# TRADE, REVENUE AND WELFARE EFFECTS OF EUROPEAN UNION PARTNERSHIP AGREEMENT ON KENYA

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## ABSTRACT

This study offers a quantitative valuation of the possible effects on trade creation, trade diversion, exports, imports, revenue, and welfare effects of the European Partnership (EPA) on Kenya. The study applied the Software for Market Analysis and Restrictions on Trade (SMART) partial equilibrium model for its analysis.

The findings of this study shows that the EPA's will be favourable for Kenya as a country owing to benefits in terms of trade expansion prized at US$ 129.45 million and benefits in consumer welfare effects to the tune of US$ 17.56 8 million. Nevertheless, the country Kenya will incur losses in revenue amounting to US$142.36 million. The export grew by similar quantities of US$ 218.73 million whereas import grew by 129.45 million. The operationalisation of the EPA's should go along with steps to develop revenue collection from other sources like income tax and Value Added Tax

**Key words:** EPA's, exports, imports, welfare, revenue, Kenya

### 1.1 Introduction

Kenya like many other developing in the pursuit for Economic growth and development became part of a trade agreement with the European Union which had both trade and aid components in them. In the year 1975 Kenya became part of the African Caribbean and Pacific Countries (ACP) and they entered into the Economic Partnership Agreements (EPA) (WTO 2013). This agreement was famously known as the Lome Convention this is because it was founded on colonial links

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between the African Caribbean and Pacific Countries plus their former European Colonial masters. The provisions of The Lome convention was later made to be more elaborate for trade and aid relations between these parties involved (Viner, 2014).Among the elaborate trade provisions included the non-reciprocal trade preferences. It granted the African Caribbean and Pacific Countries wider access to the EuropeanUnion market. Allowing almost 97 per cent of export products from the ACP to the EU also allowed the ACP states to enjoy duty free market access (Urata and Okabe, 2014).

These trade arrangements appeared worthy as most developing countries found access to funds that could deficit finance their budgetary programs along with trade to boost and improve their balance of payments condition. The trade arrangements were subsequently to be renewed in every ten years that included from 1975- 2000 (Urata and Okabe, 2014). The purpose of all these trade agreements was argued on accelerating Economic growth through increased exports and industrial growth of the developing countries involved. (Ikiara et al 2003).

When time was eventually up for Lome IV Convention (February 2000) the two set of countries choose to negotiate another trade deal. This time it was called the Cotonou Partnership agreement but this time the ACP countries were to reciprocate the duty free access to the European market in 2008 and thereafter. This led to the countries signing of the Economic partnership agreements (EPA) with the European Union whereby they opted for the agreements to get the regional groups meaning countries like Kenya found inside the EU-EAC Economic partnership agreements(Roberts, Vilakazi,  and Simbanegavi,  2014).

This meant that the proposed new trade engagements which came into force in 2008 had a wide variety of potential sacrifices where by the developing countries had to expose their products sectors to increased competition from the EU competitors. The benefit of the continued preferential access to the European markets became something to think twice whether it was worth the additional cost adjustments associated with engaged envisaged liberalization of the trade regime.

The study finds it very important to understand the nature of the goods that are exported to the European Union markets and the market access conditions that are currently available for these goods in those markets. Any position taken by a country should ensure that the market accesses currently enjoyed by the state's exports are either preserved (not reduced) or increased. This makes

it significant to scrutinise the nature of the market access conditions for the country's agricultural exports to the EU.

For the costs and benefits analysis of the Economic Partnership Arrangements of a country like Kenya to be weighed entails comparison between the adjusted costs and the trade liberalization after the formation of EPA. This would include assessing of the benefits from the EPA preferential access to the European Union markets versus the cost implications of trade liberalization which would also look at the possible ways of compensation should there be any losses from the business.

In the light of these issues, this study went into a fact finding mission of accessing the impact of the EPA –Kenya agreement through the East African community on important aspects such as the trade creation and trade diversion effects of this effects. Here the study would assess whether as a result of the EPA trade agreement does Kenya or any member of the EAC benefit from these trade agreements.The study would examine the impact on exports and imports after the Lome convention. This study examined the composition of Kenyan exports to the European union and also compare the Kenya's interest with commodities protected under the Common Agricultural policy in Europe along with its implication on Kenyan export. The study also examined revenue and welfare implication on the EU –Kenya free trade agreements   on Kenya. Finally, this study would develop policy alternatives for Kenya that can be used in Negotiations and trade policy formulationTo achieve these objective this study would use the partial tariff equilibrium model to assess the impact of the trade policies and use of all relevant literature both primary and secondary, Published and unpublished papers as well as all trades statistics in United Nations conference on trade and development.This chapter is arranged as follows; Section one looked into the introduction, statement of the problem and the aims and objectives of the study. Section two reviewed the related and empirical studies on European Union-Kenya trade partnership and the related studies. Section three examined the methodology of the study, where the model specifications is stated. Finally,section four looked into the research findings on the trade creation and trade Diversion effect, the flow of imports and exports after the Lome iv Convention, the revenue and welfare effects of the Lome iv Convention mainly looking at how much revenue was generated and how much was lost. Finally, in section five examined the conclusion of the study in relation to the various supporting and opposing Economic theories consideration of the policy implication to address the problems from this convention modality to work for Kenya and the other EAC Member to achieve maximum gain from the whole trade arrangements. This study would finally be concluded the researcher recommendations to the study.

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### 1.2 Aims of the study

The main aims of this study is to investigate the impact of the European Partnership arrangements with Kenya.The study achieved the following the following objectives at the end of its study.

i. To examine the impact of the European Union–Kenya Economic Partnership Agreements on trade creation and trade diversion on Kenya

ii. To examine the impact of the European Union - Kenya economic partnership agreements on Kenya's imports and exports

iii. To examine the revenue and welfare implication on the European Union – Kenya Economic Partnership Agreements on Kenya.

### 2. LITERATURE REVIEW

This section looks reviews the literature on the different economic integration and specifically trade expansion effects, as well as the revenue implications of a free trade agreement. The assessment shall be based on both theoretical and empirical literature.

### 2.1 Economic Integration

Economic integration is a process in which two or more states in a broadly defined geographic area reduce a range of trade barriers to advance or to protect a set of economic goals. From a political point of view economic integration differs from the broader idea of regionalism in general. The aim of the economic integration is to reduce costs for both producers and consumers and to increase trade between the countries taking part in the agreement (Burges, 2007). Economic integration helps to reduce and ultimately remove tariff and non-tariff barriers to the free flow of goods, services, capital and labour. There are four main types of economic integration.

A preferential trade agreement is a trade pact between countries that reduces tariffs for certain products to the countries who signed the agreement. The new tariffs set are not necessarily eliminated but they are lower than those for countries that are not part of the agreement. Preferential trade agreements offer additional benefits such as increased foreign benefit, and other positive externalities (Baldwin, 2011). A free trade area (FTA) represents an economic bloc in which all barriers to trade are abolished among member countries, but each member maintains its own independent external trade barriers beyond the bloc. The free trade agreement as opposed to the custom union does not specify the external tariffs of all signatories contractually (McLaren, 2004).

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The third form of economic integration is a custom union. It allows free trade among its members and adopts a common external tariff against countries outside the custom union (Peters, 1979). Unlike the common market it does not allow free movement of capital and labour among member countries.The economic union is the most advanced type of economic integration. It is a common market involving more than one nation based on a mutual agreement to permit the free movement of capital and labour. It also requires the coordination of various social, fiscal and monetary policies among participating nations. Trade liberalization may result in static and dynamic benefits.

