

**CGE MODELLING OF IMPACT OF EUROPEAN UNION-WEST AFRICA ECONOMIC
PARTNERSHIP AGREEMENT ON NIGERIA**

Adeola Adenikinju*
Abiodun Bankole*

**A REPORT SUBMITTED TO THE FEDERAL MINISTRY OF INDUSTRY, TRADE AND
INVESTMENT, ABUJA, NIGERIA**

**18 March, 2014
Revised: April 23, 2014**

* University of Ibadan

Table of Contents

Abbreviations.....	3
1. Introduction.....	4
1.1. Background.....	4
1.2. Objective.....	5
1.3. Terms of Reference.....	5
1.4. Modelling Framework and Methodology.....	6
2. Review of Past Modelling Exercises.....	7
3. Simulation Results.....	11
3.1. Evolution of tariffs during the EPA period.....	13
3.2. Government Revenue.....	14
3.3. Impact on Macroeconomic Aggregates.....	15
3.4. Impact on Employment.....	18
3.5. Impact on Prices of Sectoral Imports, domestic output and Household Consumption.....	19
3.6. Impact on Sectoral Imports from the EU.....	21
3.7. Impact on Imports from Third Countries.....	23
3.8. Impact on Regional Integration.....	23
4. Policy Implications and recommendations.....	23
5. Conclusion.....	24
References.....	25

Abbreviations

Sectors

AGV	Subsistence farming
AGI	Industrial agriculture
ELV	Livestock farming
SYL	Forestry
PEC	Hunting and Fishing
MIN	Extractive Industry (including crude oil)
ALIM	Food, beverages and tobacco industries
TEXT	Textile, leather, shoes and other garment industries
INDU	Other industries
ENE	Electricity, gas, water and distribution of other petroleum products
SERV	Services (transport, storage and communication, financial services; real estate services and corporate support services; hotels, bars, restaurants and trading; other services)

Impact Analysis of EPA's new Market Access Offer

1. Introduction

1.1. Background

Within the framework of the negotiations on an Economic Partnership Agreement (EPA) between the West African (WA) region and the European Community (EC), the parties agree that a pro-development EPA needs to embrace not only trade in goods but also EPA-related development concerns. Early impact analysis, based on extreme assumptions, such as reducing tariffs on all products from the date of signing the EPA, gave rise to grave concerns about the detrimental effects of the EPA on business and employment in West Africa. Since then major progress has been made in the negotiations including the articulation of considerably more developmentally friendly conditions than assumed in the earlier studies. This necessitated the need for country specific analysis using the joint EU-ECOWAS developed CGE model for an evidence based position on the regional market access offer and to ensure that the regional market access offer promotes economic development.

Maximum asymmetry in the market access offer is being provided in favour of West Africa. EC has offered 100% duty free quota free access to the EU market from the date of initialling the EPA. This will give maximum flexibility to West Africa to identify those sensitive products that will not be included in the tariff reduction. Currently the negotiators are discussing the percentage of goods that will be included in the sensitive products and the duration over which duties will be reduced for the remaining goods. A range of other clauses have been included that will provide West Africa with the ability to protect their business from import surges and dumping. An important new clause covering infant industries has just been added.

In 2013, ECOWAS formulated a new market access of about 75% opening and 25% exclusion to be offered to the EU. West Africa region shifting to a very high level of trade openness and dismantling trade barriers may have policy impacts. The construction of the newly proposed market access of 75% is hinged around 3 pillars:

1. Linking the West Africa Market access to the adopted ECOWAS CET (December 2012, in Abidjan),
2. Maintaining the coherence with the Regional Sectoral Policies (mainly Agriculture and Industrial), and

3. a feasible, transparent, and coherent dismantling calendar based ONLY on the CET.

This modelling exercise presents Nigeria's policy decision makers and political leaders with clear and unequivocal evidence on three critical questions:

- What are the net benefits of EPA to Nigeria in the short, medium and long term?
- What are the net losses to Nigeria if the country opts out of EPA while all other ECOWAS countries choose to join?
- What would be the cost of Nigeria staying out of the EPA?

1.2. Objective

The primary objective of the study is to provide an updated understanding of the possible impacts of the new Market Access offer of 75%-25% and other outstanding supportive clauses in the EPA text on the Nigerian economy, to inform policy makers, EPA negotiators and stakeholders to develop evidence based positions. The findings from the study and consultations would support positions taken by key stakeholders in the EPA negotiations.

1.3. Terms of Reference

In view of the above, FMITI intends to establish a small team of four economist-modellers familiar with one or both of the above two models to undertake the following:

1. identify and review recent studies and analysis, such as the World Bank TRIST modelling study by Nigeria (2009) and CGE study in 2011.
2. identify a set of scenarios based on the agreed text and market access agreement, and the alternatives in those sections where the text has not been agreed (e.g. percent sensitive products and rate of tariff reduction on the rest).
3. working with the concerned development partners and practitioners for each of the above modelling exercises (plus any other identified), work with them to test the identified scenarios.
4. compare the results of the scenarios from each of these modelling initiatives, and compare the outcomes in terms of the size of the economy and other indicators (e.g. revenue loss as percentage of GDP, revenue collection); drill down in more detail into any areas of sensitivity brought out by the analysis.
5. prepare a report to share with Nigerian policy makers and stakeholders showing in what ways the negotiations have addressed many of the earlier concerns, and so lessened the potential negative impacts of the EPA while identifying remaining areas of concern; show the potential impact of the current EPA; provide recommendations for any modifications

- to the remaining areas where negotiations are still underway, such as the details of the tariff liberalization schedule; and provide advice to government on how to ensure that best use is made of the various clauses in the EPA to cushion the negative effects of liberalization and enhance the positive.
6. provide recommendations to Nigerian policy makers on how to make effective use of the development supportive clauses in the EPA, to better domesticate the various models available, with possible updates, how to develop the ability in Nigeria to run further simulations, and use these models as part of the M&E of an EPA implementation.
 7. Organize workshops to validate and sensitize the general populace on results.

1.4. Modelling Framework and Methodology

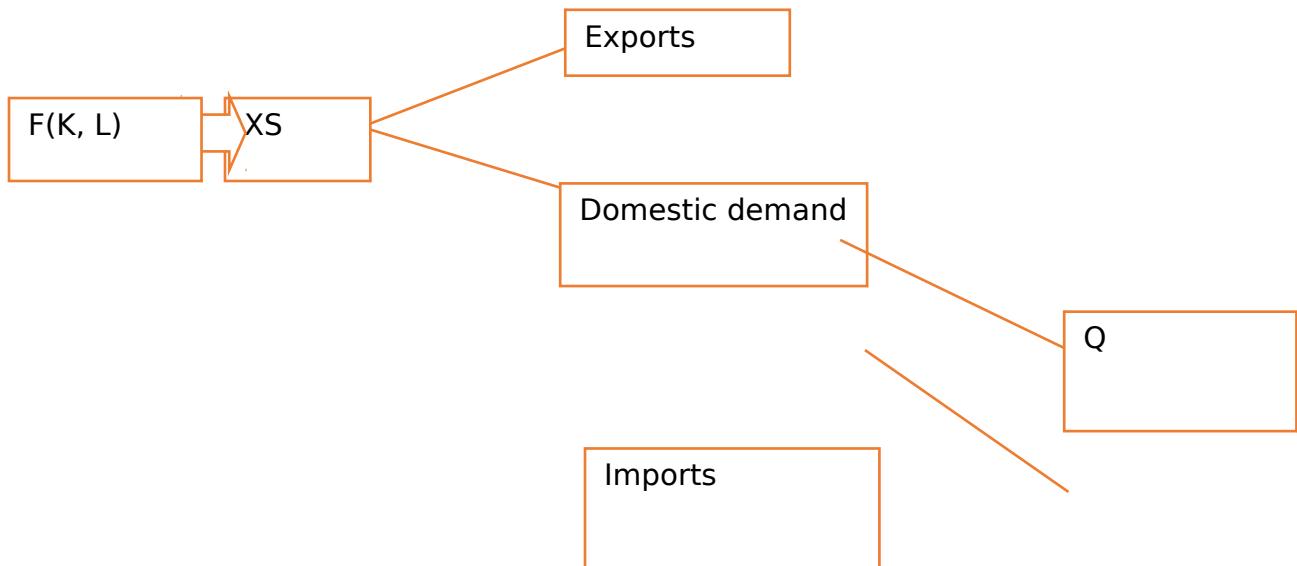
It is important to recognize that it is not possible to fully simulate a complex agreement such as this. The study analyzes the impact on Nigeria of the EPA new Market Access offer of 75% liberalisation and 25% exclusion list. This was done using the Computable General Equilibrium (CGE) model developed by the French company, ITAQA, with funding by the EC and advice from ECOWAS. The team have in the past conducted similar study using the Tariff Reform Impact Simulation Tool (TRIST) developed with funding by the World Bank and CGE model on the 70% -30% offer without the modified CET in place.

