. The main objective of the new Economic partnership agreement (EPA) is the ''eradication of poverty in a consistent manner with the objectives of sustainable development and the gradual integration of the ACP countries in the world economy''. Preliminary discussions have suggested the establishment of a Free Trade Area (FTA) between ECOWAS and European Union in accordance with the relevant WTO rules, eliminating tariff and non-tariff barriers progressively and help further integration among West African countries. The new regime adopted under the Cotonou Agreement also addresses the issue of trade related aid in particular to compensate fiscal revenue loss and address supply-side constraints.

In this paper, we use the standard Global Trade Analysis Project (GTAP) model to assess the prospective economic and social effects of the proposed EU-ECOWAS EPAs in Cote d'Ivoire. These impacts along with proposed average tariff reductions are utilized to forecast the potential revenue gain or loss resulting from the establishment of an EPA.

The preliminary simulation results show that full reciprocity will be costly for Cote d'Ivoire in terms of revenue losses, adjustments costs associated with de-industrialisation. However, unrestricted market access for Cote d'Ivoire into the EU-25, taking into account the issue of fiscal compensations promise positive gains. In addition it will result in welfare gains.

Key Words: **EPAs, Free Trade Area, ECOWAS, Cote d'Ivoire, GTAP, CGE Modelling, Fiscal impact, Welfare.**

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LIST OF ACRONYMS

ACP	African, Caribbean and Pacific States
CGE	Computable General Equilibrium
CU	Customs Union
EBA	Everything But Arms
EC	European Commission
ECOWAS	Economic Community of West African States
ECOWAS+	ECOWAS plus Mauritania
EDF	European Development Fund
EPA	Economic Partnership Agreement
EU	European Union
FTA	FreeTrade Area
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GSP	Generalized System of Preferences
GTAP	Global Trade Analysis Project
ITC	International Trade Center
LDC	Least-developed country
MFA	Multi Fibre Agreement
NTBs	Non-Tariffs Barriers
OCAB	Organisation Centrale des producteurs exportateurs d'Ananas et de Banane
UNCTAD	United Nation conference on Trade and Development
VAT	Value-Added Tax
WTO	World Trade Organisation

I. INTRODUCTION

1. Background

The Africa Caribbean and Pacific (ACP) states are now negotiating new regional trade agreements with the European Union (EU), called Economic Partnership Agreements, which will diverge radically from past trading relationships.

EPAs will introduce some major changes since preferential market access commitments are to be made on the basis of reciprocity, in conformity with the World Trade Organisation rules of non-discriminatory trading arrangements, and are designed to benefit sustainable development and poverty reduction.[2] The progressive removal of trade barriers after 2008 is to lead to Free Trade Areas (FTA) between the EU and ECOWAS[3] .

Previously, for more than 50 years, trade relations between EU and ACP states were characterized by non-reciprocal duty-free access to the EU market for most ACP exports with the exception of certain agricultural products facing positive tariffs and quotas, under the successive Lomé conventions (Lomé I to Lomé IV). The conventions also allowed ACP countries to protect their markets from EU competitions[4].

The Lomé conventions constituted a single model in the North-South relationship, combining a trade preference regime with important amounts of aids. They objectives were to improve the trade performance of the ACP group of countries, with ultimate aim of promoting their economic growth and development. For that purpose, the European Community offered non-reciprocal trade preferences to products originating in ACP countries.

Its results have however been mitigated. The evaluations of EU's aid to ACP countries have often shown the limits of the political and institutional context in the partner countries.

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[2] The Cotonou Agreement, available at: ttp://europa.eu.int/comm/development/body/cotonou/agreement/agr17_en.htm.

[3] Economic Community of West African States consisting of the following countries: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

[4] Concord Cotonou Working Groups (2004), *why the EU approach to the EPA negotiations is bad for development*. Available at: www.epawatch.net/general/text.php?itemID=166&menuID=28. Christian Aid (2005) *for richer or poorer. Transforming economic partnership agreements between Europe and Africa*. Christian Aid, London.

Indeed, the non-reciprocal trade preferences have contributed to commercial success of some countries, but globally, they have not stopped the decrease in the part of ACP countries on the EU market, from 6.7 per cent in 1976 to 2.8 per cent in 1999. Average 60 per cent of total exports remain concentrated on a few 10 sectors.
Thus, the predictability and the contractual aspect of the Lomé conventions constituted some gains to be preserve, the necessity to adapt to international and regional changes was also evident.

The Cotonou Agreement, which was concluded in June 2000, redefines the relationship between the EU and the ACP and provides for a shift from the system of non-reciprocal trade preferences to Economic Partnership Agreements (EPAs). West African countries that enter into EPAs are required to establish a FTA with the 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.
Least-Developed Countries (LDCs) from the ACP region are part of the negotiation process, while continuing to benefit duty- and quotas- free market access under the EU's unilateral Everything But Arms (EBA) scheme given to all LDCs.
The Cotonou agreement also addresses the issue of trade-related aid, in particular to address supply-side constraints, as well as the integration process in West Africa, enhancement of competition of enterprises located in the ACP, capacity building and upgrading.

2. Overview of EPAs negotiations in West Africa

The Cotonou Agreement stipulated that by September 2002 the EU and ACP countries must begin talks to negotiate EPA between the EU and regional country groupings in ACP. ECOWAS provides the negotiating front for the fifteen countries that composed the group plus Mauritania which used to be part of the community.

The negotiations have now begun, but it seems the West African countries which have agreed to turn their non-reciprocal trading arrangement with the EU into fully reciprocal regional integration areas face major challenges and may suffer significant economic and social impacts. West African countries (including Cote d'Ivoire) are relatively marginal trade partners for the European Union and the impact of an EPA on the trade and fiscal performance of the European Union will be minimal. For ECOWAS on the other hand, the EU is a major trade partner. The EU already applies very low or zero tariffs on most of its imports from this region and therefore the removal of EU trade barriers is not expected to be a major improvement for the market access of ACP States in general.

Contrarily, ECOWAS which lower import tariffs will become more exposed to global competition and may also face loss of fiscal revenue. They face the challenge to modernize their economies and become more competitive. The transformation of their economies will imply major adjustment costs in some cases.

The timetable and scope for the progressive removal of barriers to trade have not yet been fully negotiated. Therefore, the measurement of the effects of the new trade arrangements can only be a tentative and preliminary exercise.

ACP countries have however expressed concerns about the effects of trade liberalization. The validity of these concerns has been recognized by the EU and by some of the impact studies that have been undertaken. The potential effects include the loss of export earnings due to the erosion of trade preferences, the potential increase in imports and decline of fiscal revenue due to the decline in tariffs, the vulnerability of some sectors to increased competition including not only the agricultural but also the manufacturing sector. In addition the potential costs of unemployment and the social dislocation have also been pointed out as potential negative effects of EPAs.

