

TRADE, REVENUE AND WELFARE EFFECTS OF THE EAST AFRICAN COMMUNITY CUSTOMS UNION PRINCIPLE OF ASYMMETRY ON UGANDA: AN APPLICATION OF WITS-SMART SIMULATION MODEL

going to a supermarket. The exchange rate is 25 million Zimbabwe dollars for 1 US



By

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ECONOMIC POLICY RESEARCH CENTRE

APRIL 2011



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Abstract

Using the WITS-SMART simulation model, this paper provides insights on the effects of the East African Community Customs Union principle of asymmetry on Uganda with regard to trade, welfare and revenue effects since 2005. The end to the phased tariff reduction on category B products (these products were treated as sensitive products in 2005) increased trade creation and welfare effects. This effect shall have a reflection on consumer surplus in terms of reduced prices. The results also suggest that government shall incur a tariff revenue loss which should not be ignored given the fluctuating growth in the general trade tax revenue; hence the need to strengthen domestic ability to mobilise revenue or seek alternative source of funding.

The results also suggest that to realise more trade created and welfare, effective elimination of non-tariff barriers to trade that would affect the expected benefits accruing from the trade reforms within the region is necessary. The diversion effect resulting from the CET on respective products like woven fabrics of cotton, soap products and paints and vanishes by inefficient producers within the union could equally be displaced through building specialised capacity in the sectors.

Keywords: Trade, Welfare, Revenue, Category B Products, SMART, Principle of Asymmetry

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1. Introduction

Uganda joined other countries within the East African region to revive the defunct East African Community (EAC) in 2000. Article 5 (2) of the EAC Treaty provides for the establishment of a Customs Union (CU) followed by a Common Market (CM), a Monetary Union (MU) and, ultimately, a Political Federation. In 2005, the East African Community became a CU with the primary objective of creating more trade within the region and, in turn, enhancing growth. Under a CU, partner states are expected to adopt a Common External Tariff (CET), in addition to the elimination of internal tariffs. This is aimed at increasing trade flows between partner states in a large market created, and to reduce imports from non-partner states. Ultimately, with increased trade, the welfare of the citizens of partner states is expected to improve.

With the EAC integration, both positive and negative effects are expected on the newly liberalised sub-sectors including services and capital movements, and product levels under category B. The partner states agreed to a phased out approach on tariff reduction on a selected products. However, there is little, if any, empirical evidence to demonstrate the gains or losses to Uganda as a result of this trade reform. Theory on integration shows that there are trade effects, for example, trade creation and trade diversion, as well as impacts on the different actors like consumers, producers and governments in a given economy. Understanding of the magnitude and direction of these effects is important for countries such as Uganda, which derive substantial amounts of tariff revenue from international trade taxes to meet fiscal needs. The share of international trade tax revenue in total government revenue stood at 20 percent in 2000. It declined over time and stagnated at 9 percent since 2006.

As discussed in the subsequent section, Uganda trade more with Kenya relative with other EAC partner states. Considering the Uganda's net international trade tax revenue over time, the share of imports from Kenya declined from 46.7 percent in 2005 to 12.8 percent in 2009. **Table 1** portrays a declining trend in the value of imports of Kenya to Uganda since 2007. Further, the upward trend in duty is largely explained by the increase in import volumes. Although the government increased the excise duty on fuel in 2007/8 from Ushs 450 and Ushs 720 per litre to Ushs 530 and Ushs 850 on diesel and petrol respectively. There is also a notable declining contribution of excise duties and increasing trend for VAT in the trade tax. The decline in excise duties contribution to trade tax is explained by the government waiver of the duty on diesel for manufacturers in 2007/8 and the exemption of heavy fuel oil used in thermal plants, table salt, trucks from VAT in 2008/9.

Table 1: Uganda's revenue from international trade with Kenya ('000 US\$)

Tax type	2004	2005	2006	2007	2008	2009
Duty	6,623	8,488	12,225	15,290	18,074	18,205
Excise	71,912	125,833	52,178	93,449	63,163	58,824
VAT	30,454	-	49,297	62,798	79,224	77,777
Withholding tax	2,769	2,926	4,909	6,346	6,698	7,205
Net trade tax	111,758	137,247	118,608	177,883	167,159	162,010
Trade % of revenue	8	7	9	9	9	..

Source: UBOs, 2011 and WDI, 2010

Using the World Integrated Trade Solution Software-Software for Market Analysis and Restrictions on Trade (WITS-SMART) simulation model, this paper provides insights into the effects of the phased out tariff reduction on Uganda in terms of trade, welfare and revenue.

The rest of the paper is structured as follows: the next section focuses on the regional context of the EAC. Section three discusses the pattern and composition of Uganda's trade flow with EAC partner states. The theoretical underpinnings and modelling procedures is the subject of Section four. The simulation results are presented in Section five, and Section six concludes with implications for policy.

2. Regional Context

Trade liberalization has been an important part of East Africa's policy agenda in the recent past since the countries embarked on several structural adjustment efforts. More recently countries in the East African region have been involved in a number of trade initiatives, particularly regional economic integration and, in particular, the EAC and the Common Market for Eastern and Southern Africa (COMESA).

A treaty re-establishing the EAC was signed on 30th November 1999, and came into force in July 2000 following ratification by the initial partner states of Uganda, Kenya and Tanzania. Rwanda and Burundi joined the community later in July 2001. In accordance with the provisions of Article 75 of the Treaty, the Protocol provides for a number of elements including: elimination of internal tariffs; elimination of non-tariff barriers; establishment of a Common External Tariff (CET); and duty drawback refund and remission of duties and taxes, among others. The main objective of the EAC is to attain economic, social and political integration in East Africa and primarily to create trade within the region.

With the implementation of the EAC treaty, there are potential gains and losses in form of trade creation and trade diversion, respectively, as promulgated by Viner's (1950) seminal work on the formation of a CU. Literature has demonstrated that CUs have potential gains and losses on revenue and welfare (see for example Castro *et al.* 2004; Karing *et al.* 2005; McIntyre 2005; Rojid and Seetana 2010; Sangeeta *et al.* 2009). Yet, the five partner states of the EAC are at different levels of development, with Kenya being the most advanced, having more competitive industries. Given the unbalanced level of development, the reduction in tariffs between Kenya and other EACCU states was phased over time under the principle of asymmetry with a 2 percent reduction for a period of five years. This transition arrangement came to the end in June 2010, and since then all the EAC countries have zero tariff lines in effect. Worth noting is the fact that the tariff rates were set at zero percent between Uganda and Tanzania in 2005; and that between Uganda and the other partner states (Rwanda and Burundi) in July 2007. Thus, the extent of the gains and/or losses given the diversity of the countries in the union remains an empirical issue to be investigated.

Besides the trade effects; the CU is likely to impact on the different actors within the economy (consumers, producers and governments). For instance, consumers are likely to gain access to the widely available goods produced within the EACU. Whereas producers are likely to gain owing to the protection under CET, some domestic sectors are likely to face stiff competition from other countries in the region and, in this case, from manufacturers based in Kenya. By eliminating substantially the tariffs on category B products from Kenya, more pressure is likely to exert on Uganda to meet fiscal responsibilities.

Despite these developments, empirical evidence remains scanty regarding the extent to which Uganda has gained or lost. More specifically, what are the likely effects of the EAC on the newly liberalized product lines? To what extent does Uganda expect to benefit or lose from the CU? It is against this background that this paper employed the WITS-SMART simulation model to quantify the effects of the EACCU on Uganda in the areas of customs revenue, trade creation, trade diversion and welfare of consumers.

3. Pattern and Composition of Uganda's Trade with the EAC countries

This section presents a discussion on Uganda's trade performance with its Partners States since the turn of the century. To gain a wider picture, the partner states' trade performance with the rest of the world (RoW) is also put into perspective. The discussion focuses on the period before and after 2005. Table 2 shows that Uganda's exports to the EAC partner states grew during the last decade and more so following the removal of internal tariffs¹ in 2005. The total value of exports from Uganda to other EAC partner states increased more than four-fold from US\$ 87.1 million in 2001 to US\$ 377.4 million in 2008. While Kenya remains the main destination of Uganda's exports in the EACCU, Rwanda has consistently increased imports from Uganda almost matching Kenya level. Yet, exports to Tanzania remained unchanged over the period; and the least relative to other partner states.