The CGE model incorporates all economic interactions in an economy and provides a laboratory for quantitative assessments of total effects (direct and indirect) of policy changes. It captures the interdependencies among economic sectors, economic agents and economic markets as well as feedbacks among production block, income block, expenditure block and trade blocks. The underlying database is provided by the Social Accounting Matrix (SAM) which ensures data coherency and consistency. CGE models are not forecasting tools but simulation tools. They help to isolate the economic effects of specific policy shocks. The ECOWAS CGE Model is a dynamic model that runs from 2004 to 2035. It is a recursive dynamic model and multisector – there are 13 production sectors, of which 10 are tradables.

It is also multi-country, made up of 11 ECOWAS Countries, 4 other ECOWAS countries, rest of Africa, rest of developing countries, the EU and the rest of developed countries. The model allows for bilateral trade and in each ECOWAS country, we have the following institutions: one representative household, one representative firm in each sector, one government, and three factors of production – skilled labour, unskilled labour and capital. The skilled labour market and unskilled labour market operate differently in the sense that wages are rigid in the former while flexible in the latter. This modeling exercise incorporated the agreed EPA market access based on the CET as scenario A,

post MAN meeting on the market access offer as scenario B and a 'No sign' alternative when other ECOWAS members sign as the scenario C. Scenario C was members under the GSP scheme. This has the implication of higher intensity of smuggling from neighbouring countries that are in FTA with Nigeria but which the model cannot capture.

Fig. 1: Modelling Transmission Mechanism



2. Review of Past Modelling Exercises

Studies of EPAs and other regional liberalization schemes have revealed some key distinctions from the standard studies of multilateral liberalization due to the fact that EPAs can lead to trade diversion as well as to trade creation. Trade diversion takes place when imports from a low-cost producer outside the regional FTA are replaced by imports from a high-cost FTA partner, while trade creation occurs when the FTA shifts production from a high-cost supplier to a low-cost FTA partner. Any assessment of a Regional Trade Agreement (RTA) and EPAs must pay close attention to the relative importance of trade creation and trade diversion because trade creation is welfare improving while trade diversion tends to be welfare reducing. Most studies concentrate on directly quantifiable effects, such as direct trade effects (including trade creation and trade diversion) and direct government revenue changes.

The estimates of most studies are obtained using either global Computable General Equilibrium (CGE) models which model the whole world (e.g. the GTAP model) and take full account of intersectoral linkages and economy-wide constraints, or Partial

Equilibrium (PE) models, which consider the impact of tariff cuts on trade sector by sector in isolation from each other. While CGE models are more suitable for estimating trade creation, diversion and welfare effects (via including the indirect general equilibrium effects of trade liberalization) they lack detail on sectors (using high levels of sectoral aggregation) and on many ACP regions, particularly for the poorest countries. PE models allow a finer level of commodity disaggregation and have therefore been employed as an alternative to the CGE approach, although these models are unable to account for macroeconomic repercussions of changes in trade barriers such as factor price and factor income effects on household income, terms-of-trade effects and intersectoral input-output linkage effects.

The possible economic consequences of the trade aspects of the Economic Partnership Agreements (EPAs) have been evaluated by Karingi, Oulmane, Sadni-Jallab, Lang and Pérez (2006) for the Common Market in Eastern and Southern Africa (COMESA); Vollmer, Martinez-Zarzoso, Nowak-Lehmann and Klann (2009) estimate the welfare effects of the interim agreements for nine African countries: Botswana, Cameroon, Cote d'Ivoire, Ghana, Kenya, Mozambique, Namibia, Tanzania, and Uganda. Their analysis is based on highly disaggregated data for trade and tariffs (HS six digit level) and follows a simple analytical PE model by Milner et al. (2005)¹ to quantify the welfare effects of trade liberalization. They present results which indicate that Botswana, Cameroon, Mozambique, and Namibia will significantly profit from the interim agreements, while the trade effects for Cote d'Ivoire, Ghana, Kenya, Tanzania, and Uganda are close to zero. However, Tanzania and Uganda also have the potential to experience positive welfare effects but predicted results of the liberalization based on the interim agreement's reduction rates fall short of the potential of a full liberalization.

Karingi et al. (2005) evaluate the gains and losses associated with EPAs for ACP countries. They predict a decrease in the production of natural resources, energy and cotton and production increases in fishing, animal products, livestock, crops, sugar oilseeds, vegetables and cereals for SSA if a Free Trade Agreement (FTA) with the EU was signed. However, in case of full reciprocity production losses in fishing, livestock and vegetables are to be expected. Karingi et al. (2005) find a decline in heavy industry, medium tech and low tech industry, clothing and textiles under full reciprocity, but increases in clothing, textiles and agriculture production under a FTA. Milner et al. (2005) analyze the EPA's impact on Tanzania, Uganda and Kenya. The authors find the expected consumer gains and production losses but, more importantly, they identify Kenya as a country where losses outweigh benefits, mainly due to the fact that Kenya's manufacturing sector will be negatively affected by EU competition.

¹ The authors illustrate the welfare effects of preferential trade agreements for a small country member of an initial PTA graphically. These effects arise from the transition of initial preferential trade agreements (PTA) between African countries to Economic Partnership Agreements.

Busse and Grossmann (2007) analyze the impact of EPAs on West African countries. They find that in most cases trade creation effects (more trade with the EU and some African countries) outweigh the trade diversion effects (less trade with African countries that are not part of the agreement). They also find a negative impact on the government deficit. Fontagne, Laborde and Mitaritonna (2008) investigate the impact of EPAs for all six ACP regions. Their results show increased exports of vegetable production, livestock, agri-food and textiles to the EU and big increases in imports from the EU (in the range of 20 to 40 percent) in textiles, metallurgy, primary products and other industries. Huge decreases in tariff revenue (70 to 80 percent) are found for all six regions except for the Pacific where the tariff revenue seems to be unimportant.

COMESA (2003) examined the broad issues that its member countries would have to contend with in the EPA negotiations. The study concludes that the costs of EPAs would include the loss of revenue to governments and the associated adjustment costs of developing alternative sources of government revenue. The broad findings, on the basis of trade statistics for 2000, was that if all EU imports were duty-free, governments in the COMESA region would lose about 25 per cent of their trade taxes, and about six per cent of their total tax revenue. Tekere and Ndlela (2003), in addressing the question for SADC, reach the same conclusion for this sub-region, showing that countries like Tanzania and Namibia could experience public revenue losses of 37 and 24 per cent respectively.

Busse et al. (2004) studied the potential impact of the EPAs on ECOWAS countries. Their study focused on trade and budget effects. Applying a partial equilibrium methodology that follows the Viner model, Busse et al. examined implications of different tariff elimination scenarios. They found that in absolute terms, the decline in import duties would range from USD 2.2 million in Guinea-Bissau to USD 487.8 million in Nigeria. Cape Verde and The Gambia will be particularly affected, as total government revenue shortfalls could amount to 20 and 22 per cent. Assuming no adjustment is required from the expenditure side, budget deficits in these countries will worsen by 4.1 and 3.5 per cent of GDP respectively.

Perez (2006) shows that switching from the Cotonou preferences to the Generalised System of Preferences (GSP) and the Everything But Arms initiative would be less costly for most ACP countries than adopting the EPAs. Perez (2006) demonstrates that a marginally extended GSP would indeed be the optimum choice for ACP countries. Based on CGE analysis, the author also estimates that these options would dramatically reduce the industrial, fiscal and social burdens of the EPAs.

It is pertinent to note that the assumptions that have been made in each study in the design of trade simulations differ. In this respect many studies erroneously compare EPA negotiations to the status quo ante (Cotonou-Lomé). In reality in the absence of

EPAs, ACP countries would revert to the situation of other developing economies in the WTO: the Generalised System of Preferences (GSP) (or, potentially, GSP+, a more generous system which is available for a limited number of developing countries) and EBA for LDCs. It is often quite difficult to compare studies, even those ostensibly using the same methodology, due to different assumptions in trade simulations and because studies focus on different ACP regions/countries (Fontagné, Mitaritonna and Laborde, 2007).