At the same time the EPAs are expected to induce greater flows of foreign savings. If properly channelled a greater level of foreign savings may result in expanding productive capacity leading to a higher level of economic growth. A greater level of foreign savings would soften the external constraint and growth would allow the expansion of government revenue.

The main objective of this study is to quantify the economic and social impacts of the trade liberalisation aspects of the proposed EU-ECOWAS EPAs in Cote d'Ivoire. More precisely, the study will provide a quantitative assessment of the likely implications of the implementation of the EPAs establishing FTA between EU and ECOWAS for Cote d'Ivoire.

The rest of the paper is organised as follows. Section II provides a description of the economic and trade structure for Cote d'Ivoire, while section III presents the modelling strategy and the data. Section IV describes the policy scenarios and section V reports the simulation results. Section VI concludes and gives some policy recommendations, and part VII provides some useful references.

II. ECONOMIC STRUCTURE OF COTE D'IVOIRE

The economic structure of Cote d'Ivoire is largely dominated by Agriculture and Services. By the end of the first decade of independence, the government's strategy for economic growth and development appeared remarkably successful. Agricultural output of cash crops expanded, and, as evidence of diversification, the relative importance of unprocessed coffee, cocoa, and timber diminished as that of bananas, cotton, rubber, palm oil, and sugar grew. Using revenues from commodity sales, the government upgraded roads, improved communications, and raised the educational level of the labour force. Local factories were replacing some imports by producing a wide variety of light consumer goods.

During the 1970s, Agriculture (coffee and cocoa in particular) remained the mainstay of the export economy and the largest component of GDP until it was overtaken by the service sector in 1978. But while agriculture provided about 75 percent of export earnings in 1965, that total had shrunk by 20 percent by 1975. Between 1965 and 1975, agriculture's share of GDP also declined by almost 20 percent. Industrial GDP, derived primarily from import substitution manufacturing and agricultural processing, increased by 275 percent from 1970 to 1975, while industry's share of export earnings increased from 20 percent in 1965 to 35 percent in 1975. The fastest-growing sector of the economy was services, which as a share of GDP increased by more than 325 percent from 1965 to 1975.

At the same time, problems that arose during the previous decade required adjustments. To reduce production costs of manufactured goods, the government encouraged local production of intermediate inputs, such as chemicals and textiles. The government also shifted some public investment from infrastructure to crop diversification and agricultural processing industries to improve export earnings.

In the 1980s, a combination of drought, low commodity prices, and rapidly rising debt costs exacerbated the structural weakness of the Ivoirian economy. Between 1977 and 1981, both cocoa and coffee prices fell on world markets, the current accounts balance dropped precipitously, and debt servicing costs rose, compelling the government to implement stabilization policies imposed by the IMF.

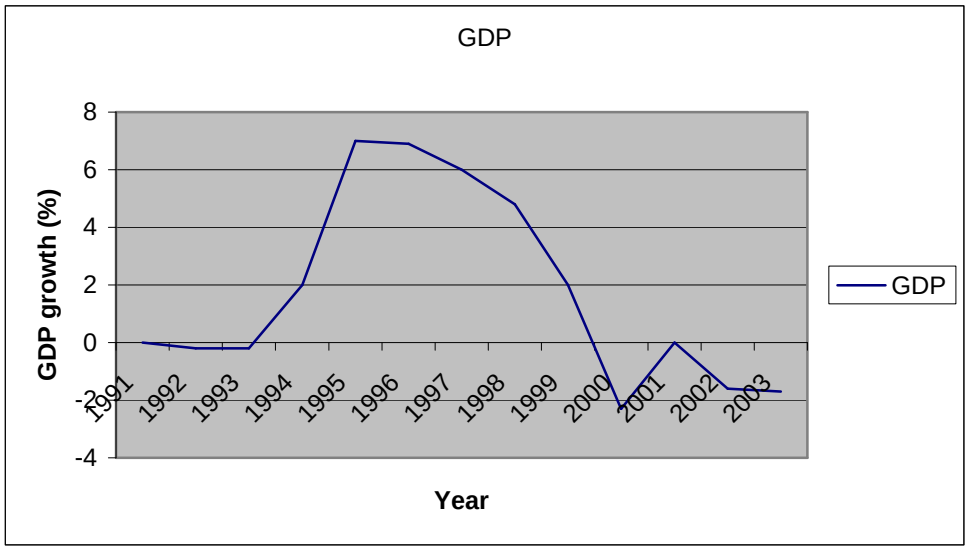
Between 1981 and 1984, GDP from industry dropped by 33 percent, GDP from services dropped by 9 percent, and GDP from agriculture dropped by 12.2 percent.

The structural adjustments required by the World Bank in 1987 gave a new impetus to the divestment process. The government placed 103 industries in which it had holdings up for sale, although several companies considered to be of strategic importance to the country were later taken off the market.

Included in this category were the Commodity Marketing and Price Control Board (Caisse de Stabilisation et de Soutien des Prix de Production Agricole-CAISTAB).

More recently, the economy improved slightly in 2001 showing a 0.1 per cent growth in real GDP after a 2.3 per cent drop the previous year, as the 1999/2000 political crisis receded. (AfDB/OCDE, 2003). Recovery was due better to macroeconomic management, further liberalisation of the primary product export sub-sector and the resumption of foreign aid.

Figure 1: Real GDP growth (in Percentage)

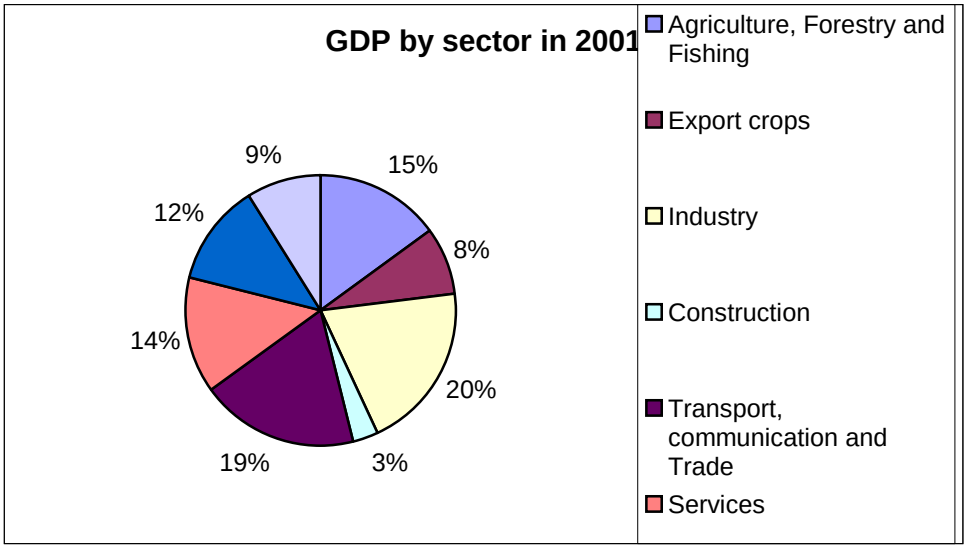


Source: Ministry of Economy and Finances, 2003.

