



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

The Impact of Regional Economic Cooperation on the Ethiopian Manufacturing Sector: The Case of Common Market for Southern and Eastern Free Trade Area (COMESA-FTA)*

Getachew Asgedom Tessema
Tadele Ferede
Arega Hailu
Fantu Guta

Abstract

A computable partial equilibrium (CPE) model is employed to quantify the welfare implications of COMESA-FTA on the Ethiopian manufacturing sector. The results of the model indicate that the value of imports have expanded as a result of tariff elimination on imports from COMESA member countries. This increase in value of imports led to consumption expansion, implying an increase in consumer's surplus. There is also negative budgetary implication implied by the loss in tariff revenue. The net welfare effect, which is the combined effect determined by the relative magnitudes these effects, reveals a welfare loss of 0.06% of GDP.

Over all, the static welfare effect of complete tariff removal on commodities imported from COMESA member countries appeared to be welfare depressing. However, this should be treated with caution since it does not show the dynamic effects relating to market size, efficiency gains and economies of scale that might have been attained in the long run. Moreover, this analysis focuses only on the manufacturing sector, it does not indicate the economy wide effects of complete tariff removal on imported commodities from COMESA member countries.

Key words: COMESA, FTA, welfare, tariff, region, and integration.

* The authors are very grateful for the Ethiopian government institutions for providing data and information, the UNECA, and a number of people for their comments and suggestions.

Correspondence: Tadele Ferede, Department of Economics, Addis Ababa University, P.O. Box 81192, Addis Ababa, Ethiopia. e-mail: tadeleferede@yahoo.com

1. Introduction

The regional integration issue in Africa mooted in 1958 with vigor and sensation. The Monrovia Declaration, The Lagos Plan of Action and The Final Act of Lagos have underlined economic integration and co-operation as indispensable for the economic transformation of African countries. As reflected in the treaty establishing the African Economic Community, integration remains a key solution to overcoming the problems of economic fragmentation and promoting economic diversification and inter-linkages among production sectors in member countries.

During the early 1960s, the eastern and southern African sub-region had already begun to make some commendable initiatives towards the formation of a sub-regional common market. The UNECA's inter-disciplinary mission on industrial coordination in 1963, the Ministerial meeting in 1965 in Lusaka/Zambia for the promotion of sub-regional co-operation and economic integration, the events of May 1966 Interim Council of Ministers, and the 1968 and 1969 summits of the Central and Eastern African States had an impact on route to the establishment of the PTA. Though the progress towards this end slowed down in the period between 1970 and 1977 due to the escalation of the liberation struggle in the southern Africa sub-region and the collapse of the East African Community (EAC) in 1977, which to a certain extent dampened the spirits of proponents of sub-regional co-operation and integration.

The Common Market for Eastern and Southern Africa Free Trade area (COMESA-FTA) was launched on 31st October 2000 by nine participating member states of Djibouti, Egypt, Kenya, Madagascar, Malawi, Mauritius, Sudan, Zambia, and Zimbabwe. These countries have all reduced tariff by 100% accordingly. Nevertheless, the remaining COMESA member states, including Ethiopia, have not yet joined the FTA launched by COMESA. This is mainly because these countries do not clearly understand their gains from the integration process. Further more, the question of equitable distribution of costs and benefits (for example, intra-trade imbalance, loss of customs revenue, polarization effect), among countries participating in the FTA is also of great concern to the Member States, in which case whether genuine or perceived, may result in the implementation of inconsistent policies and treaties among member countries. This could hinder the implementation of the various treaties signed in relation to the economic integration effort in the region. Although a growing number of countries have been exploring and participating in regional trading agreements, the causes and consequences of regional integration have given rise to an extensive and vigorous debate among researchers, policy

makers, the business community and citizens of countries at large. One of the reasons for such concerns could be that the impacts on member countries, including Ethiopia, are not well assessed. The main purpose of this paper is thus to examine the cost and benefit of COMESA-FTA on the Ethiopian manufacturing sector. In so doing, there are a number of empirical questions that this study will try to address.

The first sets of questions are concerned with the nature and type of imports. What is the effect of COMESA-FTA on the volume of imports? Will the volume of imports increase, decrease, or stay unchanged as a result of Ethiopia's accession to the COMESA-FTA? If the volume of imports changes, then what type commodities will be highly affected as a result of the trade arrangement? The later is an important question since the size of imports could affect the domestic consumption structure and producers. For example, as the volume of imports increases, consumers will enjoy expanded range of goods with reduced prices. On the other hand, expansion of imports could displace uncompetitive domestic producers while competitive producers will exploit extended market opportunities and increase their efficiency. The second important area of concerned is related with loss of government revenue. What is the revenue impact of joining COMESA-FTA? If there is revenue reduction, are there alternatives of compensating or nullifying revenue losses? Finally, the effect on consumers, producers or government revenue alone cannot be a sufficient condition for evaluating regional trade arrangements. What is more important is the net welfare effect of trade agreements. What is the net impact of COMESA-FTA on the Ethiopian economy?

The paper is structured as follows: following the introduction, section two deals with the conceptual framework. Section three provides review of empirical evidence. Section four discusses the database and methodology followed by discussion of results in section five. Conclusions and policy implications are provided in the section six.

