



**Economic Commission for Africa**

# **GOVERNMENT REVENUE IMPLICATIONS OF TRADE LIBERALIZATION IN AFRICA<sup>+</sup>**

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<sup>+</sup> Paper prepared for presentation at the United Nations Economic Commission for Africa (UN-ECA) ad-hoc expert group meeting on Maintaining the Government Fiscal Base in the Context of a Trade Liberalization Regime, 1-2 October, 2003, Addis Ababa, Ethiopia.

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## **GOVERNMENT REVENUE IMPLICATIONS OF TRADE LIBERALIZATION IN AFRICA**

### **ABSTRACT**

This paper examines the effects of trade liberalization on government revenue in Africa; using secondary data, it argues that African countries must be cautious because trade liberalization may lead to revenue loss; to benefit from trade liberalization countries in Africa must put in place sound macroeconomic policies and their economies must perform satisfactorily.

## 1. INTRODUCTION:

Trade liberalization generally refers to series of policies, programmes, rules and activities aimed at ensuring freer trade among countries or group of countries. It involves the substitution of quota and other quantitative restrictions of trade with instruments of economic policy directly affecting prices (Kruegar, 1986). The central focus is eliminating distortions between international and local prices to create a favourable environment for better economic performance. As pointed out by Collier et al (1997:309) trade liberalization could refer to import liberalization and/or a movement toward neutrality in the structure of relative prices and/or the substitution of less distorting for more distorting forms of intervention. Thus “trade liberalization would imply transforming the trade regime from an inward-oriented stance that discriminates in favour of (and thus protects) import competing activities into a neutral regime whose incentive structure does not distinguish between exportables and importables – or even into an outward – oriented trade policy regime that discriminates in favour of and thus actively promotes) exports (Oyejide 1998:111). It is clear here that trade liberalization involves both import liberalization and export promotion.

Trade policy reforms and especially trade liberalization has been a regular feature of African economies since the mid-1980s. The general belief was that trade reforms, especially when combined with exchange rate reforms and better domestic macroeconomic policies, could enhance trade-induced economic expansion and consequently reverse the downward trend of African economies. Prior to this time, particularly between the early 1960s and the early 1980s, many African countries operated highly interventionist and protectionist trade regimes on both the import and export sides. On the former, the trade regime was characterized by restrictive import licensing systems, high tariffs escalated or cascading tariff structures of varying layers; varying degrees of import prohibitions, and tight foreign exchange controls. For the export side, substantial implicit and explicit taxes, as well as the prohibition of certain export items and other non-tariff barriers were common features of the trade regimes. These protectionist trade regimes stance were motivated by several factors such as the need to raise revenue for government, avert balance of payments crises and protect domestic industries. A closer look at the pre-liberalization trade regimes of many African countries reveal a strong link between import restrictions and the appearance of balance of payments problems. Equally very important is the budgetary needs. These balance of payments concerns and the budgetary needs exerted much stronger impact on the evolution and structure of pre-liberalization trade regimes in many African countries than the need to protect domestic industries.

As pointed out by Oyejide et al (1996), trade liberalization in Africa is motivated by two major types of stimuli – unilateral and multilateral liberalizations. The unilateral liberalization, which is the most important stimulus, include those embedded in the structural adjustment programmes; those induced by positive external shocks; and those based on individual countries initiative (‘own initiatives’) that reflect internal policy dynamics and the design and use of innovative schemes to finance the liberalization process. The multilateral stimulus, which is the least significant, is reflected in the various regional economic communities (RECs) agreements; the African Economic Community (AEC) Treaty; and the World Trade Organisation (WTO) Agreement which many African Countries are signatories.

In spite of the motive for trade liberalization the major concern among African governments is the impact of such exercise on government revenue. Since trade liberalization involves substantial reduction in tariffs and in most cases elimination of tariffs, the revenue often generated through tariff is bound to be lost. In fact, it has been asserted that revenue loss is the reason for the failure of African governments to implement trade agreements (Mulat, 1997). This is because taxes from international trade and transactions form a substantial proportion of total revenue of most African countries. The main objective of this paper is to examine the implication on government revenue of trade liberalization in Africa. This is done taking into account the position of Africa in the world economy, the various efforts at regional integration and implementation of regional economic community and World Trade Organisation (WTO) agreements.

The rest of the paper is organized as follows. In the next section we look at Africa in the context of world economy with particular reference to macroeconomic performance, trade and government revenue. This is followed in section three by a discussion of theoretical and empirical issues on trade liberalization, revenue and economic performance. In section four, we take a look at the revenue impact of trade liberalization drawing on available empirical evidences. The main focus of section five is how the implementation of the trade liberalization of the major trade groupings in Africa and the World Trade Organisation could impact on the revenue of African countries. Section six summarizes and concludes the paper.