Table 2 also indicates that during the period 2001 to 2009, the imports of the EAC partner states from the RoW, excluding Uganda, grew from US\$ 6.0 billion to US\$ 18.3 billion, respectively. In terms of value, it is evident that the EAC region relies on non-partner countries for imports more than the EAC partner states. Contrary to prior expectations, the implementation of the EACCU in 2005 seems not to have reduced imports from the RoW into the partner countries as the value of imports increased from US\$ 9.8 billion in 2005 to US\$ 20.7 billion in 2008. Uganda's export market share to partner states fluctuated between 1 and 2 percent before and after the implementation of the EACCU.

While imports from the region increased during the review period, partner states continued to export to the RoW. The value of exports from the other EAC partner states to the RoW grew from US\$ 2.3 million in 2001 to US\$ 8.7 million in 2008; but declined was recorded in 2009 to US\$ 7.8 million attributed to the global economic crisis during the same period. Following the formation of the EACCU the value of trade between the other EAC partner states and the RoW doubled from US\$ 4.3 billion in 2005 to US\$ 8.6 billion in 2008.

Figure 1 shows the trade performance year-to-year percentage changes. It is evident that Uganda's exports to partner states have been fluctuating overtime with a peak of 79.8 percent growth in 2007 but a sharp decline in 2009 and 2010 to 5.6 percent and 7.5 percent respectively. This decline could be attributed to other regional markets in Southern Sudan and the DR Congo where Uganda's exports increased in the same period under review. Likewise, the EAC partner states imports from the RoW also experienced a similar trend of fluctuation with a negative growth of 11.3 percent 2009.

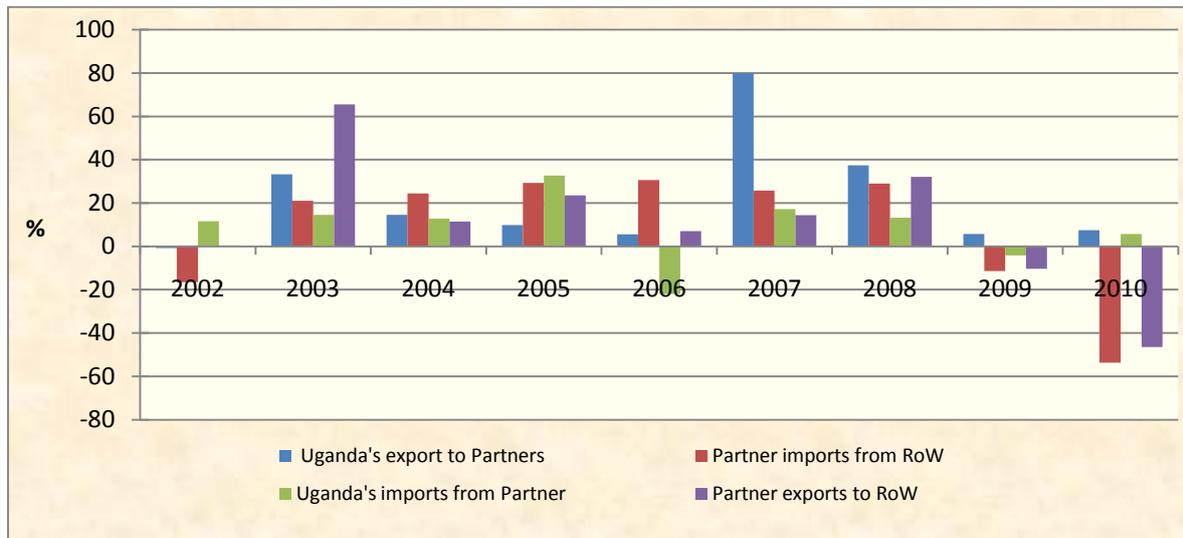
¹ The internal tariff in this case applies to the individual country MFN tariffs before the coming into effect of the EACCU.

Table 2: Uganda's Trade, 2001-2008 (US\$ '000)

Year	Kenya	Rwanda	Tanzania	Burundi	Total	Kenya	Rwanda	Tanzania	Burundi	Total	Uganda's market share
A	Partner imports from Uganda					Partner import from RoW					
2001	59,063	16,617	6,689	4,778	87,147	4,008,011	276,101	1,728,513		6,012,625	1.4
2002	61,504	12,873	5,774	6,267	86,418	3,074,637	251,200	1,691,193		5,017,030	1.7
2003	78,432	20,803	5,832	10,076	115,143	3,475,038	261,180	2,189,484	144,651	6,070,353	1.9
2004	76,903	24,683	12,155	18,113	131,854	4,563,456	284,288	2,531,186	172,729	7,551,659	1.7
2005	72,437	36,088	15,444	20,801	144,770	5,846,168	414,953	3,246,826	258,153	9,766,100	1.5
2006	88,002	30,525	13,749	20,554	152,830	7,232,947	557,036	4,526,728	433,636	12,750,347	1.2
2007	118,191	83,309	30,599	42,719	274,818	8,989,262	696,884	5,919,022	422,996	16,028,164	1.7
2008	164,631	136,895	30,528	45,383	377,437	11,127,817	1,145,623	8,087,735	315,157	20,676,332	1.8
2009	173,974	135,282	33,724	55,760	398,740	10,202,001	1,257,982	6,530,823	344,796	18,335,602	2.2
2010	190,301	149,323	37,612	51,333	428,569	-	-	8,012,874	487,685	8,500,559	5.0
B	Partner exports to Uganda					Partner exports to RoW					
2001	281,486	352	6,652	1	288,491	1,520,157	55,549	762,868		2,338,574	11.0
2002	312,871	1,367	7,510	56	321,804	1,400,372	45,959	901,362		2,347,693	12.1
2003	357,327	536	10,789	26	368,678	2,551,073	50,391	1,218,387	65,903	3,885,754	8.7
2004	399,198	637	15,779	71	415,685	2,683,206	98,170	1,465,834	82,725	4,329,935	8.8
2005	520,686	498	30,093	164	551,441	3,419,901	146,826	1,671,778	113,756	5,352,261	9.3
2006	400,965	488	28,709	17	430,179	3,501,656	137,733	1,864,681	228,522	5,732,592	7.0
2007	472,448	1,659	29,197	774	504,078	4,080,800	183,468	2,139,347	156,195	6,559,810	7.1
2008	511,333	2,879	55,483	909	570,604	5,000,949	398,330	3,121,079	141,786	8,662,144	6.2
2009	502,316	3,071	40,798	426	546,611	4,463,443	211,878	2,982,405	112,932	7,770,658	7.0
2010	511,019	7,433	56,528	1,089	578,069	-	-	4,050,546	109,372	4,159,918	13.8

Source: ITC calculations based on COMTRADE statistics

Figure 1: Trade performance - year to year percentage change



Source: Author's calculations based on ITC Calculations based on COMTRADE Statistics.

Further, Table 2 reveals that Uganda's main source of imports in the EAC region is Kenya, followed by Tanzania, Burundi and Rwanda. The imports of Uganda from Kenya, on average, stood at 95 percent of the total EAC imports before 2005 and at 90 percent after 2005. This means that Uganda's import share from other partner states increased after 2005. The imports from the EAC partner states increased from about US\$ 0.29 billion in 2001 to about US\$ 0.55 billion in 2005. There was, however, a sudden drop in the value of imports from the region especially from Kenya into Uganda from US\$ 5.2 million to US\$ 4.7 million following the implementation of the EACCU. The imports, however, picked up in 2008 to US\$ 5.1 but, again, declined in 2008 to US\$ 5.0 million attributed to political crisis that affected the trade flow in this year.

Table 3: Composition of Uganda's imports from different regions, 2005-2009 (%)

Year	EAC	COMESA	Europe	N. America	Middle East	Asia	RoW
2005	26.8	29.7	19.3	5.0	9.8	25.5	10.7
2006	16.8	20.0	20.8	3.7	18.5	28.4	8.4
2007	14.4	17.3	22.1	3.6	15.9	33.1	8.0
2008	12.6	14.5	22.4	3.1	16.1	34.2	9.7
2009	12.8	15.2	19.6	3.2	15.9	37.2	9.0

Notes: COMESA excludes the EAC COMESA members

Source: Author's computations based on Data from UBoS Statistical Abstract (2009) and ITC Database

A further analysis of Uganda's trade flow in Table 3 reveals that Uganda's imports from Asia increased from 25 percent in 2005 and 37 percent in 2009. The European exports to Uganda remained constant at about 20 percent, whereas those from COMESA (including those from other EAC partner states - Kenya, Burundi and Rwanda) experienced a decline from 30 percent in 2005 to 15 percent in 2008. The structure and the increasing trends of imports, especially from Asia, is primarily explained by the growth in private sector imports of capital and consumer goods such as petroleum products, iron and steel, electrical machinery, pharmaceutical products and sugars.

