

DFID EC-PREP

European Community's Poverty Reduction Effectiveness Programme

Project EP/RO1/001:

Trade Policy & Transport Costs:

How EU aid can promote export growth in East Africa

FINAL REPORT

Submitted December 2004

by

Professor Oliver Morrissey

CREDIT and School of Economics, University of Nottingham

This research project is one of 23 projects funded by EC-PREP, a programme of research sponsored by the UK Department for International Development. All EC-PREP research studies relate to one or more of the six focal areas of EC's development policy in the context of their link to poverty eradication. EC-PREP produces findings and policy recommendations which aim to contribute to improving the effectiveness of the EC's development assistance. For more information about EC-PREP and any of the other research studies produced under the programme, please visit the website www.ec-prep.org.

BASIC DETAILS

- Consortium: Professor Oliver Morrissey, CREDIT, University of Nottingham
Professor Chris Milner, CREDIT, University of Nottingham
Dr Nichodemus Rudaheranwa, EPRC, Makerere University, Kampala
Dr Josaphat Kweka, ESRF, Dar-es-Salaam
Ms Jane Kiringai, KIPPRA, Nairobi
Dr Evious Zgovu, University of Malawi
- Rationale: To evaluate the importance of transport costs as a barrier to trade of East African countries.
To derive practical policy implications for how aid can be used to reduce transport costs and facilitate export growth.
- Objectives: i) to evaluate the effects of trade policy reforms in the 1990s on protection at the sector level in East African countries;
ii) to quantify the importance of transport costs as a barrier to trade, by sector, especially exports;
iii) to propose uses for aid to trade and transport infrastructure to support pro-poor growth policies.
- Outputs: Project workshops (held in Nottingham)
Seminar presentations (held in Kenya, Tanzania, Uganda)
Research Papers, journal publications, and a book (in process)
Policy Briefings and dissemination (to be prepared).

Project EP/RO1/001:

Trade Policy & Transport Costs:

How EU aid can promote export growth in East Africa

FINAL REPORT

CONTENTS

Outline of Original Proposal

1. Introduction
2. Trade Policy Reform in SSA
3. Trade Costs and Growth in SSA
4. Development of Methodology
5. Comparative Results
6. Preliminary Conclusions

ATTACHMENTS

Drafts of five of the chapters for the proposed book:

Chapter 2: review of trade policy reform and performance in SSA

Chapter 3: Trade, Transport Costs and Growth

Country case studies (Kenya, Tanzania and Uganda).

Two CREDIT Research Papers on Malawi study (CP.03.04 and CP.03.17)

Policy Brief (id21 style)

DFID EC-PREP
European Community's Poverty Reduction Effectiveness Programme

Project EP/RO1/001: Trade Policy & Transport Costs: How EU aid can promote export growth in East Africa

Outline of Original Proposal

If trade is to play a role in poverty reduction in sub-Saharan Africa, the need is to increase exports and the ability of sectors to adjust to increased competition following liberalisation of imports. This is especially important for agricultural products from which rural households derive incomes and which, in the form of food, are a major component of the consumption of the poor. However, trade liberalisation in itself does not ensure that exports will increase, nor that import-competing sectors will be able to adjust smoothly. One explanation is that transport and transaction costs represent a significant burden on African countries, and constrain the export competitiveness of such countries. The primary focus of the research project is to assess the interaction of trade policy and transaction costs in determining trade performance, especially exports. This will inform the design of trade and related policies to contribute to poverty reduction.

The project intended to evaluate trade policy for four East African countries (Kenya, Malawi, Tanzania and Uganda), considering imports and exports, with emphasis on related policies towards trade costs, especially transport. Specific research aims were to:

- Quantify the trade policy reforms of the 1990s at a sector level using the effective rate of protection (ERP) method, and relate this to trade performance;
- Quantify transport (and other measurable transaction) costs at a sector level, as a cost on imports and an implicit tax on exports, also using the ERP method;
- Identify the potential effect on exports of reducing trade costs, and the consequent potential of increased exports to contribute to poverty reduction;
- Identify effects on imports and import-competing producers and how these may impact on the poor (e.g. through food production and prices);

- Consult with private sector importers and exporters, and local policy-makers, to identify effective measures to reduce trade costs;
- Relate the findings of the research on transport costs and trade to EU policies in the focus countries (aid, trade and transport);
- Through working with partners in each country, and providing research training, contribute to building trade policy analysis capacity in each country.

The main objective was to quantify the relative importance of ‘policy-induced’ and ‘non-policy’ barriers to trade, using an effective protection approach, and to estimate the impact of reductions in both on trade volumes, specifically exports that can benefit the poor. Policy-induced barriers refer to price distortions and trade costs associated with trade policies. The non-policy barriers are those not associated directly with trade policy. Some will be transaction costs resulting from other (non-trade) policies; others will be natural barriers (e.g. poor infrastructure). These barriers increase costs of importing and exporting. The results of the study can inform policy in each country and for the region, and have implications for EU aid and trade policies towards the countries.

1. Introduction

The Report is intentionally succinct, and therefore brief, with elaboration and detail in appended papers. The research evolved into three components. First, a detailed review of trade policy reform in sub-Saharan Africa (SSA) in the 1990s, relating this to trade performance (exports and imports) and including transport costs. This established the broad context: SSA countries have implemented significant trade policy reforms (they have increased their ‘openness’) but the export response has been somewhat less than hoped for. The relatively high transport costs faced by SSA, as compared to other regions of the world, are posited as one reason for the poor export supply response. Second, econometric analysis of the effect of trade openness on growth for a sample of developing countries including a large proportion of SSA countries. The aim was specifically to test if transport costs are a significant factor in the poor response of SSA to trade policy reforms. The case study of Malawi extended the econometric analysis to explore the effect of transport costs on import demand and export supply in one country. Third, development of the methodology for quantifying transport costs as effective protection of imports and an effective tax on exports. This common methodology was then applied in the case studies of Kenya, Tanzania and Uganda.