## 2. AN OVERVIEW OF THE AFRICAN ECONOMY

In order to put our discussion in proper perspective we take a brief look at the performance of the African economy. This is done with particular reference to macroeconomic performance, trade and government Revenue.

### 2.1 **Macroeconomic Performance**

Table 1 shows the position of Africa in the world economy. Generally, the 19<sup>th</sup> and 20<sup>th</sup> centuries witnessed substantial growth in world real per capita income although the 20<sup>th</sup> century growth has been much stronger than that prior to 1870. World per capita gross domestic product (GDP) grew by about 1.5 per cent between 1900 and 1913, declining to less than 1 per cent between 1913 and 1950, rising to an all time high of about 3 per cent in 1950 – 73 period and declining thereafter to less than 1.5 per cent between 1973 and 2000 (IMF 2000). A breakdown (see Table 1) shows that whereas the leading advanced countries of Western Europe, North America, Japan, Australia and New Zealand grew by an average of 0.94 per cent, the real per capita growth rate for Africa were 0.1 and 0.2 per cent respectively. Between 1870 and 1913, the real per capita income growth rate for leading advanced countries was 1.4 per cent compared with 0.4 per cent for Africa and 1.5 per cent for Latin America. This, however, changed during the protectionist inter-war years where the leading countries grew at an average rate of 1.14 per cent as against Africa's 1.0 per cent and Latin America's 1.5 per cent. Between 1950 and 1973, the advanced country's 3.8 per cent growth far outstrips Africa's 2.0 per cent and Latin America's 2.3 per cent. It is equally observed that while the advanced countries grew by 1.82 per cent between 1973 and 1996, Africa's growth rate was -0.3 per cent as against 0.6 per cent for Latin America.

**Table 1: Growth Rate of Real GDP/Person 1820 – 1996**

Country	1820-70	1870-1913	1913-50	1950-73	1973-96
Advanced countries	0.9	1.4	1.1	3.8	1.8
United Kingdom	1.2	1.0	0.8	2.5	1.6
United States of America	1.3	1.8	1.6	2.4	1.6
Japan	0.1	1.4	0.9	8.0	2.5
Brazil	0.2	0.3	1.9	3.8	1.4
Mexico	-0.1	1.7	1.0	3.1	0.8
China	0.0	0.6	-0.3	2.1	5.4
Indonesia	0.1	0.8	-0.1	2.5	3.6
India	0.1	0.4	-0.3	1.6	2.9
Czechoslovakia	0.6	1.4	1.4	3.1	0.3
Russia	0.6	0.9	1.8	3.4	-1.2
Africa	0.1	0.4	1.0	2.0	-0.3
Latin America	0.2	1.5	1.5	2.5	0.6

**Source:** Crafts (2000) Table 1.5

One interesting feature of the growth experience as noted by Uwatt (2003) is that while Africa's economic performance was quite comparable to that of China and India between 1820 and 1973, Africa completely lost out between 1973 and 1996 as the average growth rate of  $-0.3$  per cent was far below China's 5.4 per cent and India's 2.9 per cent. When compared with other regions, it is observed that over the long-run since 1870, the most marked and sustained relative declines have been in Africa and Eastern European areas which account for about 20 per cent of the world's population during most of this period (Crafts, 2000:10). It is clear, therefore, that the gap between Africa and the advanced countries have widened enormously. However, as shown in table 2 the performance of African economy has not shown reasonable level of improvement over the 1990 – 2001 period compared to the 1975 – 84 period in spite of almost two decades of economic reform. Except for gross national income per capita, inflation rate and fiscal balance/GDP ratio, all other indices show worsening economic condition. This is aggravated by the huge external debt shock whose 1990 – 2001 value triples the 1975 – 84 figures.

**Table 2: Africa: Macroeconomic Indicators 1975 – 2001**

Indicators	Annual Average		
	1975-84	1985-89	1990-2001
Real GDP Growth Rate	3.3	2.5	2.7
Investment Ration (% of GDP)	23.3	19.7	19.5
Inflation (%)	13.8	11.7	9.0
Fiscal Balance (% of GDP)	-5/8	-6.0	-3.4
Growth of money supply (%)	15	14	12
Merchandise Export Growth (%)	8.0	0.2	4.0
Merchandise Import growth (%)	7.8	2.0	4.1
Terms of Trade Growth (%)	1.1	-6.9	0.0
Current Account Balance (% of GDP)	-4.2	-2.8	-2.2
Total External Debt (US\$ Million)	101,370	233,310	302,479
Gross National Income Per Capita (US\$)	631	669	681

Source: The World Bank (2003) African Development Indicators, Washington DC.