2. Conceptual Framework

Regional economic integration occurs when different countries come together to form free trade areas or customs unions, offering members preferential trade access to each other's markets. In other words, regional economic agreements are groupings of countries formed with the objective of reducing trade barriers between members (Venables, 2000). In the post-war period, developments were led by the European Union, which was originally founded in 1958 as European common market, and since then especially in the 1960s and 1970s a number of regional economic agreements were established between developing countries.

At the centre of economic analysis of regional economic integration arrangements there lie the concepts of trade creation and trade diversion. Essentially, these concepts are the extensions of the theory of comparative advantage and the gains from trade. Trade creation can occur within regional economic integration arrangements (RTA). Production efficiency improves when RTA member countries import more from lower cost RTA partners, and less efficient domestic production falls. Consumption efficiency improves when consumers in an RTA can buy imports at prices that are lower than those for domestic products (Cernat, 2001 and Canovas, 2001). On the other hand, trade diversion occurs when RTA members switch their imports from more efficient non-member countries to less efficient partner countries within the RTA. This reduces the overall production efficiency and harms consumers within the RTA, who now import from high-cost members of the RTA.

Regional economic arrangements have been subject of considerable research and analysis in the economic literature since the seminal contributions of Viner (1950) and Mead (1955); see also DeRosa, 1998, 2001. Viner introduced the idea of trade creation and trade diversion as a result of customs union and free trade arrangements. Figure 1 below illustrates the idea of trade creation and trade diversion which is usually referred to as the Venerian (1950) analytical framework of trade analysis. The Venerian framework is based on a computable partial equilibrium (CPE) analysis identifying demand, supply, and trade of homogenous goods which are final consumption goods by three representative countries, namely the home country (H), the partner country (P), and the rest of the world (W) representing a non-member country. It is assumed that increasing cost of production¹ is applicable in regional trading countries since their natural resource base and other productive endowments are limited as compared to the rest of the world in general. The regional trading partners are price-takers in the world markets since they are small and cannot affect the world price of products. Following Baldwin (1997), let us consider two potential sources of imports, namely country A and country B. Assume that the home country

¹ The effect of regional economic integration on welfare can be modeled under constant cost assumptions. In fact, the original Viner (1950) analysis was based on this assumption. It is argued that "under constant cost conditions, a free trade are established among "small" countries unable to affect the rest of the world will be entirely trade- creating and hence, welfare improving for the trading bloc and its individual member countries if member countries are predominantly least-cost producers of exportables. If one or more member countries are inefficient producers of exportables which tend to cause significant trade diversion with non-member countries, then the inefficient member countries will gain from regional economic integration. On the other hand, efficient member countries will not necessarily gain because welfare improvements resulting from trade creation might not be sufficient enough to offset welfare and the tariff revenue losses resulting from trade diversion. Hence, it is also uncertain in such circumstances whether the trading bloc as a whole will gain" (DeRosa, 1998: 11-12). However, such type assumption is very restrictive and cannot represent the prevailing realities of developing countries such as Ethiopia (see Baldwin, 1997; DeRosa, 1998, and DeRosa and Saber, 2000).

introduces a trade barrier, that is, a tariff which raises the domestic price of imports above the world price by the amount of the tariff. As indicated in the figure below, domestic or home consumers pay P^a+T to import from country A and P^b+T to import country B. This implies that all imports would come from country A. The domestic price of imports from country A is fixed at P^a+T and the magnitude of imports is given by Q_3-Q_2 .

Suppose that the home country signs a free trade agreement with country B but not with country A. This arrangement entails a reduction of local price of goods imported from country B, that is, they cost only P^b . However, goods imported from country A cost higher price domestically. Home consumers switch their imports from country A to country B and this changes the relative competitiveness of goods from countries A and B. This has four effects: The first effect is that reduction of tariffs by the home country for its partner will increase competition from imports and decreases the price of domestically made goods to P^b . Secondly, high-cost home production goods are replaced by cheap imports from country B with the magnitude of Q_2-Q_1 . Thirdly, imports from country A are completely diverted to country B. Finally, domestic consumption has increased to Q_4 (see Baldwin, 1997).