2 Trade Policy Reform in Africa

In the past two decades, most sub-Saharan African (SSA) countries liberalised their trade regime, many reducing restrictions on imports significantly. A broad picture of trade policy reform can be obtained by examining trends in tariffs. The data in Table 1 are based on average (scheduled, unweighted) tariffs for as many countries as available in various regions of SSA covering three periods – 1980-85, 1990-95 and 2000-02. Being simple averages, the data are no more than indicative, but some clear patterns emerge. Average tariffs have been reduced significantly, roughly halved on average, in Africa over the past 20 years. Comparing different regions of Africa, although the overall variation or spread in tariffs has been reduced, progress varies. North Africa reduced tariffs the least, and by 200-02 had the highest tariffs of any region (this is influenced by Tunisia having increased

tariffs). Southern Africa has consistently had the lowest tariffs (and the trend is influenced by significant reductions in South Africa). Although West Africa appears to show the greatest reduction, the 1980-85 value is distorted by very high tariffs in Guinea, so as a region it is East Africa that reduced the tariffs the most.

Table 1: The Pattern of Tariff Changes in Africa

	<i>Average Scheduled Tariffs</i>		
	1980-85	1990-95	2000-02
<i>All Africa</i>	32.8	23.6	16.1
Regions			
<i>North Africa</i>	31.0	27.2	22.5
<i>West Africa</i>	38.5	22.8	14.2
<i>Central Africa</i>	30.0	21.7	16.7
<i>East Africa</i>	37.3	28.3	15.9
<i>Southern Africa</i>	19.5	19.7	12.7

Notes: See draft Chapter 2 for details.

The most immediate effect of reducing tariffs is to reduce the domestic price of imports and make it easier to import. One would therefore expect to observe an increase in imports following liberalisation. Table 2 shows that this was indeed the case. For Africa overall, imports (measured relative to GDP), increased by some 12% during the decade of the 1990s. All regions of Africa recorded an increase in imports over the decade, with the exception of North Africa. Interestingly, North Africa is the region that reduced tariffs the least (proportionally) and that had the highest average tariffs at the end of the decade. Southern Africa, the region that had consistently the lowest average tariffs also had the highest import/GDP ratio. This high starting point may explain why the percentage increase in imports was relatively low. For the other three regions, there is no evident correlation of tariffs and tariff reductions to growth in imports.

Table 2: Import Performance in Africa in the 1990s

	Imports (%GDP)		Change	
	1990-92	1998-00	%points	%
<i>All Africa</i>	39.8	44.7	4.9	12.3
Regions				
<i>North Africa</i>	34.1	32.1	-2.0	-5.7
<i>West Africa</i>	35.8	40.8	5.0	14.0
<i>Central Africa</i>	35.4	44.6	9.2	26.0
<i>East Africa</i>	41.9	45.2	3.3	7.9
<i>Southern Africa</i>	51.4	54.1	2.7	5.3

Notes: See draft Chapter 2 for details.

Although trade liberalisation does not usually affect actual export prices, it increases the return to exportables relative to importables. The competitive position of producers of exportables is not adversely affected, and may be improved if they can access cheaper inputs and/or the trade reform included specific export promotion measures. Thus, the relative incentives to producers of exportables are improved. An adequate export response is usually sufficient to ensure that the net impact of trade liberalisation is favourable. However, SSA countries face many constraints on export supply response (detailed in draft Chapter 2) and consequently the benefits of liberalisation have been slow to materialize.

Table 3 shows that overall export growth in Africa was quite strong over the decade, with the export/GDP ratio increasing by almost 20%. Interestingly, the lowest growth was in North Africa, the least 'liberalised' region, whereas the highest export/GDP ratio (with moderate growth) is in Southern Africa, the most liberalised region. There are many factors affecting export performance and domestic trade policy is only one. Thus, one would not expect to observe a strong correlation between relative tariff reductions and relative export growth, although it is encouraging that export growth was generally strong throughout Africa. As export earnings are the basis of financing imports, one might expect to see a relationship between export and import growth. This is evident comparing Tables 2 and 3. Regions with the highest export growth also tended to have the highest import

growth. Consequently, liberalisation was not associated with a reduction in trade deficits (detailed in draft Chapter 2).

Table 3: Export Performance in Africa in the 1990s

	Exports (%GDP)		Change	
	1990-92	1998-00	%points	%
<i>All Africa</i>	27.3	32.4	5.1	18.7
Regions				
<i>North Africa</i>	29.5	29.9	0.4	1.4
<i>West Africa</i>	25.3	28.6	3.2	12.6
<i>Central Africa</i>	22.2	35.2	13.0	58.6
<i>East Africa</i>	25.8	28.9	3.1	12.0
<i>Southern Africa</i>	35.5	39.1	3.6	10.1

Notes: See draft Chapter 2 for details.