## 2.2 Trade

Trade remains the main vehicle for Africa's full participation and integration into the global economy. Yet Africa's trade is concentrated in a narrow range of primary commodities whose market share has been shrinking over the years. Available data shows that between 1960 and 1969, Africa's average share of world export was 5.3 per cent and of imports 5.0 per cent. These figures dropped to 2.3 per cent and 2.2 per cent respectively for the 1990 – 98 period. However, as shown in Table 3, Africa's share of world export is even lower at below 1.5 per cent. In terms of total trade, Africa's share of World trade which was a little below 4 per cent in 1971 declined consistently to less than 2 per cent in 1999 (IMF, WEO, 2000). This is in sharp contrast to the newly industrialized economies (NIES) of Asia (excluding oil exporters) which have done so well with trade being as high as 10 per cent of World trade in 1996.

The weak performance of African trade is reflected in its earnings. According to Sharer (2001), non-oil export, was \$69 billion in 2000. If Africa had retained its share of non-oil exports at 1980 levels, exports in 2000 would have been \$161 billion or \$92 billion more than their actual. Furthermore, even if Africa had held its market share at 1980 levels only for those commodities she already exported in substantial quantities in

**Table 3: Africa: Direction of Trade and Share in World Trade Selected Years 1982 – 2001**

	1982	1987	1991	1996	2001
<b>Export (% of total)</b>					
Sub-Saharan Africa	4.8	9.4	6.1	8.6	12.1
European Community	34.9	46.5	50.6	44.5	40.6
North America	22.7	33.7	9.6	9.0	9.3
Rest of the World	37.6	10.4	33.7	37.8	38.0
World	100.0	100.0	100.0	100.0	100.0
<b>Import (% of total)</b>					
Sub-Saharan Africa	4.7	1.9	8.8	14.5	10.6
European community	50.6	54.2	50.7	40.3	38.7
North America	11.4	27.1	22.0	20.4	22.9
Rest of the World	33.3	16.8	18.5	24.7	27.8
World	100.00	100.0	100.0	100.0	100.0
<b>African Export Share (%)</b>					
Sub-Saharan Africa	4.8	9.4	6.1	8.6	12.1
European Community	4.2	1.5	1.6	1.7	1.3
North America	2.1	0.5	1.6	1.7	1.4
Rest of the World	2.3	0.9	0.7	0.9	1.0
World	3.0	1.2	1.3	1.4	1.3

Sources: The World Bank (1995) African Development Indicators 1994 – 95  
The World Bank (2001) African Development Indicators, 2001.  
The World Bank (2003) African Development Indicators, 2003.

export between 1990 and 1999, that of imports stood at 9.76 per cent. The corresponding figures for 2001 are 12.1 per cent and 10.6 per cent respectively. Furthermore, there is marked disparity in Africa's trade performance. Between 1980 and 1997, Anglophone Africa's overall trade grew at an annual average rate of 2.1 per cent compared with 1.6 per cent for Francophone Africa (Subramanian and Tamirisa, 2001). Again while the Francophone Africa is found to be serious regarding trade, the Anglophone counterpart remains on the average.

Besides, Africa still maintains a restrictive trade regime despite several attempts at trade liberalization. According to the IMF estimate reported by sharer (2001) in 1990, more than 75 per cent of countries in Africa had trade regimes classified as "restrictive" and none had trade regimes that could be classified as open. Only 23 per cent had moderate trade regime. In the same year, about 61 per cent of countries in the rest of the world operated open trade regime compared to 24 per cent and 15 per cent which operated moderate and restrictive trade regimes respectively. It is also worthy of note that despite its tariff reductions during the past decade Africa's current tariff of about 19 per cent is still higher than the average of 12 per cent for the rest of the world. This weak trade performance of African countries has been blamed on a number of complex factors among which are lack of infrastructure and physical and human capital, limited natural endowments and difficult geographic location as well as flawed macroeconomic and structural policies.



**Table 4: Africa: Government Revenue and Taxes 1975 – 2001**

	Annual Average		
	1975-84	1985-89	1990-2001
Government Revenue Excluding Grant (% of GDP)			
Africa	23.8	23.4	24.6
Sub-Saharan Africa	21.0	21.9	22.8
North Africa	-	25.8	28.1
Grants to Government (% of GDP)			
Africa	-0.2	0.8	1.0
Sub-Saharan Africa	-0.5	1.0	1.2
North Africa	0.3	0.5	0.6
Taxes on Income and Profits (% of Total Revenue)			
Africa	34.0	31.2	31.3
Sub-Saharan Africa	40.9	36.6	37.3
North Africa	-	19.2	20.0
Taxes on International Trade (% of total Revenue)			
Africa	8.5	10.8	12.2
Sub-Saharan Africa	7.4	10.2	12.2
North Africa	-	13.1	12.1
Indirect Taxes (% of total Revenue)			
Africa	45.1	43.4	42.9
Sub-Saharan Africa	44.9	42.6	43.1
North Africa	-	44.4	42.6
Non-tax revenue (% of total Revenue)			
Africa	13.3	12.9	14.6
Sub-Saharan Africa	13.3	11.0	13.5
North Africa	-	18.1	16.7

Source: The World Bank (2003) *African Development Indicators*, Washington D.C.