**2.2 Static and Dynamic benefit of an FTA**
In terms of static and dynamic benefit, the FTA leaves future external trade policy to the discretion of each member government, thus providing a continual incentive for interest groups to try to influence the government (Mclaren, 2004).  The impact of the EU-South Africa free trade agreement is of a more dynamic nature in terms of increased imports and exports competition. Secondly, Tsolo, et al. (2010) in their study state that the agreement could lead to a substantial reduction in revenue as a direct outcome of tariff reductions. The reason for this would be because the common external tariff that was applied before the agreement has been removed. Trade liberalization may also result in revenue loss and welfare gain.

**2.3 Revenue and Welfare Effect of Free Trade Agreement**
The free trade area is generally seen as welfare creation and revenue loss due to the removal of tariffs. It is important to note the revenue loss relates to import tariff revenues. The belief exists that free trade will maximize world welfare. Free trade increases import and exports through trade creation. However, as long as these countries have indirect taxes such as value added tax, the shortfall in revenue would taper off (Lang, 2006). Aggregate welfare of a free trade area is just the sum of effects across countries.

 Free trade area creates both trade creation and trade diversion. Trade creation occurs when trade increases. However, trade diversion occurs when a free trade agreement shifts imports from a more efficient supplier to a less efficient supplier which in itself causes a reduction in national welfare. National welfare gains occur when trade creation outweighs trade diversion. Thus, a country would only enter a free trade agreement if the free trade agreement is welfare improving (Suranovic, 1997). This happens when trade creation outweighs trade diversion. The market with trade creation would generate national welfare gains while the market with trade diversion would generate

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national welfare losses. But it is also possible for trade diversion to outweigh trade creation. This is welfare reducing. This is quite interesting because it suggests that free trade could also reduce the national welfare of the countries involved. The only way to prevent this is to ensure that all barriers to trade against all countries are removed. This would reduce trade diversion.

### 2.4    Empirical Literature

Studies conducted by (Assarson, 2005) on the impact of South Africa and the EU FTA support the view that EU-SA free trade agreement stimulated both export and imports. The analysis conducted compared the trade statistics between the years 1999 and 2004.Lang (2006) used the partial equilibrium smart model to assess the full liberalization of imports from the EU to the Economic Community of Western African States (ECOWAS). The result showed that trade creation by far outweighs trade diversion. Total EU exports to the ECOWAS surged by US$1.8 billion, with France and United Kingdom making the largest profits. However, more than US$ 365 million was diverted in favour of less efficient EU producers. Tariff revenues were reduced by the agreement. For example, Guinea-Bissau and Ghana lost approximately 19% of their budget revenues.

 Abdelmalki, et al. (2007) used the WITS-SMART Simulation Model to assess the free trade agreement between the US and Morocco. The findings showed that the free trade agreement significantly reduced Moroccan tariff by more than US$ 147 million. Almost 60% of this loss resulted from the elimination of duties on the imports of US cereals. Cereals represented 0.5% of GDP and 4.5% of the balance of payments. Cereals accounted for almost 60% of revenue shortfall. This explains why this product was treated separately during the negotiations. The findings show that consumer surplus was mainly improved by lowering the price of industrial goods. The partial equilibrium showed that imports from the US to Morocco increased by US$ 53.68 million.

Abdelmalki, et al. (2007) used the Global Trade Analysis Project (GATP) simulation model to propose a quantitative assessment of the potential impact of the free trade agreement between the US and Morocco. Trade liberalization was modest in the two countries but not inconsiderable in Morocco. The growth rate of the Moroccan GDP increased by 0.37% and the net welfare gain equalled US$ 37 million. In any scenario the impact of trade liberalization on growth would be much more important in Morocco than for the United States considering the difference in bilateral trade flow sizes.

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Abdelmalki, et al. (2007) used WITS-SMART partial equilibrium model to show the possible impact of the free trade agreement between Morocco and Korea. They focused on the possible consequences of a complete elimination of tariff barriers on the Moroccan economy but first of all on the impacts on consumer surplus. One of the main objectives of liberalization is to reduce the price paid by consumers, thus increasing their purchasing power. The results revealed that Moroccans consumers derived gains from the FTA since they had access to goods at lower prices. The FTA stimulated Moroccan exports. This expansion was primarily concerned with the textile and clothing industry.

Othieno and Shinyekwa (2011) in their study investigated the effects of the East African Community Customs Union Principle of Asymmetry on Uganda with regard to trade, welfare and revenue effect since 2005. The end of tariff reduction increased trade creation and welfare effects. This effect was reflected in consumer surplus in terms of reduced prices. Tariff reduction implies government revenue loss. In addition, the diversion effect which resulted from the Common External Tariff (CET) on respective products like woven cotton fabric, soap products and paints vanished. Inefficient producers within the union could equally have been displaced by building specialized capacity in the sectors.

Villa, et al. (2012) used trade data for 2010 and applied ex-ante partial equilibrium modelling to calculate the impact of the preferential trade agreement between Canada and Colombia. The simulations carried out showed that trade creation could be one and a half times larger than trade diversion. Trade between the two countries in the first year grew by approximately 10%. Use of the WITS-SMART Model showed that though Canadian tariff revenue fell by US$ 78.1 million, Canadian consumer welfare improved by US$ 11.5 million.

Choudhry, et al. (2013) evaluated the impact of Sri Lanka's FTA using a sector specific analysis of the textile and clothing sector. Sri Lanka provided reduction in tariffs -35% in 2003, 70% in 2006 and 100% in 2008. The result of the SMART analysis revealed that Indian exports of textile to Sri Lanka increased from US$ 121 million to US$ 395 million during the period 1999 to 2009. Trade creation effects dominate trade diversion effects. For example, when articles of apparel and clothing accessories were traded, trade creation was around US$ 555 thousand and trade diversion was around US$ 248 thousand.

Mugano (2013) conducted a study on the impact of a South African Development Community (SADC) Customs Union on Zimbabwe. The WITS-SMART Model was used for the study. The findings reported trade expansion valued at US$ 39 million and consumer welfare at US$ 7 million. On trade Zimbabwe's export were expected to fall by 0.94 per cent while imports were expected to surge by 2.05 per cent. However, the country lost revenue amounting to US$ 42 million. The results obtained varied from one case study to the other. The implication of a FTA between two countries depends on a number of factors.

From the literature it is not possible to discern the impact of a free trade agreement on imports, exports, trade creation, trade diversion, and revenue and consumer surplus. The empirical review however, does help to identify the possible outcomes of a FTA. However, it does not allow one to draw a general conclusion about any FTA. Thus, the EU-South Africa FTA remains an empirical question that needs to be addressed in order to determine whether it is welfare increasing or decreasing.

Efforts still have to be made by both the EU and South Africa for the agreement to be fully implemented.  Previous studies undertaken by Assarson (2005) and Tsolo (2010) on the implication of the EU-FTA on South Africa used trade statistics and time series-cross sectional (TSCS) data respectively to determine the impact of the EU-FTA on South Africa. These studies did not analyse the potential impact such an agreement would have on trade creation, trade diversion, welfare and revenue effect. This study (by means of the WITS-SMART Model) would therefore fill the gap by analyzing the potential impact such an agreement if fully implemented in 2012 would have on South Africa. The WITS-SMART Model is a partial equilibrium model developed by the United Nations Conference on Trade and Development (UNCTAD) during the 80's mainly to assess the impact of the General Agreement on Tariffs and Trade (GATT) rounds. The WITS-SMART Model gives the possibility to approximate the consumer surplus.