4. Analytical Framework

4.1 Theoretical Underpinnings

Schiff and Winters (2003) have argued that a well-crafted trade bloc can raise efficiency and economic welfare among its members. It is, therefore, known that Free Trade Areas (FTAs) change the prices of imports from partner states as a result of reduction or phasing of tariffs. The effective reduction of price changes the patterns of demand which may lead to adjustment of trade and output flows. This is achieved through facilitation of consumer choice and increasing competition among producers. When barriers are dropped, markets enlarge giving more efficient producers' entry into countries where prices are artificially high as a result of duties and other trade barriers. This is best explained by the theory of trade creation and diversion based on the conventional interpretation of Viner's (1950) work.

Trade diversion occurs when a CU (in this case the EACCU) diverts trade, away from a more efficient supplier outside the EAC region, towards a less efficient supplier within the union, for example Kenya, Tanzania, Burundi and Rwanda. This is likely to either reduce Uganda's national welfare or improve despite the trade diversion. On the other hand, trade creation occurs when a CU (in this case the EACCU) creates trade that would not have existed otherwise without the formation of the CU. In this case, as a result, supply will come from a more efficient producer of a given product. Gains occur if higher-cost domestic production is replaced by cheaper imports from one/or all EAC partner states. Unlike trade diversion, in all cases, trade creation raises a country's national welfare.

This implies that Uganda, being a member of the EAC, is likely to have both positive and negative effects on the economy, and it is the net impact that will determine whether this is a welfare gain or loss. DeRosa *et al.* (2002) noted that not all EACCU partner countries would realise net economic gains unless the CET were set appreciably below the average tariff level of Uganda, whose Most Favoured Nations (MFN) tariff line was far below those of other partner states. If the CET tariffs were set above Uganda's average MFN (about 11 percent), the country's economic welfare and the progress of its structural reform programme, to which trade reform has been central since the early 1990s, would significantly be compromised. In contrast, this implied that "Kenya and, in particular, Tanzania, stood to benefit under most EACCU scenarios, which would establish a CET well below their current average tariff rates (about 18 percent and 34 percent, respectively)" (DeRosa *et al.* 2004). McIntyre (2005) argues that the assessment of the static effects of forming an effective Free Trade Area (FTA), hinges on three important principles from the theory of integration, namely, the allocative/efficiency, competitiveness and complementarity.

The efficiency gains of economic integration are determined by whether the products from partner states are in direct competition with, or complementary to each other. In this case, considerable overlap in the range of commodities produced by partner states is critical for efficiency gains. This overlap should be accompanied by production with significant differences in production costs between states, which will espouse more efficient allocation of resources. This will foster intra-industrial trade of the partner states with a high potential to reap competitive gains. What is observed on the ground within the EACCU is different as most of the industries are agro-based, more or less producing similar products. In such instances, it is difficult to enjoy allocative gains. Typically, partner states of a developing country FTAs have a narrow range of exports of goods and services, in

this case mainly primary commodities that are exported to industrial countries (McIntyre 2005). Therefore, there is little scope for efficiency gains and the EACCU is unlikely to escape this phenomenon.

Complementarity is achieved when partner states of an FTA produce commodities that do not compete. The common tendency for non competitive economies in production is for them to be complementary, which make them to lose and gain in an FTA. When complementarity exists, the FTA will be characterized by the usual trade diversion and trade creation. Close examination of the FTA in the more industrialized countries in comparison with those in the developing countries, shows that their economies provide the necessary conditions for complementarity between the two groups. For example, the ongoing economic partnership agreements (EPAs) negotiations as part of the Cotonou Agreement between the European Union (EU) and Caribbean and Pacific (ACP) partner states is a typical example.

The trade flow and the type of commodities traded among the EAC partner states demonstrate that trade linkages are relatively weak. They exhibit limited complementarity. Work done by Khandelwal (2004) to develop estimates of bilateral product complementary indices in the COMESA and SADC regions revealed that within the COMESA FTA, product complementarities between Kenya's exports and the imports of the other partner states was an average of 38.6². With the exception of Egypt, the rest of the COMESA partner states exhibited very low average product complementarity for exports. Uganda had an average of 19.8. This means that the economies of the EACCU have limited complementarity and competitiveness.

4.2 Model Framework

This paper employs the SMART³ model because of its strength in analysing the tariff effect of a single market on disaggregated product lines. The model also has the ability to analyse the effects of trade policy reforms in the presence of imperfect substitutes. It is also more adequate than homogenous goods model when examining tariff preferences, as it avoids corner solutions. SMART is a static partial equilibrium model which was developed by the United Nations Conference for Trade and Development (UNCTAD) and the World Bank during the 1980's, mainly to assess the impact of General Agreement on Trade and Tariffs (GATTs) rounds. Its theory is borrowed from Laird and Yeats (1986).

The SMART model is contained in the WITS. It uses the Common Format for Transient Data Exchange (COMTRADE) - a commodity trade statistics; Trade Analysis Information systems (TRAINS)-tariff, para tariffs and non-tariff measures; Integrated Data Base (IDB) and Consolidated Tariff Schedules (CTS) databases which provide simulated analytical tools to simulate tariff reductions. SMART simulates the impact of a given trade policy change (tariff reduction) for a single market on the following variables: trade creation and diversion effects, net trade effect (aggregating trade creation and trade diversion effects); tariff revenue variations; and welfare effect, among others.

² The Complementarity index, which ranges from 0 to 100, measures the similarity between the export basket of a country and the import basket of another country. The higher the index between two countries, the greater the product complementarity between the two countries.

³ SMART is operable under strict *ceteris paribus* condition, this model provides a snapshot of the impact of tariff reductions while disregarding any adjustment process accompanying this change. The dynamics that affect the change are not explicitly modelled, or complex variations in the set up be considered (McIntyre 2005, p.15).

The underlying assumptions in this model are: import substitution elasticity assumed at 1.5, implying that products from different countries are imperfect substitutes; the import demand elasticities are taken at HS-6 digit level – *Armington assumption applies*⁴; export elasticities are infinite, that is, export supplies are perfectly elastic, which implies that world prices of each variety of products are given; full transmission of price changes when tariff and non-tariff distortions (ad valorem equivalents) are reduced or eliminated.

Like any other partial equilibrium model, SMART model fails to represent inter-sectoral links and interactions, as well as macro-level effects. Laird and Yeats (1986) summarised the derivation of the model beginning with simplified import demand and export supply functions and an equilibrating identity.⁵

The Uganda's j^{th} import demand (M) function for i^{th} commodity produced in the k^{th} partner state ($k = \text{Kenya, Tanzania, Rwanda and Burundi}$) is expressed in Eq. (1).

$$M_{ijk} = f(Y_j, P_{ij}, P_{jk}) \quad (1)$$

The k^{th} partner state's export supply function for i^{th} commodity is expressed as in Eq. (2).

$$X_{ijk} = f(P_{ikj}) \quad (2)$$

The partial equilibrium equation is thus expressed as in Eq. (3):

$$M_{ijk} = X_{ijk} \quad (3)$$

In a FTA situation the domestic price of the i^{th} commodity in the Uganda's j^{th} market will be equal to k^{th} partner state's export price plus transport and insurance charges. This price would change by an amount equivalent to the *ad valorem* incidence of any tariff as in Eq. (4).

$$P_{ijk} = P_{ijk}(1 + t_{ijk}) \quad (4)$$

The export revenue earned k^{th} partner state can be simplified as expressed Eq. (5).

⁴ This assumes that products are differentiated by country of origin, example; bananas from Bukoba-Tanzania are imperfect substitutes for bananas from Mbale-Uganda.