### 2.3 Government Revenue

The revenue profile of African governments is shown in Table 4. Between 1975 and 2001, government revenue (excluding grants) remain at about one-fifth of GDP for Africa as a whole. The figure for the North Africa group of countries is slightly higher. These average figures hide the observed variation across countries. For countries such as Botswana, Eritrea and Lesotho, government revenue was over 40 per cent of GDP while for Central African Republic, Chad, Niger, Rwanda and Uganda it was below 10 per cent. Grants to government have remained generally low at less than 1 per cent of GDP even though there is some improvement. Regarding the sources of revenue Table 4 reveals

indirect taxes as the most important having accounted for over 40 per cent of total revenue. In some countries such as Central African Republic, Comoros, the Gambia, Guinea, Madagascar, Mozambique, Senegal, Sierra Leone, and Uganda, the share of indirect taxes is above 70 per cent. Except for Angola, Botswana, Equatorial Guinea and Nigeria, there is no country where the share of indirect taxes in total revenue is below 30 per cent. Taxes on income and profits are the next most important source of revenue accounting for at least one third of total revenue except for North Africa sub-region. The single outstanding cases are Angola and Republic of Congo where the share of taxes in income and profits are 79.2 per cent and 62.8 per cent respectively. It is also clear from the table that taxes on international trade and transactions are the least important source of revenue for most African countries. Its average share of total revenue slightly exceeds 12 per cent. However, for some countries such as Republic of Benin, Cape Verde, The Gambia, Madagascar, Mali, Niger, Sierra Leone, and Uganda it accounts for not less than 40 per cent of total revenue with Lesotho having the highest share of 52.3 per cent. The lowest cases are found in South Africa and Angola where taxes on international trade accounts for 3.5 per cent and 4.9 per cent of total revenue respectively.

### **3. THEORETICAL ISSUES ON TRADE LIBERALIZATION AND GOVERNMENT REVENUE**

Trade liberalization is rooted in the traditional theories of international trade. These theories consist of the classical (Ricardian) theory and the neoclassical (modern) theory. Both theories are based on the principle of comparative advantage as the basis for trade and extol the virtues of specialization, division of labour and free trade (Iyoha, 1995). For these theories, the advantage of external trade is maximized when it is entirely free of natural and man-made encumbrances. This means that the use of import quota, tariffs and non-tariff barriers are anti-trade and cannot promote economic efficiency. Neither can it facilitate economic growth.

According to these theories free trade is the best from the World's point of view since it would maximize both world output and world welfare. From an individual country's point of view these theories emphasize the production and the consumption gains from trade. The production gains refer to the efficiency gains from external trade obtained through improved allocation of production resources arising from specialization and the division of labour. The exchange gains from trade that emanate from the improved allocation of consumption resources constitute the consumption gains from external trade. It is expected that these two gains will promote economic efficiency and facilitate economic growth. The import of trade liberalization is the emphasis placed on more extensive use of the price mechanism in place of direct intervention through quantitative restrictions.

Besides improvement in the efficiency with which resources are allocated and increases in competition and product specialization, it is also argued that trade liberalization can enhance a country's ability to attract foreign investment and create a favourable environment for technology transfer. This technology transfer can occur in three ways: first as an integral part of foreign investment; second through increased trade that allows a country to import capital goods that embody current technology; and thirdly through export competition that induces firms to operate at the frontiers of technological development. From this perspective it is clear that trade liberalization can enhance

economic growth through trade expansion. Through enhanced export it also strengthens the incentive to adopt new technology by increasing the returns from innovation made possible by expanded market opportunities (World Bank 1991:89). Furthermore, important imports could be made available in order to increase capacity utilization of domestic industries.

It is perhaps the fiscal impact of trade liberalization that is of great concern to most African countries and indeed developing countries. As observed by Rodrik (1990) and Greenaway and Milner (1993), the budgetary implication is a determining factor in trade liberalization efforts of developing countries. Theoretically, the effects of trade liberalization on revenue depend on its direct impact on custom revenue (taxes on international trade) as well as the economy's reaction to variations in relative prices (exchange rate). These effects could be positive or negative. Tanzi (1989) cited in Jebuni et al (1994:52-53) has shown that liberalization accompanied with devaluation may have positive effect on tax revenues through (i) the replacement of quotas and other quantitative restrictions by tariffs; (ii) reduction of duties from the prohibitive to a more normal range; (iii) putting low tariff on previously exempted goods especially in a situation where exempted goods form a large share of imports; (iv) increase in the value of imports and in the domestic prices of imported products because of the devaluation; (v) the likely reduction in smuggling; (vi) some positive effects associated with a possible change in the composition of imports in favour of decreased incentive to bias imports towards import of raw materials and intermediate products; and (vii) some positive effect on tradeable output associated with devaluation and liberalization policy. The negative effect on tax revenues can occur through (i) continuous price increase for some imported goods; (ii) price reduction due to the reduction in import duties; and (iii) reduction in output and employment in some sectors especially the import-substituting sectors.