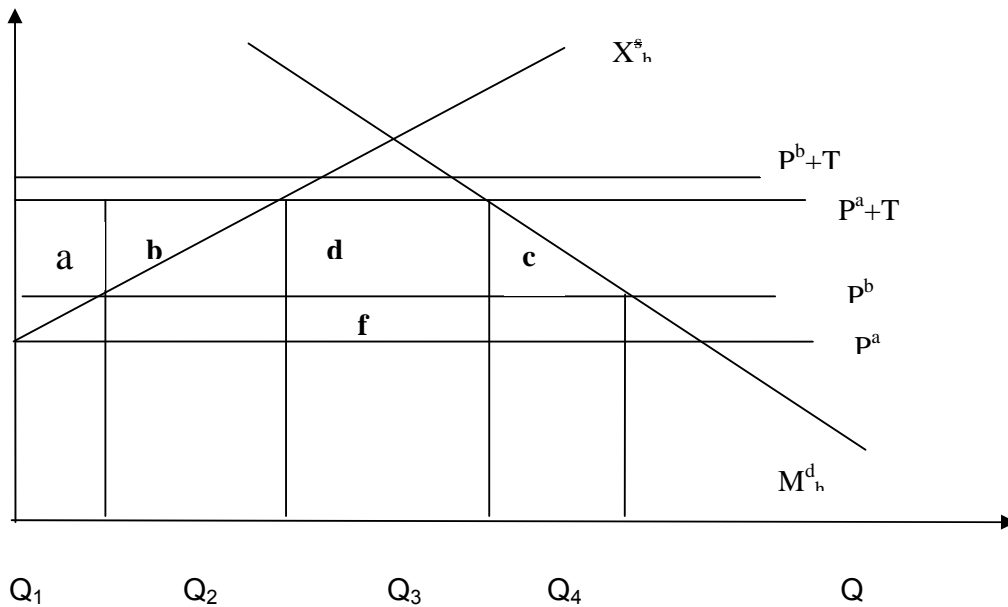


Figure 1: Trade creation and trade diversion

According to the traditional analysis, the elimination of tariff on the imported goods on a partner country has an impact on the welfare of member countries and non-member countries². This effect can be classified into trade creation, trade diversion and loss of government revenue. As indicated in the figure, the home country imports none of the good from the country with which it signs the free trade agreement. However, after the free trade agreement, home country diverts all of its imports from country A to country B. This is what is known as trade diversion. As a result, the government loses all tariff revenue due to the switch of import sources. The magnitude of the loss is equivalent to the areas d and f. Because of tariff reduction, domestic consumers in the home country benefit from lower-price of goods by an amount equal to the areas a, b, c, d, and e while domestic producers are adversely affected which is equivalent to the area a and b. Hence, the net effect on the home country is equal to the areas c and e.

In the above analysis, the cost of trade diversion is equal to the area f which emanates from the fact that after free trade, the home country imports goods from the high cost supplier. Similarly, the trade creation gains are areas c and e, consisting of reduced producer distortion, represented by area C and reduced consumer distortion, represented by area e. A discriminatory tariff reduction could lead home consumers to switch from low-cost supplier to a high-cost supplier. This would bring the possibility of welfare loss for the home country. Suppose the home country has signed a free trade agreement with country A instead of B. Because country A was the low-cost supplier, there is no possibility of that the tariff reduction would lead to switching of imports and hence, the home country would be better off.

It is clear from the preceding discussion that RTAs have both trade-creating and trade-diverting effects. The issue is which effect dominates and this depends upon a number of factors, including production cost differences, rates of initial tariffs, and relative supply and demand responses. Apart from static effects of regional economic integration, there are also long-term effects such as increased competition, economies of scale, stimulus to investment, and efficient use of resources.

²It has been documented that “under increasing cost conditions, a free trade area established among “small” countries unable to affect the rest of the world will be entirely trade-diverting so long as non-member countries continue to supply imports to member countries. Although member country producers whose exports to other member countries are increased under regional economic arrangement will enjoy welfare gains, the welfare of member countries will typically decline because they give up significant tariff revenues and enjoy no overall increase in their imports. ...[T]he certainty of welfare losses occurring under increasing cost conditions is greater, the less highly protectionist are, initially, the countries forming the regional economic arrangement” (DeRosa, 1998: 18).

3. Empirical Evidence

In the preceding section, an attempt has been made to highlight the basic theoretical underpinnings of the economics of regional economic integration and their theoretical benefits and costs. Regional economic arrangements have both static and dynamic effects and consequently their impact on welfare. The theoretical predictions of the effects of regional economic arrangements on welfare are not, however, certain in general.

The empirical evidence of the welfare implications of trade reforms take two main forms: results derived from econometric studies and those of computable equilibrium models.

Although there are a variety of different econometric methods employed to evaluate the effects of RTAs, gravity models and growth regressions are the most widely used in the empirical literature. Gravity models estimate bilateral trade between countries as a function of the size of the two economies (usually measured by their GDPs), and the distance between them. Empirical evidence using this method appears to indicate that regional economic cooperation has both welfare-enhancing effects (Cernat, 2001; Sayan, 1998; Burfisher and Jones, 2000; Paas, 2002; and Augustine, 2001) and welfare reducing effects (Alemayehu and Haile, 2001; and Choudhri and Hakura, 2000). On the other hand, results from growth regressions and factor decomposition methods indicate that regional economic integration stimulates economic growth and reduces poverty (Badinger, 2001; Dollar and Kraay, 2001; Stryker and Pandolfi, 1999; Gwartney and Skipton, 2000; Blackburn and Hung, 1996; Hertel et al., 2003a; Hertel et al., 200b; and Frankel et al., 1996). In other words, more open economies enjoy higher per capita GDP growth than the closed ones. However, while recognising the positive correlation between openness and growth, few are sceptical about the relationship between trade and growth (Rodriguez and Rodrik (1999) and Irwin (2002).

Empirical evidences using computable partial equilibrium model and mathematical models indicate that the effects of free trade area on welfare are mixed. For instance, DeRosa (1998); Ngeno et al (2002); Lyakurwa et al. (2002); and Antingi-Ego et al. (2001) used a mathematical model to estimate the revenue implications of free trade area of East African Community (EAC). Their results show that although there is welfare loss in the form of government revenue loss, there are countries who gain (e.g. Kenya and Tanzania) and lose (e.g. Uganda) from trade arrangement and hence, the effects are mixed.