⁵ **Notations in the model**

M- Imports; *X*- Exports; *P*- Price

W- Welfare; *R*- revenue;

Y- National income **ad valorem** terms

TC- trade creation

TD- trade diversion

i- Subscript denoting commodity

j-Subscript denoting domestic/importing country data

k-Subscript denoting foreign/exporting country data

- (In certain expressions the subscript *K* is used to denote data for an

- alternative foreign/exporting country)

d- Prefix denoting change

M_n - imports from non-preference-receiving countries;

t- tariff rate distortion

V- output in the importing country

E_m- Elasticity of import demand with respect to domestic price;

E - Elasticity of export supply with respect to export price;

E_s- elasticity of substitution with respect to relative prices of the same product from different sources of supply;

$$R_{ikj} = X_{ikj} \cdot P_{ikj} \quad (5)$$

4.1.1 Trade Creation

The trade creation effect can be defined as the increased demand in Uganda for i^{th} commodity from the k^{th} partner state resulting from the price decrease associated with the transmission of price changes when tariff distortions are reduced or eliminated on the i^{th} commodity. Therefore, from Eq. (1) to (5); it is possible to write the formula for trade creation. First, it is possible to derive the total differential of domestic price with respect to tariffs and foreign price from Eq. (4).

$$\partial P_{ijk} = P_{ikj} \cdot \partial t_{ijk} + (1 + t_{ijk}) \partial P_{ikj} \quad (6)$$

The simplified expression for the elasticity of import demand with respect to the domestic price can be rearranged as follows:

$$\frac{dM_{ijk}}{M_{ijk}} = E_m \frac{dP_{ijk}}{P_{ijk}} \quad (7)$$

Here, we substitute Eq. (4) and (6) into Eq. (7) leading Eq. (8).

$$\frac{dM_{ijk}}{M_{ijk}} = E_m \frac{dt_{ijk}}{(1+t_{ijk})} + \frac{dP_{ijk}}{P_{ijk}} \quad (8)$$

The standard expression for the elasticity of export supply with respect to the world price can be rearranged as in Eq. (9).

$$\frac{dP_{ikj}}{P_{ikj}} = \left(\frac{dX_{ikj}}{X_{ikj}} \right) / E_x \quad (9)$$

From Eq. (3) it follows that

$$\frac{dM_{ijk}}{M_{ijk}} = \frac{dX_{ikj}}{X_{ikj}} \quad (10)$$

Substituting Eq. (10) into (9) and the result into (8) would produce the expression that can be employed to compute the trade creation effect. From Eq. (3) this is equivalent to Kenya and other EAC partner's growth of export of the i^{th} commodity to the j^{th} country. The expression for *trade creation* as expressed in Eq. (11).

$$TC_{ijk} = M_{ijk} \cdot E_x \cdot \frac{dt_{ijk}}{(1+t_{ijk}) \cdot (1+E_m/E_x)} \quad (11)$$

It may be noted that if the elasticity of export supply with respect to the world price is infinite then the denominator on the right hand side of Eq. (11) becomes unity and can be ignored.

4.1.2 Trade Diversion

The term **trade diversion** is used to account for the tendency of importers to substitute goods from one source to another in response to a change in the import price of supplies from one source but not from the alternative source. Thus, if prices fall in one overseas country, there will be a tendency to purchase more goods from that country and less from countries whose exports are unchanged in

price. Trade diversion can also occur not because of the change in the export price as such but because of introduction or elimination of preferential treatment for goods from one (or more sources) while treatment for goods from other sources remains unchanged (Laird and Yates 1986).

Again there could be simply a **relative** change in the treatment of the goods from different sources in the importing country by differential alterations in the treatment of different foreign suppliers.

(i) *Without Explicit Values for the Elasticity of Substitution*

If the elasticity of substitution between alternative suppliers is not known, then it is still possible to compute the trade diversion effect using a formulation developed by Baldwin and Murray (1977). However, for this approach, it is necessary to be able to calculate the level of import penetration by non-preference-receiving countries, that is, the level of imports from non-preference receiving countries in apparent domestic consumption (defined as domestic output of the i^{th} plus imports of i^{th} less exports of the i^{th} commodity). The formulation for trade diversion as expressed in Eq. (12).

$$TD_{ijk} = TC_{ijk} \cdot \frac{Mn_{ij}}{v_{ij}} \quad (12)$$

(ii) *With Explicit Values for the Elasticity of Substitution*

If explicit values are available for the elasticity of substitution between goods from different sources, then it is not necessary to use the approach outlined above. Alternatively, if there are no market penetration data available, then there may be no option but to assume values for the elasticity of substitution (and conduct simulations across a range of reasonable estimates). It is possible to define the elasticity of substitution as the percentage change in relative shares associated with a one percent change in the relative prices of the same product from alternative sources as expressed in Eq. (13).

$$E_s = \frac{d\left(\frac{\sum M_{ijk}}{\sum M_{ijK}}\right)}{\left(\frac{\sum M_{ijk}}{\sum M_{ijK}}\right)} \bigg/ \frac{d\left(\frac{P_{ijk}}{P_{ijK}}\right)}{\left(\frac{P_{ijk}}{P_{ijK}}\right)} \quad (13)$$

With imports from k^{th} country (Kenya and other EAC partner states), and K denotes imports from the K^{th} countries (RoW).

From this expression it is then possible to express the percentage change in the relative shares of the alternative suppliers in terms of the elasticity of substitution, the percentage change in relative prices and the original relative shares of imports from the alternative sources. By extensive expansion, substitution and rearrangement, it is possible to obtain the expression for trade diversion (TD) gain or loss, in equation (14): The term in equation (14) for relative price movement is specified in terms of the movements of the tariffs or the *ad valorem* incidence of non-tariff distortions for the two foreign sources.

$$TD_{ijk} = \frac{M_{ijk}}{\sum_k M_{ijk}} \frac{\sum_k M_{ijk} \sum_K M_{iJK} \cdot E_s \cdot \frac{d(P_{ijk}/P_{iJK})}{P_{ijk}/P_{iJK}}}{\sum_k M_{ijk} + \sum_K M_{iJK} + \sum_k M_{ijk} \cdot E_s \cdot \frac{d(P_{ijk}/P_{iJK})}{P_{ijk}/P_{iJK}}} \quad (14)$$

4.1.3 Total Trade Effect

The total trade effect is obtained by summing up together the trade creation and trade diversion effects. Results can be summed up for groups of suppliers either for individual products or across product groups.

4.1.4 Revenue Effect

The quantification of the revenue effect in WITS/SMART model is simple. The tariff revenue is given as the product of the tariff rate and the value of imports. Eq. (14) has direct application in estimating the **revenue effect** for the importing country. Otherwise the percentage increase in revenue is equal to the percentage increase in imports **plus** the percentage increase in prices. This can be shown by taking from Eq. (5) the total differential of revenue with respect to import price and the value of imports resulting into Eq. (15):

$$dR_{ijk} = P_{ijk} \cdot dX_{ijk} + X_{ijk} \cdot dP_{ijk} \quad (15)$$

Dividing the expression on the left-hand side (LHS) of Eq. (15) with the LHS expression of Eq. (5) and the right hand side of Eq. (15) with the RHD of Eq. (5).

$$\frac{dR_{ijk}}{R_{ijk}} = \frac{(P_{ijk} \cdot dX_{ijk} + X_{ijk} \cdot dP_{ijk})}{(P_{ijk} \cdot X_{ijk})} \quad (16)$$

Reducing Eq. (16) and substituting from Eq. (10) gives Eq. (17).

$$\frac{dR_{ijk}}{R_{ijk}} = \frac{dM_{ijk}}{M_{ijk}} + \frac{dP_{ijk}}{P_{ijk}} \quad (17)$$

In other words, equation (17) can be written as:

$$\frac{dR_{ijk}}{R_{ijk}} = \left(\frac{dt_{ijk}}{(1+t_{ijk})} \right) \cdot E_m + \left(\frac{(1+E_x)}{(E_x - E_m)} \right) \quad (18)$$

4.1.5 Welfare Effect

The welfare effect arises from the benefits consumers in the importing country derive from the lower domestic prices after the removal or reduction of tariffs or the *ad valorem* incidence of non-tariff distortions. As noted by Cline (1978), “for the pre-existing level of imports, any price reduction to the consumer merely represents a transfer away from the government of tariff revenue formerly

collected on the import and, therefore, no net gain to the country as a whole. But for the increase in imports, there is a net welfare gain equal to the domestic consumers' valuation of the extra imports minus the cost of extra imports at supply price (excluding tariffs)". Thus, the net welfare gain is normally estimated as the increase in import value times the average between the *ad valorem* incidence of the tariff barrier before and after their elimination. This welfare gain can also be thought of as the increase in consumer surplus as expressed in Eq. (19):

$$W_{ijk} = 0.5(dt_{ijk} \cdot dM_{ijk}) \quad (19)$$

The coefficient 0.5 captures the average between the ad valorem incidence of the tariff barrier before and after their elimination/reduction. Eq. (19) assumes that elasticity of export supply is infinite (Lang 2006). In the case where the elasticity of export supply is less than infinity the supply price is higher than before. The new domestic price of imports does not decline to the full extent of the tariff change and import expansion is less than in the case of infinitely elastic export supply. Welfare can still be computed using Eq. (19) but needs to be interpreted as a combination of consumer surplus and producer surplus.