Lyakurwa (1993:36) has identified two ways in which trade liberalization could negatively affect revenue. First, even though trade volumes could increase with liberalization, the virtual elimination of export taxes and reduction in import tariffs could lead to revenue loss. In this case liberalization implies a shift in tax base from traded goods in the tax base to traded goods outside the tax base (Oyejide 1998). Second, trade liberalization implies shifting from easy-to-collect trade taxes to more difficult-to-collect revenues from incomes and domestic consumption. Since this type of tax require more sophisticated accounting and record keeping than usually available, tax revenue losses may be inevitable as some of the income and activities associated with trade liberalization escape the tax net.

However, Tanzi (1989) argues that trade liberalization with devaluation would increase tax revenue and possibly improve the fiscal balance. How this happens depend on the price elasticity of demand for imports, income-related effects, the elasticity of substitution among imports, the market structure of import trade, the public's perception of liberalization and the response of the economy (Cheasty, 1990). However, empirical evidence from Africa and Latin America suggests that there is no clear cut relationship between trade taxes and trade reform (Greenway and Milner, 1993).

#### 4.0 REVENUE IMPLICATION OF TRADE LIBERALIZATION

As earlier mentioned trade liberalization in Africa consists of unilateral and multilateral liberalizations. Unilateral liberalization, often linked to conditionality under the Structural Adjustment Programmes (SAP), is the most dominant. It is also the most sustained and most comprehensive among African trade liberalization attempts (Oyejide 1998). In assessing the revenue implication of trade liberalization due attention will be given to these two kinds of liberalization.

##### 4.1 Revenue Effect of Trade Liberalization Programme Under SAP

According to Mulat (1997) there are three main components of trade liberalization scheme under national SAPs. These are deregulation of markets and prices; privatization and commercialization of the public economy (enterprises) and undertaking of "complimentary" fiscal and monetary policy interventions to reinforce trade liberalization. These measures have different short-run and long run effects on revenue. In the early stages of SAP, fiscal reforms usually consist of tax concessions, tax rate reductions and increased government subsidies. The short-run effect is a reduction in tax revenue levels. In the long-run fiscal reforms are expected to enhance the tax base and diversify the sources of taxations and hence increase in the tax revenue base. Furthermore, the increase in domestic prices of goods and services accompanying domestic trade liberalization is expected to increase the return on investment. With a given tax structure, government tax revenue intake from the taxation of incomes and profits is expected to increase. This can only happen if there is increased investment, growth of real and effective purchasing power of the populace and low production costs. In many African countries these conditions are lacking and hence increase in business incomes and profits have not occurred at a sustainable level. Therefore, government revenue instead of increasing following market liberalization, may, in fact remain constant and even decline. As shown in table 4, government revenue as a percentage of GDP has remained virtually constant while taxes on income and profits as a percentage of GDP have in fact declined.

One notable feature of the SAP is the use of tax incentives (tax exemptions, tariff reductions and government subsidy) to encourage economic growth and improve market efficiency. The short-run effect of these measures is the reduction in revenue. Revenue could only be improved in the long-run if the tax revenue increase from economic growth and discretionary changes in taxation outweighs the short-run revenue loss. The use of income tax reforms to enhance the purchasing power and improve public welfare in the early phases of SAP has not yielded any positive impact on revenue. In fact many reports show that the short-run revenue effect of income tax reforms have so far been negative (Mulat 1997:164). Mixed results have also been found for the fiscal reforms affecting international trade adopted under SAP. If the figures in Table 4 are anything to go by, it means that improvements in revenue have occurred. This is because according to Oyejide (1998:128) African tariff structures have been compressed substantially, with the average number of tariff categories being sharply reduced; the rate of protection have become less varied; the scope of discretion has been considerably reduced; and tariff policy transparency has been enhanced.

In the case of privatization programme, the effect on government revenue varies. In countries (such as Tanzania, Mozambique, Ethiopia, Malawi and Uganda) where the revenues from sales of outputs of public enterprises are integral part of government revenues, privatization results in loss of government revenue. In other countries such as Nigeria where public enterprises constitute great burden on government budget, privatization is seen as revenue enhancing.

Some African countries have suffered tax revenue loss following SAP reform because of difficulties in tax administration. Examples are Ethiopia, Uganda, Tanzania, Guinea, Mozambique and Niger, where, in addition to the collapse of the system of tax administration following the change of regime, the tax base (income levels) suffered severe erosion as a result of the destabilizing effects of drastic political change (Mulat, 1997:163). Besides, the mere fact that early SAP policies focused more on market efficiency and stabilization than on growth and coupled with the poor growth of African countries, trade liberalization is bound to be associated with revenue loss since lack of economic growth tends to erode tax base.

