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Trade policy and transport costs in Uganda

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Trade Policy and Transport Costs in Uganda

by

Nichodemus Rudaheranwa

Abstract

Recent studies on trade policy for low-income countries have established that high transport costs associated with poor quality infrastructure in countries such as Uganda represent a barrier to trade and an additional source of protection to domestic producers of import competing goods. This study updates and extends the analysis of Milner et al (2000) for Uganda in the 1994 to compare with the situation in the early 2000s. The results show that trade policy barriers have been further reduced and, in general, transport costs have fallen, although not dramatically. Transport costs remain a significant trade barrier, equivalent to effective protection of over 20% and an implicit tax on exports of over 25% (and up to 50% on air freight). Simulation of the protection effects under the new EAC Customs Union shows that overall the level of tariff protection will increase but any adverse impacts could be offset by greater efficiency at Customs and ports and additional investment to reduce infrastructure-related transport costs.

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Outline

1. Introduction
2. Trade Policy and Performance since the 1990s
3. Analytical Approach
4. Estimates and Results
5. Conclusions and Policy Implications

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1. INTRODUCTION

Despite significant rates of economic growth over the past decade, Uganda remains an economy heavily dependent on the agriculture sector, in terms of supplying inputs in the industrial sector (most manufacturing activities in the country are agro-processing), employment (over 80%) and export earnings (over 90%). The contribution of the agricultural sector to GDP declined from about 54% in 1987 to just below 40% in 2004 (The Republic of Uganda, 1997; and Table 1) but it remains the major productive sector. Although gold exports have been significant in recent years, agriculture (including fishing) provides most of Uganda's exports and, as Milner *et al* (2000) showed, faced high effective taxation due to excess transport costs in 1994. This paper analyses trends in trade policy and transport costs since 1994 to assess the implications for Uganda, in particular agricultural exports.

Table 1: Sector distribution of the Uganda's GDP in recent years (%)

Sector	*1999/00*	*2001/02*	*2003/04*
Agriculture	40.1	39.7	38.5
Industry	18.6	19	19.5
Services	40.5	41.2	42

Source: The Republic of Uganda (2004)

The trade-policy reforms initiated in Uganda since the mid-90s consolidated the removal of controls in financial and commodity markets, reductions in protection for import-competing firms and simplification of the tariff structure began in the late 1980s. The five tariff bands in 1993 (0%, 10%, 20%, 30% and 60%), with more than 95 percent of tariff lines between 10 and 30 percent and a simple average tariff rate of 17%, were reduced to three (zero, 7% and 15%) in 2001 (WTO, 1995 and 2002).[1] Uganda grants preferential treatment in form of duty reductions to COMESA member states on a reciprocal basis and subject to certificates of origin. According to the WTO (2002), capital goods and raw materials enter duty free, intermediate goods from COMSA and non-COMESA member countries are subject to tariff rates of 4% and 7% respectively while finished goods from COMESA Member States attract

[1] About 16.4% of all tariff lines were duty free by 2001 while 39.3% carry the maximum rate of 15%. A few exceptions include cigarettes at 130% and alcoholic beverages at 70%.

a tariff rate of 6% only. Quantitative restrictions (e.g. import licensing requirements, quotas, bans, etc.) have been eliminated or converted into tariff equivalents. A number of state-owned enterprises (SOE) either have been (or are in process of) being privatised or liberalized. Specifically, the monopoly of a number of marketing boards in the procurement, distribution and marketing of agricultural produce has been eliminated.

Policy-induced barriers to trade (e.g. tariffs, control of commodity and foreign exchange markets, quantitative trade restrictions, etc.) have been substantially reduced. Other barriers to trade tend to arise from poorly functioning trade-promoting institutions (Rudaheranwa *et al.*, 2003), inadequate, inefficient and costly infrastructure systems or natural barriers (Milner *et al.*, 2000; Rudaheranwa, 1999). The current analysis looks at the relative effects of trade policy reforms (reduction in tariffs) and non-policy barriers (changes in transport costs) on Uganda comparing 1994 and 2003. The rest of the paper is organized as follows. Section 2 gives an overview of Uganda's trade structure over the last decade. Section 3 presents the analytical framework while Section 4 discusses effective rate of protection (ERP) estimates relating to tariffs and transport costs respectively, including coverage of transport costs as an effective tax on exports. Section 5 considers some policy implications.