On the other hand, Sunny et al. (1998) used computable partial equilibrium model and found that the fear of government revenue loss has not been supported by the experience of three African countries: Botswana, Zambia and Zimbabwe over the six-year period, 1985-1990. It has been argued that revenue loss is simply a redistribution of income from government to consumers as the latter benefit from reduced price of imported goods.

In the Ethiopian context, little is known about the economic effects of the country's accession to COMESA Free Trade Area, however. The only exceptions are studies by Girma Zewdie (1976) and Zewdie and Associates (2000). The former used a partial equilibrium model to assess the revenue effects of Ethiopia's accession to the East Africa Common Market (EACM). The interesting aspect of this study is that the estimation is based on the highly disaggregated imported manufactured commodities. The results of the study indicated that the shift by Ethiopia from national tariff to East African Common External Tariff caused imports to expand and hence, loss of customs revenue. The study, however, failed to address other important issues such as the effect of common external tariff on consumers' and producers' welfare, and did not show the total economic impacts of introducing common external tariff.

Girma (2000) used the residual imputation model to examine the trade creating and diverting effect of Preferential Trade Arrangement (PTA) on intra and extra-regional imports of member countries. The study found virtually little or no evidence of trade creation and diversion among the PTA member countries. However, there has been significant external trade creation, i.e., after integration, a move has been observed from high-cost partners to low-cost non-partner countries.

Despite the current wave of regional economic arrangements or free trade areas in both developed and developing countries, the above empirical evidences suggest that the static welfare gains of regional economic integration are below expectations or in some cases minimal and some countries experienced loss, implying that empirical evidence on the effects of free trade area on welfare shows mixed results.

4. Database and Methodology

4.1 Database for the Study

The basic data employed in this study to analyze trade flows consists of three-year averages for the years 1998 to 2000 on international trade by Ethiopia and its principal trading partners, namely, COMESA member countries and the rest of the

world. A three-year average is considered in order to smoothen up the year-to-year fluctuations of trade statistics for various reasons.

The data is disaggregated by categories of commodities denominated in local currency. The data on imports from and export to COMESA member countries and rest of the world are obtained from the Ethiopian Customs Authority. The data are provided at the two-digit level of the harmonized system that recorded the bilateral trade flows. Data on values of domestically produced import substitutes are obtained from various publications of the Central Statistical Authority on manufacturing industries. Similarly, the averages of 1998 to 2000 data are used for the values of domestically produced import substitute commodities.

4.2 Methodology

In light of the theoretical and empirical discussions, a computable partial equilibrium (CPE) model has been employed to assess the static effects of COMESA-FTA on the manufacturing sector of Ethiopia. The model is used to assess the likely impacts on welfare of the home country (Ethiopia in this case) of reducing and/or elimination of tariff on imports of commodities originating from the COMESA member countries. The model considers three actors in the trading arrangements between the home country and COMESA. These are the home country (Eth), the trading partners of COMESA member countries taken together as a single trading bloc (COM) and the rest of the world (ROW).

The effects of Ethiopia-COMESA trade arrangement have three components, namely, consumption effect, a trade diversion effect of and a trade creation effect.³ The first effect occurs when COMESA member countries are globally efficient and hence, the dominant supplier prior to the imposition of discriminatory tariff, we have the consumption effect only following complete cessation of tariff on imports from COMESA member countries. Accordingly, the welfare (ΔW^{ceo}) effects that are associated with the complete cessation of tariff on imports from COMESA member countries are given by:

$$\Delta W^{ceo} = \frac{1}{2} \sum t_{0,i}^{com} \left(\frac{t_{0,i}^{com}}{1+t_{0,i}^{com}} \right) e_{m,i}^d M_{0,i}^{com} P_i^{com} \quad (1)$$

³ The specifications of trade effects, revenue, producers' surplus and consumers' gain have been left out. The equations of these variables can be obtained from the authors on request.

Where $t_{0,i}^{com}$ = current non-discriminatory (ad-valorem) tariff on commodity i on COMESA imports; $e_{m,i}^d$ = own price elasticity of demand for import of commodity i ; $M_{0,i}^{com}$ = current volume of import of commodity i from COMESA associated with tariff t_0 ; and P_i^{com} = current duty free unit value of commodity i from COMESA member countries.

For those commodities where the ROW is the dominant supplier, assuming that $P^{com} < P_0^{row}$, complete cessation of tariffs on commodities imported from COMESA member countries results in a complete trade diversion from ROW to the partner countries. The welfare (ΔW^{TD0}) impact of trade diversion with consumption effects on the home country as a result of the complete elimination of tariff from commodities imported from COMESA member countries can be estimated by:

$$\Delta W^{TD0} = \frac{1}{2} \sum \left[(1 + t_{0,i}^{row}) P_i^{row} - P_i^{com} \right] \left(\frac{(1 + t_{0,i}^{row}) \cdot P_i^{row} - P_i^{com}}{(1 + t_{0,i}^{row}) \cdot P_i^{row}} \right) e_{m,i}^d \cdot M_{0,i}^{row} - \sum (P_i^{com} - P_i^{row}) M_{0,i}^{row} \quad (2)$$