On the whole, country specific studies have revealed diverse patterns. For Ghana, Jebuni *et al* (1994) has found that both the economy and government revenues responded positively to the Economic Recovery Programme. While a major part of the growth in government revenue could be explained by the policy change and the response of the economy to the change, part of the increase has been attributed to the broadening of the tax base and increased efficiency in tax collection. Using computable general equilibrium (CGE) framework, Bamou (1999) has found that trade reform yields increased indirect fiscal revenue for Cameroon. This increase is the result of the hike in tax revenue from local products sold locally. Thus there is a shift of fiscal pressure from international trade to local or domestic products. In the case of Gabon, he found that trade reform led to decline in indirect fiscal revenue. This implies that the shift in fiscal pressure from international to domestic trade is not registered. Furthermore, Matlanyane and Harmse (2001) study of South Africa shows that trade liberalization has not led to a significant reduction in trade tax revenue at least in the short run.

## 5. REVENUE EFFECT OF MULTILATERAL TRADE GROUPINGS

Most African countries belong to regional grouping such as regional economic communities (RECs), African Economic Community (AEC) and World Trade Organisation (WTO). One common theme of these regional groupings is liberalization of trade among member countries. This tendency for freer trade means reduction or elimination of tariffs on inter-community trade. The result is revenue loss. The magnitude of this revenue loss has been estimated by Mulat (1997).

Table 5 shows the estimated revenue loss from full liberalization of inter-regional trade. For all the regions, the revenue loss is less than 0.5 per cent of GDP. This revenue loss varies across the regions and over time. For the ECOWAS region it accounts for 0.2 per cent of GDP compared to 0.1 per cent for AMU, 0.09 per cent for ECCAS and 0.03 per cent of COMES. In all the regions, the average revenue loss for the 1990s was greater than the corresponding figures of the 1980s. For the AMU and ECCAS regions the 1990 revenue loss estimate were more than twice the 1980s yearly levels. The differences in revenue loss between the two periods were not so visible in the case of the ECOWAS and

COMESA regions. The regional averages hide the inter-country variations which Mulat (1997) observed were much larger than the inter-regional differentials.

At first glance, one may be tempted to feel that the revenue loss is quite low and, therefore, not a serious problem. When it is realized that these revenues run into several hundreds of millions of U.S. dollars for some of the regional member countries, coupled with the fact that most of these countries depend heavily on foreign trade taxation budgetary revenue and foreign exchange earnings, the magnitude of the revenue loss becomes clear. This makes the implementation of regional trade liberalization and integration programmes very difficult.

**TABLE 5: TAX REVENUE LOSS FROM FULL LIBERALIZATION OF REGIONAL TRADE AS A PERCENTAGE OF REGIONAL GDP**

<b>YEAR</b>	<b>Arah Magbreh Union (AMU)</b>	<b>Economic Community of West African States (ECOWAS)</b>	<b>Economic Community of Central African States (ECCAS)</b>	<b>COMMON MARKET FOR EAST AND SOUTHERN AFRICA (COMESA)</b>
1980	0.008	0.123	0.058	0.009
1981	0.026	0.201	0.041	0.017
1982	0.017	0.156	0.041	0.011
1983	0.005	0.147	0.029	0.012
1984	0.028	0.240	0.028	0.026
1985	0.002	0.121	0.022	0.017
1986	0.033	0.188	0.027	0.020
1987	0.007	0.203	0.031	0.022
1988	0.075	0.183	0.068	0.027
1989	0.068	0.122	0.057	0.020
1990	0.111	0.216	0.104	0.027
1991	0.125	0.147	0.121	0.015
1992	0.131	0.160	0.087	0.022
1993	0.099	0.277	0.062	0.037
<b>Average Annual Rates</b>				
1980-1993			0.040 (0.016)	0.018 (0.006)
1990-1993	0.117 - (0.014)	0.200 (0.059)	0.093 (0.025)	0.025 (0.009)

**Note:** The figures in parentheses are standard deviations of the yearly observations.

**Source:** Mulat (1997) p. 169.

The tax revenue loss from complete liberalization of intra-African trade and the full globalization of the African economy under AEC are found to be higher than losses from full inter-regional trade liberalization. This is shown in Table 6. The loss ranges from 0.011 per cent to 0.380 per cent. While the revenue loss are generally low for the AMU and COMESA regions, larger values occur in the case of ECOWAS and ECCAS. Equally revealing is the fact that 1990-1993 average annual rates for AMU and ECCAS

regions more than double the 1980-1989 rates. This is in contrast to the ECOWAS and COMESA regions figures which remain stable for the two periods. However, except for ECCAS, the gaps between the revenue losses between inter-regional and intra-African trade are narrow.