4.2 Data Sources and Caveats

The data used for this analysis is in-built in WITS coupled with COMTRADE, TRAINs, IDB and CTs databases. These are real import figures reported by countries (in US\$) at customs points at different product levels. The major caveat of this database is that it does not capture informal trade statistics reported at country levels.

4.3 Method of Simulation

This study used a SMART simulation model to estimate the trade, revenue, and welfare effects of EACCU principle of asymmetry on selected product lines treated as sensitive (Category B products). The analysis captured the trend of tariff reduction since the inception of the EACCU between Uganda and Kenya and the rest of the EAC partner states whose products enjoyed zero tariffs. The simulation results are summarized in Tables 3 to 5. The number of products, however, varies across the various tables due to the import dynamics resulting from the tariff changes.

5. Results and Discussion

5.1 Trade Effects

It is evident from Table 4 that the net trade effect has been increasing over time with varied effects across product lines. More specifically, the net trade effect on iron and steel, and plastic and articles thereof consistently improved over time. In contrast, the trends were mixed for cement and soap products (see Figure 2). In 2010, all these product lines were estimated to have positive net trade effect, with a higher effect on soap products and least for iron and steel.

Total imports fell by US\$ 5.0 million in 2005 resulting from the adoption of the first transition 10 percent tariff on category B products from Kenya. The trade creation results across various product lines are negative, more especially on soap products, plastics and articles thereof, paper products, iron and steel and articles of iron and steel. This could be attributed to both the EAC common external tariff (0, 10, 25 and 30-100 percent on sensitive products) and the initial transitional tariff of 10 percent on category B products treated as sensitive. These tariffs were higher than the initial MFN tariff of (0-plant and machinery, 7-raw materials, 15-consumer goods) and the COMESA preferential tariff (of 0, 4 and 6 percent) which Uganda initially applied on some of these products.

This suggests that the imports from Kenya, along the new tariff line, became more expensive and less competitive in Uganda's market; hence the negative trade creation effect. The other reason could be attributed to the fluctuation in the import flows due to the high tariffs on some product levels (Table 2) between 2005 and 2007. Further, the results in 2005 also seem to suggest that there were no diversion effects on some products such as: cement, paints and vanishes, plastics and arts thereof, paper products, woven fabrics of cotton, yarn, base metal, iron and steel and furniture and beddings. This implies that at 10 percent tariff line, imports from Kenya, along these product levels, were less competitive to those from non-Union states, especially those from COMESA, which faced a lower tariff and resulted into the positive trade diversion effect.

However, with the subsequent reduction in the tariff line to 8 percent in 2006, the aggregate trade creation results improved by about 26.6 percent (US\$ 1.3 million). The results suggest that at 8 percent tariff line, products such as cement, soap products, other woven fabrics of cotton, yarn, iron and steel, articles of iron and steel, aluminium and articles thereof, tools and miscellaneous manufactured articles were gaining momentum and trade created substantially improved. On the other hand, the negative diversion effect on products including soap products, paper products, fabrics and manufactured cotton suggests a shift in imports from low-cost producers outside the EACCU to a high cost imports from a less efficient Union states, in this case Kenya.

Another important feature in Table 4 is the positive trade created worth US\$ 27,014 when Rwanda and Burundi joined the EAC bloc in July 2007. There was no evidence of trade diverted with the joining of these two partner states. The implication is that, Burundi and Rwanda have not had the capacity to competitively divert the market share of products coming outside the EAC trade bloc due to their limited economies of scale. The negative net trade effect during this period could in one part be attributed to the tension in Kenya at the time. This crisis affected the commodity prices in Uganda including fuel, intermediate inputs and other manufactured products both from Kenya and those outside the EAC Union. The results further suggest that as the tariff cut moved downwards to

4 percent, trade effects were majorly reflected on products such as cement, plastics and articles thereof, paper products, iron and steel and articles of iron and steel. Minimally, the effects were on paint and vanishes, soap products, cotton products, furniture and beddings and aluminium and arts thereof.

During 2008, iron and steel from EAC partner states remained relatively more competitive than those from outside the CU. While cement, iron and steel, and paper products registered positive diversion, the effect was negligible. Otherwise, the positive effect would imply that imports of these product lines from the non-union countries were relatively cheaper than those from other EAC partner states, especially those who were already enjoying full liberalisation at zero tariff rates.

Trade diversion was more reflected in 2009 as import inflows from Kenya increased with a further tariff reduction to 2 percent. These were more reflected but remained negligible in products including: insulated wire and other electric conductors, plastic products, manufactured cotton products, and woven fabrics and yarn. The results of the product line suggest that Uganda is more dependent on imports from Kenya partly because of lack of petrochemical industry for the case of plastic industry.

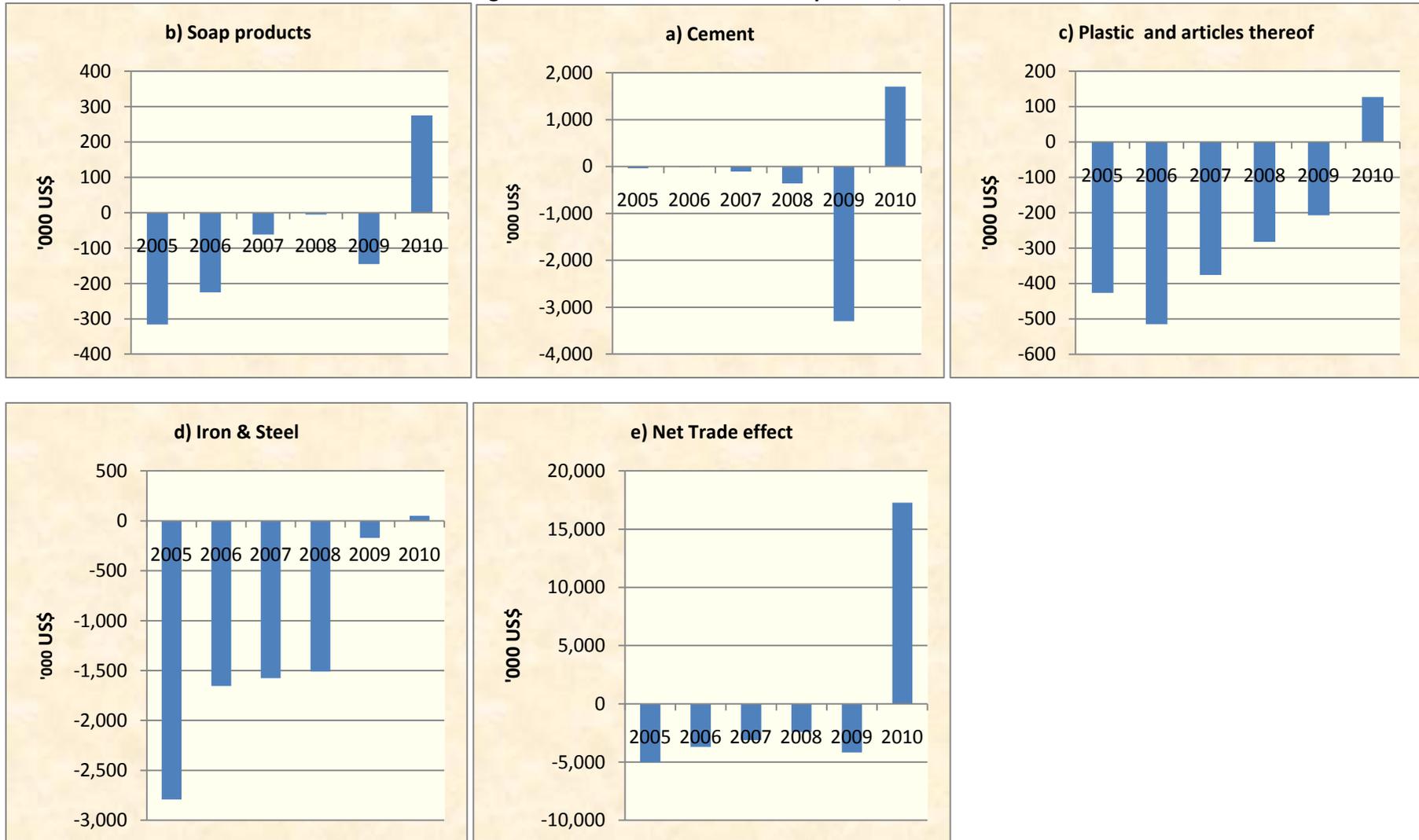
The results thereon also reflect more trade created between Uganda and the rest of the EAC partners, that is, Rwanda, Burundi and Tanzania. The creation effect was positive and increased by two-fold from US\$ 286,958 in 2008 to about US\$ 572,916 in 2009. It is important also to note that in 2009, the trade created results more than worsened for products such as cement, soap products and paper products compared to 2008. This indicates that the prices of imports from union partners during this period fell short of cognizable impact against the prices of goods that came from outside the CU. This could partly be attributed to the after effect of the global financial crisis that affected the chain of production in form of increased costs. The small trade creation effect could also be attributed to lesser economies of scale among the EAC partner states.