For commodities where the home country is not relatively minor supplier, the effects of trade creation (i.e., trade source substitution) with consumption are estimated the same as that of trade diversion. Here, it is assumed that the COMESA member countries are more efficient supplier than the rest of the world, which is to mean that the supply curve of COMESA lies below that of the rest of the world. The welfare (ΔW^{TC0}) effects of this trade can be stated as:

$$\Delta W^{TC0} = \frac{1}{2} \sum t_{0,i}^{com} \left(\frac{t_{0,i}^{com}}{1 + t_{0,i}^{com}} \right) e_{m,i}^s \cdot P_i^E \cdot M_{0,i}^E + \frac{1}{2} \sum t_{0,i}^{com} \left(\frac{t_{0,i}^{com}}{1 + t_{0,i}^{com}} \right) e_{m,i}^d \cdot P_i^{com} \cdot M_{0,i}^{com} \quad (3)$$

where $M_{0,i}^E$ = current quantity of domestically produced import substitute of commodity i when the tariff rate on imports from COMESA is t_0 ; and $P_{0,i}^E$ = current price of domestically produced import substitute of commodity i when the tariff rate on imports from COMESA is t_0 .

Finally, the overall estimate of the trade effects due to consumption, trade diversion and creation can be obtained by aggregating these effects over all commodities.

Similarly, the government revenue and welfare effects can also be aggregated over all commodities to give us the net welfare effects of the Ethiopia-COMESA trade arrangement.

5. Discussion of Results

For the purpose of introducing to the model results, it is important to note that the magnitude of imports from COMESA member countries is very small. It accounted for, on average, 4.55% of the value of total imports during 1998-2000 while the average share of imports from the rest of the world was 95.45% of the value of total imports during the same period. If one looks at imported manufactured goods, the structure basically remains the same. The average share of manufacturing imports from COMESA member countries accounted for 4.53% of the value of total imports during 1998-2000 and the remaining (95.47%) was from the rest of the world.

The type of imported manufactured goods from COMESA member countries revealed that they are mainly food items, textile products, tobacco, wood and wood products, printed books and the like. Imports of machinery, equipment, and other capital goods are non-existent from COMESA member countries. This is not surprising since COMESA member countries do not have the capacity to produce capital goods. The import demand for these types of goods is satisfied from the rest of the world. In general however, the trading relationship among COMESA member countries is not strong.

Similarly, the average share of duty collected from imports of COMESA member countries accounted for 6.26% of the total duty collected during 1998-2000 while 93.74% was collected from goods imported from the rest of the world. Duty collected from imports of manufactured goods from COMESA member countries has been negligible (accounted for on average 6.21% of the total duty collected during 1998-2000). The main source of duty for the Ethiopian government has been imports of manufactured goods from the rest of the world, accounted for on average 93.79% of the total duty during the indicated period.

On the export side, Ethiopia exported commodities worth of Birr 467.07 million to COMESA member countries as compared to Birr 3.34 billion to the rest of the world in 1998-2000. In other words, Ethiopia's export to COMESA member countries represented only 12.22% of the total value of exports to the world or 23% of the total volume of exports during 1998-2000. This indicates that Ethiopia is highly dependent

on the rest of the world for its imports and exports. Bearing these facts in mind, we will now examine the potential effects of tariff elimination on imports from COMESA countries on trade, revenue and the overall welfare effects on Ethiopia, on the basis the based outcomes of the model.

5.1 Trade, Revenue and Welfare Effects of Tariff Elimination on Imports from COMESA

It has been argued that regional integration is assumed to occur via complete elimination of tariff on imports from member countries in the free trade area. To this end, Ethiopia's accession to COMESA-FTA would require a zero-tariff rate for commodities originating from COMESA member countries, while maintaining its tariff rates with the rest of the world. The model is used to estimate the potential trade, revenue and welfare effects of the Ethiopia-COMESA trade partnership that involve the elimination or reduction of tariff on imports from COMESA member countries.

The following assumptions are made in the foregoing analysis. It is assumed that the volume and value of Ethiopia's exports will not be affected significantly by tariff changes in the short-run. Similarly, the structure of the domestic manufacturing sector does not change in the short-run. Moreover, the composition of imports from COMESA member countries and the rest of the world are assumed to remain unchanged in the period under consideration. It is also assumed that the rate of tariff on commodities coming from the rest of the world remains unchanged in the short-run. Furthermore, it is assumed that the COMESA member countries have the capacity to meet import demands of Ethiopia that is created for COMESA member countries as a result of this trade arrangement. It is also assumed that the commodity groupings at the two-digit level of the harmonized system imported from COMESA member countries and the rest of the world are perfect substitutes.

Regional integration through complete elimination of tariff has different impacts on different sectors of the manufacturing activities. On those commodities where COMESA member countries are efficient and are the main suppliers before any trade arrangement, the model estimates consumption effect only, resulting from reduced prices on imported commodities. According to these results, there appears to be an expansion of imports (by about 0.03% of GDP or 0.15 % of the total value of imports) as result consumption has expanded marginally by about 0.002% of GDP (Table 5.1). This would benefit domestic consumers considerably. This is so since as price of

imports falls, quantity demanded increases for normal goods and hence consumers enjoy more goods at reduced prices.