Table 4: Transport Costs in Africa, Country Groups

Grouping	cif/fob ratio	
	1980	1994
<i>Landlocked Countries</i>	1.227	1.249
Regions		
<i>North Africa</i>	1.101	1.096
<i>West Africa</i>	1.196	1.191
<i>Central Africa</i>	1.244	1.224
<i>East Africa</i>	1.161	1.146
<i>Southern Africa</i>	1.137	1.222

Notes: See draft Chapter 2 for details.

The project investigates transport costs specifically, and these represent some 15% of unit values on average in Africa, which is considerably higher than the averages for other developing country regions (see draft Chapter 2). Table 4 illustrates the importance of transport costs, reporting the cif/fob ratio for groups of African countries. Unsurprisingly, Landlocked countries (or Central Africa, which is similar) face the highest transport costs, of over 20% unit values, while North Africa faces the lowest transport costs. In general, transport costs declined slightly between 1980 and 1994. The main exceptions are

landlocked, Southern Africa and Agriculture groups. The increases in all of these groups are largely due to Malawi, where the ratio in 1994 rose to 1.67 (because the war in Mozambique denied the shortest route to the sea). Differences in transport costs between groups of countries reflect differences in the direction and composition of trade as well as location characteristics. The latter seems most important. Remoteness, poor infrastructure and being landlocked are clearly damaging to trade because they raise trade costs, and such costs are a particular burden on SSA countries. This is the issue on which the project concentrated, and the main results are summarised in the remainder of this report.

3. Trade Costs and Growth in SSA

Although sub-Saharan African countries have liberalised their trade regimes and increased ‘openness’ since the mid-1980s, this has failed to translate into significant improved growth performance. We test for the effects of openness on growth, controlling for trade structure and trade costs, using a sample of exclusively developing countries, about a quarter of which are in sub-Saharan Africa. Cross-section (long-run) and panel (short-run) techniques are used. Openness has a robust positive impact on growth. We also find consistent evidence that countries relatively well endowed with land (and thus dependent on primary commodity exports) and/or that face high natural barriers to trade experience lower growth rates. We also find that the combined effect of low levels of openness and high transport costs eliminate the negative ‘Africa dummy’ typically found in the literature (that, even controlling for other variables, sub-Saharan African countries experience below average growth performance). Policies to lower barriers to openness and reduce transport costs offer the prospect of improving growth performance in sub-Saharan Africa.

Chapter 3 (draft attached) uses cross-section and panel econometric techniques to investigate the links between growth, inequality and openness for a sample of developing countries (about a quarter are SSA) over 1970-95. There are four broad conclusions. First, within the sample, there is no evidence that those countries that are initially poorer also exhibit higher levels of inequality; there is a low correlation between initial GDP and inequality. Second, inequality appears to have a robust negative effect on growth in the long run but not in the short run. In the long run, this negative effect persists when we

control for factors that promote growth (investment and openness), factors that retard growth (natural resource endowments and barriers to trade), and initial GDP (for which there is evidence of convergence). This suggests that inequality may act as a measure of policy distortions that retard growth.

Third, we find consistent robust evidence that openness is positively associated with growth. There is also some evidence that liberalisation tends to offset or dampen the negative effect of inequality on growth. Finally, Africa does appear to be different, i.e. SSA countries have a below average growth performance, controlling for the ‘usual’ explanatory variables. This is an artefact of specification in the sense that the negative SSA dummy implies exclusion of factors specific to SSA. We do find that the specification combining transport costs and openness (which is low for SSA) accounts for this SSA effect. The especially poor SSA growth performance can be explained by low levels of openness combined with natural barriers to trade (especially high costs of transport to distant dynamic markets).

The poor performance of SSA countries is an issue of major concern for development policy. Our analysis suggests that the factors contributing to poor growth are in essence policy variables (although not necessarily trade policy) amenable to change. Although SSA countries are disadvantaged by natural barriers and distance from markets, interventions are possible that can reduce transport and transactions costs of trade. There are policy options that would reduce the impact of high freight costs in international trade, such as exploiting economies of scale in transportation, increasing efficiency in the shipping system, or increasing the unit value of commodities shipped. All would reduce the relative impact of freight charges on trade flows. More generally, greater openness tends to promote growth, even in an environment of high natural barriers.

Similarly, although SSA countries may have unfavourable resource endowments, resulting in over-dependence on unprocessed primary commodity exports, this is not a binding constraint on growth. Policies that encourage exports and diversification, and that reduce barriers to openness, can boost economic performance, but they must recognise the central

role and particular nature of agriculture and primary commodity export sectors in SSA. These policy interventions should be in addition to the ‘standard’ prescriptions – productive investment is a major determinant of growth.

4. Development of Methodology

Trade barriers, be they artificial (e.g. tariffs and import restrictions) or natural, such as geographical distance between producing and market centres, increase transaction costs of trade. It has long been recognised that transport costs may pose a severe constraint to foreign trade, although few studies tried to quantify this in any detail. There is evidence that the incidence of freight charges is higher on goods exported by developing countries relative to those of industrial nations. The project proposed to extend the analysis of Milner *et al* [2000] to provide comparable estimates for Kenya, Tanzania and Uganda over the period from the early 1990s to early 2000s.

The analytical method is based on the standard measures of effective rates of protection (ERPs), extended to incorporate measures of transport costs (calculated on an *ad valorem* basis). The method applied in the three country case studies uses a consistent and common framework. In each country, 14 trading/production sectors are distinguished and for each sector both ERPs due to trade policy and to transport costs are calculated. The sector pattern of ERPs are compared during a period of trade policy reform – early 1990s, late 1990s and early 2000s (with projections of implementing the common external tariff for the EAC). Estimates distinguish the protection conferred on importables and the effective taxation of exportables. Where possible, we also distinguish overland, sea and air freight costs. The measures are described below.