Table 4: Simulated trade effects (US\$ '000)

	2005 (at 10% tariff)			2006 (at 8% tariff)			2007 (at 6% tariff)			2008 (at 4% tariff)			2009 (at 2% tariff)			2010 (at zero tariff)		
	All	Diversion	Creation	All	Diversion	Creation	All	Diversion	Creation	All	Diversion	Creation	All	Diversion	Creation	All	Diversion	Creation
Products (HS-6 digit level)																		
Cement	-36.864	0.001	-36.866	-7.756	-0.001	-7.754	-107.110	0.001	-107.111	-360.852	0.003	-360.854	3,297.420	-0.002	3,297.410	1,704.043	0.000	1,704.044
Paint & Vanishes	-9.784	0.000	-9.784	-14.390	-0.002	-14.388	-16.839	-0.001	-16.839	-1.985	0.000	-1.985	-13.804	-0.002	-13.803	24.633	-0.001	24.634
Soap products	-316.149	-0.006	-316.144	-225.429	-0.003	-225.425	-61.813	-0.001	-61.811	-4.895	0.000	-4.895	-145.442	-0.001	-145.440	275.018	-0.002	275.020
Glues																11.971	0.000	11.971
Plastic & articles thereof	-426.782	0.002	-426.783	-515.424	-0.001	-515.422	-375.812	-0.009	-375.798	-281.838	-0.001	-281.839	-206.958	-0.006	-206.953	127.386	0.005	127.382
Wood products	-50.182	-0.004	-50.174	-45.474	0.003	-45.475	-19.740	-0.005	-19.734				-67.109	0.001	-67.109	129.154	0.006	129.144
Paper Products	-848.178	0.002	-848.177	-868.083	-0.003	-868.079	-396.425	-0.004	-396.418	-199.880	0.002	-199.881	-348.021	-0.002	-348.017	477.073	0.004	477.068
Other woven fabrics of cotton	-28.513	0.001	-28.513	-2.309	0.000	-2.307	-0.282	0.001	-0.285				-0.919	-0.001	-0.916	1.756	-0.001	1.759
Yarn	-3.255	0.001	-3.256	-0.788	-0.001	-0.786	-0.733	-0.001	-0.731	-1.445	-0.002	-1.443	-2.493	-0.001	-2.489	3.405	0.002	3.404
Fabrics	-11.688	-0.002	-11.681	-13.377	-0.005	-13.371	-12.962	-0.003	-12.961	-2.029	-0.001	-2.028	-9.263	-0.010	-9.250	15.847	0.004	15.848
Narrow Woven fabrics	-0.194	-0.001	-0.194	-0.650	0.001	-0.650	-0.953	-0.001	-0.954	-0.578	0.001	-0.578	-0.731	0.001	-0.729	0.851	0.003	0.849
Textile fabrics impregnated	-1.479	-0.003	-1.477	-7.280	-0.001	-7.279	-8.266	-0.001	-8.265	-10.441	0.000	-10.441	-6.712	0.003	-6.708	0.057	0.000	0.057
Manufactured Cotton Products	-37.067	-0.002	-37.063	-48.535	-0.003	-48.529	-12.479	0.000	-12.475	-13.964	-0.002	-13.963	-24.332	-0.005	-24.323	0.908	0.003	0.906
Woven fabrics & Yarn	-73.550	-0.003	-73.550	-23.386	-0.001	-23.385	-65.196	-0.005	-65.190	-4.225	-0.003	-4.222	-7.361	-0.005	-7.356	10.229	0.002	10.227
Iron & Steel	2,791.052	0.001	2,791.064	1,654.360	0.004	1,654.370	1,576.360	-0.004	1,576.350	1,509.990	0.003	1,509.990	-170.160	-0.003	-170.160	48.962	-0.001	48.964
Arts of Iron & Steel	-211.023	-0.006	-211.013	-180.815	-0.002	-180.813	-426.641	-0.004	-426.636	-292.504	-0.002	-292.502	-68.786	-0.002	-68.780	56.776	0.005	56.767
Aluminium & Arts thereof	-68.186	0.000	-68.185	-20.472	0.001	-20.474	-5.090	-0.001	-5.089	-0.010	0.000	-0.010	-8.645	-0.003	-8.642	16.610	0.000	16.610
Tools	-48.319	0.001	-48.321	-6.099	-0.002	-6.097	-10.934	-0.004	-10.931	-1.394	-0.002	-1.393	-0.735	-0.003	-0.733	0.074	0.002	0.073
Miscellaneous Arts of base metal	-7.364	-0.001	-7.363	-2.579	0.002	-2.580	-1.577	-0.001	-1.574	-2.046	-0.005	-2.041	-1.860	-0.001	-1.857	1.610	0.000	1.609
Insulated wire & other electric conductors	-25.540	-0.009	-25.533	-31.593	0.002	-31.595	-23.473	-0.007	-23.469	-3.526	-0.004	-3.522	-50.917	-0.007	-50.911	94.528	0.008	94.521
Furniture & bedding	-7.473	0.001	-7.473	-8.500	-0.001	-8.499	-3.513	-0.001	-3.511	-0.861	-0.006	-0.855	-1.476	-0.005	-1.472	2.011	0.001	2.010
Miscellaneous manufactured articles	-22.375	-0.003	-22.371	-13.461	0.000	-13.460	-17.815	-0.002	-17.813	-6.773	-0.006	-6.767	-30.164	-0.004	-30.160	51.506	0.000	51.506
Dairy Products																193.642	0.004	193.638
Tea																15.947	0.002	15.945
Rice																9.296	0.000	9.296
Wheat or Meslin Flour																1.109	0.000	1.109
Vegetable, Fats & Palm oil																176.431	0.000	176.430
Chewing gum																230.610	-0.003	230.610
Crisp bread																31.475	0.004	31.470
Mixture of Juices & Unfermented																10.812	0.002	10.809
Beverages																42.287	0.006	42.279
Tobacco products																13,496.510	0.001	13,496.510
Rest of EAC*							27.014	0.000	27.014	286.958	0.000	286.958	572.916	0.000	572.916			
Net Trade effect	-5,025.017	-0.030	-5,024.985	-3,690.760	-0.013	-3,690.730	-3,117.000	-0.053	-3,116.930	-2,412.280	-0.025	-2,412.250	-4,176.350	-0.058	-4,176.260	17,262.530	0.056	17,262.470

Source: Author's computations based on SMART simulations

Figure 2: Trade creation of selected products, US\$ '000



It is further noted that trade effects are more reflected in the first period of a fully fledged EACCU. This is where all tariff lines across all products are at zero percent except for products that do not meet the Rules of Origin criterion. The result seem to suggest that trade created in 2010 would grow by 513.3 percent, that is, a tune of US\$ 17.3 million, with a diversion effect on few products including cement, chewing gum, soap products, paints and varnishes, iron and steel, woven fabrics of cotton, aluminium, and base metal. This indicates that these are the only products that have become competitive against imports coming from outside the CU in Uganda's market.

The figures in Table 4 also give an indication of new products with large trade creation effects such as dairy products, tea, vegetable, fat and palm oil, beverages, and more specifically tobacco products in 2010. The large positive creation effect for tobacco would, however, remain affected by the high internal taxes such as excise duty as well as VAT, thus resulting into low consumer surplus.

The huge negative trade effects for the products such as soap products, cement, paper products, plastics and articles thereof, iron and steel could be attributed to the transition tariff lines as well as the high customs tariff of about 10 to 25 percent on a given product. Likewise, the divergent figures on trade effects could as well be qualified to sectoral bottlenecks and external shocks.

5.2 Revenue Effects

The results in **Table 5** indicate that at the inception of the intra-EAC transition tariff at 10 percent, the revenue effect was about US\$ 4.6 million in 2005. This improvement in the revenue could be attributed to the raised tariff line on certain products and also increased imports resulting from the subsequent tariff cut for products like iron and steel, plastics and articles thereof, soap products, wood products, articles of iron and steel, aluminium and articles thereof, among others.