Those commodities where significant expansion of imports occurs include rubber and articles, other made up textile articles and worn clothing, salt, sulphur, plastering, cosmetics, lime and cement and articles of iron and steel. In these sectors, it is expected that domestic producers anticipate greater competition from imports from COMESA member countries.

Table 5.1: The result on commodities with consumption effects only

Variables	Amount (in '000'Birr and %)
Change in value of imports	15,451.60
(% of 2000 total imports)	0.15
Change in consumption	1,140.56
(%of 2000 GDP at market prices)	0.002
Change in tariff revenue	-9,705.37
(% of 2000 total tax revenue)	-0.15
Change in welfare	1,140.56
(% of 2000 GDP at constant prices)	0.002

Source: Model result

On the other hand, there exists a loss in government revenue amounting to 0.002% of GDP or 0.15% of the total tax revenue collected in the year 2000. As indicated, elimination of import tariffs on COMESA member countries has both positive and negative effects on these sectors, i.e., an increase in consumption and a loss in tariff revenue. The net welfare effect depends on the relative magnitudes of the gain in consumers and the loss in tariff revenue. Since the loss in tariff revenue is offset by the gain in consumers, the net welfare effect is an increase in consumption, which is positive. In fact, however small it may be, welfare has increased by about 0.002% of GDP.

For those commodities where the rest of the world is currently the major supplier, complete cessation of tariffs from COMESA member countries result in trade diversion from rest of the world to COMESA member countries as well as consumption effects on domestic consumers. As a result, imports tend to expand by about 0.34% of GDP or 1.73% of the total value of imports (Table 5.2).

A significant expansion of imports occur in the commodities: man-made staple fibers (such as woven fabrics, plain weave fabrics, dyed weave fabrics, yarn and the like),

miscellaneous chemical products (such as insecticides, fungicides, herbicides, disinfectant, finishing agents used in the textile and similar industries, etc), foot wear, gaiters and articles of such parts (such as sports footwear with plastic or rubber soles and textile uppers, training shoes, sandals with leather soles and straps, etc), animal and/or vegetable fats and oils (such as edible animal fats and oil, edible vegetable fats and oil, glycerol and like), art of apparel and clothing access (such as women's or girls suits of synthetic fibers, men's or boy's trousers and breeches of other textiles, men's or boy's ensembles of cotton, men's or boys' jackets and blazers of wool or fine animal hair, etc) and the like.

Table 5.2: Results for commodities with trade diversion and consumption effects

Variables	Amount (in '000'Birr and %)
Change in value of imports	175,944.21
(% of 2000 total imports)	1.73
Change in consumption	14,926.84
(%of 2000 GDP at market prices)	0.03
Change in tariff revenue	-177,433.41
(% of 2000 total tax revenue)	-2.74
Change in welfare	-69,014.77
(% of 2000 GDP at constant prices)	-0.13

Source: Model result

In these sectors it is expected that greater market opportunities for COMESA suppliers would occur via displacing non-COMESA suppliers, i.e., diversion of imports from the rest of the world. Because of the increase in imports, consumption has also expanded by about 0.01% of GDP. On the other hand, government revenue has reduced by 0.34% of GDP or 2.74% of the total tax revenue, implying a negative net welfare effect amounting to 0.13% of GDP. This is because the duty-inclusive price of the rest of the world is less than the tariff-free unit value of COMESA member countries.

The third effect of tariff elimination is related to trade creation for COMESA member countries and consumption effect for domestic consumers. To this end, the model has identified manufacturing commodities that have trade creating with consumption effects (Table 5.3).

For these sectors, the value of trade created for COMESA member countries is about 1.68% of GDP or 8.59% of the total value of imports. This is the main source of trade

expansion for Ethiopia, with an estimated Birr 875.5 million value of additional imports from COMESA member countries. This has come as a result of displacement of domestic industries that are more expensive than their counterparts and consumption expansion in the country. The maximum possible effect for trade creation for COMESA member countries or source substitution is identified in these commodities. If, however, COMESA member countries are not competitive with domestic producers, then this maximum creation of trade will not occur.

Table 5.3: Results for commodities with trade creation and consumption effects

Variables	Amount (in '000' Birr and %)
Change in value of imports	875,536.59
(% of 2000 total imports)	8.60
Change in consumption	25.96
(%of 2000 GDP at market prices)	0.00
Change in tariff revenue	-406.15
(% of 2000 total tax revenue)	-0.01
Change in producer's surplus	-260,078.71
(%of 2000 GDP at market prices)	-0.50
Change in welfare	38,530.38
(% of 2000 GDP at constant prices)	0.07

Source: Model result

Industries that are likely to be displaced by imports from COMESA member countries include: food (mainly manufacture animal feeds), tobacco (tobacco products), and textiles (spinning, weaving and finishing of textiles and manufacture of cordage, rope, twine and netting). These local manufacturing sectors might face greater competition from COMESA suppliers. The loss in producer's surplus due to tariff elimination amounts to 0.50% of GDP. The increase in the value of total imports for these sectors is estimated to be 1.69% of GDP or 8.60% of the total value of imports in 2000. Despite the increase in the value of imports from member countries, the change in consumption as a proportion of GDP is insignificant. The loss in tariff revenue as a percentage of the total tax revenue is 0.01% or 0.001% of GDP. Since the losses in producer's surplus and revenue are offset by the gain in consumers' surplus, the magnitude of welfare effect is determined by the relative sizes of trade creation and consumption effects. The net welfare effect is, thus, found to be positive for these sectors, which amounting to 0.07% of GDP.