2. TRADE POLICY AND PERFORMANCE SINCE THE 1990s

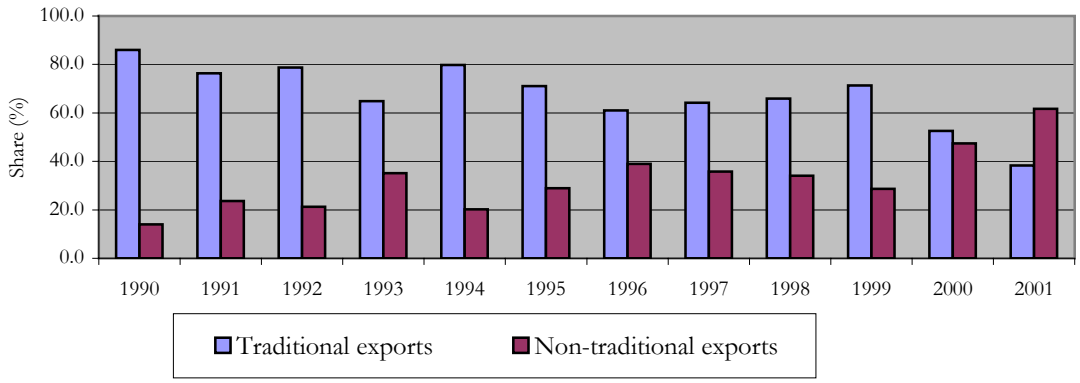
Trade policy reforms initiated in Uganda over the last decade were designed to reduce the anti-export bias associated with protection policies, induce resource allocation into the export sector and improve trade performance. Export earnings have increased, for example from about US$ 258 million in 1981 to a peak of about US$ 710 million in 1996 and about US$ 508 million in 2003 (The Republic of Uganda, 1997 and 2004). The commodity composition of the country's exports has also changed significantly. The contribution of traditional exports (mainly coffee, cotton, tea and tobacco) fell from just less than 86 percent in 1992 to about 53% and 38% in 2000 and 2003 respectively (Figure 1 below; The Republic of Uganda, 1996 and 2004).

The drastic decline in the share of traditional exports is mainly due to the shrinking contribution from coffee exports, from about 80 percent in 1992 to about 55% and 21% in

1998 and 2003 respectively due to deteriorating terms of trade.[2] Coffee export prices fell by almost 70 percent in dollar terms between 1998/99 and 2001/02 alone leading to a US$ 222 million decline in coffee export earnings (The Republic of Uganda, 2003a). It is worth noting that though coffee prices began to pick up slightly in the first half of the financial year 2002/2003 (about 0.59 US$/kg), they are still much lower than they were in 1994/95 (about US$ 2.48/kg). In addition, prices for each of the other three traditional exports (cotton, tea and tobacco) also fell between 1998/99 and 2002/03 although less markedly than coffee prices.

Non-traditional exports increased both in volume and value due to the export-diversification policy drive initiated in the country during the early 1990s. The share of non-traditional exports rose from about 14 percent (about US$ 25 million) in 1990 to about 47% and 62% (about US$ 278 million) in 2000 and 2001 respectively (The Republic of Uganda, 1996 & 2002a; Figure 1 below).

Figure1: Composition of Ugandan Exports 1990-2001 (%)



Significant developments were in exports of fish and fish products from US$ 10.4 million in 1994 to just less than US$ 88 million in 2002, and flowers from about US$ 0.3 million in 1995 to about US$ 17.8 million in 2002 (Table A1 in the Appendix). Other non-traditional export sectors that experienced performance improvements include: gold and gold compounds from US$ 9.6 million in 1991 to over US$ 60 million in 2002; maize from US$

[2] According to The Republic of Uganda (2004), the share of coffee export earnings were projected to decline further to 17.1% of export of goods in 2003/2004.

4.2 million to US$ 10.6 million and cattle hides from US$ 4.1 million to US$ 9.8 million between 1990 and 2002. Generally, non-coffee exports currently account for over 82% of total exports. Fish and fish products (the largest non-coffee exports) account for 16% of total export earnings and are estimated to increase by about 18% in 2003/04 mainly due to more investment in processing facilities and export opportunities (The Republic of Uganda, 2004). Similarly, flower export earnings are projected to increase in 2003/04 as result of increase in farm size, construction of more greenhouses and declining freight charges, which have encouraged exports.