The primary sector accounts for 25 per cent of GDP and the economy thus remain dominated by agriculture. Growth in the primary sector (which is mostly food and export crops, down from 6.7 per cent in 2000. Export agriculture's share of GDP remained steady, while that of food crops rose to 15 per cent.

The secondary sector began to recover in 2001 (+1.1%) after a 13.1 per cent slump the previous year. The tertiary sector did better in 2001, growing 4.4 per cent after a drop of 2.5 per cent in 2000. Its structure was stable in terms of GDP contribution which totalled 45 per cent.

Figure 2: GDP by sector in 2001



Source: AfDB / OCDE, 2003

Total final consumption grew 11.3 per cent in 2001, boosted mainly by private consumption, which increased by 12.1 per cent, while public consumption rose 9.5 per cent. Final consumption remained the major component of demand, rising to 86.7 per cent (up from 81.2 per cent in 2000). These results were due to increased civil service salaries and higher field prices offered to cocoa farmers.

Investment, mostly by the private sector, fell further to 10.9 per cent of GDP (from 10.5 per cent in 200 and 11.6 per cent in 1998).

Table 1: Demand composition (Percentage of GDP)

Demand composition (Percentage change of GDP)				
	1995	1999	2000	2001
Gross Capital Formation	**15,6**	**13,2**	**10,5**	**10,9**
Public	5,1	4,3	2,6	1,7
Private	10,5	8,9	7,9	9,2
Consumption	**77,1**	**77,8**	**81,2**	**80,6**
Public	10,6	14,6	13,7	13,7
Private	66,5	63,2	67,5	66,9
External sectors	**7,3**	**8,9**	**8,3**	**8,5**
Exports	41,8	39,7	39,9	40,2
Imports	-34,4	-30,8	-31,6	-31,7

Source: AfDB / OCDE 2003

The overall balance turned positive in 2001, with a 0.9 per cent of GDP surplus, compared with a 2.3 per cent deficit the previous year, due to a higher tax revenue and lower capital expenditure. Primary current expenditure (85 per cent of total spending in 2001 with wages and salaries taking 37 per cent) was up 5.2 per cent, mostly due to a 6.6 per cent rise in the wage bill.

Public expenditure comes mostly out of the government's own revenues, which grew 8.4 per cent in 2001 faster than GDP, of which it comprised 17.5 per cent. Tax revenues rose slightly to 14.8 per cent of GDP mainly due to elimination in 2001 of exemptions, introduction of a single 20 per cent VAT and a big drive to collect existing taxes (AfDB/OCDE, 2003).

Table 2: Public Finance (percentage of GDP)

Public Finance (Percentage of GDP)

	1995	1999	2000	2001
Total Revenue and Grants	**20,7**	**17,3**	**16,8**	**17,5**
Taxes	16,3	14,9	14,3	14,8
Grants	0,6	0,8	0,4	0,5
Total expenditure and Net lending	**24,1**	**19,9**	**18**	**16,6**
Current expenditure	19	15,2	15,1	14,7
Excluding interest	12,7	11,3	11,2	11,4
Wages and salaries	6,3	5,5	6	6,2
Interest payments	6,3	3,9	3,9	3,3
Capital Expenditure	5,1	4,6	2,8	1,8
Primary Balance	**2,9**	**1,2**	**2,7**	**4,2**
Overall Balance	**-3,4**	**-2,7**	**-1,2**	**0,9**

Source: AfDB / OCDE 2003

Table: Evolution of fiscal revenues of Côte d'Ivoire from 1995 to 2005 (in billion of FCFA)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Growth Rate
Revenue (without dons)	**1103**	**1231,9**	**1328**	**1389**	**1271,5**	**1237**	**1336,3**	**1428**	**1351,9**	**1438,3**	**1471,4**	**2,92**
Fiscal Revenue	**897,4**	**1040,7**	**1113**	**1142**	**1149,1**	**1077,5**	**1168,4**	**1259**	**1190,1**	**1241,4**	**1251,1**	**3,37**
% of revenues	81,4	84,5	83,8	82,3	90,4	87,1	87,4	88,2	88	86,3	85	
Internal revenue	**369,4**	**452,43**	**530,9**	**567,8**	**563,36**	**592,7**	**616,4**	**627**	**545,9**	**547,1**	**614**	**5,21**
% of revenues	33,5	36,7	40	40,9	44,3	47,9	46,1	43,9	40,4	38	41,7	
Direct taxes	202,1	252,17	303,6	327,8	322,15	334,4	326,6	333,1	287,7	288,6	360,3	5,9
% of revenues	18,3	20,5	22,9	23,6	25,3	27	24,4	23,3	21,3	20,1	24,4	
Goods and Services (Without taxes on Oil)	167,3	200,26	227,3	240	241,21	258,3	289,8	293,9	258,2	258,5	253,7	4,25
% of revenues	15,2	16,3	17,1	17,3	19	20,9	21,7	20,6	19,1	18	17,24	
External Revenue	**528**	**588,24**	**582**	**574,4**	**585,73**	**484,8**	**552**	**632,3**	**644,2**	**694,3**	**637,1**	**1,8**
% of revenue	47,9	47,7	43,8	41,4	46,1	39,2	41,3	44,3	47,6	48,3	43,2	
Import including taxes on Oil)	350,6	382,5	408,8	416,4	408,93	321,4	355,5	375,9	359,3	378,3	374,4	0,66
% of revenues	31,8	31	30,8	30	32,2	26	26,6	26,3	26,6	26,3	25,4	
Exports	177,4	205,74	173,2	158	176,8	163,4	196,5	256,4	284,9	316	262,7	4
% of revenue	16,1	16,7	13	11,4	13,9	13,2	14,7	17,9	21,1	22	17,8	
Non fiscal revenue	**205,9**	**191,24**	**215,1**	**246,5**	**122,45**	**159,5**	**167,92**	**169,1**	**161,8**	**196,9**	**220,3**	**0,67**
% of revenues	18,7	15,5	16,2	17,7	9,6	12,9	12,6	11,8	12	13,7	14,9	

Source: Direction Générale des Douanes Ivoiriennes/ Ministry of Economy / Author synthesis

III. METHODOLOGY AND DATA

Since this study try to examine the fiscal impact of trade policy and tax reforms, as well as it effects on welfare, all the interdependences have to be considered and that require a Computable General Equilibrium (CGE) model.