Nevertheless, as noted by Fontagné, Mitaritonna and Laborde, (2007), we can say that overall, the literature based on partial equilibrium models tends to show that European exporters are the main beneficiaries of the EPAs, as their sales to the ACP markets increase substantially after the implementation of these agreements. Implementation pushes the prices of imports from Europe down, thus reducing the imports from non-EU countries. Accordingly, the United Nation Economic Commission for Africa (UNECA, 2005) provided an exhaustive assessment of the effect of EPAs on African economies, based on the SMART partial equilibrium model. The study forecasts that European firms could increase their exports by more than 20% while imports from third markets would fall, partly as a result.

Oyejide et al (2009) assessed the impact of the EPA on the Nigerian economy, using the Tariff Reform Impact Simulation Tool (TRIST), a partial equilibrium model designed to assess the short-term adjustment costs of tariff reforms developed by the World Bank with support by DFID². In this study the aggregate impact of the EPAs on government revenue, production and employment was found to be negative and small in relative percentage terms, while the impact on some sectors was found to be high. However, when support to mitigating EPA adjustment costs, which the region is pursuing in the negotiations with the EU, is taken into account, negative impacts should be ameliorated³.

Oyejide et al (2011) using the CGE model found that tariffs under EPA are cut more heavily in the last years so that the impact would be smaller in the earlier years. The

2 See Oyejide, A., Kwanishie, M., Adenikinju, A., Bankole, A., Adegbenro, R., Oghayei, S. and Ogwuche, S. (2009) "Impact of EPA Market Access Offer on Nigeria: An Updated Analysis" A Report Submitted to the Federal Ministry of Commerce and Industry, Abuja, Nigeria. See also a previous impact analysis using the same TRIST model: Andriamananjara, S., Brenton, P. von Uexkuell, J. and Walkenhorst, P. (2009) "Assessing the Economic Impacts of an Economic Partnership Agreement on Nigeria", World Bank Policy Research Working Paper 4920.

3 The TRIST modeling and the CGE study results are not directly comparable due to different assumptions, exclusion lists, scenarios and model dynamism. Hence we have removed the part that compared the two. Interested reader can access the TRIST study at the Ministry of Industry, Trade and Investment, Abuja.

nominal average protection will drop from just over 5% to about 2% in 2029, which marks the last phase of liberalization in the EPA arrangement. While industrial agriculture sector will experience the largest initial percentage-point cut, subsistence farming, Food, beverages and tobacco, Hunting and fishing, as well as the textile, leather, shoes and other garment industries will experience significant tariff reductions from 2026. With respect to the impact on government revenue, negative effect on total tax revenue over the period 2011-34 amounts to US\$ 11,835 million, and customs import duty loss is US\$ 6,404 million. The reduction in tariff revenue relative to the baseline was moderate in the initial liberalization phase, but after the full implementation of the tariff cuts it was projected to be up to nearly 30%. The total government revenue loss was up to 3.5% in the last period.

With respect to the impact on the composition of Nigeria's imports by origin the reductions in duties on imports from the EU raise Nigeria's imports from the EU by 10.2% leading to a diversion of US\$ 15.5 billion from other developed countries and US\$ 23.7 billion from non-African developing countries as well as US\$ 920 million and US\$ 2.25 billion respectively from ECOWAS and other African countries. This shift in the regional pattern of Nigeria's imports in favour of the EU became more pronounced from 2025 onwards. The impact on macroeconomic aggregates showed that the reduction in government revenue entails a drop in aggregate savings and investment with adverse knock-on effects on employment, which dominate the benefits from lower import prices for consumers while the real GDP over the whole simulation period (2010-34) is projected to fall by US\$ 8.5 billion. In terms of sectoral impacts, industrial agriculture and other Industries are projected to shrink most relative to the BAU scenario, while the sensitive sectors, in which tariffs on imports from the EU drop only marginally and late in the implementation phase, are still moderately affected, though imports and domestic market prices of goods, including consumer goods in all the sectors would fall relative to the no-EPA baseline scenario with some welfare benefit effect.

3. Simulation Results

First, the basic features of the liberalization status of the different products are identified and discussed. The products in category A (most of which carry 5% tariffs) are essential products that carry low tariffs and are liberalised first (on 1/1/2020) by 100% followed by the products in category B (with 10% tariffs) (in 2025 by 50% and 2030 by 100%) which are inputs and are liberalised after category A. The category C products are those products that are deemed to compete with imports (these carry 20% tariffs) and will be liberalised at a later stage in the liberalization schedule (i.e. in 2025, 2030 and 2035 by 50%, 50% and 100% respectively). The exclusion list contains products in category D whose tariffs will not be liberalized throughout the agreement.

According to the Table 1 which shows the Distribution of Sectors by Liberalisation category in West Africa, most of the tariffs of industrial agriculture, Food beverages and Tobacco and Textiles, Leather etc, are in the exclusion category and over 50% of subsistence farming products are in Category C while Mineral and Energy products are evenly spread out among the categories. Most of Forestry and Fishing are Categorised in A and B respectively.

Table1: Distribution of Sectors by Liberalisation category WEST AFRICA (% of Import)

Product Category	A	B	C	D	Total
AGI	17.2	10.3	0.8	71.7	100
AGV	18.3	53.6	1.2	26.9	100
ELV	51.4	48.6	0	0	100
SYL	84.5	0	15.5	0	100
PEC	0.4	99.6	0	0	100
MIN	35.5	50	5.1	9.4	100
ALIM	20.4	5.8	3.9	69.9	100
TEXT	3.1	12	5.2	79.7	100
INDU	41.8	20.6	15.3	22.3	100
ENE	49.9	40	8.2	1.9	100

In Table 2, the distribution of sectors by liberalisation category of Nigeria's imports from the EU indicates that the largest proportion of Livestock and Fishing (PEC) tariffs are in category B, while almost all forestry products (SYL) are in category C. Substantial proportion of Mineral (MIN) are in category B and D while Industrial agriculture (AGI), Food Beverages and Tobacco as well as textile and leather products are under category D. Most of the products of other industry (INDU) are categorised in category A and B. This import structure and the attendant tariff liberalisation are run under EPA Scenario A.

Table 2: Distribution of Sectors by Liberalisation category Nigeria's imports from the EU (Scenario A)

	A	B	C	D	Total (US\$)	
AGI	19.91	4.62	0.04	75.43	100	380,116,540.24
AGV	17.75	70.69	1.11	10.45	100	200,914,868.07
ALIM	25.81	4.67	3.81	65.71	100	237,931,110.76
ELV	20.57	79.43	0.00	0.00	100	370,736.45
ENE	43.35	49.89	5.90	0.86	100	1,528,464,487.68
INDU	41.56	26.99	13.94	17.51	100	1,698,196,658.19
MIN	28.13	39.80	0.43	31.64	100	149,973,001.19
PEC	0.14	99.86	0.00	0.00	100	232,217.90
SYL	0.00	0.00	100.00	0.00	100	222.00
TEXT	5.92	30.90	6.81	56.37	100	39,921,397.53

Some products were shifted from some categories to another as shown in Table 3 as a result of the Ministry's meeting with the manufacturers' Association of Nigeria (MAN). These shifts did not radically change the structure of the categorisation but could have tampered with the 75%-25% liberalisation agreed with the EU. Hence, ALIM lost only 4% from category D to A and B whilst a marginal shift of products from categories A and C to D occurred under ENE. Products of other industry (INDU) were shifted from A, B and C to D while only a little part of category C was moved to D under mineral (MIN) products. Also, about 1% of products moved from B to A under textile products (TEXT). The effects of these shifts are analysed under EPA scenario B.