Measures of transport costs (and interpretation)

The aim is to distinguish between internal or overland (*d*) and international (*s*), sea or air, transport costs (TC), measured as *ad valorem* freight rates on output *j* or input *i*. Different methods have been used to estimate *ad valorem* freight rates in each country. From the perspective of a producer of import-competing goods, the relevant issues are:

- 1) The difference in TC (getting the product to the point of sale) between domestically produced and imported goods, defined as $[s_j - d_j]$. In general $d_j = 0$, as production is at the point of sale or imports and domestic goods incur the same local TC (if production is at the point of entry). The major exception would be if domestic production is in the interior whereas sale is at the point of entry. Thus, nominal protection due to transport costs ($NRPT_j$) will be within the range s_j and $[s_j - d_j]$, and the latter could be negative (i.e. disprotection).
- 2) The additional TC of importing inputs rather than sourcing locally, defined as $[s_i - d_i]$ for input i . This is required to calculate effective protection due to transport costs ($ERPT_j$). Where inputs are not available locally, $d_i = 0$, and s_i represents TC element of using imported inputs (and reduces effective protection on final output).
- 3) The interpretation of d is different for each country. In Tanzania it represents internal costs, measured as rail freight Mwanza-DSM, typically, more relevant to exporting than import-competing, so in practice $d_j = 0$. In Kenya the most relevant internal transport is Nairobi-Mombassa; insofar as Nairobi is the main centre of domestic production and sale, d applies only to imports so we use $[s_j + d_j]$ and $[s_i + d_i]$. Imports to Uganda must be transported overland through Kenya or Tanzania, so in practice we use $[s_j + d_j]$ and $[s_i + d_i]$, where d is Kampala-Mombassa or proxied by Mwanza-DSM.

In the case of exports, transport is a cost and can be interpreted as a tax on exports. The relevant measures become:

- 4) For exports, TC are an additional cost (relative to competitors) of getting the product to the point of sale, defined as $[s_j + d_j]$. Only where export production is at the point of exit do we have $d_j = 0$; this is most likely to apply to products exported by air. In general, nominal *taxation* due to transport costs (NTT_j) is $[s_j + d_j]$. Where possible, this could be reported for specific major export commodities.
- 5) East African countries export mostly relatively unprocessed commodities, and few intermediate inputs are actually used. Insofar as inputs are imported, such as fertilizer, production costs are increased by $[s_i + d_i]$ for input i . This is required to calculate effective taxation due to transport costs (ETT_j).

Revised Formulae incorporating Transport Costs

Consider first producers of import-competing goods. In the absence of ‘natural’ barriers to trade the effective protection afforded to the value added of commodity j by tariffs on product j and inputs i is given by e_j :

$$e_j = [t_j - \sum_i a_{ij}t_i]/[1 - \sum_i a_{ij}] \quad [1]$$

The t_j and t_i are *ad valorem* tariff rates on imported final output (j) and intermediate inputs (i) respectively. The a_{ij} is the technical coefficient that represents the amount of input i used in producing one unit of output j . We can allow for non-tradables by adjusting the value added measure in the denominator. Equation [1] measures the protection afforded to domestic producers competing with imports of j .

Effective protection due to transport costs can be represented in the same way, but keep in mind the exceptions to the measures noted above (especially using the sum of TC for Uganda, not the difference):

$$ERPT_j = \{[s_j - d_j] - \sum_i a_{ij} [s_i - d_i]\} / [1 - \sum_i a_{ij}] \quad [2]$$

Tariffs are usually levied on the import price inclusive of TC (s), and this should be allowed for. To measure combined effective protection due to tariff and freight charges we have (omitting the denominator for convenience):

$$e_j^T = (t_j - \sum_i a_{ij}t_i) + \{[s_j - d_j] - \sum_i a_{ij} [s_i - d_i]\} + (s_j t_j - \sum_i a_{ij} t_i s_i) \quad [3]$$

Equation [3] gives the total protection that would result from both tariffs and transport costs under the c.i.f. valuation system. That is, the first term on the right hand side is the tariff protection effect only, the second term is the natural protection effect only, and the last term is the protection due to interaction of tariffs and transport costs.

Adjustments for Export Producers

Measures that protect import-competing producers disprotect, or tax, export producers. If domestic producers are exporters of j , simply set $t_j = 0$ in [1] to capture the negative protection of exports. It will be convenient to redefine this measure as positive, and interpret as net taxation of exports:

$$T_j = \sum_i a_{ij} t_i / [1 - \sum_i a_{ij}] \quad [1X]$$

All TC on final products are a cost to exporters, so [2] becomes:

$$ETT_j = \{[s_j + d_j] + \sum_i a_{ij} [s_i - d_i]\} / [1 - \sum_i a_{ij}] \quad [2X]$$

To measure combined effective taxation of exports due to tariff and freight charges we have (omitting the denominator for convenience):

$$ETX_j^T = \sum_i a_{ij} t_i + \{[s_j + d_j] + \sum_i a_{ij} [s_i - d_i]\} + \sum_i a_{ij} t_i s_i \quad [3X]$$

5 Comparative Case Study Results

All three of the case study countries engaged in significant trade liberalisation during the 1990s. Although Kenyan trade reforms were often reversed in the 1980s, by the early 1990s most quantitative restrictions on imports had been eliminated. The maximum tariff was reduced from 170% in 1988 to 70% in 1992, the number of tariff rates was reduced from 24 to 12 and the average tariff fell from 40% to 34% over the same period. By the end of the 1990s, the number of rates was reduced to five, and the maximum rate was set at 35%. In Tanzania the number of tariff rates had been reduced to five by 1992 and four by 1997, with a maximum of 30%. The average unweighted tariff fell from 8% in 1998 to 6% in 2002. The Ugandan tariff structure has been simplified significantly over the last ten years. The number of tariff bands was reduced from five in 1995 to three (zero, 7% and 15%) in 2001. The protection rates reported below for the three countries are computed using the method outlined in the previous section.