CGE models brings together economic theory and empirical data to create a practical tool for exploring economic policies, such as changes in tariffs and their effects on economic systems. They use mathematical formulas to represent the behaviour of numerous economic agents (producers, consumers and governments), sectors (industry, agriculture and services), and factors of production (land, labour and capital). These economic structures are then married to a rigorous accounting system, which ensures that all resources constraints are accounted for because a CGE model gathers all the significant elements of an economy, it can account for, in theory, all the flow-through and feedback effects of policy changes.

In this study, we will use the Global Trade Analysis Project (GTAP) model and data base which is well suited to exploring the implications of multilateral trade agreements whose policy cut across many sectors and regions.

1. The standard GTAP Model

The GTAP model is a multi-country multi-commodity model designed for comparative-static analysis of trade policy issues (see Hertel 1997). The regional household to which the income of factors, tariff revenues and taxes are assigned represents the consumer side. It is assumed that the regional household allocates its income to three expenditure categories: private household expenditures, government expenditures and savings. Consumption of private household is depicted using a non-homothetic Constant Difference of Elasticity (CDE) function.

A representative producer for each sector of a country or region makes production decisions to maximize profits by choosing inputs of labour, capital, and intermediates to produce a single sector output. Producers can substitute primary factors for each other, and this substitution possibility is captured using a Constant Elasticity of Substitution (CES) functional form. In addition, it is assumed that intermediate goods are used in fixed proportions (Leontief). In the case of crop production, farmers also make decisions on land allocation. Intermediate inputs are produced domestically or imported, while primary factors cannot move across country. Internationally traded commodities are assumed to be distinguished according to the region of origin.

Using this so-called **Armington assumption**[5] implies that for example wheat imported from the rest of Sub-Saharan countries is different from wheat imported from the EU, and trade flows in both varieties have their own price tag. A great advantage of the Armington assumption is that it allows us to model bilateral trade flows and bilateral trade policies. We exploit this feature in the treatment of trade preferences applied to developing countries.

The GTAP model includes two global institutions. Transport sector minimizes its costs under the Cobb-Douglas technology. The second global institution is the global bank, which takes the savings from all regions and purchases investment goods in all regions depending on the expected rates of return.

The savings are completely exhausted on investments that are savings-driven in the model. In the static GTAP model, current investment is assumed not to affect the production capacity of industries since it is not yet installed. The demand for investments however affects economic activity through its effects on patterns of production in the capital goods producing sector in each region to service investment.

The global bank guarantees that global trade taxes are imported intermediate inputs, and modeled at the border. Additional internal taxes can be placed on domestic or may be applied at differential rates that discriminate against imports/savings are equal to global investments.
The welfare changes are measured by the equivalent variation (EV). Taxes are included in the theory of the model at several levels. Production taxes are placed on intermediate or primary inputs, or on output.

Trade policy instruments are represented as import or export taxes/subsidies. A salient feature of many developing countries including Côte d'Ivoire is unemployment (or under- employment) of human resources. This is at variance with the usual general equilibrium treatment of full employment of factors of production. We will therefore try to modify the model to allow for unemployment of unskilled labour in Côte d'Ivoire. This will be achieved by fixing the nominal wage rate, and letting the volume of employment of unskilled labour adjust (see McDonald and Walmsley (2003)). This specification of the labour market still allows the real wage to adjust.

[5] Armington (1969) has proposed that similar domestic and imported goods, as well as gods imported from different origins, should be regarded as imperfect substitutes. GTAP model incorporates this assumption by differentiating products on the basis of their country of origin. The effect of a trade policy measure on the relative price of similar traded and domestically produced goods leads to a substitution of the domestic for imported goods or vice versa , or to a substitution between imports from different sources.

The GTAP framework relies on country and regional input-output tables as its data base. In fact the GTAP data base comprises Input-Output data for each country, bilateral trade data derived from United Nations trade statistics; and support and protection data.

2. Data and study aggregation

Our work is based on the GTAP 6.22 data base and new country data for Cote d'Ivoire. The new GTAP data base has updated national economic and trade data, and more importantly protection data from MacMaps (CEPII / ITC), which has a detailed database on bilateral tariff protection that integrates trade preferences, specific tariffs, and a partial evaluation of non- tariffs barriers. GTAP 6.22 has also incorporated the phasing out of the Multi fibre Agreement (MFA) in 2005, the enlargement of the EU to 27 Members and the removal of export subsidies in agriculture[6] , the china WTO accession; and includes 96 countries, 57 sectors and 5 factors of production (natural resources, land, skilled labour, unskilled labour, and capital).

Since the current study try to provide important insights regarding the impact of the EPAs at the individual country level, we will use new country data for Cote d'Ivoire. The data for Cote d'Ivoire contain 57 sectors and each sector has its own specific characteristics (See table 3).

Thus we have aggregated the 57 commodities into 13 broad sectors and the 96 countries into 5 regions as shown below.

[6] The Hong Kong Ministerial declaration provides that the export subsidies on agriculture must be eliminated by 2013. Since full EPA will take place by 2018, such adjustments are done in the benchmark database.

Table 3: Ivoirian commodities in the GTAP data base

"SECT"	Commodities comprised
AGFOODS ! FOOD CROPS	Food crops, industrial and export products, other agricultural and livestock products
B_T !	Beverages, Tobacco and cigarette
CNS ! CONSTRUCTION	Construction BT
CRP !	Chemical products, Rubber and plastic products
CTL_OAP !	Livestock and poultry
EGWDTB ! ELECTRICITY	Electricity, Gas and Water distribution
ELE !	Industrial machinery, radio, TV equipment and other apparetal
FRS ! FORESTRY	Forestry
FMP ! METAL PRODUCTS	Metal Products
FSH ! FISHING	Fishing
GOV ! GOVERNMENT SERVICES	Public administration and security, education, health and social action services
LEA ! LEATHER AND SHOES	Leather and shoes
LUM !	Product of wood, straw and plaiting materials
MDOTHFD !	Meat and fish, Cocoa and coffee products, baker's, confectionery and alimentary, dairy products.
MVH_OTN ! MOTOR AND VEHICULE	Motor and vehicule
NMM ! OTHER NON METAL MINERAL PRODUCTS	Other non metal mineral products
OBS ! OTHER BUSINESS SERVICES	Real estate, business services
OFI ! FINANCIAL SERVICES	Financial services
OIL_GAS ! OIL AND GAS	Crude oil and natural gas
OME ! FURNITURE	Furniture, other industrial products
OSD ! OILSEEDS	Oil seeds
OTP_CMN ! TRANSPORT AND COMMUNICATION	Transport and communication, posts and telecommunications services,
P_C ! OIL PRODUCTS	Oil products
PCR ! RICE	
PPP ! PAPER AND PAPERBOARD	Paper and paperboard products
ROS !	Social, collective and personal services
TEX_WAP ! TEXTILE	Textile and clothing products
TRD ! TRADE	Whole sale and retails trade, repair services, hotel and accommodation services
ATP ! AIR TRANSPORT	Air Transport
COL ! COAL	Mining and Agglomeration of hard coal, lignite and peat
DWE ! DWELLINGS	Ownership of dwellings (imputed rents of houses occupied by owners
I_S ! IRON & STEEL:	Iron and Steel: Basic production and casting
ISR ! INSURANCE	Insurance includes pension funding, except compulsory social security
NFM ! NON-FERROUS METALS	Production and casting of cooper, Aluminium, Zinc, Lead, Gold, and Silver
OCR ! OTHER CROPS	Live plants, cut flowers and flower buds; Flower seeds and fruit seeds; Vegetable seeds, Beverage and spice crops, Unmanufactured tobacco, Cereal straw and Husks; unprepared; Whether or not chopped; ground; pressed or in the form of pellets; Swedes; mangolds, fodder roots, hay, Lucerne (Alfalfa),Clover, sainfoin, Forage kale, lupines, vetches and similar forage products, Whether or not in the form of pellets, plants and part of plants used primarily in perfumery, in pharmacy, or for insecticidal, fungicidal or similar purposes, sugar beet seed and seeds of forage plants, other raw vegetable materials,
OMF ! OTHER MANUFACTURING	Other manufacturing includes recycling
OMN ! OTHER MINING:	Mining of metal ores, Uranium, gems, other mining and Quarrying
PFB ! PLANT FIBRES:	Cotton, Flax, Hemp, Sisal and other raw vegetable materials used in textiles
WOL ! WOOL:	Wool , Silk, and Other Raw animal materials used in textile
WTP !Water Transport	Water Transport