### 3. Research Methodology

The study used partial equilibrium (PE) and the World-Integrated Trade Solutions/Software for Market Analysis and Restrictions on Trade (WITS/SMART) to examine the influence of Economic Partnership Agreement on Kenya. This study specifically looked at trade creation, trade diversion, revenue effects, welfare effects and the implications on imports and exports at a given point in time. P.E model was mainly chosen owing to its ability in computing the tariff effect of a single market on disaggregated product lines hence this study used a base year 2008 and a harmonised code of 6

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will be used (Fukunaga and Isono, 2013; Lord, 2016; Lee, 2013; Veeramani and Saini, 2010; Francois and Pindyuk, 2013; Makochekanwa, 2012; Bilal, Dalleau and Lui, 2012; Onogwu and Arene, 2013).

Othieno and Shinyekwa (2011) explains that the P.E model has the strength to examine the impact of trade-regime reforms in the presence of imperfect substitutes. P.E models also evaluate the policy reform and the effects on the sectors that are directly affected, generally pointed out to as the first-round effects. The merits of the P.E model is that they require PE models is that they require minimal data as the only data on trade flows, tariffs, and elasticities are required.

### 3.1 SMART Model and Partial Equilibrium Model Software
The WITS integrates various databases starting from bilateral trade, commodity trade flows and to several of types of trade protection (Lang, 2006). Lang (2006) explained that the WITS/SMART model applied the Common Format for Transient Data Exchange (COMTRADE) which is 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, that gives simulated analytical tools to simulate trade policy analysis, such as the impacts of multilateral tariff cuts, free trade agreement, preferential trade liberalisation and ad hoc tariff changes (Lang, 2006).

As Lang (2006), Plummer, Cheong and Hamanaka (2010), and Othieno and Shinyekwa (2011) posited, the SMART paradigm runs on information contained in the UNCTAD managed TRAINS database. SMART, therefore, applies TRAINS data for tariff (applied tariffs) and trade information stored in the COMTRADE database for simulation purposes.

Mugano (2013) pointed out, the partial equilibrium SMART model was invented by UNCTAD and the World Bank in the 1980s, to use in assessing the effect of GATT rounds. The SMART paradigm is one of the software that is found in the World Integrated Trade Solution software (WITS) (Lang, 2006). SMART model and the simulation techniques are part of the WITS trade database and software suite provided jointly by the World Bank and the United Nations Conference on Trade and Development, as Plummer, Cheong and Hamanaka (2010) had said.

The working principle of the model is derived from Laird and Yeats (1986). SMART has the capability to compute the impact of a given trade regime change (measured in tariff) on the variables that are listed in this section, that are the rational for this study: Trade-creation impacts;

Trade-diversion impacts;Net-trade impact (aggregate-trade creation and trade-diversion impacts); Tariff-revenue changes; and Variations in consumer surpluses.

**(i)      Trade Creation**

Laird and Yeats (1986) explained the WITS/SMART theory used in this study. Laird and Yeats, stated that trade creation contains the trade impacts of liberalisation that cause the elimination of inefficient producers in a certain preferential trade area (FTA, for example). Before trade creation will take place, it is taken for granted that there is full transmission of price changes when tariffs or non-tariffs barriers (NTBs like *ad valorem* equivalents) are disbanded. This study applied equation 3.1.1, which was adopted from Laird and Yeats (1986) to compute trade-creation impacts. Before creating trade-creation model, import demand and export supply functions and an equilibrating identity should be formulated.

For the purpose of this research work, the import demand functions for country j, in this work refers to Kenya, from commodity i supplier, country k can be expressed thus:

$$M_{ijk} = f(Y_j, P_{ij}, P_{ik}) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\ 3.1.1$$

Equation 3.1.1 states that import depends on the output produced and the prices in the importing and exporting countries. The counterpart export function can be stated as:

$$X_{ijk} = f(P_{ijk}) . \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\ 3.1.2$$

The trade equilibrium of two countries in a partial-equilibrium model can be presented as shown in equation 3.1.3 below.

$$M_{ijk} = X_{ijk} . \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\ 3.1.3$$

Given that there is a free trade and customs union situation, the domestic price of commodity *i* in country *j* (in this case Kenya) from country *k* would vary with the variations in an *ad valorem* tariff as shown below:

$$M_{ijk} = X_{ijk}(1 + t_{ijk}) . \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\ 3.1.4$$

The export revenues that country k obtains are expressed in equation 3.1.5 below.

$$R_{ijk} = X_{ijk} . P_{ijk} . \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\ 3.1.5$$

Trade-creation model, as Laird and Yeats (1986) presented is done through total derivative of equation 3.1.4 as shown in equation 3.1.6.

$$dP_{ijk} = P_{ijk} . dt_{ijk} + (1 + t_{ijk}) . dp_{ijk} . \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\ 3.1.6$$

The elasticity of import demand with regard to the domestic price can be rearranged as in equation 3.1.7, as seen below.

$$\frac{dM_{ijk}}{M_{ijk}} = Em\left(\frac{dp_{ijk}}{p_{ijk}}\right) . \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\ 3.1.7$$

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When the expressions in equations 3.1.4 and 3.1.6 are substituted into expression in equation 3.1.7, equation 3.1.8 is obtained.

$$\frac{dM_{ijk}}{M_{ijk}} = Em\left[\left(\frac{dt_{ijk}}{1+t_{ijk}}\right) + \frac{dp_{ijk}}{p_{ijk}}\right].\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..\dots\dots\dots..3.1.8$$

The world price elasticity of export supply can be stated as shown in equation 3.1.9 below.

$$\frac{dp_{ijk}}{p_{ijk}} = \frac{dX_{ijk}}{X_{ijk}} \div EX = \frac{dX_{ijk}}{(X_{ijk}).EX}.\dots\dots\dots\dots\dots\dots\dots\dots..\dots\dots\dots\dots3.1.9$$

Using equation 3 to transform equation 3.1.9, equation 3.1.10 is obtained.

$$\frac{dM_{ijk}}{M_{ijk}} = \frac{dX_{ijk}}{X_{ijk}}.\dots\dots\dots\dots\dots\dots\dots\dots\dots..\dots\dots\dots\dots\dots.3.1.10$$

Finally, trade-creation impacts are created by substituting equation 3.1.10 into 3.1.9, and the result is also substituted into 3.1.8. This result is tantamount to exporting country, *k*'s growth of exports of commodity *i* to country *j*. The equation for trade creation can then be expressed as in equation 3.1.11.

$$TC_{ijk} = M_{ijk} . E_X . \frac{dt_{ijk}}{(1+ t_{ijk})(1+\frac{E_m}{E_X})}\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 3.1.11$$

Trade diversion is an incident that most likely happens in a free trade area. This is where competent producers outside the Free Trade Arrangements or customs union are displaced by less competent producers, who are protected by the high tariff rate. The EPA's is used to show how trade diversion was evaluated in this study. Trade diversion would be the outcome if, as a result of setting up the EPA's more suppliers from the rest of the world (ROW) into Kenya are displaced by inefficient producers from Kenya.