UGANDA

Table 5 summarises rates of tariff protection against Ugandan imports since 1994. Protection is expected to decline following trade liberalisation, which is confirmed by our ERP estimates in 2001 compared to earlier periods. Between 1994 and 1997, effective protection fell in only five out of 14 sectors but rose in seven sectors. Protection increases may partly be attributed to the removal of tariff exemptions and/or conversion of non-tariff barriers into tariffs. However, ten sectors experienced a significant decline in effective rates of protection between 1997 and 2001 (actual tariff rates), the exceptions being fish products, chemicals, other manufactures and machinery. Between 1994 and 2001, protection (NRP and ERP) declined in all sectors except chemicals, and in most cases the decline was significant.

Table 5: Average tariff protection of Uganda imports (%)

<i>Sector</i>	Nominal protection			Effective protection		
	<i>1994</i>	<i>1997</i>	<i>2001</i>	<i>1994</i>	<i>1997</i>	<i>2001</i>
Food products	0.270	0.502	0.028	0.274	0.510	0.027
Animal products	0.310	0.168	0.008	0.324	0.163	0.006
Forestry products	0.135	0.328	0.063	0.148	0.372	0.068
Fish products	0.333	0.018	0.071	0.351	-0.056	0.066
Minerals (fertilizers)	0.133	0.725	0.067	0.165	1.026	0.084
Coffee and sugar goods	0.253	0.829	0.136	0.299	0.980	0.160
Manufactured foods	0.143	0.503	0.054	0.172	0.885	0.091
Tobacco and beverages	-	0.544	0.114	-	0.729	0.189
Textiles and footwear	0.559	0.715	0.177	1.510	1.645	0.434
Building materials	0.249	-	-	0.560	-	-
Chemicals	0.099	0.093	0.380	0.114	-0.360	1.187
Machinery	0.202	0.152	0.062	0.388	0.042	0.078
Other manufactures	0.146	0.275	0.077	0.213	-0.103	0.007
Transport equipment	0.215	1.490	0.137	0.427	3.721	0.290
<i>Average</i>	<i>0.218</i>	<i>0.453</i>	<i>0.098</i>	<i>0.353</i>	<i>0.657</i>	<i>0.183</i>

Notes and source: See case study report on Uganda.

Table 6 reports some estimates of protection (of imports) and taxation (of exports) due to overland transport costs, which are important for Uganda. All figures refer to 40-foot container cargo (about 30 tons) on Northern Corridor (Kampala-Mombasa). These freight rates refer to light cargo and non-perishable products. Frozen fish transported through Mombasa attracts considerably higher freight rates because of special requirements.

Table 6: Import Protection and Export Taxation due to overland transport costs (%)

Sector	Import Protection				Export taxation			
	1994		2003		1994		2003	
	<i>NRP</i>	<i>ERP</i>	<i>NRP</i>	<i>ERP</i>	<i>NRP</i>	<i>ERP</i>	<i>NRP</i>	<i>ERP</i>
Food products	32.9	33.7	22.0	22.6	17.1	18.4	14.9	15.8
Animal products	10.6	10.7	7.1	7.2	5.9	6.4	5.2	5.7
Forestry products	21.6	26.3	14.5	17.9	12.4	20.6	10.8	16.9
Fish products	10.9	11.6	7.1	7.8	5.4	8.3	4.7	6.5
Minerals and quarry	16.3	22.2	10.8	15.1	9.9	17.0	8.6	14.1
Coffee, cotton and sugar	16.0	18.9	10.7	12.8	8.8	11.6	7.7	9.9
Manufactured foods	29.3	57.1	19.6	39.6	15.9	52.2	13.8	40.9
Tobacco and beverages	49.5	82.2	33.1	56.8	24.0	61.1	20.9	48.5
Textiles, cloth and footwear	12.3	25.3	8.2	19.0	6.6	39.4	5.7	25.4
Building materials	31.1	70.4	20.8	48.6	17.3	67.4	15.1	53.3
Chemicals	10.1	09.0	6.8	8.3	5.6	44.6	4.9	30.7
Metals and machinery	9.5	16.4	6.4	12.0	5.6	26.7	4.9	20.1
Other manufactures	14.4	23.4	9.6	17.4	8.0	39.8	7.0	29.4
Transport equipment	10.0	17.5	6.7	12.7	5.6	25.3	4.9	19.2
<i>Average</i>	<i>19.6</i>	<i>30.3</i>	<i>13.1</i>	<i>21.3</i>	<i>10.6</i>	<i>31.3</i>	<i>9.2</i>	<i>24.0</i>

Notes and source: See case study report on Uganda.

Results in Table 6 indicate that protection of import-competing products and taxation of exports arising from overland freight rates has fallen considerably since 1994. Average freight costs for imports (NRP) fell from 20% to 13%, while ERP of imports declined by almost a third to 21%. Although freight costs for exports are lower and declined only slightly, effective taxation of exports still fell from 31% to 24% on average (as freight costs on imported inputs declined). One factor may be the steady increase in the volume of imports; the increased turnaround may be responsible for this and also general improvements in the clearing process (especially at borders). It may also reflect increased

competition between Northern Corridor in Kenya and Central Corridor in Tanzania, and probably also among shipping agents.