Table 4: Aggregated commodities in the GTAP data base

Broad Sectors	Commodities comprised
Agricultural Food	Food crops, Industrial and Export products, other agricultural and livestock products
Vegetables and Fruits	Fruits, Vegetables, nuts
Oilseeds	Oil seeds
Sugar	Sugar cane, Sugar beet
Cotton	Plant-based fibers
Other Crops	Crops nec
Livestock	Cattle, sheep, goats, horses; Animal products nec; Raw milk; Wool, silk-worm cocoons.
Natural Resources	Forestry; Fishing; Coal; Oil; Gas; Minerals nec.
Agro processing	Bovine meat products; Meat products nec; Vegetable oils and fats; Dairy, products; Processed rice; Sugar; Food products nec; Beverages and tobacco products.
Light manufacturing	Textile, Leather products; Wood products; Paper products, publishing.
Industry	Petroleum, coal products; Chemical, rubber, plastic prods; Mineral products nec; Ferrous metals; Metals nec; Metal products; Motor vehicles and parts; Transport equipment nec; Electronic equipment; Machinery and equipment nec; Manufactures nec.
Services	Electricity; Gas manufacture, distribution; Water; Construction; Communication; Financial services nec; Insurance; Business services nec; Recreational and other services; PubAdmin / Defence/Health/ Education; Dwellings.
Trade	Trade; Transport nec; Water transport; Air transport.

Table 5: Countries Aggregation in the GTAP data base

Aggregated Regions	Comprising countries/Regions
EU	Austria, Belgium, Denmark, Finland, France, Germany, United Kingdom, Greece, Ireland, Italia, Luxembourg, Netherlands, Portugal, Spain, Sweden, Croatia, Cyprus, Czech Republic, Hungary, Malta, Poland, Romania, Slovakia, Slovenia, Estonia, Latvia, and Lithuania
CIV	Cote d'Ivoire
Rest of ECOWAS	Rest of West African countries (Nigeria, Senegal)
Rest of SSA	Rest of Sub-Saharan Africa
Rest of the World (ROW)	Australia, New Zealand, China, Hong Kong, Japan, Korea, Taiwan, Rest of East Asia, Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam, Rest of Southeast Asia, Bangladesh, India, Pakistan, Sri Lanka, Rest of South Asia, Canada, United States of America, Mexico, Rest of North America, Bolivia, Colombia, Ecuador, Peru, Venezuela, Argentina, Brazil, Chile, Paraguay, Uruguay, Rest of South America, Central America, Rest of Free Trade Area of Americas , Switzerland, the rest of EFTA, the rest of Europe, Albania, Bulgaria, Russian Federation, the rest of the Former Soviet Union, Turkey, Iran, the rest of the Middle East, Egypt, Morocco, Tunisia, and the Rest of North Africa. South Africa, Mauritius, Rest of the Caribbean ,Rest of Oceania

3. Trade and protection structure of Cote d'Ivoire

Imports in Cote d'Ivoire are increasingly continued to rise since 1996, despite a small fall in 2002. Imports increased from 1996 to 2004 at a rate of 7 per cent. Table shows the evolution of total imports of Cote d'Ivoire between 1995 and 2005.

It is noteworthy that the majority of Cote d'Ivoire's imports come primarily from EU, Ecowas, Asia and America. Imports from EU have increased between 2000 and 2004 and there are continuing to increase at a rate of 21.6 per cent.

Table: Evolution of trade flows in Cote d'Ivoire from 1995 to 2005 in Million of F CFA

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EXPORT (X)	1912	2274,3	2597,9	2718	2870	2768	2893	3677	3364	3655	4060
IMPORT (M)	1213	1341,4	1551,6	1703	1703	1710	1772	1712	1878	2267	2770
GDP (Y)	4988	6178	6802	7541	7734	7417	7730	8006	7984	8179	8626
TRADE BALANCE (X- M)	699	932,9	1046,3	1015	1167	1058	1120	1965	1486	1388	1290
EXCEDENT (X-M)/Y in %	14,01	15,1	15,382	13,5	15,1	14,3	14,29	24,54	18,6	17	14,95
EXPORT RATE (X/Y)	38,33	36,81	38,19	36	37,1	37,3	37,41	45,92	42,12	44,7	47,06

Source: BCEAO/DGE/Ministry of Economy and Author synthesis

Table: Evolution of total Imports of Côte d'Ivoire between 1996 and 2005 by region (in millions de FCFA).

Region	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
European Union	721327,7	823223,4	953107,4	910785,1	745284,5	826450,9	793884,5	1137399,2	1198619,9	1381712
America	140601	150508,8	165167	139745,7	125323,7	189865,9	109509,4	120939,7	204740,1	173115
Asia	192335,5	239650,1	269356,1	291406,1	269930,3	291071,9	397241,6	299570,2	336562,1	592388
WAEMU	16071,8	14735,8	19399,9	14786,8	15801,3	20214,9	22183,4	26980,5	17222,7	798264
Other ECOWAS	278964,8	255631,4	195521	254294,7	480672,9	365124,2	270351,2	304341,7	518750,1	774451
Other EUROPE	49996,5	77582,9	103509,9	106451,1	71161	85803,7	92324,4	70806,3	97454,7	100448
Other Africa	40181,4	45105,6	59134	61613,3	60799,4	85179	118999,2	82181,6	102488,4	117481
Others	3942,5	2227,3	2581,1	1089	1488	2488,2	5121,8	5220,5	11355,4	9119

Source: Direction Générale des Douanes Ivoiriennes/ Ministry of Economy /Author synthesis

Total exports of Côte d'Ivoire have also increased at a rate of 5.9 per cent from 1996 to 2005. Table represents the evolution of export during this period by destination/region. We note that the share of exports to EU is the most important.