Table 3: Distribution of Sectors by Liberalisation category Nigeria's imports from the EU (Scenario B)

	SCENARIO B: Post MAN Meeting					
	A	B	C	D		Total (US\$)
AGI	19.91	4.62	0.04	75.43	100	380,116,540.24
AGV	17.75	70.69	1.11	10.45	100	200,914,868.07
ALIM	26.49	8.48	3.81	61.23	100	237,931,110.76
ELV	20.57	79.43	0.00	0.00	100	370,736.45
ENE	43.29	49.89	5.84	0.98	100	1,528,464,487.68
INDU	40.26	25.94	9.05	24.75	100	1,698,196,658.19
MIN	28.13	39.07	0.18	32.63	100	149,973,001.19
PEC	0.14	99.86	0.00	0.00	100	232,217.90
SYL	0.00	0.00	100.00	0.00	100	222.00
TEXT	6.91	29.91	6.81	56.37	100	39,921,397.53

3.1. Evolution of tariffs during the EPA period

Figure 1 shows the evolution of effective tariffs from 2015 to 2035 in all the product categories. Because all product aggregates are combinations of the different liberalisation stages, each product is a weighted average of the liberalisation categories. For scenario A, tariffs are not cut until 2020 which is after the grace period of 5 years. Second, tariffs of PEC, ENE, and Forestry (SYL) products approach zero in 2035. The impact of those tariff lines which are explicitly excluded from tariff liberalisation, and placed in sensitive products list, is manifest in the effective tariffs of Food beverages and Tobacco (ALIM), Industrial agriculture (AGI), and textile and leather products (TEXT) which are far above zero in 2035.

With respect to Scenario B, while the features of scenario A were retained, there were slight differences between the two scenarios in some categories. One, final tariffs of ALIM and TEXT in scenario B are lower than in A. Two, final tariffs of INDU and MIN are higher in B than in A. These reflect the shifts that were done post MAN meeting discussed above. Because of this similarities in the curves of the simulations we only

show the graphs for scenario A and discuss the differences in the tables when necessary.

Figure 1: Evolution of Tariffs in Scenarios A & B

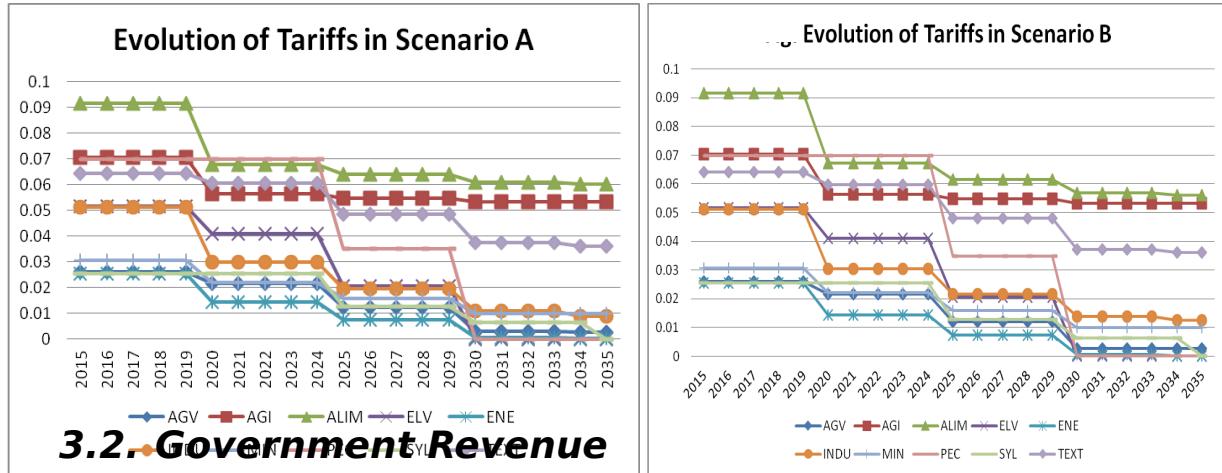
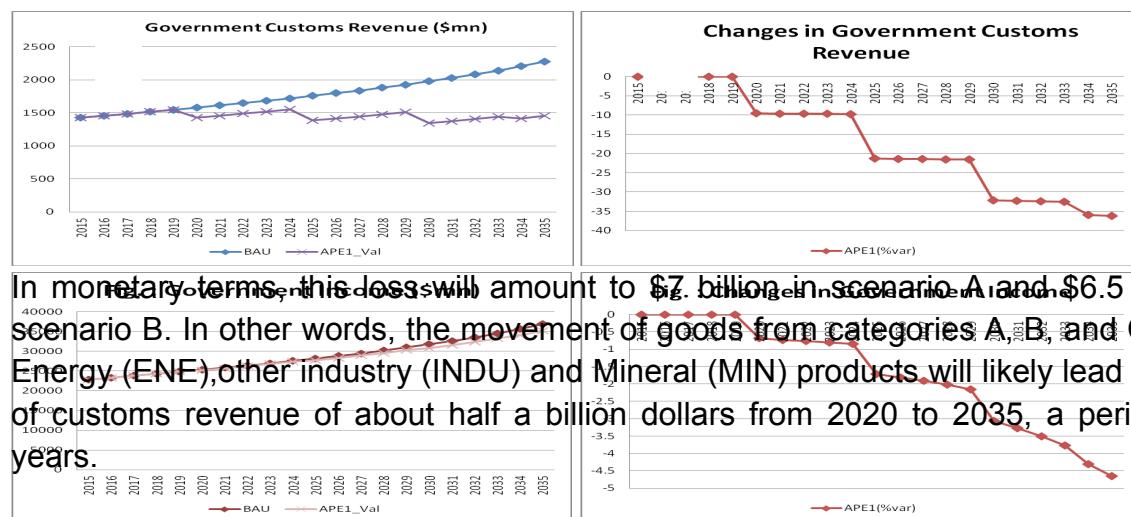


Figure 2 shows that government will likely lose revenue from import duties under EPA Scenario A and this loss will likely be significant, this depicted by the widening gap between the BAU and APE1 curves. At the initial period of liberalisation, government revenue from import duties will likely fall by 10% with possible increases to above 35% as liberalisation deepens by 2035. Whereas under the no-EPA scenario, the change is insignificant as it is not up to 0.4%. Scenario B shows similar trend of the three curves but the gap widens more in this scenario B.

The effect of the reduction of customs revenue on total government income is depicted in the lower part of Figure 2. Total government income reduced by about 0.5% at the commencement of liberalisation and this portrays a stepwise movement downward to about 5%.



In monetary terms, this loss will amount to \$7 billion in scenario A and \$6.5 billion in scenario B. In other words, the movement of goods from categories A, B, and C to D in Energy (ENE), other industry (INDU) and Mineral (MIN) products will likely lead to a gain of customs revenue of about half a billion dollars from 2020 to 2035, a period of 15 years.

Similar to the gain of revenue that will likely arise from customs duty collection between scenarios A and B, total government income also decreased but by a less extent in scenario B (\$11.38billion) compared to A (\$11.63billion). This is accounted for by the shifts of products between categories explained above.

Table 4: Impact on Customs revenue and Total Government Income

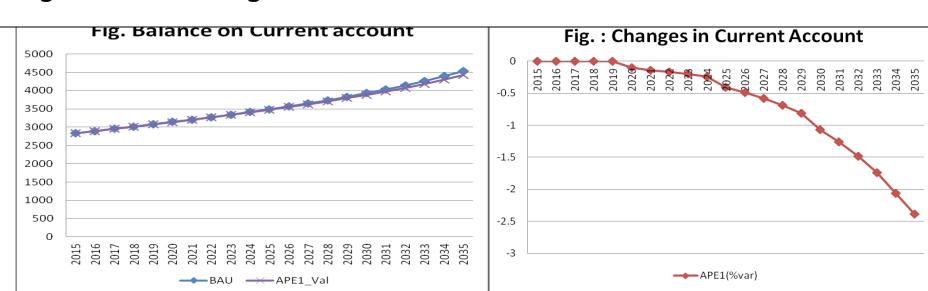
		2015-2035	
		Scenario A	Scenario B
Tax on Imports	BAU (\$mn)	37,591.65	37,591.65
	APE1_Value (\$mn)	30,539.14	31,052.07
	APE1(% var)	-18.76083652	-17.39636329
	Var_Val (\$mn)	-7,052.51	-6,539.58
Government Income	BAU (\$mn)	603,728.84	603,728.84
	APE1_Value (\$mn)	592,103.41	592,347.85
	APE1(% var)	-1.925604548	-1.88511635
	Var_Val (\$mn)	-11,625.42	-11,380.99

3.3. Impact on Macroeconomic Aggregates

Current Account

In view of the upsurge of imports from the EU due to cheaper import prices, Nigeria's current account will likely deteriorate with EPA liberalisation. This is depicted by the deviation of APE1 curve from the BAU trend in Fig. 3a. This deterioration will range from about 0.1% at the start of the liberalisation period (2020) and increase to about 2.5% in 2035 when all the product categories scheduled for liberalisation would have had their tariffs cut accordingly. While the rate of current account deterioration under the No-EPA scenario is not significant, the EPA Scenario B shows that the current account will likely

Figure 3a: Changes in Current Account



deteriorate further by \$34million which is the difference between the scenario A and scenario B values (see Table 4).