However, the sequential reduction of the tariff by 2 percent on imports from Kenya subsequently led to tariff revenue loss on certain products including: aluminium and allied articles from US\$ 226,401 in 2005 to US\$ 5,558 in 2007, Iron and steel US\$ 2.6 million in 2005 to US\$ US\$ 133 million in 2009, art of base metal, soap products, plastic and articles thereof underwent substantial revenue effect. Uganda also recorded a tariff loss of about US\$ 28,338 in 2007 and US\$ 127,100 in 2009 both for category B and A products⁶ from other EAC partner states whose products faced a zero percent tariff line. The revenue effect is expected to widen from US\$ 3.0 million in 2009 at 2 percent tariff line to a negative loss of about US\$ 5.3 million in 2010. This is attributed to the overall c.i.f value of imports declining as duty free imports from Kenya replace dutiable non-Union partner imports. This is as a result of the commencement of a fully fledged EACCU which took effect on 1st July, 2010, with a zero tariff on all product levels from all partner states that meet the Rules of Origin criterion.

⁶ Unlike category B commodities, category A commodities underwent immediate zero tariff in 2005.

Table 5: Revenue effects of tariff reduction for Uganda ('000 US\$)

Products (HS-6 Digit Level)	2005(10%)	2006(8%)	2007(6%)	2008(4%)	2009(2%)	2010(0%)
Aluminium & articles	226.401	21.256	5.558	0.005	10.246	-21.061
Articles of iron & steel	148.098	205.177	180.588	31.843		-58.391
Cement	28.789	6.797	88.079	306.350	1034.894	
Fabric	9.366	9.35	5.634	2.297	9.955	-18.161
Furniture & beddings	9.607	16.575	7.353		1.765	-1.985
Insulated wire, & electric conductors	40.726	48.585	41.631	7.846	100.641	-196.211
Iron & Steel	2,554.478	1,472.668	1,014.44	1,239.612	133.603	-25.674
Manufactured cotton products	97.500	59.774	78.91	11.694	32.414	-54.533
Misc. Art of base metal	5.207	1.919	1.163	3.079	1.567	-1.484
Misc. manu art.	29.599	17.361	23.772	10.595	44.147	-80.543
Narrow woven fabrics	0.247	0.711	1.18	0.704	0.756	-0.818
Other products						-4,019.91
Other woven fabrics of cotton	10.068	1.216	0.239		1.129	-2.31
Paint & vanishes	28.789	20.391	103.674	308.305	1,048.509	-25.896
Plastic & articles thereof	476.572	466.484	361.747	281.121	211.422	-138.201
Soap products	396.157	236.21	76.647	5.136	200.057	-404.548
Textile fabrics impregnated	1.220	0.432	0.677	0.960	0.617	-0.064
Wood Products	645.355	735.727	374.341	306.28	288.893	-279.051
Yarn	1.687	0.316	0.351	1.042	2.153	-3.345
Rest of EAC partners*	-	-	-28.338	-63.550	-127.100	
Net Revenue Effect**	4,561.768	3,263.87	2,362.235	2,602.064	3,027.511	-5,332.19

Notes: figures in the parenthesis refer to the tariff rates; ** the results exclude the three-band EAC-Common External Tariff revenue. The reason why this was not included in this simulation is basically to capture the effect of the regional trade reform on revenues mobilized from within the trade bloc; and the 2010 results are projections.

Source: Author's calculations based on SMART Simulations.

The revenue losses since 2005 are due to the sequential intra-tariff cuts coupled with the fall in the import value during the same period (see Table5). The decline in the import value is partly explained by the rise in the intra-EAC transitional tariff line between Uganda and Kenya and the CET above Uganda's initial MFN tariff lines. But could also be attributed to the tax incentives the government adopted in 2007/8 budget speech, that is, 10 year tax holiday to companies engaged in value added exports; withholding tax exemption on interests, raw materials and plant and machinery; stamp duty exemption on increase in share capital and mortgages and duty and tax exemption on raw materials and plant and machinery among others. In particular, it could also be explained by the political crisis that eroded the business climate in Kenya in 2007 as well as coupled with the effect of the global financial crisis.

It is noticeable in Table 6 that net trade revenue fluctuated in 2009 resulting from import VAT. The fluctuation is a result of the exemption of heavy fuel oil used in thermal plants, table salt and trucks from VAT in 2008/9. But also the revenue effect to international trade tax revenue is declining from 1.6 percent in 2005 to about 0.2 percent by 2009. The zero percent tariffs on imports from Kenya explains this projected loss given the fact that Kenya's imports accounted for, on average, 18 percent in Uganda's share of total imports since 2001 (see Table1). Although the growth is reflected

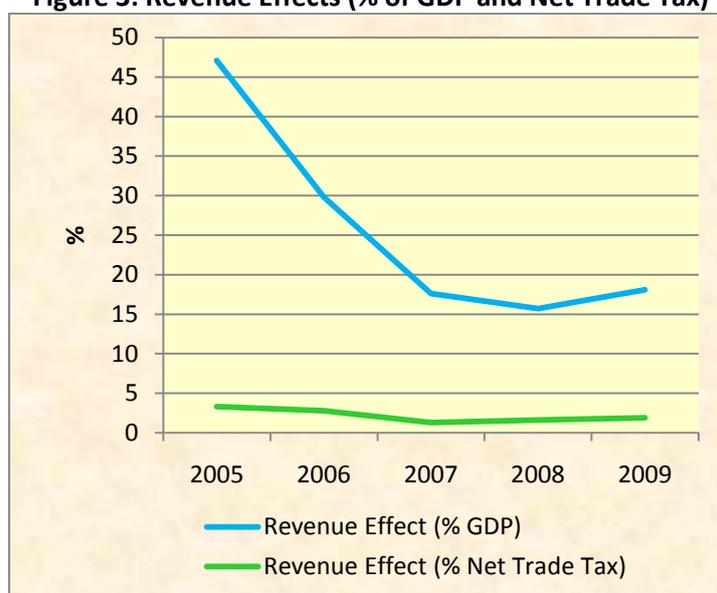
in absolute terms due to increased imports, it is at a declining rate (Table 1). It is evident in Figure 3, that the revenue effect to GDP has also been declining from 47.1 percent in 2005 to about 18.1 percent by 2009 (a 30 percent decline). This scenario sets a big challenge for the government to meet its fiscal responsibilities in the short term, taking cognisance that the deficit could be filled by the CET revenue but this is also fluctuating. The fluctuation can be attributed to the diversion effects as imports from Kenya increase at zero tariff rates replacing those from non-union partner states.

Table 6: Uganda’s CET, import VAT, Excise and withholding tax revenues (‘000 US\$)

Tax type	2004	2005	2006	2007	2008	2009
Duty	61,649	129,665	170,746	245,028	289,796	295,234
Excise	97,642	139,658	185,856	349,108	385,512	406,677
Withholding tax	22,181	24,803	35,668	53,065	66,623	63,784
VAT	191,612		296,502	442,384	559,939	496,465
Net Intl. Trade Tax	373,083	294,126	688,772	1,089,585	1,301,870	1,262,160

Source: UBOs, 2011 and Own computation 2011

Figure 3: Revenue Effects (% of GDP and Net Trade Tax)



Source: Own computation, 2011

5.3 Welfare Effects

The welfare results in Table 5 indicate a substantial improvement in consumer surplus for some products during the review period as the tariff was asymmetrically reduce for products like articles of iron and steel, iron and steel, paper products, plastics and articles thereof and soap products. However, there was significant negative effect for products such as iron and steel and cement in 2008 as well as for soap products in 2009. Literally, these effects could be explained by the aftermath of the political crisis in Kenya, the global financial crisis between 2007 and 2009, which affected import volume, prices as well as cost of production.

The negative results could also be attributed to the raised EAC-intra and CET tariff line above Uganda’s applied MFN tariff line. This implies that the EACCU is both trade creating and diverting

since both an increase and a reduction in the welfare of the Ugandans along different product levels are noticed. The results further reflect that the welfare effect will be more meaningful and significant if the tariff line on all products is zero amounting to US\$ 507,801 worth of consumer surplus. The negative welfare effect was expected on Uganda given its initial application of MFN tariff structure. The MFN tariffs were lower than both the transitional tariff and EACCU CET as noted earlier. In 2010, the estimated welfare effects were highest for cement, followed by soap and paper products. Other products that initially had negligible effects but later registered a significant consumer surplus include tobacco products, beverages, dairy products and chewing gum.