**(ii)      Trade Diversion-**

The creation of EPA's causes a reduction of tariffs to zero to European Union member states without any changes in the tariffs facing the(Rest of the World) ROW exporters; the principle underlying the measurement of trade diversion in SMART is also explained in Laird and Yeats (1986). This paper considers the elasticity of substitution in order to derive trade diversion. The elasticity of substitution estimated in this thesis is expressed as a percentage of a change in relative shares of imports from two different sources, due to a one per cent change in the relative prices of the same product from these two sources:

$$TD_{ijk} = \frac{M_{ijk}}{\sum M_{ijk}}.\sum M_{ijk} \sum M_{ijk} E_s \frac{d\frac{M_{ijk}}{M_{ijk}}.\frac{P_{ijk}}{P_{ijk}}}{M_{ijk} M_{jk} M_{ijk}.\frac{M_{ijk}}{P_{ijk}}}\dots\dots\dots\dots\dots\dots\dots\dots\dots3.1.12$$

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### (iii)  Trade Expansion

In order to derive the total trade effect, trade creation and diversion are summed up (Laird and Yeats, 1986). Laird and Yeats (1986) said that it is plausible to sum the results across a group of importers for single or groups of products, as well as for single sources of supply or groups of suppliers.

### (iv)  The Revenue Effect

In principle, the tariff revenue is calculated as the product of the tariff rate in this case) and the tax base (the value of imports). Thus, before the change in the *ad valorem* incidence of the trade barriers, the revenue is given as:

$$dR_{ijk} = P_{ijk}(dX_{ijk}) + (X_{ijk})dP_{ijk} \; \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.1.13)$$

When left hand side (LHS) of equation (3.1.13 is divided by $dR_{ijk}$ and the right hand Side (RHS) of the same equation by $X_{ijk} (P_{ijk})$ gives equation (3.1.14).

$$\frac{dR_{ijk}}{R_{ijk}} = \left( \frac{P_{ijk}(dX_{ijk}) + X_{ijk}(dP_{ijk})}{P_{ijk}(X_{ijk})} \right) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.1.14)$$

Simplifying and substituting the expression in equation (10) results to equation (3.1.15).

$$\frac{dR_{ijk}}{R_{ijk}} = \frac{dM_{ijk}}{M_{ijl}} + \frac{dP_{ijk}}{P_{ijk}}. \; \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.1.15)$$

Alternatively, this can be written:

$$\frac{dR_{ijk}}{R_{ijk}} = \left( \frac{dt_{ijk}}{1+t_{ijk}} \right). Em \left( \frac{1+Ex}{Ex-Em} \right). \; \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.1.16)$$

### (v)  The Welfare Effect

The WITS/SMART model is used to estimate the welfare effects on Kenya. The welfare impact is mainly attributed to the consumers' benefit in the importing country, as a result of lower import prices caused by trade liberalisation. This gives consumer's opportunities to substitute more expensive domestic or imported products with the cheaper imports that are affected by the relevant tariff reduction. Rise in imports may lead to a net welfare gain that can be of interest to consumer welfare; and it is measured as follows:

$$W_{ijk} = 0.5(dt_{ijk}. dM_{ijk}). \; \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots. (3.1.17)$$

The coefficient of 0.5 captures the mean effect between the *ad valorem* incidents of the trade barriers before and after their removal/reduction (Laird and Yeats, 1986). Equation (3.1.13) takes

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for granted that the elasticity of export supply is infinite. This is valid for Kenya, because it is a small country that cannot impact on world prices.

### 3.2 Sensitivity Analysis and Robustness tests

For the purpose of this research study a single    scenario is well-defined to characterise a magnanimous discharge by the Kenyan Markets to EU imports. These outcomes may not essentially be exact effect of the Free Trade Agreement.  Examining the influence of the full liberalisation by means of the PEM framework permits one to differentiate the products as well as sectors anywhere the effect is greatest.The Categorizing the products depending with which the impact of liberalisation is highest may be helpful for Kenya in determining or grouping goods according to their sensitivity of the products hence benefit from differentiated and special treatment.

The sensitivity parameters being evaluated here are the revenue losses and trade diversion effects. The market partners act as price takers and the changes in demand are usually met with quantity adjustments simply because elasticity of supply is taken to be infinite. The value measured for the elasticity of substitution that determines the degree of substitution stuck between diverse varieties of goods permitted by  the export partners is 1.5 for each item or product or. Therefore, this study applied 100% tariff deduction and decline at the HS-6 level for the year 2008.

**Table 3.1: Elasticities used in Sensitivity Analysis**

| Elasticity | Lower Bound | Base Case | Upper Bound | Worst Case |
|---|---|---|---|---|
| Substitution | 0.5 | 1.44*** | 2 | 6 |
| Export Supply | 89.1 | 99 | 99** | 99** |
| Import Demand * | 2.7 | 1.5 | 3.3 | 6 |

Source: *Stern (1976), **Retained as Infinite, ***Tokarick(2010), Mugano (2013)

### 4. RESEARCH FINDINGS AND RESULTS

The Kenyan and EU trade negotiations have progressed quite slowly. This is shown by the Kenyan government signing the extension as late as 14 October 2014 - just on the expiry date of the Contracts (Langan 2014).  Although it was a relief to most Kenyan and EU exporters, it became clear that Kenya was the only country in the EAC not listed in the least-developed countries, according to the EU. This meant that it needed the EPAs with the EU to access the EU quota-free and duty-free markets (Mutambo 2014).

It's significant to note that tariffs in Kenya are among the highest and customs duty of other commodities is more than 100 per cent. Kenya is allowed to leave only 20 per cent of its tariffs due to consideration given to sensitive industries out of the FTA (GOK 2013). This implies that Kenya has to go ahead and comply with EPAs tariff rates by reducing all the other tariffs to zero per cent for most goods considering only 16 per cent are zero rated.

It also revealed that a full trade-liberalisation protocol could be expected by as late as 2022. It was also revealed that Kenya may only be allowed to leave only 20 per cent of its tariff lines – considering it sensitive sectors and industries from the free trade agreement. In this arrangement, it means that Kenya must change from its current tax trade regime and adopt the new zero-tax regime for the bulk of their products from the EU (Nugent & Rhinard 2015). The Kenya – EPAFTA gave Kenya an opportunity to set its export duties under the EU's generalised system of preference on Kenyan products, which is much lower than the normal EU tariff for other countries. It also meant that most goods got duty-free access to the EU markets (Nugent & Rhinard 2015).

### 4.1    Trade creation and trade diversion

Trade creation is a term mostly used in international economics and trade. This exemplifies the case where trade flows are redirected, as a result of the formation of a free-trade agreement or a customs-union protocol (Eicher, Henn & Papageorgiou 2012). Cost-reducing and more efficient producers in the same regional trade agreement, like the EPAs, would displace less efficient and morecostly producers. This would lead to the consumers benefiting from the lower prices (Viner 2014).

In the case of Kenya, this means that the consumers would use more efficient or lower-cost producers in any of the EU countries – leading to the displacing of less efficient and high-cost producers from Kenya.

This would, however, also mean that some of the Kenyan producers would be ousted from the market by the efficient producers from the EU, affecting them negatively. Therefore, for the Kenyan producers and industries to compete in this new arrangement, they would have to improve their production quality and efficiency to be better than their competitors in the region – through better quality products and selling them at lower prices.

On the other hand, trade diversion is a case in which trade is being turned away from a more efficient exporter, from the rest of the world, to a less efficient exporter within the regional trade

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arrangement by either a Customs union protocol or a free-trade agreement protocol (Eicher *et al.* 2012). In this case, it means an efficient producer from the rest of the world would be displaced by a less efficient producer from the 27 members of the European Union member countries within Kenya (Onogwu & Arene 2013).

This also implies that the country would have to lose revenue, which came in the form of import duties. The high quality goods from the rest of the world might well be forfeited at the expense of lower quality goods produced within the EU or Kenya. In cases of customs union protocol, the common external tariff for goods from the rest of the world would move consumers purchase expensive goods produced within the trading bloc. This is simply because the competitor is paying also for the tax; hence, production from the RTA appears to be cheaper (Kahouli & Maktouf 2015).