Table 4: Impact on Current account

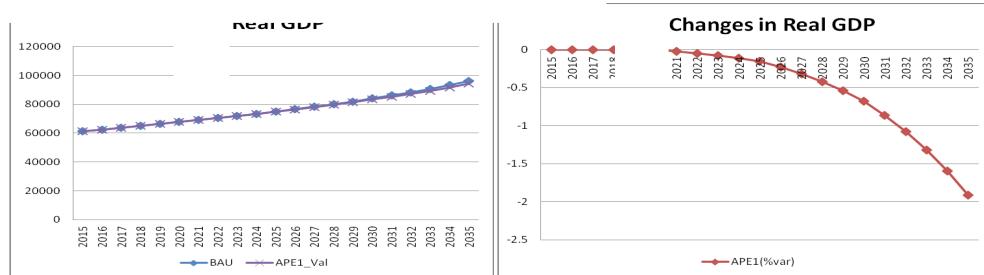
		2015-2035	2015-2035
		Scenario A	Scenario B
	BAU (\$mn)	74,721.07	74,721.07
	APE Value (\$mn)	74,154.60	74,120.20
Balance on Current Account	APE(%var)	-0.7581195	-0.80415216
	Var Val (\$mn)	-566.48	-600.87111

Impact on GDP, Interest rates and Investment

Figure 4 depicts the likely impact of the EPA on Nigeria's real Gross Domestic Product over the liberalisation period. The reduction in GDP from the BAU scenario is not substantial as the trend of both scenario A and BAU curves move in tandem. The graph of the change in real GDP shows that there will be a gradual reduction in real GDP up to a maximum of 2% as the impact of EPA liberalisation on GDP growth path becomes dramatic toward 2035.

In contrast, real GDP will fall by less than 0.5% throughout the period of study under the 'No EPA' scenario. The likely explanation for this is that despite that Nigeria does not sign EPA, its exports to the EU will be subject to higher tariffs under the GSP, leading to loss of competitiveness in the EU market, and a possible reduction of such exports which eventually leads to some insignificant decreases in national income.

Figure 4: Impact on Real GDP



The graph of the impact of scenario B on real GDP is similar in trend terms and the difference can only be discerned in monetary values. Table 5 shows these value changes. The real GDP will likely fall by US\$8.3billion in scenario A and by US\$8.9billion under scenario B. We note that rather than for the real GDP to improve under scenario B in view of the increase in the proportion of products placed in category D, it worsens instead. Table 5: Impact on Real GDP

		2015-2035	2015-2035
		Scenario A	Scenario B
Real GDP	BAU (\$million)	1,601,307.90	1,601,307.87
	APE1 Value (\$mn)	1,593,003.50	1,592,401.70
	APE1(%var)	-0.51860108	-0.55618099
	Var Val (\$million)	-8,304.34	-8,906.18

Interest rates will likely rise as a result of the signing of the EPA under scenario A (see Fig. 5) due to the reduction of national savings which then drives the likely fall in investment (Fig. 6). Interest rate is likely to rise by a maximum of 25% in 2035. Hence, the impact on investment will be negative for both total investment falling by between 1.5% and 12.5%, and public sector investment which will reduce by between 0.4% and 1.8% in EPA scenario A. It is observed that the reduction in public investment will likely mimic the schedule of tariff liberalisation and the behaviour of government revenue from customs duty. There is no much difference in this percentage change in scenario B. Also, the reduction of investment under 'No-EPA' scenario will not be quite significant as shown in the interest rate graph on the right of Figure 5.

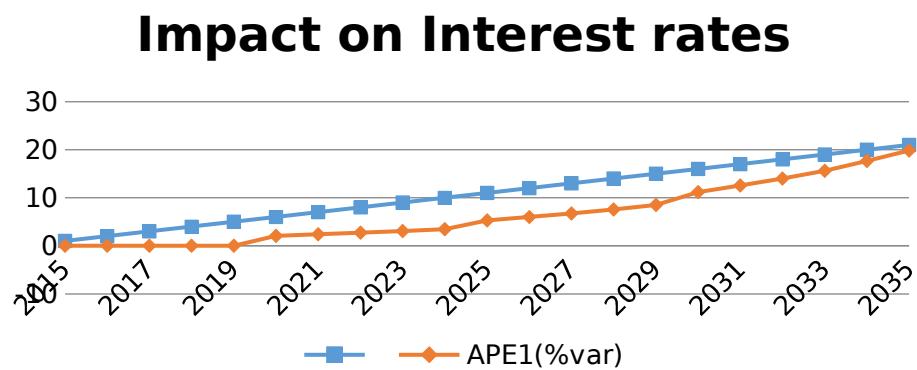
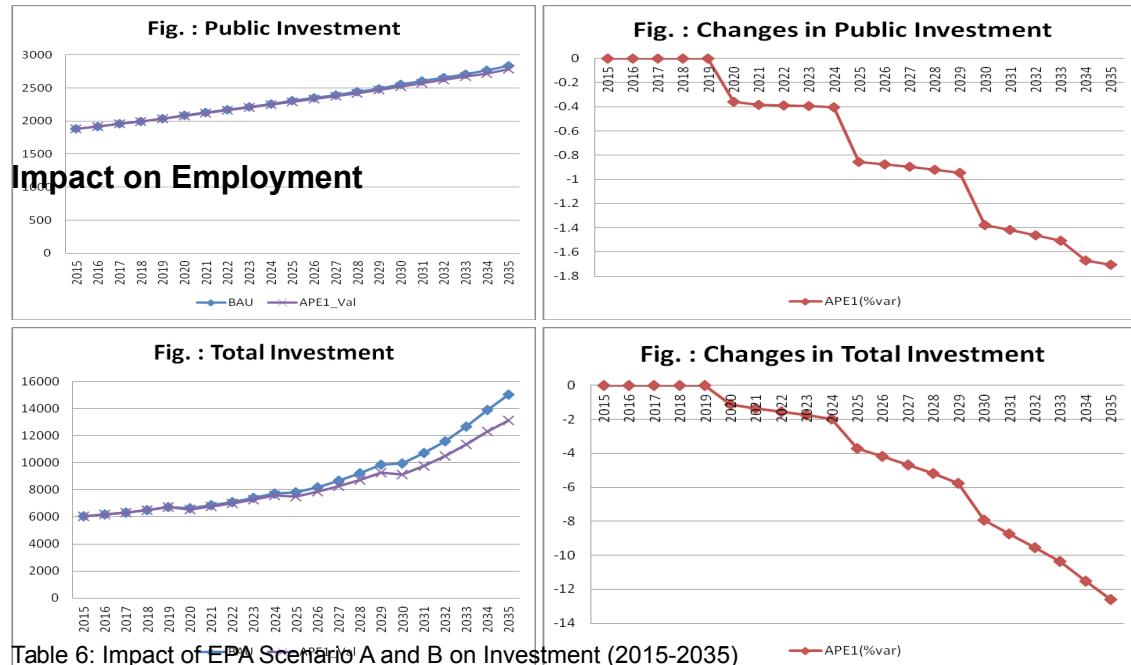


Figure 5: Impact on Interest Rates

The values of the change in public and total investments are indicated on Table 6. From the table, a shortfall \$396 million of public investment is recorded in EPA scenario A as

against \$399 million in Scenario B, showing the former as a better alternative. This also applies to total investment which shows the reduction to be larger in scenario B at \$10.3billion than that of scenario A at \$10.2billion with a difference of about \$100million.