Table 7: Protection and Tax Burden due to sea shipment

	Protection(imports)		Taxation (exports)	
	1994	2000	1994	2000
Food products	0.232	0.106	0.192	0.113
Animal products	0.081	0.107	0.070	0.116
Forestry products	0.170	0.269	0.214	0.352
Fish products*	0.074	0.252	0.086	0.297
Minerals and quarry	0.155	0.267	0.176	0.320
Coffee, cotton and sugar	0.134	0.115	0.121	0.132
Manufactured goods	0.334	0.205	0.539	0.421
Tobacco and beverages	0.454	0.244	0.631	0.379
Textiles, cloth and footwear	0.206	0.377	0.405	0.702
Building materials	0.461	0.035	0.696	0.391
Chemicals	-0.034	0.185	0.455	0.551
Metals and machinery	0.096	0.162	0.275	0.407
Other manufactures	0.099	0.286	0.408	0.558
Transport equipment	0.099	0.183	0.260	0.421
<i>Average</i>	<i>0.183</i>	<i>0.199</i>	<i>0.323</i>	<i>0.368</i>

Notes and source: See case study report on Uganda (Table A6). Note that fish are air freighted.

However, as shown in Table 7, nominal and effective freight costs associated with sea shipping actually increased slightly on average between 1994 and 2000. Effective international freight costs also increased for the major exports (coffee and fish for example). Taken in conjunction with the reductions in tariffs and overland transport costs, overall protection (taxation) of imports (exports) decline between 1994 and 2000. The results, however, highlight particular problems associated with international freight costs.

TANZANIA

Estimates of freight costs in Tanzania, comparing 1998 and 2002, suggest that average costs were quite low, especially for overland freight, but increased slightly (Table 8). While se freight costs on average fell from 12% to 11%, land freight costs rose from four

to almost seven per cent (due largely to an increase in rail freight rates in 2001), and overall average costs rose from 16% to 18%. There were significant variations for the major export sectors. For the main cash crops (cotton, coffee, tea) overall costs fell significantly from 33% to 25%, due to a fall in sea freight costs. For non-traditional exports (fish and mining) however, overall transport costs appear to have risen. In the case of mineral products, this may be because more remote mines were opened. As the average changes are quite small and the data reliability is limited on actual freight rates, the cross-sector pattern of costs is more informative than the estimated trends over time. This suggests that transport costs for major export products remain quite high, especially for the non-traditional sectors into which Tanzania is aiming to diversify.

Table 8: Transport Costs in Tanzania

Sector	Land		Sea		Total	
	1998	2002	1998	2002	1998	2002
Livestock	0.071	0.110	0.062	0.070	0.133	0.179
Food Products	0.027	0.036	0.179	0.119	0.206	0.155
Coffee, tea, cotton & sugar	0.058	0.083	0.276	0.162	0.334	0.245
Fish Products	0.000	0.000	0.056	0.066	0.056	0.067
Manufactured foods	0.006	0.012	0.166	0.173	0.172	0.185
Beverages and Tobacco	0.092	0.121	0.251	0.260	0.343	0.381
Mineral Products	0.041	0.073	0.103	0.115	0.144	0.188
Chemical Products	0.055	0.100	0.059	0.061	0.113	0.161
Forestry Products	0.025	0.031	0.130	0.178	0.155	0.209
Building Materials	0.071	0.150	0.134	0.137	0.205	0.287
Textile and clothing and leather	0.023	0.010	0.069	0.059	0.092	0.069
Metal products and machinery	0.032	0.050	0.057	0.045	0.089	0.095
Transport equipment	0.031	0.049	0.057	0.052	0.088	0.101
Other manufactures	0.059	0.104	0.102	0.104	0.162	0.209
<i>Average</i>	<i>0.042</i>	<i>0.066</i>	<i>0.121</i>	<i>0.114</i>	<i>0.164</i>	<i>0.181</i>

Source: For details see Tanzania case study.

In contrast, there have been significant reductions in tariffs, and hence in protection due to trade policy. Estimates for Tanzania are in Table 9, comparing 1995 with 2001. Average (unweighted) nominal tariffs were reduced from 15% to just over 8%, contributing to a reduction in effective protection of imports from 31% to 17%. The most significant reductions were in building materials, machinery and other manufacturing. The results for effective taxation of exports give rise to concern, as this increased from 32% to 40%. The rates are especially high, and increased, for cash crops – the traditional export sector; this almost entirely due to high and increasing levels of transport costs.