Table 4.1 illustrates the trade-creation effects and trade-diversion effects generated by the WITS/SMART model as a result of adopting the EPAs with Kenya.

**Table 4.1: Trade-Creation effects of EPA on Kenya (US$ Millions)**

| Trading Partner | Trade Creation Effect | Trade Diversion Effect | Trade Total Effect |
|---|---|---|---|
| European Union | 129.45 | 89.29 | 218.73 |

Source: Author's own calculations based on the SMART simulations approach.

Table 4.1 shows that the coming into effect of the EPAs in full automatically dismantled both the tariff and the non-tariff barriers in Kenya. This would likely expose the previously protected industries in Kenya and the EU to compete with other effective industries in the market.

Through the WITS/SMART simulations approach Kenya is expected to realise a trade creation of US$129.45 million and a trade diversion of US$89.29 million, thereby giving Kenya a total trade effect of US$218.73 million. The trade creation, which comprised 59.18 per cent of the total effects, is expected to outweigh the trade diversion, which was 40.82 per cent of the total trade effects. This therefore implies that the EU-Kenya FTA under the EPA has positive total trade effects. This would be good for Kenya; as it would increase the consumer welfare, which would be evident through the drop in prices of imports, lowering the prices of goods and services.

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These results are consistent with those of Guei *et al.* (2015), who assessed the revenue, welfare and trade effects of the European Union free trade agreement on South Africa. Their findings indicated that South Africa has positive total trade effects, which comprise 75.44 per cent of trade creation and 24.55 per cent of the trade diversion on goods and services. Hence, these findings give a strong indication that they can be adopted for decision-making purposes and policy improvements.

Mugano *et al.* (2013) also assessed the impact of EPAs on Zimbabwe in 2013. Their results were similar to this study, where the study determined 97 per cent trade creation and less than two per cent trade diversion. This confirmed that the coming of free-trade agreements would most likely lead to higher trade creation effects with a reduced trade-diversion effect in most cases.

Abdelmalik (2007) evaluated the impact of the free-trade agreement between the US and Morocco. This study confirmed a positive trade effect with higher trade creation than the trade diversion – implying that Moroccans were able to gain from the free trade agreement through increased welfare.

These studies also confirmed a prediction by the Ronge (2006) who assessed the implication of EPAs on Kenya's agricultural markets' access to the EU. This study anticipated a double growth in the trade-creation effect resulting from the implementation of the economic partnership agreement with the EU, but recommended that for Kenya to gain optimally from the trade arrangement, there had to be, inter alia, unrestricted access for all Kenyan goods and products into the EU markets, an adequate tariff-phase down period to facilitate and to consolidate achievements from the regional integration.

Table 4.2 illustrates the products and commodities with the highest trade creation effects in Kenya, as a result of the EPAs between the EU and Kenya.

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**Table 4.2: Products with highest trade-creation effects from EPA (US$ Millions)**

| HS Code. | Product description | Trade Creation Effect |
|---|---|---|
| 82 | Tools, cutlery, spoons forks and base metal | 33.03 |
| 27 | Mineral fuels and oils waxes | 22.82 |
| 25 | Salt; sulphur; earths and stone | 17.54 |
| 38 | Miscellaneous chemical products | 14.52 |
| 52 | Cotton | 10.79 |
| 56 | Wadding of textile materials fibres and dust | 10.22 |
| 75 | Nickel and articles | 6.80 |
| 72 | Iron and steel | 3.31 |

Source: Author's own calculations based on the SMART simulations approach.

This study found that due to the levels of disaggregation, the trade-creation effects were expected to be more evenly spread across the tariff lines. The goods that would carry the largest trade creation effects included commodities, like tools, implements, cutlery, spoons and forks, base metals, represented 25.52 per cent of the total trade creation, followed by mineral fuels, mineral oils and products of their distillation; bituminous substances and mineral waxes, which had 17.63 per cent of the total trade creation.

This study revealed similar findings to those of Lang (2006), who assessed the impact of free-trade agreements on Europe and the ECOWAS. Lang's findings indicated that finished goods and raw materials had the greatest trade creation effects, as was evident in this case.

The fin dings of this study agree with the prediction by Ronge (2006), who investigated the trends of Kenya's exports and imports to and from the European Union markets. Ronge concluded that even after the reciprocal access of EU goods to ACP countries and Kenya were implemented, the trends would most likely remain the same. These trends were the continued increase in the exports of the consumer goods and raw materials; since the imports of the same products also decreased.

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**Table 4.3: Highest trade diversion effects from EPA (US$ Millions)**

| HS CODE | Product description | Trade Diversion Effect |
|---------|---------------------|------------------------|
| 630900 | Worn clothing and other worn articles. | 5.09 |
| 100190 | Wheat | 3.25 |
| 271019 | Petroleum oils and bituminous minerals | 3.34 |
| 870323 | Cylinder capacity exceeding 1,500 cc | 2.98 |

Source: Author's own calculations based on SMART simulations approach.

Table 4.3 illustrates the most vulnerable goods to trade-diversion effects. This argument is also supported by Onogwu and Arene (2013) from central Africa; who detected significant trade-diversion effects originating from the EPAs.

The WITS/SMART model simulations identified the following commodities to be most vulnerable to trade diversion in the EPAs treaty with Kenya. These comprised worn clothing, used articles, followed by wheat and muslin. It is also noted that most of the losses registered emanated from the products that were regarded as the sensitive products during the free-trade agreement between Kenya and the EU (Richardson & Mazey 2015). This originates from the endeavours of Kenyan traders and consumers importing from the higher cost producers and suppliers within the EU.

It is imperative to note that these findings are in agreement with those of Lang (2006) who examined the ECOWAS-EU free-trade agreement and realised that most items with higher trade diversion resulted from the losses driven from the importing of high cost oil and fuel products. These products were described as having an inflationary effect on the Kenyan prices of consumer goods (Kahouli & Maktouf 2015).

Karingi *et al.* (2005) made a significant contribution to trade creation and trade diversion. They examined the impact of Economic partnership agreements on the South African development community. The findings of their studies indicated that the trade-creation effects in this partnership would lead to an increment in imports of US$350.8 million.

There is evidence of a greater trade-creation effect than the trade-diversion effects in Kenya. These findings are consistent with the findings of Guei *et al.* (2015); Mugano *et al.* (2013); Abdelmalik

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(2007); Cernat (2003); Meade (1955); Ohyama (1972); Kemp and Wan (1976) and Amponsah (2002). These researchers noted that some regional groupings' tariff rates were too weak to divert trade from third parties, thereby leading to a higher trade-creation effect than the trade-diversion effects.

## 4.2    The revenue effects

The Kenyan government had to make some very profound decisions – bearing in mind the possible loss of revenues from taxes to meet its budget. It was also not easy to predict whether Kenya would be compensated for the lost revenue on infrastructural maintenance and import duty through increased trade.

The cut in the fiscal revenue is one of the contentious issues that governments had to keenly consider before entering into any trade agreements. The revenue effects of the European Union and the Kenya-trade partnership through the EPAs was addressed through the WITS/SMART simulation approach as it formed part of the objectives of this study. Table 4.4 highlights the commodities with the highest revenue effects.