Figure 6: Impact on Investment



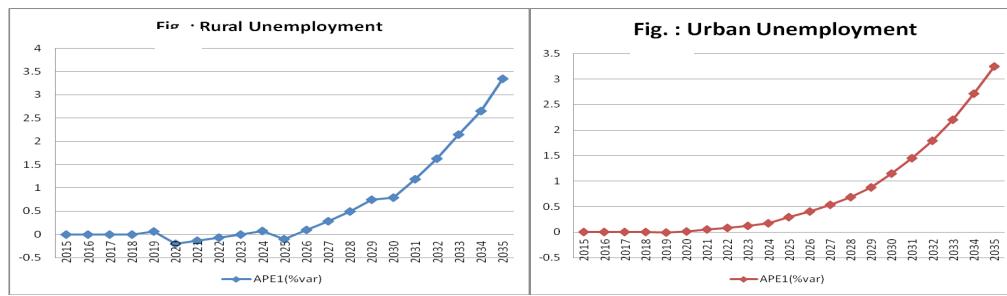
		Scenario A	Scenario B
Public Investment	BAU (\$mn)	48,755.42	48,755.42
	APE1_Value (\$mn)	48,358.98	48,356.24
	APE1(%var)	-0.8131198	-0.81874626
	Var Val (\$mn)	-396.43979	-399.18318
Total Investment	BAU (\$mn)	185,095.86	185,095.86
	APE1_Value (\$mn)	174,805.64	174,704.78
	APE1(%var)	-5.55940041	-5.61389268
	Var Val (\$mn)	-10,290.23	-10,391.08

3.4. Impact on Employment

In the model, urban skilled labour market has a property of rigid wages which implies that downturn in the economy do not translate to wage reduction whereas in the unskilled job market for both urban and rural areas, wages are flexible, suggesting that any downturn in the economy workers will be ready to earn lower wages for the same amount of effort. Therefore, a fall in domestic investment as a result of the increase in demand for EU imports which lead to a fall in import-competing sectors in Nigeria which will likely create a drop in urban skilled employment. As a result, unemployed skilled

urban workers will migrate to unskilled job market for a source of income. This movement then exerts a downward pressure on rural and urban unskilled wages. A second round effect is that labour market's impacts on household income will entail a drop in aggregate consumer demand which also induces producers to cut production as they begin to experience rising stock of unsold outputs. Hence, there will likely be a gradual increase in urban and rural unemployment (this happens because farms are also facing competition from imports from the EU) as liberalisation deepens under EPA scenario A and B (see figure 7). These increases will be quite small at first (less than 0.5% up to 2026) especially in the urban segment of the labour market but will likely become sharper as liberalisation becomes more intense, rising to about 3.5% in 2035 in both the urban and rural areas. Under the 'No-EPA' scenario, there is insignificant increase in urban and rural unemployment.

Figure 7: Impact on Employment



In both cases of rural and urban locations, the unemployment will likely become worse under scenario B than under scenario A (see Table 7).

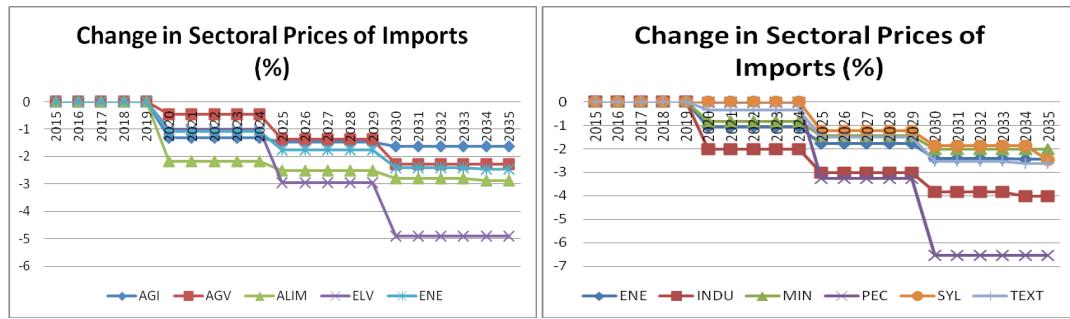
Table 7: Cumulated increase in unemployment

Indicator		Scenario A	Scenario B
Rural Unemployment	APE1(%var)	12.97	16.45
Urban unemployment	APE1(%var)	15.77	17.29

3.5. Impact on Prices of Sectoral Imports, domestic output and Household Consumption

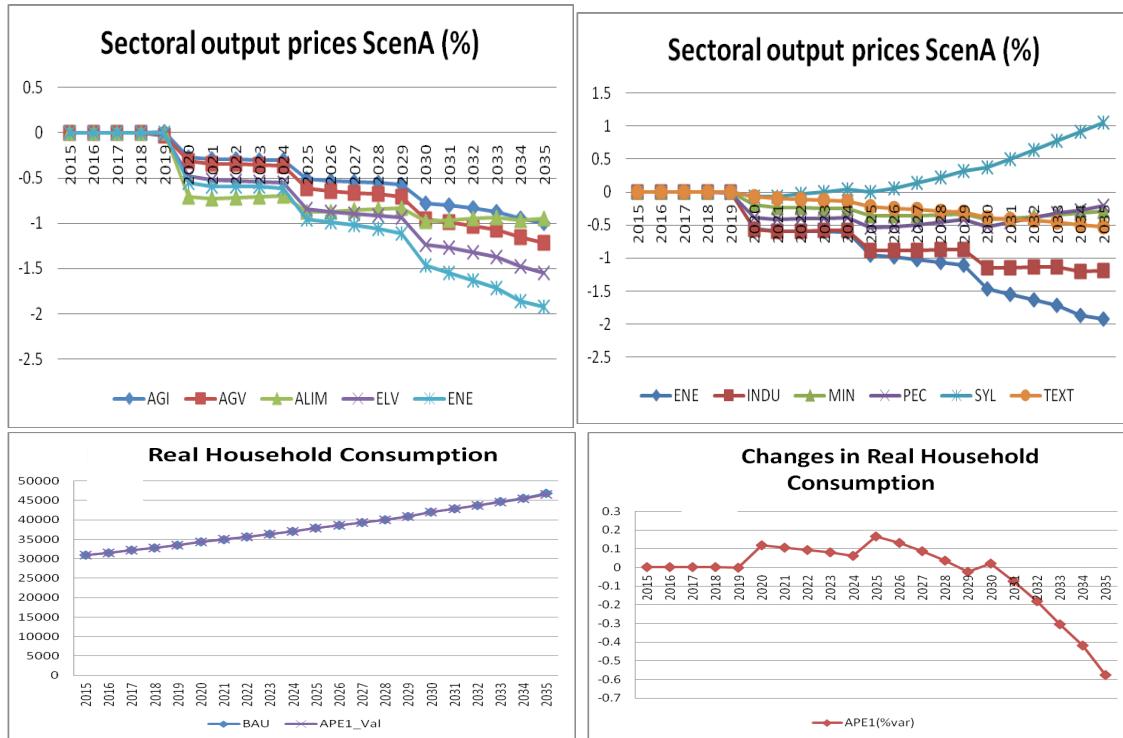
The increased imports from the EU will likely induce a fall in the prices of imports (see Figure 8). As a result, there is a high possibility of the price of domestic output falling but the reduction in this price is slightly more in EPA scenario A than B. In scenario A which is analysed (see Figure 9), industrial agriculture will likely suffer the least price reduction which will range from less than 0.5% to 1% followed by subsistence farming (AGV) and food beverages and tobacco (ALIM). The domestic price of SYL will likely rise in spite of the reduction of tariffs. In the 'no EPA' case, the price reductions will be almost zero in the period.

Figure 8: Impact on Sectoral Import Prices



Therefore, in the event of a reduction of prices of outputs induced by falling import prices as shown in Fig. 9, total real household consumption will likely rise. This will rise at first and fall later depicting an unstable trend under EPA scenario A. This falling trend is due to the overwhelming impact of loss of disposable incomes caused by the likely rise in both urban and rural unemployment. However, the falling trend of real household consumption will not be substantial even under this scenario A, getting to a maximum of 0.6% in 2035.