Table 9: Effective Protection and Taxation in Tanzania

Sector	Tariffs		Protection		Taxation	
	1995	2001	1995	2001	1995	2001
Livestock	0.086	0.188	0.054	0.156	0.160	0.221
Food Products	0.106	0.087	0.296	0.189	0.251	0.205
Cash crops	0.319	0.141	0.788	0.582	0.750	1.059
Fish Products	0.134	0.046	0.197	0.083	0.083	0.090
Manufactured foods	0.118	0.124	0.438	0.501	0.535	0.853
Beverages & Tobacco	0.150	0.025	0.472	0.073	0.874	1.010
Mineral Products	0.104	0.014	0.194	0.050	0.171	0.198
Chemical Products	0.130	0.033	0.156	-0.024	0.154	0.183
Forestry Products	0.137	0.087	0.296	0.209	0.219	0.235
Building Materials	0.291	0.105	0.706	0.059	0.424	0.576
Textile & leather	0.177	0.170	0.162	0.245	0.279	0.381
Metals & machinery	0.085	0.033	0.134	0.053	0.165	0.182
Transport equipment	0.072	0.070	0.108	0.079	0.111	0.102
Other manufactures	0.174	0.075	0.316	0.078	0.299	0.318
<i>Average</i>	<i>0.149</i>	<i>0.085</i>	<i>0.308</i>	<i>0.167</i>	<i>0.320</i>	<i>0.401</i>

Source: For details see Tanzania case study. Tariffs indicates NRP, Protection refers to ERPs for imports (including transport costs), and Taxation is total effective taxation of exports.

KENYA

As discussed in some detail in the case study report, the trade data for Kenya exhibited large and often inexplicable year-on-year variation, casting doubt on the reliability. This is the principal reason why results for Kenya are so far only provisional. Furthermore, results

proved quite sensitive to the input-output table used to derive technical coefficients (the original 1992 table or the updated table for 1997). Consequently, estimates of effective protection were variable. This is illustrated in Table 10, which gives estimated based on averages over periods, and compares results using the two IO tables (the final column gives results using the 1997 IO Table).

Table 10. Nominal and Effective Protection in Kenya

Sector	Average NRP		Average ERP		
	1990-1994	1997-2000	1990-1994	1997-2000	1997-2000 ^b
Mfg . Bev & Tobacco	0.43	0.15	-18.53	-3.26	0.19
Mfg . Met prod's & mach	0.10	0.11	-0.52	-0.38	-0.39
Mfg . Other chemicals	0.14	0.05	0.29	-0.23	-0.10
Mfg . Paint Det & soap	0.08	0.06	-0.08	-0.15	-0.11
Mfg . Petroleum prod's	0.79	0.14	-1.42	-0.13	-0.14
Traditional economy	0.00	0.00	0.00	0.00	0.00
Mfg . Raw Textiles	0.14	0.07	0.14	0.05	0.07
Fishing and Forestry	0.17	0.07	0.15	0.06	0.07
Mfg . Paper print & publ	0.06	0.06	0.01	0.08	0.08
Mining and Quarrying	0.09	0.11	-0.15	0.16	0.18
Agriculture	0.04	0.19	0.03	0.20	0.19
Mfg . Non Metal min prod's	0.13	0.12	-0.61	0.21	0.15
Mfg . Finished Textiles	0.27	0.15	0.39	0.25	2.40
Mfg . Rubber prod's	0.20	0.15	0.27	0.31	0.26
Mfg . Food prep's	0.10	0.15	0.04	0.42	0.28
Mfg . Wood prod's	0.24	0.19	0.14	0.50	0.32
Mfg . Leather & Footwear	0.22	0.23	0.88	0.97	0.65
Mfg . Bakery prod's	0.37	0.20	5.93	1.45	-0.09
Mfg . Clothing	0.13	0.36	0.12	1.77	1.44
AVE	0.20	0.13	-0.68	0.12	0.29

Source: Kenyan case study.

Average nominal tariffs fell significantly from 20% to 12% between the early and late 1990s, but with considerable variation across sectors (e.g. tariffs increased significantly for agriculture and clothing). In the early 1990s, average (unweighted) effective protection appears to have been negative, but this is an artefact of the unusually high negative figure

for Beverages and Tobacco. Nevertheless, many sectors appeared to face negative protection (net taxation), implying tariffs in imported inputs were much higher than on final output. These rates of effective taxation were reduced or reversed by the late 1990s, although the estimates for the late 1990s are sensitive to the IO table used. What we can say is that effective protection increased overall, and especially for certain sectors (notably clothing, but also agriculture and food products). Protection was significantly reduced for Bakery products, and disprotection was significantly reduced for Petroleum products and Beverages & Tobacco.

Table 11 Implicit Taxation from Land Transport Costs in Kenya

Sector	1993	2001	2003	1993	2001	2003
	NRP			ERP		
1 Traditional economy				-	-	-
2 Agriculture	0.18	0.13	0.09	0.21	0.15	0.10
3 Fishing and Forestry	0.01	0.01	0.01	0.02	0.01	0.01
4 Mining and Quarrying	0.62	0.46	0.29	0.94	0.72	0.45
5 Mfg . Food prep's	0.07	0.05	0.03	0.78	0.52	0.33
7 Mfg . Bev & Tobacco	0.14	0.10	0.06	0.86	0.32	0.21
8 Mfg . Raw Textiles	0.06	0.04	0.03	0.14	0.17	0.11
9 Mfg . Finished Textiles	0.06	0.04	0.03	0.13	0.15	0.10
10 Mfg . Clothing	0.19	0.14	0.09	0.43	0.30	0.19
11 mfg . Leather & Footwear	0.01	0.01	0.01	0.31	0.19	0.12
13 Mfg . Paper print & publ	0.14	0.11	0.07	0.45	0.32	0.21
14 Mfg . Petroleum prod's	0.03	0.02	0.01	1.47	1.02	0.65
15 Mfg . Rubber prod's	0.07	0.05	0.03	0.28	0.19	0.12
16 Mfg . Paint Det & soap	0.23	0.17	0.11	0.87	0.59	0.38
17Mfg . Other chemicals	0.11	0.08	0.05	0.58	0.36	0.23
18 Mfg . Non Metal min prod's				0.06	0.03	0.02
19 Mfg . Met prod's & mach	0.18	0.13	0.09	0.83	0.23	0.15
AVE	0.14	0.10	0.07	0.49	0.31	0.20

Source: Kenyan case study.