**Table 4.4: Revenue effects of EPA on Kenya (US$ Millions)**

| HS CODE | Product Description | Revenue Effect |
|---------|--------------------|----------------|
| 63 | Worn clothing and other worn articles. | -12.69 |
| 85 | Telephone sets, | -7.50 |
| 87 | Road tractors for semi-trailers | -5.97 |
| 10 | Wheat and muslin. | -3.57 |
| 48 | Paper, paperboard, coated with kaolin | -3.36 |
| 17 | Cane sugar and chemically pure sucrose | -3.04 |
| 27 | Petroleum oils and bituminous minerals, | -2.88 |
| 21 | Food preparations not elsewhere specified | -2.55 |
| Other | Other goods and Products | -100,8 |
| Total | | -142.36 |

Source: Author's own calculations, based on the SMART simulation approach.

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As Kenya is carrying out policy reforms to comply with the recommendations of the EPAs, it would likely lead to a revenue loss of US$142.355 million dollar. The items expected to be highly affected with losses were commodities, such as worn clothing and other used articles valued at US$12.69 million, telephone sets, telephones for cellular networks and wireless networks worth US$7.50 million. Other commodities included are shown in table 4.4.

The findings are similar to the studies by Guei *et al*. (2015). They estimated the revenue, welfare and trade results from the EU-South Africa free-trade agreements. It was noted that South Africa would probably incur revenue losses amounting to US$562 million.

These results were also consistent with those of Mugano, Brookes and Le Roux (2013) who examined the impact of EPAs pacts with Zimbabwe. Later, they found that Zimbabwe would lose as much as US$22.15 million as a result of the tariff reforms and being part of the EPAs treaties.

The outcome of the loss of revenue after member states had embraced the EPAs is consistent with the observations made by other researchers in the region. Oxfam (2006) estimated that Zimbabwe stood to lose US$18.431 million in revenue, had it adopted the EPAs. The marginal difference between these results can be explained by the different time periods at which the researches were undertaken.

Lang (2006) found a significant loss in revenue of around 19 per cent in Ghana, 19.38 per cent in Guinea-Bissau, and 12 per cent in Togo was expected – had they embraced full-trade liberalisation with the EU. It was also clear; as Mugano, Brookes and Le Roux (2013) noted that among the items causing considerable revenue losses, costs from telephone sets and related items featured highly.

More studies in support of these findings are those of Bilal, Dalleau and Lui (2012), who assessed the influence of the EPAs on selected states in West, Eastern and Southern Africa. Their findings also indicated that of the eight countries in West Africa (Benin, Cape Verde, Comoros, Djibouti, Gambia, Ghana, Guinea Bissau and Togo) were likely to suffer significant losses in the form of tariff revenues. The magnitude of these losses ranged from 6 per cent reduction in total tax revenues to as much as 43 per cent.

Revenue losses are expected as a result of the EPAs trade agreement. Dalleau and Lui (2012) argued that the losses are expected due to the loss in revenue resulting from the tax free policy in the FTA.

Matthews (2010) assessed the EPA's and food security and argued that losses from the developing nations and FTA with the developed countries are as a result of the inadequate technology to export manufactured goods and poor technology amongst the developing countries, leading to high cost production. He also noted that many exporters in the developing countries were unaware of the market rules and regulations, leading fewer participants in the trade ventures, such as those with the EU, causing developing countries like Kenya to experience less benefits and losses from the free trade agreements.

### 4.3     The consumer welfare of Kenyans

Consumer welfare refers to an individual person who would benefit from the consumption of a specific good or service from the EPA countries (OECD 2014). According to the Organisation for Economic Co-operation and Development (OECD) (2014), it was noted that welfare is actually an individual matter. This raises question of whether Kenyans are likely to benefit from the lower prices and better quality goods from the EPAs treaty. Table 4.5 shows the simulations from the WITS/SMART model and the partial-equilibrium approach of data analysis.

**Table 4.5: Welfare effects of EPA on Kenya (US$ Million)**

| HS code | Product Description | Consumer Welfare |
|---|---|---|
| 63 | Worn clothing and other worn articles. | 2.11 |
| 17 | Cane, beet sugar, chemically pure sucrose | 0.76 |
| 10 | Wheat and muslin. | 0.66 |
| 73 | Tanks, casks, drums, cans, boxes | 0.51 |
| 27 | Petroleum oils and minerals | 0.41 |
| 48 | Paper, paperboard, coated with kaolin | 0.38 |
| Other | Other Products not specified above | 12.73 |
| Total |  | 17.56 |

Source: Author's own calculations based on SMART simulations.

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The results reflected in table 4.5 are derived from the WITS/SMART model approach. They indicate that Kenya could expect to enjoy a consumer-welfare gain of US$17.56 million through the effecting of the EPAs deals. This welfare is quite insignificant – especially in a case where Kenya's GDP stands at US$60.94 billion, as at 2014 (World Bank 2015). Based on 2014 gross domestic product, welfare gains were less than one per cent.

The commodities which are likely to lead to increments in welfare include items, such as worn clothing and other used articles. They had a welfare effect of US$ 2.11 million, followed by cane or beet sugar and chemically pure sucrose in solid form, valued at US$0.76 million. The tanks, casks, drums, cans, boxes and similar containers, especially of a capacity of 50 litres or more ranked third with the best welfare effect. This is followed by the petroleum oils and oils obtained from bituminous minerals, other than crude with a US$0.41 million welfare effect. The last item of the five commodities with the highest welfare creation was paper and paperboard, coated on one or both sides with kaolin (China clay), which was valued at US$0.38 million. The other commodities had a cumulative welfare effect of US$12.73 million.

These results are agreed with those of Mugano, Brookes and Le Roux (2013), who assessed the impact of the EPAs pact on Zimbabwe using the partial-equilibrium approach. They found that although Zimbabwe was expected to gain by US$2.80 million from its engagement in the EPAs, the gains were quite insignificant. This is because the welfare would be less than 0.03 per cent of Zimbabwe's GDP, as at 2011. In Central African States, Onogwu and Arene (2013) found that the total removal of tariffs under the EPAs led to minimal welfare benefits as a percentage of the GDP.

Karingi *et al.* (2005) also agreed with these outcomes, when they assessed the welfare gains in SADC countries. They found that SADC member countries stood to have increased welfare gains if they had opted to join the EPAs. They further mentioned that if the SADC region adopted the EPA trade agreement, it stood to attain a welfare surplus of US$25.577 million. They also stated that Angola would be the main beneficiary with approximated welfare gains of US$14.940 million. The welfare gains would be spread across 14 member states, hence arriving at the same conclusion that there were welfare gains, but they were quite insignificant.

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Another study in support of these findings is the study of Zgovu and Kweka (2009). They assessed the impact of the EPA on Tanzania and Malawi where they also discovered that there were welfare gains, but they were also too insignificant to be felt by the individual residents.

The researcher found these results to be consistent with economic theory and with the empirical literature. Studies by Balassa (1975), who also estimated the effects of EC FTA on the member countries, and Lang (2006) who also examined the effects of the EU-ECOWAS Free-trade agreement on West African states agreed that the welfare gains from the EPAs were too insignificant to be felt.

### 4.4     The impact of the EPAs on Kenyan exports

The boosting of export competitiveness and the promotion of deeper regional trade agreements has been seen as an engine that would boost economic growth, reduce poverty, and create jobs in developing countries (WTO 2013). These are key necessities in most developing countries, and especially in the Sub-Saharan Africa.

Greater regional competition in the home country has been confirmed to stimulate exports through improved innovation, improved production efficiency, reduced prices and more incentives to produce better goods. This would lead towards an increase in long term job creation and the concomitant increase in incomes and government revenues (World Bank Group 2012).