**TABLE 6: TAX REVENUE LOSS FROM FULL LIBERALIZATION OF INTRA-AFRICAN TRADE AS A PERCENTAGE OF REGIONAL GDP**

YEAR	Arab Maghreb Union (AMU)	Economic Community of West African States (ECOWAS)	Economic Community of Central African States (ECCAS)	COMMON MARKET FOR EAST AND SOUTHERN AFRICA (COMESA)
1980	0.027	0.152	0.132	0.36
1981	0.050	0.246	0.101	0.061
1982	0.039	0.201	0.120	0.024
1983	0.011	0.202	0.087	0.042
1984	0.042	0.288	0.079	0.033
1985	0.003	0.145	0.106	0.023
1986	0.047	0.214	0.075	0.025
1987	0.010	0.235	0.077	0.026
1988	0.102	0.212	0.164	0.031
1989	0.092	0.146	0.181	0.022
1990	0.136	0.253	0.284	0.034
1991	0.149	0.170	0.380	0.017
1992	0.156	0.185	0.366	0.026
1993	0.118	0.343	0.232	0.044
<b>Average Annual Rates</b>				
1980 – 1989	0.042 (0.033)	0.204 (0.047)	0.112 (0.37)	0.032 (0.012)
1990 – 1993	0.140 (0.017)	0.238 (0.079)	0.316 (0.070)	0.030 (0.011)

**Note:** The figures in parentheses are standard deviations of the yearly observations.

**Source:** Mulat (1997) p. 170.

If we consider the tax revenue loss from full implementation of the World Trade Organization Agreement, then we expect much higher figures. This is because over 80 per cent trade of African countries is with the rest of the world. As shown in Table 7, the revenue loss averages about 2 per cent of Africa's GDP compared to between 0.11 and 0.38 per cent of inter-African trade and less than 0.5 per cent for inter-regional trade. The revenue loss also declines over time. Except AMU, the average annual rates are lower for the 1990 – 1995 period compared to the 1980-1989 period.

**TABLE 7: TAXES ON FOREIGN TRADE/GDP AT 1990 MARKET PRICES  
(PERCENTAGES)**

YEAR	Arab Maghreb Union (AMU) (sixteen countries)	Economic Community of West African States (ECOWAS) (sixteen countries)	Economic Community of Central African States (ECCAS) (Ten countries)	Common Market for East and Southern African (COMESA) (Nineteen countries)	All Africa (Fifty- three countries)
1980	1.71	4.93	3.05	0.28	1.98
1981	3.38	5.22	2.26	0.40	2.56
1982	2.66	4.94	2.42	0.54	2.30
1983	0.85	4.61	2.40	1.07	1.71
1984	2.35	3.49	1.70	1.33	2.12
1985	0.15	1.88	1.85	0.99	0.89
1986	2.02	2.38	1.25	1.08	1.68
1987	0.37	2.55	1.28	1.43	1.17
1988	3.47	1.93	2.75	1.61	2.50
1989	2.93	1.33	2.50	1.26	20.05
1990	3.34	2.64	3.95	1.18	2.25
1991	3.02	2.02	4.09	0.77	2.20
1992	3.09	1.62	4.05	0.46	2.07
1993	2.34	2.82	2.12	0.71	1.85
1994	1.96	3.19	0.42	0.64	1.59
1995	1.88	1.16	0.57	0.75	1.00
Average Annual Rates					
1980-1989	1.99(1.20)	3.33(1.49)	2.14(0.60)	1.00(0.45)	1.90(0.55)
1990-1995	2.60(0.63)	2.24(0.77)	2.53(1.75)	0.75(0.24)	1.83(0.47)

**Note:** Average of the previous five observations

**Source:** Mulat (1997) p. 171.

**Note:** The figures in parentheses are standard deviations of the yearly observations.

**Source:** Mulat (1997) p. 169.

Informative as this revenue loss estimate may be, it is quite unlikely that it may actually occur. This is because African countries are not likely to fully implement the various regional agreements. Besides and as observed by Oyejide (1998:128) African trade liberalization attempts have suffered from credibility and sustainability problems going by the frequency with which various attempts have been reversed.



## 6. REVENUE EFFECT OF TRADE LIBERALISATION: EMPIRICAL RESULTS

Apart from the potential revenue loss from trade liberalization, there is need to empirically determine revenue effect of trade liberalization in Africa. This is done by formulating and estimating an econometric equation which incorporates both measures of trade liberalization and other macroeconomic variables. Following Ebrill, Stotsky and Cropp (1999) and Matlanyane and Harmes (2001), we specify taxes on international trade and transactions as a function of trade (import and export) base, exchange rate, per capita gross national income and the average tariff rate. The dummy variables which would have captured trade liberalization episodes are excluded because between 1990 and 2001 covered by the estimation, almost all African countries had embarked on some form of trade liberalization. The estimated equation is:

$$TR = a_0 + a_1E + a_2M + a_3G + a_4W + a_5R + \mu \dots (1)$$

Where TR is trade revenue as a percentage of gross domestic product (GDP); E is export as a percentage of GDP; M is import as a percentage of GDP; G is per capita gross national income; W is real exchange rate index; R is the average overall tariff rate and  $\mu$  is the error term. The average tariff rate is computed as the ratio of trade revenue to value of total international trade.