The estimates of internal (land) transport costs for Kenya are more consistent, and reported in table 11. Average land freight costs have halved between 1993 and 2003, such that

effective protection (taxation) has fallen from almost 50% to about 20% on average. Again, there are important variations: as could be expected, freight costs are highest for mining and quarrying, but also relatively high for agriculture, clothing and chemical products (detergents, soap and paints). Freight costs are particularly low for petroleum, textiles and fish, suggesting at least that land transport is not very important for these products. Patterns of effective protection are somewhat different – relatively high for chemical products and mining, but also for petroleum and food products. The estimated very low effective taxation of fish exports is because land transport is unimportant, air freight being the major transport cost. In general, these estimates suggest that overland transport costs are lower than in either Tanzania or Uganda, but this may reflect the way they are estimated and the fact that products tend to be transported shorter distances in Kenya. Furthermore, these estimates do not account for sea freight.

6. Preliminary Conclusions

The project intended to evaluate trade policy for four countries (Kenya, Malawi, Tanzania and Uganda), considering imports and exports, with emphasis on related policies towards trade costs, especially transport. Although the original intention was to measure trade and transport barriers (ERPs) using a common method applied to all countries, this proved impractical for Malawi. Consequently, the comparative common methodology study was limited to the three East African countries, and separate but complementary analyses were carried out for Malawi. Furthermore, all case studies faced serious data constraints, so the estimates provided are still provisional (especially for Kenya).

The main conclusions, corresponding to the original objectives, are:

- All three East African countries implemented significant reductions in tariffs that resulted in significant reductions in effective protection associated with trade policy to about 15% across sectors on average (compared to around 30% in the early 1990s). However, effective protection was increased for some sectors (e.g. clothing in Kenya, manufactured food in Tanzania, chemicals in Uganda).

- For the three East African countries overall transport costs have not fallen since the mid-1990s. Uganda faces the highest transport costs, and although land freight costs fell (but not for exports), sea freight costs rose. Kenya has relatively low land freight costs, and these declined (although not estimated in the case study, sea freight costs should have risen in line with those for Uganda). The situation is different in Tanzania in the sense that sea freight costs fell slightly but land (rail) freight costs rose.
- Overall, effective protection due to transport costs remains around 15% on average and rose slightly, somewhat offsetting the reductions in tariffs. Econometric analysis for Malawi found that, following trade liberalisation, transport costs became a more important source of protection (and restraint on import demand) than trade policy. This would also appear to be the case for East Africa
- For the East African countries, transport costs for exports remain very high. Even in the early 2000s, effective taxation of exports due to transport costs remains around 40% for Kenya and Tanzania, and probably 50% for Uganda.
- For Malawi, a more direct econometric study looked at the effect of transport costs on export supply. This confirmed the broader econometric study showing that high transport costs are a significant barrier to exporting in SSA. The high costs faced by East African exports are therefore a severe constraint to export supply response.
- Through interviews and meetings by the local consultants, and through the in-country workshops in East Africa, the team has consulted with private sector groups and local policy-makers. These consultations contributed to the discussion in the country reports on measures to reduce trade costs.
- The project has provided substantial capacity-building in the three East African countries. The local researchers have benefited (and are continuing to benefit) from research training and expert advice on their work for the project. Furthermore, the project has helped to establish strong links between the three institutes (KIPPRA, ESRF and EPRC) beyond promoting collaboration between the three individual researchers.

Overall, the study quantifies and highlights the importance of transport costs as a severe barrier to trade in East Africa. Most importantly, despite trade liberalisation, the effective

barriers to exporting have not been reduced and remain very high. A Policy Brief (to be written) will relate the findings to derive implications for EU policies in the focus countries. In particular, we will consider how aid can be allocated to the transport sector to reduce barriers to trade and facilitate a growth in exports. For specific policy issues will be highlighted and elaborated.

- There is remarkably little quantitative information on transport costs in the countries studied. Although many reports and policy papers exist, there are largely bereft of estimates of actual freight costs faced by importers and exporters. Consequently, the project had to devise a variety of ways to estimate transport costs, across sectors and over time, distinguishing land, sea and air freight. More work is required to validate and reconcile estimates across the three countries, but the study will provide the first comprehensive and comparable set of estimates for East Africa. For policy-makers, this at least fills an important gap in information.
- Data and information are particularly scarce with respect to road freight. Estimates of land transport costs have either been based on rail freight charges (Tanzania), derived from input-output tables (Kenya) or projected from estimates for the early 1990s (Uganda). For sectors that rely largely on rail transport (e.g. cotton in Tanzania), the estimates will be reasonably reliable. However, for sectors that rely heavily on road freight, the estimates are less reliable. General information in the case studies suggest that rail freight is more expensive and less efficient, and a case could be made for infrastructure investment. Road freight is a private sector activity, although investment in improving the quality of roads integrating major markets, producing areas and ports would clearly be beneficial.
- Estimates suggest that sea freight charges have declined in Tanzania, perhaps because of the investment in improving port facilities at DSM. However, sea freight charges from Kenya appear to have risen, suggesting a need for investment in port facilities at Mombassa.
- Air freight is especially important for major non-traditional exports such as fish, horticulture and floriculture. Investment in storage, freezing and processing facilities may be of greatest benefit in these sectors.