This study will use the partial-tariff equilibrium approach applying the WITS/SMART Model in addressing the objective of the study, which is to determine the impact of EPAs treaties on Kenyan exports.

Table 4.6 illustrates the results derived from the WITS/SMART model on the effects of Kenyan exports from the EPAs. It shows where the export destinations are, Kenya's export coming before the free-trade agreement, Kenya's exports after the FTA, the changes in revenues from exports, and finally, the percentage share in exports.

The evidence indicates that the number of Kenyan suppliers grew, which means an increase in the Kenyan exports to the EU. This could also result from the increased efficiency in the production of their goods that led to its higher demand in comparison with its competitors in the EU.

**Table 4.6: Impact of EPA on Kenyan exports (US$ Millions)**

| Partner | Exports Before | Exports After | Export Change In Revenue | Share of Exports (%) |
|---|---|---|---|---|
| U.K. | 401.8 | 458.51 | 56.7 | 21.04 |
| Germany | 389.72 | 431.19 | 41.47 | 19.79 |
| Italy | 181.73 | 208.23 | 26.51 | 9.56 |
| France | 237.65 | 263.96 | 26.31 | 12.12 |
| Netherlands | 192.04 | 209.36 | 17.32 | 9.61 |
| Belgium | 119.67 | 134.9 | 15.23 | 6.19 |
| Sweden | 95.68 | 106.71 | 11.03 | 4.90 |
| Spain | 48.9 | 54.78 | 5.88 | 2.51 |
| Finland | 77.21 | 80.42 | 3.21 | 3.69 |
| Austria | 16.71 | 19.73 | 3.02 | 0.91 |
| Ireland | 21.53 | 24.09 | 2.55 | 1.11 |
| Denmark | 68.96 | 71.46 | 2.5 | 3.28 |
| Poland | 4.77 | 6.11 | 1.34 | 0.28 |
| Czech Rep | 12.31 | 13.51 | 1.2 | 0.62 |
| Portugal | 9.09 | 10.12 | 1.03 | 0.46 |
| Greece | 3.08 | 3.8 | 0.72 | 0.17 |
| Hungary | 19.46 | 20.17 | 0.71 | 0.93 |
| Slovak Re | 3.83 | 4.5 | 0.67 | 0.21 |
| Romania | 28.99 | 29.34 | 0.35 | 1.35 |
| Bulgaria | 3.66 | 4.01 | 0.35 | 0.18 |
| Luxembourg | 1.22 | 1.45 | 0.23 | 0.07 |
| Cyprus | 20.68 | 20.88 | 0.2 | 0.96 |
| Slovenia | 0.7 | 0.85 | 0.15 | 0.04 |
| Croatia | 0.17 | 0.2 | 0.03 | 0.01 |
| Malta | 0.34 | 0.36 | 0.02 | 0.02 |
| Estonia | 0.09 | 0.1 | 0.01 | 0.00 |
| Lithuania | 0.01 | 0.01 | 0 | 0.00 |
| Latvia | 0.01 | 0.01 | 0 | 0.00 |
| Total | 1960 | 2178.7 | 218.73 | 100.00 |

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Source: Author's own calculations based on SMART simulations.

The EPA's trade agreement is expected to lead to growth in Kenyan exports to the EU. This was evident by the US$ 218.73 million likely increment in the exports, as shown in Table 4.4. Among the most evident export destination for Kenyan goods and commodities, there are countries like the United Kingdom with a 21.04 per cent increment in its exports, followed by Germany with 19.79 per cent, Italy with 12.12 per cent, France with 12.11 per cent, the Netherlands with 9.6 per cent, and Belgium with 6.19 per cent. These were the most visible export destinations for Kenyan commodities. The statistics indicate that Kenya exports to the EU stood at 17.2 per cent of Kenya's total exports (Nugent & Rhinard 2015).

The improved competitiveness caused by a reduction in the production costs of capital goods and raw materials from the EU would lead to increased exports from Kenya to the EU (Matthews 2010). The improvement in the exports would also improve the socio-economic engagement between Kenya and EU Union. Table 6.7 lists the major exports after the EUFTA.

**Table 4.7: Kenya's major exports after EPAs (US$ Million)**

| HS Code | Product Description | Exported value |
|---------|--------------------|----------------|
| '09 | Coffee, tea, mate and spices | 643.49 |
| '06 | Live trees, plants, bulbs, roots, cut flowers etc | 386.15 |
| '27 | Mineral fuels, oils, distillation products, etc | 383.53 |
| '07 | Edible vegetables and certain roots and tubers | 149.05 |
| '62 | Apparel, accessories, not knit or crochet | 106.05 |
| '28 | Inorganic chemicals, precious metal compound | 105.70 |
| '61 | Articles of apparel, accessories, knit or crochet | 99.69 |
| '25 | Salt, sulphur,  stone, plaster, lime and cement | 77.06 |
| '41 | Raw hides and skins  and leather | 68.93 |
| '20 | Vegetable, fruit, nut, etc food preparations | 66.44 |
| '08 | Edible fruit, nuts, peel of citrus fruit, melons | 58.15 |

| '39 | Plastics and articles thereof | 58.03 |
|---|---|---|
| '24 | Tobacco and manufactured tobacco substitutes | 53.27 |
| '84 | Machinery, nuclear reactors, boilers, etc | 53.20 |
| '34 | Soaps, lubricants, waxes,  modelling pastes | 50.10 |

Source: Author's own calculations based on SMART simulations.

Table 4.7 reveals that the major exports from Kenya to Europe were Coffee, tea, mate and spices valued at US$643.49 million followed by live trees, plants, bulbs, roots and cut flowers worth US$386.15 million. The third largest groups of items were mineral fuels, oils, distillation products valued at US$ 383.53 million, edible vegetables and certain roots and tubers worth US$149.05 million.

Other commodities include articles of apparel, accessories, inorganic chemicals, precious metal compounds, isotopes, accessories - knitted or crocheted, salt, sulphur, earth, stone, plaster, lime and cement, raw hides and skins (other than fur-skins) and leather, vegetables, fruit, nuts, etc. food preparations, edible fruit, nuts, peel of citrus fruit, melons among other items listed  in Table 4.7. Galar (2015) agreed that most of the goods that Kenya exports to the European Union are primary products. The primary products, according to the World Bank (2014) are vulnerable to most economic shocks and interferences by natural factors, which inevitably lead to increased losses.

### 4.5    Impact of EPAs on Kenya's imports

The developing nations have been working to control and regulate the inflow of imports, without hindering economic growth. This was done with a common goal of reducing the balance-of-payments deficit (Milner, Morrissey & McKay 2005). The objectives of this study were to assess how Kenya's imports had been affected after it became part of the EU FTA. Based on the WITS/SMART simulation, the findings realised are shown in Table 4.8.

**Table 4.8: The impact of EPAs on imports (US$ Millions)**

| Partner countries | Imports Before FTA | Imports After FTA | Import Change |
|---|---|---|---|
| European union | 11,124.51 | 11,253.96 | 129.45 |

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Source: Researcher's own calculation and WITS-SMART simulation approach.

Based on the partial-equilibrium approach, the study notes that Kenya is expecting an increment in its imports from the EU of US$129.45 million, which would result from the trade-creation effects.

As the study earlier mentioned, trade creation and trade-diversion effects have had a strong influence on the quality and quantity of imports into Kenya (Kohl 2014).