Finally, the combined welfare impact of tariff change resulted from changes in consumption; trade diversion and trade creation can be obtained by aggregating these effects over all commodities (Table 5.4).

Because of tariff elimination, the value of imports tends to expand to the amount of 2.05% of GDP or 10.48% of the total value of imports. This increase in value of imports leads to consumption expansion that is equivalent to 0.03% of GDP, implying an increase in consumer's surplus due to tariff elimination.

Ethiopia's accession to COMESA-FTA has also negative budgetary implications that are implied by the loss in tariff revenue. The magnitude of the foregone tariff revenue is about 0.36% of GDP or 2.89% of the total tax revenue collected by the government in the year 2000. In principle, tariff revenue effect should not be taken as the only and main criterion for assessing the importance of joining COMESA-FTA since the government could offset the loss due to COMESA-FTA by imposing other forms of taxes or devising mechanisms of compensating such losses with member countries. The net welfare effect, which is the combined effect determined by the relative magnitudes the above effects, reveals a welfare loss of 0.06% of GDP.

Table 5.4: Results for aggregate effects of complete tariff elimination

Variables	Amount (in '000'Birr and %)
Change in value of imports	1,066,932.41
(% of 2000 total imports)	10.48
Change in consumption	16,093.37
(%of 2000 GDP at market prices)	0.03
Change in tariff revenue	-187,544.93
(% of 2000 total tax revenue)	-2.89
Change in welfare	-29,343.83
(% of 2000 GDP at market prices)	-0.06

Source: Model result

The above discussion appears to indicate that static welfare effect of complete tariff removal on commodities imported from COMESA member countries is welfare depressing. However, caution must be taken in using this welfare loss due to tariff elimination as the only tool for evaluating the country's association with COMESA-FTA. This welfare loss, being static in nature, does not show the dynamic effects relating to market size, efficiency gains and economies of scale that might have been attained in the long run. Moreover, since this welfare loss is only for the manufacturing sector, it does not indicate the economy wide magnitudes of complete tariff removal on imported commodities from COMESA member countries.

6. Conclusions

The main objective of the study was to examine the benefits and costs of Ethiopia's accession with the COMESA-FTA. Specifically, the study tries to assess the impact of COMESA-FTA on government revenue, domestic manufacturing sector, on domestic consumers and the overall welfare effects of the trade arrangement. To this end, a static computable partial equilibrium model has been employed to analyze these effects.

Recent trends on Ethiopian trade statistics reveal that that the magnitude of imports from COMESA member countries is very small. Similarly, if one looks at the structure of imported manufactured goods, the picture basically remains the same. The average share of manufacturing imports from COMESA member countries is very small as compared to that of the rest of the world.

The theoretical and empirical examination points to similar concerns regarding Ethiopia's accession to COMESA-FTA. The findings of this study indicate that both imports and consumption tend to expand while showing a loss in government tariff revenue. Over all, the results of the static computable partial equilibrium model reveal that the benefit is less than the cost if Ethiopia joins the COMESA-FTA in the short-run. As such, the static outcome of Ethiopia's accession to COMESA-FTA is welfare depressing. The robustness of the results of the model was also examined by using different elasticities of demand and supply and was found consistent with the base case results.

Finally, the results of the model should be viewed along with the following important points. First, although the outcomes of study does not appear to support Ethiopia's association with COMESA-FTA, they are only limited to the manufacturing sector and by any means they do not indicate the economy wide effects of complete tariff removal on imported commodities from COMESA member countries. Hence, further investigation is required in other sectors (such as agriculture) in order to have a more complete picture of the probable impacts of joining COMESA-FTA.

Second, as noted earlier, the results of the model are static in nature and do not show the dynamic effects relating to market size, efficiency gains and economies of scale that might have been attained in the long run. In fact, it can be argued that many of the benefits of Ethiopia's accession to the COMESA free trade arrangement may be realized in a dynamic framework, which again requires further empirical evidence.