Table: Evolution of total exports of Côte d'Ivoire from 1996 to 2006 by region (in millions of FCFA)

Region	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EUROPEAN UNION	1235286,1	1291331,1	1317053,8	1199776	1141813	1238324	1737915,1	1751463,8	1734329,9	1782017
America	233416,4	234157,3	281247,4	468371,2	294519,5	312257,7	286957,1	266731,8	209867,2	753850
Asia	94444,8	105716,2	122731,1	143748,8	154827,3	148154,5	171280,3	193891,3	209867,2	207531
WAEMU	249742	311584,2	344836,8	391307,5	464991,9	406341	390193,9	320787,7	349930,2	416961
Other ECOWAS	165789,3	178010,2	178919,6	163306,1	227145,7	251225,2	482829,7	235176,1	422229,3	535336
Other Europe	95061,2	113495,3	106833,4	124471,4	99544,9	121816,3	177014	146170,6	162295,7	115254
Other Africa	95061,2	170778,3	162245,7	129940,2	161289,6	163323	186825,9	236005,4	175716,9	193791
Others	19851,3	16888,5	19848,3	21566,8	28801,5	27915,4	42588,6	35926,3	14683,4	14907

Source: Direction Générale des Douanes Ivoiriennes/ Ministry of Economy /Author synthesis

IV. POLICY SCENARIOS

This study tries to provide important insights regarding the impact of the EU-ECOWAS EPAs on trade, GDP, terms of trade, employment and welfare in the individual country level of Cote d'Ivoire.
Thus, reference experiment involves the Full removal of import tariffs and tariffs equivalents of bilateral non tariffs barriers (NTBs) between the EU-25 and Côte d'Ivoire.
Specifically, the study looks at three possible scenarios:

1. EU-Cote d'Ivoire 50%: Cote d'Ivoire eliminates its tariffs on 50 % of its imports from the EU-25, while EU continues to grant duty-free access to all ACP products to its markets, with addressing the issue of sensitive products.

2. EU- Cote d'Ivoire 80%: This is practically similar to the previous scenario, except that Cote d'Ivoire now reciprocates tariff elimination on 80% of its imports from the EU.

3. EU-Cote d'Ivoire (Full reciprocity of preferential tariffs): Free trade Agreement between the EU-25 and ECOWAS including Cote d'Ivoire in the context of EPAs negotiations. The full reciprocity's impacts will be estimated by simulating a complete, symmetrical removal of imports protection.

All of the experiments are carried out in the standard GTAP closure which allows for output, prices and factor incomes to, adjust to external shocks. Selected experiments are further carried out for an unemployment closure, whereby nominal wages for unskilled labour in developing countries are fixed and equilibrium is re-established by changes in the quantity of unskilled labour.
The reference experiment of full reciprocity of trade preferences between EU and Cote d'Ivoire in the context of EPAs negotiations, is repeat under different closures that allow for a replacement of tariff revenues lost through fiscal compensations, either from a Value-added Tax (VAT) on private consumption or combinations of different levels of the VAT and an Income tax on skilled and unskilled labour. These will highlight the welfare effects of the design of the tax regime that is meant to replace government income from tariffs.

V. SIMULATION RESULTS

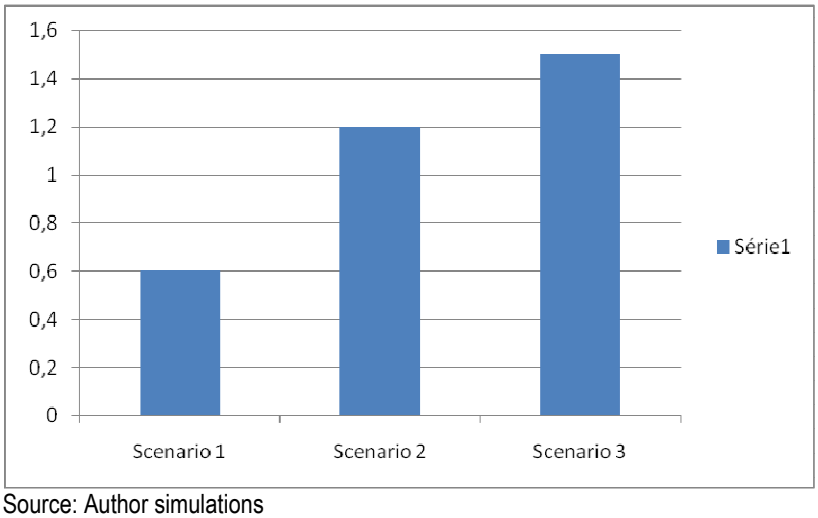
This Part analyses the results of the experiments described above. It is organised in four Sections.

The first section (Section 1) focuses on the tariff revenue effects for Cote d'Ivoire of different liberalization policies under the establishment of an EPA with EU, and the relative merits of different tax replacement scenarios will be examined. The second section looks at the changes in trade patterns, i.e. the effects on exports and imports. On the basis of the payoffs estimated in the simulations of different scenarios of liberalization, effects on employment and welfare will be discussed in section 3 and 4 respectively.

1. Tariff revenues Effects

The effects on fiscal revenue are showed in the following figures. In a first time, by simulating different scenarios without addressing the issue of fiscal compensation we obtain a real decrease in the government revenue in Cote d'Ivoire. The non uniform negative effects are reducing in connection with the proposed scenario.
However, since the proposed EU-ECOWAS EPAs expect a fiscal compensation, we have then addressing this issue in the simulation. We found that the increase in tax on private consumption (implemented, for instance, within a VAT system) and transfer from EU to Cote d'Ivoire would be necessary in order to replace tariff revenues lost when trade is fully liberalized between the EU and ECOWAS. In fact, the tariff revenue formula, if unchanged, would lead to large transfers of receipts from EU to Cote d'Ivoire. In view of the development considerations already present in the current arrangement for distributing the revenue pool, the formula is likely to be adjusted leading to significantly reduced tax replacement needs in the country.