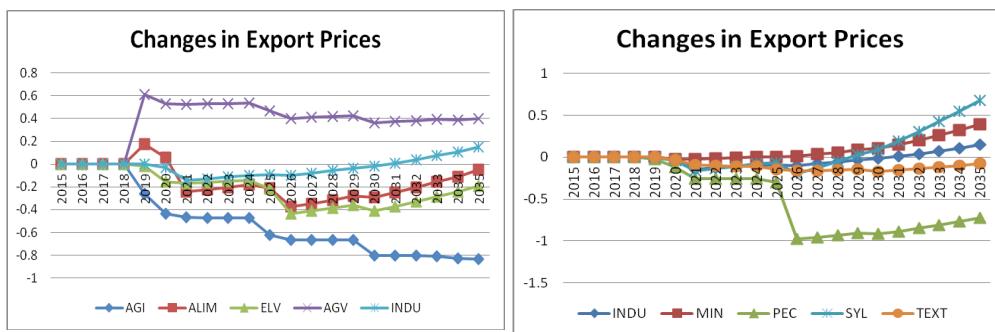
Figure 9: Impact on Price of domestic output and Household Consumption



Impact on Prices of Exports

The sectoral prices of export to the EU are expected to fall upon signing the EPA due to the fact that Nigeria's exports will enter EU duty free-quota free under both scenarios A and B, and increase under the No EPA scenario as Nigeria's exports will be subject to the Generalised System of Preferences (GSP). From figure 10, sectoral export prices will likely fall in accordance with a priori expectation for many of the products except AGV, INDU, SYL and MIN, especially at the early stage of the liberalisation. Export prices turned into an upward trend for some of the sectors probably due to telling effects of output reductions as liberalisation deepens. In the case of the 'NoEPA' scenario, prices of export to the EU in all sectors increase.

Figure 10: Impact on Export prices



3.6. Impact on Sectoral Imports from the EU

In figure 11, which shows the trend of sectoral imports from the EU, it is clear that the impact of the EPA on sectoral imports is positive in the sense that most sectors will increase their imports from the EU as a result of the more competitive imports that will be sourced from the EU. These increased imports will likely displace imports from ECOWAS, other developing countries and other developed countries which is consistent with previous findings discussed in the literature review section above. The fact that the impact is positive suggests that imports from the EU will be more competitive consequent on signing the EPA.

The monetary values and percentage changes in cumulative terms are shown on Table 8. While imports will likely increase by \$2.5million in the case of AGI and \$385million for AGV, it will be \$4billion and \$37.5billion for ALIM and INDU respectively.

Figure 11: Sectoral Imports from the EU (% change)

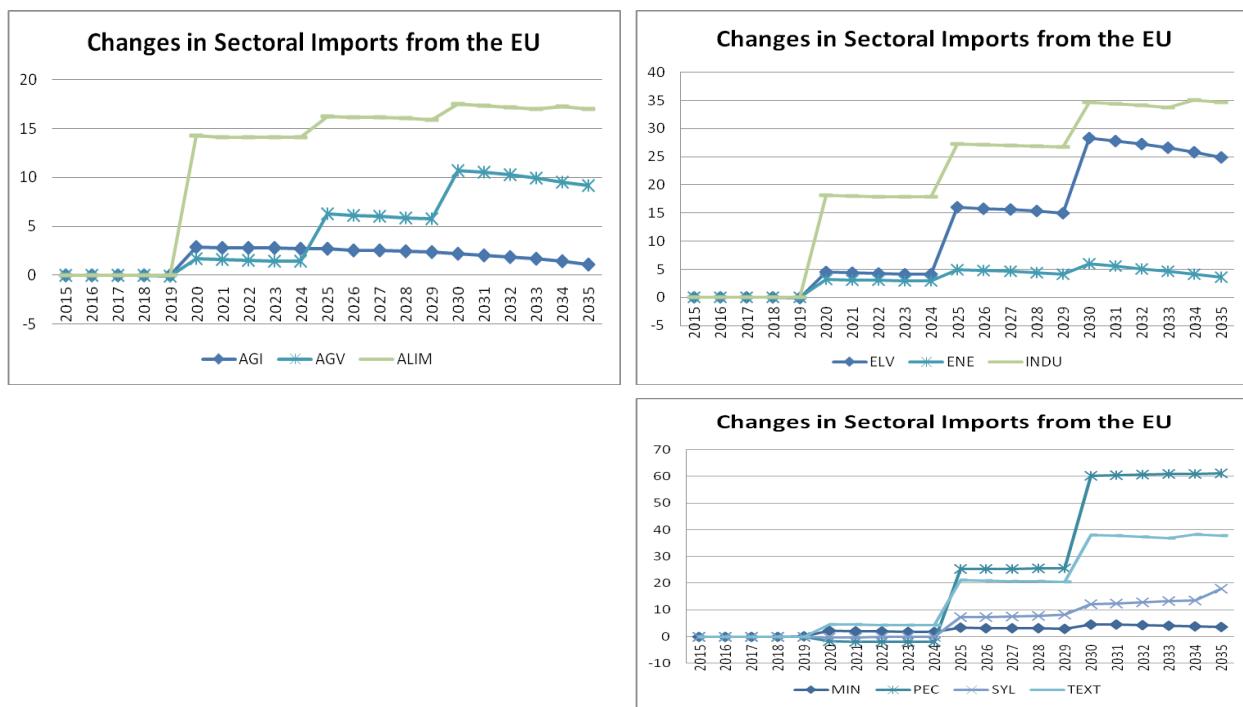


Table 8: Nigeria's Cumulative Imports from the EU (2015-2035)

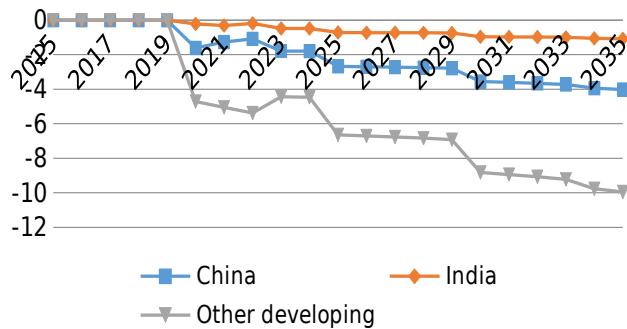
Category	Indicator	Amount	Category	Indicator	Amount
AGI	BAU (\$mn)	139.55	INDU	BAU (\$mn)	168,678.26
	EPA_VAL(\$mn)	142.07		EPA_VAL(\$mn)	206,182.86
	APE1(%var)	1.805804371		APE1(%var)	22.23440057
	Var_VaL(\$mn)	2.52		Var_VaL(\$mn)	37,504.60
AGV	BAU (\$mn)	7,389.89	MIN	BAU (\$mn)	614.68
	EPA_VAL (\$mn)	7,775.26		EPA_VAL (\$mn)	630.37
	APE1(%var)	5.214827284		APE1(%var)	2.552547667
	Var_VaL (\$mn)	385.36		Var_VaL (\$mn)	15.69
ALIM	BAU (\$mn)	31,738.16	PEC	BAU (\$mn)	15.8
	EPA_VAL (\$mn)	35,800.44		EPA_VAL (\$mn)	19.82
	APE1(%var)	12.79935573		APE1(%var)	25.44303797
	Var_VaL (\$mn)	4,062.28		Var_VaL (\$mn)	4.02
ELV	BAU (\$mn)	41.13	SYL	BAU (\$mn)	33.66
	EPA_VAL (\$mn)	46.93		EPA_VAL (\$mn)	35.71
	APE1(%var)	14.10162898		APE1(%var)	6.090314914
	Var_VaL (\$mn)	5.81		Var_VaL (\$mn)	2.05
ENE	BAU (\$mn)	0.22	TEXT	BAU (\$mn)	1,777.70
	EPA_VAL (\$mn)	0.23		EPA_VAL (\$mn)	2,111.73
	APE1(%var)	4.545454545		APE1(%var)	18.79000956
	Var_VaL (\$mn)	0.01		Var_VaL (\$mn)	334.03

3.7. Impact on Imports from Third Countries

In figure 12, the trend of imports from developing countries decomposed into those of China, India and other developing countries, is shown. EPA scenario A will likely divert imports from these three sources by about 5% in the case of China in 2035, 2% in the case of India and 10% from other developing countries. Therefore, it is shown that the increased imports from the EU will likely displace imports from developing countries because imports from the EU will be more competitive consequent on signing the EPA.