Here, the effect of trade liberalization is incorporated through average overall tariff rate and the ratio of imports to GDP which captures the effect of liberalization on trade. The model uses a panel data sample of forty (40) African countries over the 1990 –2001 period. All variables except average tariff rate are in linear logarithmic form. Three variants of the estimated results are presented in table 8.

**TABLE 8: DETERMINANTS OF TRADE TAX REVENUE**

Variables	Pooled Least squares	Fixed Effect	Random Effects
Constant	-2.356 <sup>xxx</sup> (-13.717)	-	-1.545 <sup>xxx</sup> (-4.277)
Export – GDP ratio	4.30E-05 (1.085)	1.29E-05 (0.3012)	1.65E-05 (0.691)
Import – GDP ratio	0.754 <sup>xxx</sup> (24.245)	0.696 <sup>xxx</sup> (21.210)	0.661 <sup>xxx</sup> (15.885)
Average tariff rate	0.070 <sup>xxx</sup>	0.070 <sup>xxx</sup> (38.078)	0.066 <sup>xxx</sup> (27.194)
Per Capita GNI	0.072 <sup>xxx</sup> (4.264)	-0.049 (-1.606)	0.028 (0.721)
Real Exchange Rate Index	0.024 <sup>xxx</sup> (3.016)	-0.063 <sup>xxx</sup> (-2.800)	-0.017 (-0.799)
R <sup>2</sup>	.758	.991	.919
F-Statistic	297.3	12437	-
N <sub>it</sub>	473	473	483

xxx = Significant at 1 per cent significance level.

Source: Computer by the author

The common version uses pooled least squares regression technique while the fixed and random effects versions use generalized least squares with cross section weights. Of particular importance in the three results is the effect of trade liberalization. The results of the import – GDP ratio show that the coefficients are significantly different from zero and positive. This is as expected and reflect the fact that countries that import heavily are more likely to have more import tax revenue. The implication is that when trade liberalization leads to higher imports revenue may rise meaning that trade liberalization need not be accompanied by a decline in revenue. The results generally show that a 1 per cent increase in import – GDP ratio leads to 90.7 per cent increase in the ratio of trade revenue to GDP.

The average tariff rate coefficients are also positive and statistically significant at one per cent significance level. The positive relationship between tariff rate and trade revenue is as expected and tends to confirm the hypothesis that a reduction in tariff rates results in a significant loss in trade revenue. In fact a one per cent reduction in tariff rates leads to 0.07 per cent reduction in the ratio of trade revenue to GDP. In the case of real exchange rate index, the coefficients are generally negative. This means that when currencies depreciate, the volume of imports fall and hence leads to a loss of trade tax revenue. However, as shown by the pooled least squares result, real exchange rate index effect on trade revenue is positive. Thus the effect of real exchange rate index is not very clear. Furthermore, the coefficients on the export share of GDP are positive but insignificant. This reflects the fact that exports of African countries are mostly primary products which are exported virtually free of export tariff. The coefficient of the per capita income variable is generally insignificant probably because most of the African countries in the sample are low income countries.

From these findings it is clear that trade liberalization does not necessarily lead to reduction in revenue if it is combined with adequate macroeconomic policies.

## 7. CONCLUSION

It is clear that the revenue implications of trade liberalization depend on the form of liberalization and its implementation modalities. It has been argued that the link between trade liberalization and economic growth stresses the importance of ensuring that fiscal considerations do not truncate trade reform. The results have been mixed. However, some observations can be made:

- Countries can embark on trade liberalization trade while minimizing the revenue consequences.
- Trade liberalization can result in reduced trade tax revenue thus raising difficult fiscal issues. It is, therefore, important that the domestic tax system be strengthened.
- For trade liberalization to succeed, it should be anchored on sound macroeconomic policies; economic fundamentals such as an appropriate exchange rate policies ought to be moving in the right direction.

Because of the revenue implications of trade liberalization for African economies, the process must be guided. African economies must ensure that their domestic economies perform satisfactorily with some degree of openness before embarking on full trade

liberalization. The experience with the WTO confirms that trade liberalization has its theoretical merits but in practice the issues are contentious.

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**APPENDIX****Countries included in the Sample**

Algeria, Republic of Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Republic of Congo, Cote d'Ivoire, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Niger, Rwanda, Sao Tome and Principe, Seychelles, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zambia, Egypt, Morocco and Tunisia.