References

- Alemayehu Geda and Haile Kebret. 2001. Regional Economic Integration in Africa: A review of problems and prospects with the case study of COMESA, draft paper for Department of Economics (AAU/ or CSAE), university of Oxford working papers (unpublished).
- Atingi-Ergo, M., Obwona, M. and Abuka, C.A. 2001. "A Regional Integration Study of East Africa: The Uganda Country Report" paper presented at regional workshop organized by African Centre for Economic Growth, Nairobi.
- Bakanova, M. and Souza, L. 2001. Trade and Growth under limited liberalization: The case of Belarus, paper prepared for "Third Conference of the European Trade study Group", September 14-16, 2001, Brussels, Belgium.
- Baldwin, R. and Seghezza, E. 1996. Trade-induced investment-led growth, NBER working paper series, working paper 5582.
- Baldwin, R.E. 1997. "Review of Theoretical Developments on Regional Integration" in A. Oyejide, I. Elbadawi and P. Collier (eds.). *Regional Integration and Trade Liberalization in Sub-Saharan Africa*, Vol. I: Framework, Issues and Methodological Perspectives. London, Macmillan.
- Bandiger, H. 2001. Growth effects of economic integration: The case of EU member states (1950-2000), Institute for European Affairs, Vienna University of Economics and Business Administration, Austria.
- Bansiter, G. and Thugge, K. 2001. International Trade and Poverty Alleviation, IMF working paper, WP/01/54.
- Blackburn, K. and Hung, V. 1996. Endogenous Growth and trade liberalization, *International Economic Journal*, 10 (1): 33-46
- Cernat, L. 2001. Assessing regional trade arrangements: Are South-South RTAs more trade diverting? Division on International Trade in goods and services, and commodities, UNCTAD, Policy issues in international trade and commodities study series No. 16, Geneva.
- Cheng, H. and Wall, H. 2002. Controlling for heterogeneity in gravity models of trade and integration, Federal Reserve Bank of St. Louis, Working paper series 1999-010C.
- Choudhri, E. and Hakura, D. 2000. International trade and productivity effects: Exploring the sectoral effects for developing countries, IMF staff papers, Vol. 47 No. 1.
- DeRosa, D.A. 1998. "Regional Integration Arrangements: Static Economic Theory, Quantitative Findings, and Policy Guidelines", ADR International, Ltd, U.S.A.

- DeRosa, D.A. 2001. "The EAC Trade Simulation Model: Overview and Preliminary simulation Results" Background paper for a study project examining the impacts on industry competitiveness, international Trade and tariff revenue, and economic welfare of forming the East African Cooperation (EAC) customs union", under the preparation for the Uganda Ministry of Finance, Planning and Economic Development and the U.S. Agency for International Development, Mission to Uganda.
- Dollar, D. and Kraay, A. 2001. "Trade, Growth and Poverty", Development Research Group, the World Bank.
- Fine, J. and Yeo, S. 1997. "Regional Integration in a Sub-Saharan Africa: Dead End or a Fresh Start?" in A. Oyejide, I. Elbadawi and P. Collier (eds.). *Regional Integration and Trade Liberalization in Sub-Saharan Africa*, Vol. 1: Framework, Issues and Methodological Perspectives. London, Macmillan.
- Frankel, J., Romer, D. and Cyrus, T. 1996. Trade and Growth in East Asian countries: Cause and effect? NBER working paper series, working paper 5732, Cambridge.
- Hertel, T., Ivanic, M., Preckel, P., and Granfiled, J. 2003a. Trade liberalization and the structure of poverty in developing countries, Global Trade Analysis Project.
- Hertel, T., Ivanic, M., Preckel, P., and Granfiled, J. 2003b. The earnings effects of multilateral trade liberalization: Implications for poverty for developing countries, Global Trade Analysis Project.
- Irwin, D. 2002. Interpreting the tariff-growth correlation of the late nineteenth century, NBER working paper series, working paper 8739.
- Lyakurwa, W. M., Mjema, G.D. and Rutasitara, L. 2002. "A Regional Integration Study of East Africa: Tanzania Country Report" paper presented at regional workshop organized by African Centre for Economic Growth, Nairobi.
- Mckay, A., Milner, C. and Morrissey, O. 2000. "The Trade and Welfare Effects of a Regional Economic Partnership Agreement" Centre for Research in Economic Development and International Trade, University of Nottingham.
- Ngeno, N.K., Nyangito, H. O., Ikiara, M., Ronge, E., and Nyamunga, J. 2002. "A Regional Integration Study of East Africa: The Case of Kenya" paper presented at regional workshop organized by African Centre for Economic Growth, Nairobi.
- OECD. 2001. The Uruguay Round Agreement on Agriculture: The policy concerns of emerging and transitional economies, Paris.
- Paas, T. 2002. Gravity approach for exploring Baltic Sea regional integration in the field of international trade, Humbert Institute of International Economics, discussion paper 180.

- Rodriguez, F. and Rodrik, D. 1999. Trade policy and economic growth: A sceptics guide to cross-national evidence, University Maryland and Harvard University.
- Schiff, M. 1996. Small is beautiful: Preferential Trade Arrangements and the impact of country size, market share, efficiency and trade policy, Policy Research Working Paper 1668, World Bank.
- Sunny, G., Babikanyisa, V., Forcheh, N. and Akinboade, O. 1995. A Common market For Eastern and Southern Africa: Costs & benefits, Zambia/Lusaka.
- Vamvakidis, A. 1998. Regional Integration and Economic Growth, *The World Bank Economic Review*, Vol. 12, No.2: 251-70.
- Vega, M. and Herce, J. 2000. Integration and Growth in the EU: The Role of Trade, Documento De Trabajo 2000-20.
- Vega, M. and Herce, J. 2002. Interdependent Growth in the EU: The Role of Trade, ENEPRI Working Paper no. 11.
- Venables, A.J. 2000. "International Trade and Regional Economic Integration", paper prepared for the International encyclopaedia of Social and Behavioral Sciences", London School of Economics, UK.
- Winters, A. and Chang, W. 1997. "Regional Integration and the Prices of Imports: An Empirical Investigation" World Bank, Washington D.C.
- Yeats, A.J. 1998. "What can be expected from African regional trade arrangements: Some Empirical Evidences", World Bank, Washington D.C.