Figure: Uniform increase in consumption tax to replace tariff revenue lost, EU-CIV (per cent)



Source: Author simulations

2. Changes in Trade patterns

The following tables provide the percentage variations in trade patterns following an EU-Ecowas EPA for Cote d'Ivoire, at the sectoral level for exports and imports, respectively.
We denote effects on export side as well as on the import side. We found that with a few exceptions in some sectors, exports do not change drastically in Cote d'Ivoire under an EU-ECOWAS EPA. On the import side however, total imports under an EU-ECOWAS EPA increase for Cote d'Ivoire.

a. Exports Effects

Table: Changes in Exports volumes, all scenarios (Per cent)

Volume of exports	**(per cent)**
Scenario 3	5,02
Scenario 2	3,21
Scenario 1	1 ,89

Source: Authors' simulations.

b. Imports Effects

Table: Changes in Imports volumes, all scenarios (Per cent)

Volume of Imports	(Change in per cent)
Scenario 3	12, 3
Scenario 2	7,1
Scenario 1	4,67

Source: Authors' simulations.

Table: Change in commodity exports by sector, EU-CIV FTA ($ millions,)

	AgFood	AgroProc	Crops	Natural Resrces	Textiles	Livestock	Industry	Light Mnfcs	Services
Scenario 3	622.14	0.00	-1.13	-2.11	-8.16	-0.04	-16.20	-123	-7 ;00
Scenario 2	67.65	0.08	434.27	217.03	-17.75	7.41	-535.33	189.01	-87.95
Scenario 1	-5.52	0.00	-11.62	987	-204.03	-105.63	-35.29	-327.81	-67 ;87

Table: Change in commodity imports by sector, EU-CIV FTA, ($ millions,)

	AgFood	AgroProc	Crops	Natural Resrces	Textiles	Livestock	Industry	Light Mnfcs	Services
Scenario 3	22,34	0.00	23,4	-1.85	-8.80	-1.27	-32.04	9.16	-3.99
Scenario 2	7,65	0.01	46,00	116.91	234,16	-58,74	329.00	1007	97.75
Scenario 1	89,2	0.01	56,7	346,56	86.80	-0.68	473.79	601.90	196.82

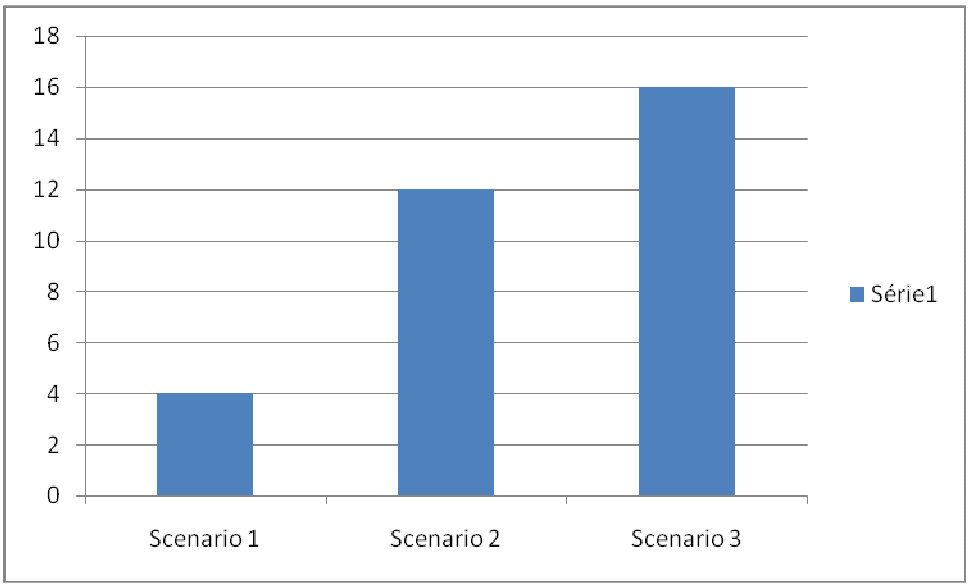
Source: Authors' simulations.

3. Employment Effects

The standard GTAP model assumes full employment of resources. Since this assumption may not be appropriate for many developing countries, including Cote d'Ivoire, especially for unskilled labour, we re-run the scenario of an EU-ECOWAS FTA under an alternative closure. In order to allow for unemployment in the unskilled labour force, the standard GTAP closure has been changed such that the wage rate for unskilled labour is fixed and the quantity supplied is allowed to adjust to changed market conditions post-EPA. This alteration more accurately reflects labour market conditions in developing countries especially in west African economies, where typically an excess supply of unskilled labour is prevalent, which can be employed by industry at the going wage rate in the event of an expansion of production. Hence, the wage rate was made exogenous and the supply of unskilled labour made endogenous in order to take the effects of an EU-ECOWAS FTA on unemployment into account.

In the next figure, we show that, under the assumption that west African countries feature a large pool of unemployed unskilled labour and, hence, wages remain unchanged, welfare effects of an EU-ECOWAS EPA are higher than under a scenario, in which wages are allowed to adjust in order to equate demand to a given quantity of unskilled labour supply.

Figure: Changes in Employment of unskilled labour, selected scenarios (Per cent)



Source : Author's simulation

The diversity of employment effects has to do with the expansion of production in different sectors with different factor intensities.

Agrofood sector absorbs an additional per cent of the existing employment of unskilled labour in that sector, but other sectors also attract unskilled labour, most notably the processed food and manufactures sectors, and to a smaller extent, the natural resources sector. Employment expansion in the processed food and heavy manufactures sectors explains the still significant overall employment surge in the country. Unskilled labour in the crops sector is reduced by about 3, 2 per cent of the original value.

4. Welfare changes

In the GTAP model, we measure the impact of trade liberalization on welfare in terms of equivalent variations (EV) in income (2001 $ millions in the GTAP 6 database). EV represents the money-metric equivalent to the utility change brought about by a change in prices. It measures the amount of money that would need to be taken away from the consumer before the price change to leave her as well off as she would be after the change in prices.
The main sources for welfare changes in our model are the following: (i) Welfare may be affected by a reallocation of existing resources (allocative efficiency effect (ii) Prices of imports and exports faced by a country may become more or less favourable (terms of trade effect (tot)). (iii) Welfare may vary due to a change in the amount of resource endowments (endowment effect (endw)).
As endowments in the standard GTAP closure are exogenous, this effect, in our paper, only occurs for the unemployment closure. (iv) Welfare may increase if net inflows are received by a country from tax revenue pooling. In this paper, this is relevant for Cote d'Ivoire.

Even without considering the direct welfare effects of increased employment, welfare improvements are more pronounced in Cote d'Ivoire, as measured by allocative efficiency and terms of trade developments. Allocative efficiency increases by several multiples in Cote d'Ivoire. It is also noteworthy that the country still largely faced positive terms of trade gains. When endowment effects are added, welfare gains are further amplified.