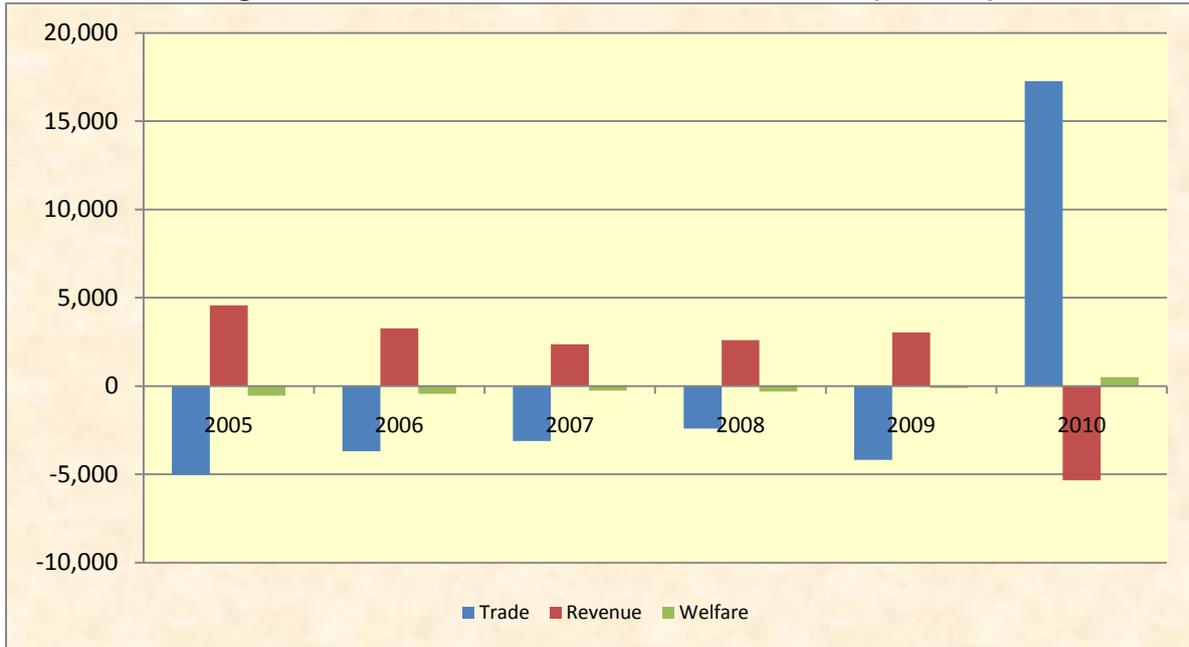
Table 7: Simulation results for welfare effects ('000 US\$)

Products (HS-6 digit level)	2005(10%)	2006(8%)	2007(6%)	2008(4%)	2009(2%)	2010(0%)
Aluminium & arts thereof	-6.884	-2.137	-0.587	-0.002	-1.302	2.503
Arts of iron & steel	-34.737	-28.182	-22.331	-14.014	-5.052	9.687
Cement	-4.052	-1.55	-10.55	-32.685	-30.064	43.082
Fabrics	-2.793	-2.753	-2.703	-0.468	-2.105	3.593
Furniture & bedding	-0.888	-1.408	-0.685	-0.174	-0.251	0.319
Insulated wire& electric conductors	-4.78	-5.523	-4.257	-0.81	-5.955	11.034
Iron & steel	-282.238	-218.638	-135.542	-225.887	-12.69	4.301
Manufactured cotton products	-6.903	-8.582	-2.426	-2.67	-4.256	4.276
Misc arts of base metal	-0.706	-0.252	-0.142	-0.197	-0.18	0.155
Misc. manufactured articles.	-3.625	-2.512	-2.552	-1.111	-3.137	5.147
Other products						347.816
Other woven fabrics of cotton	-6.099	-0.703	-0.035		-0.104	0.216
Paint & vanishes	-1.178	-2.043	-1.479	-0.404	-1.02	1.671
Paper products	-89.926	-80.682	-33.573	-18.664	-14.657	15.545
Plastic & articles thereof	-48.045	-44.033	-30.181	-17.595	-13.801	11.974
Soap products	-36.595	-25.06	-7.31	-0.656	-17.182	32.772
Textile fabrics impregnated	-0.159	-0.351	-1.534	-0.246	-0.098	0.069
Tools	-4.502	-0.594	-1.037	-0.133	-0.07	0.008
Wood products	-7.89	-6.128	-2.329		-5.934	11.838
Woven fabric and yarn	-6.461	-2.642	-7.677	-0.377	-0.829	1.271
Yarn	-0.321	-0.146	-0.041	-0.138	-0.343	0.524
Rest of EAC*			1.419	2.557	5.114	
Net welfare effect	-548.782	-433.919	-265.552	-313.674	-113.916	507.801

Notes: *estimates for Tanzania, Rwanda and Burundi whose products enjoyed full Customs Union at zero rates
Source: Author's computations based on SMART simulations

Bringing together the effects of trade, welfare and revenue effects as illustrated in Figure 4, it is evident that more trade was created during the review period with diminutive effects on welfare. While Uganda was expected to lose some tariff revenue, it could have gained more in terms of increased internal revenue on imports such as import VAT, excise duty and withholding tax and welfare to its population in form of lower commodity prices.

Figure 4: Trade, welfare and revenue effects of EAC... (US\$ '000)



Source: Own computation, 2011

6. Conclusion and Implication for Policy

Although the goal of setting up the EACCU transition tariff adjustment for Uganda and Tanzania on certain product lines viewed as sensitive was to enable the uncompetitive production industries build capacity to effectively compete within the bloc; this paper focused on the effect of this trade policy reform on trade, revenue and the welfare effect on Uganda. The total trade effect along the various tariff lines during the transition were below expected results, especially for products that were imported from Kenya. This is attributed to the lower preferential tariff that was enjoyed by other COMESA partner states outside the EAC bloc at 4 and 6 percent while Kenya faced 10, 8 and 6 percent in the first three years of the transition. This is also partly explained by the 2007 aftermath of the political crisis in Kenya after the disputed presidential election and the global financial crisis in 2009. This study also noted that this trade reform initially increased revenue for Uganda with the rise in the CET and the transition tariff line above applied MFN rate. However, the revenue fluctuated with the sequential reduction in the tariff line over the years.

Although, the losses were compensated by the CET, Excise duty, Withholding tax and VAT revenue, the compensation gap kept on narrowing with an end to the transition tariff. Likewise, the transitional trade reform affected consumer welfare along various product lines that underwent upward adjustment of the tariff above the applied MFN rate the country before this reform. Over time, this changed as consumer welfare increased with the cut in the tariff rate. With the implementation of the zero percent tariff line in 2010, further improvement in trade and welfare effects are observed.

The emerging issues from this simulation are: the end to the phased tariff reduction on category B products increased trade creation and welfare effects. This reflects itself in consumer surplus in terms of reduced prices. The significant reduction in government tariff revenue need not be ignored given the fluctuating growth in the general trade tax revenue. Consequently, there is need to strengthen domestic ability to mobilise revenue or seek alternative source of funding. The results also suggest that given the diversion effect resulting from the CET, the inefficient producers could equally be displaced through building specialised capacity in the sectors. The policy implications that could be drawn from these issues include:

The expected increase in trade created should be fostered through effective elimination of non-tariff barriers to trade that would affect the expected benefits accruing from the trade reforms within the region. This is important because non-tariff barriers increase the cost of doing business which in turn is reflected in form of high commodity prices.

The government should seek for an alternative funding to the tariff revenue loss as the expected gains from the integration may not be realised soon. The internal trade tax revenue growth has been fluctuating and thus may not be sufficient to compensate for the loss. This calls for strengthening the ability to domestically mobilize revenue as the country waits for oil revenue in the near future. In addition, there is need to broaden the tax base by streamlining tax exemptions and incentives where they exist, with clear procedures, duration and a coordinating unit across the country.

The government could also promote sectors where trade diversion exists such as woven fabrics of cotton, soap products and paints and vanishes. This requires building comparative advantage to

replace these inefficient producers from other Union partner states. This would require short to medium term interventions to address supply constraints such as hydro energy, roads, affordable credit, and property registration and promote labour skill development to enhance productivity in order to reduce the cost of production for domestic producers to efficiently compete. By making local firms competitive and enhancing their economies of scale, additional tax revenue would also be generated.

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