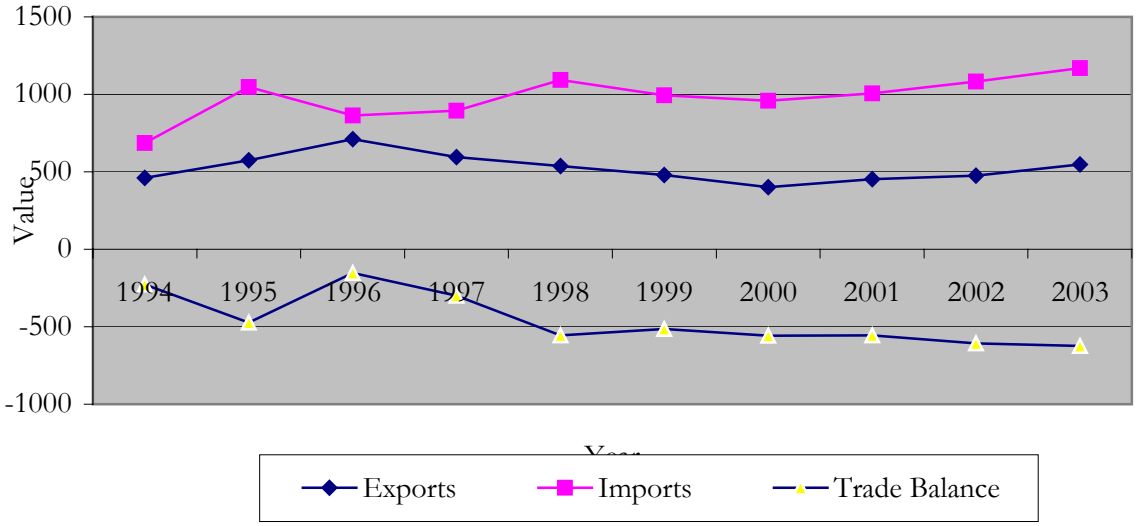
The trade deficit has continued to rise mainly because imports (financed by aid inflows) have increased faster than export earnings (Figure 2). The persistent higher import trend may be attributed to a number of factors. First, recent rapid growth in construction activities in the country has involved a higher import growth of construction materials particularly cement, lime, clay tiles and glass. A second source of import growth has been imports of transport and telecommunication equipment particularly vehicles and mobile phones given the country's growing demand for transport and telecommunication services[3]. Third, Uganda's industries have a high content of imported inputs into their production structure[4]. Finally, the import growth could be attributed both to a liberal import trade regime that increased low-priced and high-quality imports and to the consumption habits in the country with the general perception that imported products are of better quality. The trade deficit increased from US$ 641 million in 2002/03 to US$ 712 million in 2003/04 even when exports of goods grew by 24% while imports rose by 17% over the financial year because imports were increasing from a higher base than that of exports.

Ugandan trade structure has not changed much in terms of market destination of exports and import sources (Tables 2 and 3 below). Much of the Ugandan export trade is destined for Europe with a share of about 73% and 45% of Uganda exports in 1995 and 2001 respectively. However, the share of Ugandan exports (in terms of value) destined to Europe has persistently declined since 1995 probably largely due to falling coffee prices. It is clear

[3] Information from Uganda Communication Council shows that phone subscription has increased from 24,051 to 54,000 fixed lines between 1993 and 2002 while the number of mobile phone subscribers increased from 3000 lines only in 1996 to 393,310 by July 2002 and the number of private FM radio stations increased from 14 in December 1996 to over 130 by July 2002. The importation of motor vehicles has experienced similar trends.

that the European Union is traditionally a major trading partner both for Ugandan exports and imports. Table 2 suggests that the share of Ugandan exports destined to the European Union has fluctuated between 25% and 59% since 1995. The share of Ugandan exports to COMESA is low and has not increased significantly since 1995 although that to the rest of Africa has slightly improved albeit from a very low level. The country's exports destined for Asia has more than tripled since 1995 from 2.4 percent to about 13.7 percent in 2001.

Figure 2: Ugandan External Trade (US$ Million and in current values)



Source: The Republic of Uganda (2002b)

Ugandan import trade by source is dominated by imports from the African continent particularly from COMESA whose share has remained above 22% of imports throughout the 1990s. The share of import trade from the rest of Africa other than COMESA, though low, has improved from 2.2 percent in 1995 to about 8.2 in 2001. The share of imports from Europe has tended to decline in recent years (see Table 3), however that from Asia has stabilized around 30 percent. There is little trade (whether import and export) between Uganda and America although the exports to North America have increased from 0.1% to

[4] Hence the critical importance of freight costs as discussed later.

1.8% of the country's export trade between 1995 and 2001 probably reflecting the effect of the Africa Growth Opportunity Act (AGOA) initiative.