Figure 12: Imports from Developing Countries

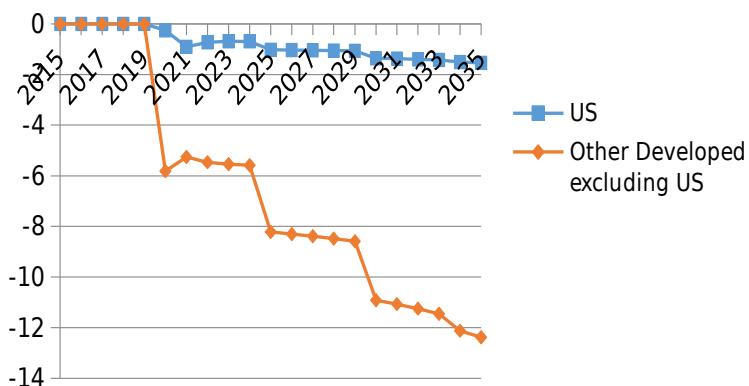
Imports from Developing Countries



The likely incidence of import diversion from other developed countries may also happen. Figure 13 indicates that the trend of imports from other developed countries and the US will likely fall. This reduction of imports from these two sources will reach about 2% for the US and 12% for other Developed countries in 2035. The explanation is also that increased imports from the EU will be more competitive consequent on signing the EPA which will reduce the import prices of the EU relative to those of US and other developed countries.

Figure 13: Import from Other Developed Countries

Imports from Other Developed Countries



3.8. Impact on Regional Integration

It is possible to also have a situation whereby increased imports from the EU will displace imports from ECOWAS member states particularly if the supply constraints are binding in the subregion. This possibility is confirmed in Figure 14 and 15 which shows the trend of imports in the EPA period. Though the sharp drop of imports from the rest of ECOWAS countries reversed a year after, imports from these countries will likely continue to reduce as the liberalisation deepens such that by 2035, imports from Benin will fall by 3%, Burkina Faso 3.4%, Cote d'Ivoire 3.1%, Ghana 2.9%, Mali 6.1%, Niger 3.6%, Senegal 0.2% and Togo 3.9%. Therefore, EPA will also divert Nigeria destined imports from these countries to the EU.

Figure 14: Impact on Regional Integration

Impact on Regional Integration

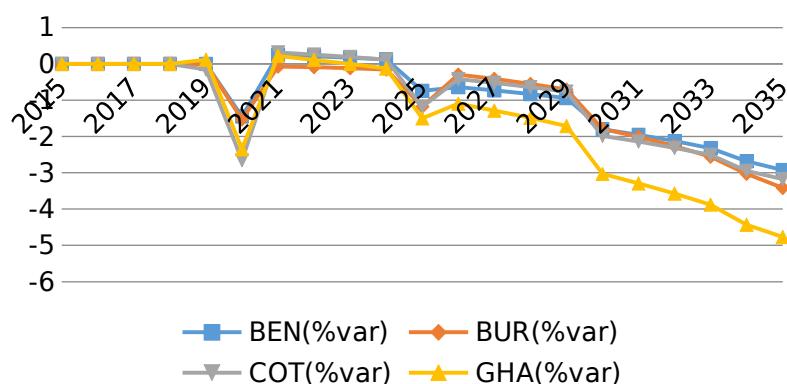
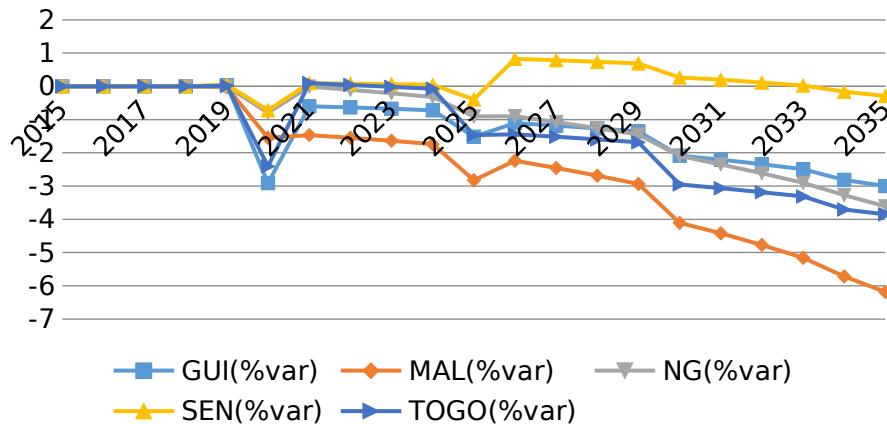


Figure 15: Impact on Regional Integration Cont'd

Impact on Regional Integration



4. Policy Implications and recommendations

Policy Implications

The analysis provided above of the impact of the EPA on the different aspects of Nigeria's economy shows more negative than positive consequences. These consequences lead to the suggestion that if Nigeria signs the EPA, then:

- There is need for guarantee of substantial transfers from the EU in the form of development funding different from the normal development aid to shore up government revenues and public investment
- Otherwise, the government will need to find alternative sources of funding public investments as income from trade taxes will fall. Increasing the VAT and ensuring more effective collection of taxes are such other revenue handles that can be considered.
- There will likely be an increase in both urban and rural unemployment. Instituting a policy of labour market reforms may reduce the unemployment rate induced by EPA implementation
- Since total household consumption may slightly fall, government transfers to the household sector need to be considered in the policy response to

EPA effects. But alternative employment channels may have to be created since falling government income may not permit adequate transfers.

- A ‘No Sign’ policy implies multiple trade policy in West African region and a precarious trade relationship with other ECOWAS which sign EPA.

Recommendations

- Nigeria needs a market access agreement supported with sufficient EU development funding.
- A ‘No Sign’ policy needs alternative strategy to cope with multiple trade policy in West African region and address ECOWAS membership
- Nigeria should develop a sound Trade and Industrial policy which makes use of the new options from EPA, CET and other trade negotiations.
- if Nigeria does not sign, it will need to establish well-functioning mechanism to fight smuggling
- Nigeria needs to facilitate improved understanding of the rules and regulations controlling imports into EU, among others.

5. Conclusion

ECOWAS formulated a new market access of about 75% opening and 25% exclusion to be offered to the EU in 2013. West Africa region shifting to a very high level of trade openness and dismantling trade barriers may have policy impacts. The three critical questions that this modelling exercise seeks to answer include what are the net benefits of EPA to Nigeria in the short, medium and long term; what are the net losses to Nigeria if the country opts out of EPA while all other ECOWAS countries choose to join; and what would be the cost of Nigeria staying out of the the EPA. The primary objective of the study, therefore, is to provide an understanding of the possible impacts of the new Market Access offer of 75%-25%.

The findings from the study suggest that EPA will generate negative impacts on government revenue and certain macroeconomic aggregates discussed above. Nigeria may also suffer the implication of not signing the EPA when the rest of ECOWAS countries have signed one of which is the expected increase in the rate of smuggling into Nigeria the imports from Europe into the neighbouring ECOWAS countries.

However, Nigeria needs to make the political decision to move in one way or the other as there is a limit to which technical analysis can drive the

conclusion of the issues. The political will to decide which way to go in view of the technical evidence is therefore critical at this juncture.

References

- Busse M. and H. Grossmann 2004. "Assessing the Impact of ACP/EU Economic Partnership Agreement on West African Countries. HWWA Discussion Paper 294. August.
- Busse, M. and H. Grossmann. 2007. "The trade and Fiscal impact of EU/ACP economic partnership agreements on West African countries", Journal of Development Studies 43(5): 787{811.
- COMESA Secretariat. 2003. Status of EPAs negotiations. Lusaka, Zambia. Mimeo.
- Fontagne, L., C. Mitaritonna, and D. Laborde. 2007. An impact study of the EU-ACP Economic Partnership Agreements (EPAs) in the six ACP regions. Mimeo.
- Karingi, S., R. Lang, N. Oulmane, R. Perez, M.S. Jallab and H.B. Hammouda 2005. "Economic and Welfare Impacts of the EU-Africa Economic Partnership Agreements", Economic Commission for Africa ATCP Working Paper No. 10.
- Milner, C., O. Morrisey and A. McKay. 2005. "Some Simple Analytics of the Trade and Welfare Effects of Economic Partnership Agreements", Journal of African Economies
- Oyejide, T. A., Kwanishie, M., Adenikinju, A., Bankole, A., Adegbenro, R, Oghayei, S. and Ogwuche, S. (2009) "Impact of EPA Market Acess Ofer on Nigeria: An Updated Analysis" A Report Submitted to the Federal Ministry of Commerce and Industry, Abuja, Nigeria.
- 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.
- Vollmer, S. Martinez-Zarzoso, I. Nowak-Lehman, F. D. and Klaan, N. 2009. "EU-ACP Economic Partnership Agreements: Empirical Evidence for Sub-Saharan Africa" World Development Report 2009 – *Development in 3D: Density, Distance, Division*, Welfare Effects of Economic Partnership Agreements, Journal of African Economies.