Total welfare effects (experiments conducted under the standard closure)

EU-CIV	alloc eff	tot	IS	taxpool	Total
Scenario 3	17.8	0.6	-0.6	0	17,62
Scenario 2	145,32	-134,67	-2.1	0	8,54
Scenario 1	-44.9	-225	-116.2	0	-7,482
Total	1176.7	-34.5	0.7	12.9	1155.9

Author's simulations

VI. CONCLUSION AND POLICY IMPLICATIONS

This paper has developed a CGE model that focuses on the prospective impacts an EU-ECOWAS Economic Partnership Agreements in Cote d'Ivoire. Trade liberalization has been simulated as an important benchmark. More than the absolute levels, the relative impact of different scenarios in terms of welfare, production structure, trade, employment and government revenues may provide useful guidance to policy-makers in Cote d'Ivoire and also for the ongoing negotiations with EU in the West African region. In particular, the empirical simulations lead us to the following set of conclusions:

- Revenue from Cote d'Ivoire, sharing arrangements may require further adjustments to ensure a net transfer of resources from EU after the establishment of the EPA. Tariff revenue losses can be replaced by moderate increases of some variables, for instance, consumption taxes or transfer from EU to Cote d'Ivoire. However, the design of the tax regime appears to matter if tariff revenues are to be replaced.

- Due to the importance of EU as a trading partner for many ECOWAS economies and particularly Cote d'Ivoire, liberalization in the context of EPAs already goes a long way towards realizing such gains. The positive results of an EU-ECOWAS FTA are robust to variations in key assumptions, notably the Armington parameters.

- All liberalization scenarios lead to significant structural change in Cote d'Ivoire's economy. In fact, the required structural adjustment under the partial liberalization scenario (80 per cent of liberalization) is less than under an EU-ECOWAS FTA.

- Trade patterns follow the trend in production: Overall imports, especially of manufactures, and exports, notably of agricultural and processed food products, increase if taking into account the fiscal compensations. Part of this increased trade can be explained by trade diversion away from other West African countries.
  However we denote a loss in the import and export volume when we do not simulated the transfers from EU to Cote d'Ivoire

- The positive welfare effects of an EU-Ecowas EPA are even more pronounced. If well suited and implemented more jobs are created in agricultural sectors that are already major employers of unskilled labour. Others receive an employment boost in their transition towards processed food products. Employment expansion in manufacturing seems to be limited by increasing skill requirements.

REFERENCES

Bilal, Sanoussi, 2002, "Les Aspects Multilatéraux des Accords de Partenariat Economique entre Les Pays ACP et l'Union Européenne", ODI, ECDPM, May 2002.

Brockmeier, M., 2001, "A Graphical Exposition of the GTAP Model", *GTAP Technical Paper No. 8,* Revised March 2001.

Busse, M., A. Borrmann, and H. GroBmann, 2004, "The Impact of ACP/EU Economic Partnership Agreements on ECOWAS Countries: An Empirical Analysis of the Trade and Budget Effects", Final Report, Hamburg Institute of International Economics, Hamburg, Germany.

Bouet, A., Y. Decreux, L. Fontagne , S. Jean and D. Laborde (2004), A consistent, ad valorem equivalent measure of applied protection across the world: The MAcMap-HS6 database.

COMESA Secretariat (2003), Status of EPA Negotiations, mimeo (Lusaka: October).

European Commission (1996), Green Paper on relations between the European Union and the ACP countries on the eve of the 21st century : Challenges and options for a new partnership (Brussels, 20 November).

Hinkle, L. and M. Schiff (2004), EPA between SSA and the EU: A development perspective on their trade components.

Huber, J. (2000), The past, present and future ACP-EC trade regime and the WTO, 11 European Journal of International Law 2, pp. 427-438.

Keck, A. and R. Piermartini (2005), The Economic Impact of EPAs in SADC Countries.

Kennan, J. and C. Stevens (1997), From Lome to the GSP: implications for the ACP countries of losing Lome trade preferences. IDS research paper for Oxfam; available at <http://www.oxfam.org.uk/policy/papers/lome-gsp/index.htm>.

COMESA, 2002, “Discussion Paper on Trade Policy Compatibility and Impact Assessment of Economic Partnership Agreements and Preliminary Adjustment Scenarios”, COMESA Secretariat, Lusaka, Zambia.

ECA, 2004, Assessment of Regional Integration in Africa, Economic Commission for Africa, Addis Ababa

ECA, forthcoming, Trade Liberalization under the Doha Development Agenda: Options and Consequences for Africa, Trade and Regional Integration Division, Economic Commission for Africa, Addis Ababa

Hertel, T.W., 1997, *Global Trade Analysis: Modelling and Applications,* Cambridge University Press, New York and Cambridge.

Karingi, S.N., M. Siriwardana, and E.E. Ronge, 2002, Implications of the COMESA Free Trade Area and Proposed Customs Union: Empirical Evidence from Five Member Countries using GTAP Model and Database, COMESA, Lusaka Zambia.

Karingi, S.N., R. Lang, N. Oulmane, R. Perez, M. Sadni-Jallab and H. Ben Hammouda, “Economic and Welfare Impacts of the EU-Africa Economic Partnership Agreements”, African Trade Policy Centre Work in Progress No. 10, Economic Commission for Africa, Addis Ababa.

Meyn, M., 2004, “Are Economic Partnership Agreements likely to Promote or Constrain Regional Integration in Southern Africa? Options, Limits and Challenges Botswana, Mauritius, and Mozambique are Facing”, NEPRU Working Paper No. 96, The Namibian Economic Policy Research Unit, Windhoek, Namibia.

Milner, C., O. Morrissey, and A. McKay, 2002, “Some Simple Analytics of the Trade and Welfare Effects of Economic Partnership Agreements: The Case of the EU-EAC”, mimeo, CREDIT, University of Nottingham.

Morrissey, O., C. Milner, and A. McKay, A Critical Assessment of Proposed EU-ACP Economic Partnership Agreements, CREDIT Research Paper, University of Nottingham

Scollay, R. (2002), Impact assessment of possible economic partnership agreements (EPAs) with the European Union, report for ACP secretariat and the ACP Pacific states, draft.

Stevens, C. and J. Kennan (2005), ``Preparing for EPA'', in Trade Analysis Handbook

Stevens, C. and J. Kennan (2005), EU-ACP EPA: the effects of reciprocity (IDS, 20 May).

Tekere, M. and D. Ndlela, 2003, Impact Assessment of Economic Partnership Agreements on Southern African Development Community and Preliminary Adjustment Scenarios, Final Report, Trade and Development Studies Centre, Harare, Zimbabwe.

Winters, L.A. (2002), Post-Lomé Trading Arrangements: The Multilateral Alternative (Washington, D.C.: World Bank).

World Bank, 2003, Global Economic Prospects 2004: Realising the Development Promise of the Doha Round. Washington, D.C.