**Table 4.9: Major imports in Kenya from EU (US$ Millions)**

| HS Code | Product Code | Imports Before FTA | Import Change |
|---|---|---|---|
| 87 | Vehicles, parts and accessories | 293.06 | 7.37 |
| 27 | Mineral fuels, oils, and waxes | 1557.83 | 7.29 |
| 63 | Textile articles and sets; | 51.94 | 6.67 |
| 85 | Electrical machinery and televisions. | 19.84 | 5.54 |
| 48 | Paper  articles of paper pulp | 20.41 | 5.50 |
| 73 | Articles of Iron or Steel | 6.12 | 4.02 |
| 10 | Cereals | 201.28 | 2.95 |
| 21 | Miscellaneous edible preparations | 22.03 | 1.88 |

.Source: Researcher's own calculations based on SMART simulations.

This is mainly attributed to the preferential trade agreements from the full privilege of the EPAs pact. Table 4.9 indicates that there would be a positive import change of US$129.45 million. This is a clear indication of the growth in imports from the EU. Vehicles other than railway, tramway rolling stock parts and accessories, were the most imported commodities by Kenya from the EU – with an import value of US$293.06 million.

Table 6.9 shows that the import change comprised US$7.37 million of vehicles, tramway rolling stock, parts and accessories from the EU. The second group of products with the largest import value comprised mineral fuels, mineral oils and products of their distillation; bituminous

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substances; mineral waxes with an import value of US$7.29 million. These were followed by items, such as textiles; worn clothing and worn textile articles; rags valued at US$51.94 million, electrical machinery, equipment and parts, sound recorders and reproducers, television screens, parts and accessories worth US$19.84 million along with the other commodities mentioned in Table 6.9.

These findings were in line with those of Zgovu and Kweka (2009), who assessed the impact of the EUFTA using the partial-equilibrium model approach in Tanzania and Malawi. Their findings indicated a probable increase of one per cent for Tanzania and 6 per cent for Malawi, respectively after the full implementation of the EPAs.

Studies by Guei *et al.* (2015), who estimated the revenue, welfare and trade results from the EU-South Africa FTA had similar outcomes to this study. They found that South Africa was likely to register an import growth of US$1,266.12 billion, as a result of the FTA with the EU. They further confirmed the similarity to imports of petroleum oils and oil from bituminous material worth US$1,557,526, as the main imports from the EU. Other imported products were motor vehicles and motor vehicle parts, electrical machinery and equipment, which the developed nations, like the EU, have a comparative advantage in manufacturing.

These findings were further confirmed by Urata and Okabe (2014), who confirmed that the quality of exports in developing countries has always been very poor – unlike the imports they receive from the first-world countries, which have quality and highly developed technologies; this ultimately lead to a significant  balance-of-payments deficit.

**5. 0 Conclusions and Policy Recommendation**

This section outlines the noted research outcomes resulting from the trade creation, trade diversion, revenue, welfare, and export and import implications on Kenya. The final section placed forward the various policy recommendations Kenya would adopt to maximally gain from the EPAs free trade arrangement.

This study arrived at the following findings using the WITS/SMART model approach in evaluating the influence of the influence of most favoured nation's tariff rates on Kenya.

1) Kenya is expected to have a trade creation effect amounting to US$ 129.45 million that would be necessary to offset the trade diversion effects. This would consequently lead to a net welfare gain after the unilateral implementation of the Economic Partnership Agreement.

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2) The SMART simulations findings indicate that Kenya is expected to get a revenue loss amounting to US$ 142.36 million resulting from the implementation of the EPA's Free Trade Agreement. The losses are mostly due to the withdrawal of tariff revenue from the member states which are part of the COMESA region without Kenya being adequately prepared to fill in the gap through alternative revenues

3) The WITS/SMART simulation shows that Kenya will expecting to experience consumer welfare gains amounting to  US$17.56  million after the implementation of the  EPA's treaty.

4) Kenya is also expected to register positive growth trends in exports worth US$ 218.73million where as imports also grew by US$ 129.45 million.

It noted that the losses realised were greater than the consumer welfare benefits. This necessitates that policy makers should work out on reducing the losses as well as increasing the welfare benefits from the free trade agreement with the EPA's.

### 5.1 Policy Options for Kenya

An ultimate free trade agreement is inescapable for Kenya. A number of measures could be put in place to mitigate the negative impact and also enhance the benefits of the EPA's.

i. Kenya as a country needs to work on improving its revenue collection. This would necessitate the improvements of methods and sources of revenue collection. This can be solicited through company and personal taxes, excise duty so as to fill in the deficit arising from tariff withdrawal due to EPA's. Policy makers should also work on the configuration of the income tax bands to make them more progressive in nature which would eventually lead to an increase in government revenue. Government revenue collection agencies who work on modalities of revenue collection without discouraging work and investments. Finally the treasury in Kenya needs to factor in Value added tax to as vital trade policy instrument to alleviate revenue losses due to trade liberalisation  as suggested by (Mugano, Brookes and Le Roux 2013)

ii. The Kenyan government should discuss with the EPA's partners on the modalities of a tariff phase down period for Kenya. This would ensure   adequate time to facilitate her consolidations of gains from regional integration and also develop its productive capacity for the infant industry besides the protection of sensitive sectors.

iii. The European Union  policy makers and  Kenyan government need to educate and sensitize its citizen's and staff on the effects of trade reforms to ensure they take adequate steps to ensure higher consumer welfare.

iv.     Kenyan policy makers should look into alternatives of developing the domestic market to increase revenue generation from other local taxes that would fully compensate for the expected losses in revenue loss arising from lost tariff revenue through trade liberalisation (reduced taxes) and the increased budget supporting free trade transactions.

v.      The Government of Kenya has to put in place capacity utilisation and re-tooling loan facility that would motivate the industries to increase their capacity consumption and improvement their competitiveness and efficiency as they prepare for tariff withdrawal.    Policy makers should propose an industrial bank in 2016-2020 that would mainly be essential in providing long term loans to fund industries concessionary tariff rates for re-tooling.

vi.     The Kenyan policy makers should strive for a detailed product - by-product and sector-by-sector negotiation on the guiding tariff, standards and regulations. This would ensure transparency among the trading and protecting the consumers from substandard products that would reduce consumer welfare. It would also go a long way to protect the infant industry from unfair competition coming other countries/firms  outside the RTA  that are smuggle into the region to enjoy preferential treatment at the expense of infant industries.

vii.    Kenyan policy makers and negotiators should petition for an agreeable standards protection measure that would be used to protect the consumers from poisonous and substandard products but also guard against malicious regulation aimed at barring exports from Kenya to the European Union among other countries. This would facilitate growth of exports from Kenya to various market destinations under the free trade agreement protocol.

viii.   The members in the Economic Partnership agreement should agree on the costs repayments as a result of complying with the various technical barriers to trade (TBT) and the sanitary and phyto sanitary measures. This would ensure reduced losses arising from extra requirements not mentioned within the free trade negotiation but in member countries.

ix.     The EU should facilitate greater access to accurate trade related information. This should include changes in standards of exports and imports required, changes in legal requirements on immigration and shipment of goods, methods to verify correctness of trade information and various links for assistance to traders in foreign and their nation e.g. the European retailers Code of good agricultural practice (EUREGAP).

x.      The EU, should agree to harmonise standards of individual countries with internationally acceptable standards to promote uniform compliance hence reduce compliance costs by various member partners.

xi.     The government of Kenya and the various free trade agreement boards should offer support service especially trade capacity building. The various department dealing with exports should

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equip and train members on the various regulation and standards (Quality control) needed to ensure they fully comply hence increase the increase exports, revenue and the consumer welfare of Kenya.

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