Table 2: Ugandan exports by region of destination (% share)

Region\Year	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
COMESA	20.4	26	17.5	16.5	18.9	23.3	27
Other Africa	0.4	0.2	0.8	1.1	5.5	8	7.4
Africa	20.8	26.2	18.3	17.6	24.4	31.3	34.3
Middle East	0.6	1.3	0.9	2.2	0.6	1.5	2.2
Other Asia	1.8	6.2	4.1	4.6	3.6	9.8	11.5
Asia	2.4	7.5	5	6.8	4.2	11.3	13.7
European Union	38.9	35.4	52.1	50.9	59.3	24.9	28.4
Other Europe	33.6	29.2	14	11.9	9.7	25.5	16.7
European	72.5	64.6	66.1	62.8	69	50.4	45.1
North America	0.1	0.5	0.4	2.2	0.3	2.3	1.8
Rest of World	4.1	1.2	10.1	10.7	2	4.6	4.4

Source: The Republic of Uganda (2002b)

Generally, the structure of Ugandan trade has diversified in terms of commodity composition but is still concentrated in terms of market destination/source mainly to the European Union and regional markets such as COMESA. The persistent trade imbalance arises not only due to a narrow range of export products but also poor terms of trade and limited market access. In addition, Uganda export products tend to be mainly unprocessed agricultural products that are subject to vagaries of weather and price fluctuations (Murry, 1997; UNCTAD, 2003) compared to high-value imports.

There are a number of factors that tend to erode the trade position of developing countries like Uganda (Murry, 1997: 8; UNCTAD, 2003: 15), a few of which could be mentioned here: (i) the slow rate of growth in world demand for agricultural products and industrial raw materials, (ii) the high propensity of industrial countries to develop synthetic substitutes for commodities produced by developing countries (iii) the tendency for commodity prices to fluctuate leading to uncertainties in export earnings (iv) the adverse relationship between export prices received by developing countries in comparison to prices paid for imports of capital equipment and other manufactures, etc. Besides, unprocessed agriculture products tend to be bulky and of low value and therefore face high burden arising from transportation costs. This calls for increased efforts towards the processing of raw materials to add value

for the country's exports to fetch high prices in export markets and withstand high shipping costs.

Table 3: Ugandan imports by source (% share)

Region\Year	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
COMESA	30.3	22	24.2	29.2	27.5	27.7	32.6	29.4
Other Africa	2.2	3.9	3.8	6.7	9.2	6.5	8	8.2
Africa	32.5	25.9	27.9	35.9	36.7	34.2	40.6	37.6
Other Asia	23	27.7	26.1	23.1	24.4	25.9	23.4	25.8
Middle East	5.8	6.4	6.1	6.6	6.1	6.4	6.3	6.9
Asia	28.8	34.1	32.2	29.6	30.5	32.4	29.7	32.7
European Union	29.1	29.9	31.3	25.5	24.3	22.4	19.4	19.7
Other Europe	2.5	2.8	2.8	2.9	2.4	2.8	2.9	3.4
European	31.4	32.7	34.2	28.4	26.7	25.2	22.3	23.1
North America	6.6	4.5	4.3	5	4.8	5.7	4.7	3.8
Rest of World	0.5	2.7	1.4	1.1	1.3	2.5	2.6	2.7

Source: The Republic of Uganda (2002b)

3. ANALYTICAL FRAMEWORK

The impact of tariff reduction due to trade policy reforms in Uganda on various sectors is assessed in the framework of nominal and effective rates of protection[5]. Protection provides a subsidy to producers of import-competing goods and implicitly taxes production for export. Nominal rates of protection (NRP) measure the impact of trade distortions on the price of the final output only, whilst effective rates of protection (ERP) measure the impact of distortions on the value added of a given economic activity. NRP is the percentage increase in the domestic price of importables resulting from a given trade-distortion on the assumption that domestically and imported goods are perfect or close substitutes. The nominal rate of protection is an indicator of the extent to which tariffs and tariff-like measures raise the domestic price above the c.i.f. (cost, insurance, and freight) import price or border price.

[5] A theoretical framework of effective rate of protection (ERP) is given in Johnson (1969), Balassa (1965), Balassa et al, (1982) and Corden (1966) while its various application is provided in Jansson and Shneerson (1978), Clark (1981), Milner et al (2000); Rudaheranwa (1999 and 2000) among others. The approach of the current analysis follows Milner *et al* (2000); Rudaheranwa (1999 and 2000) based on the Balassa method.

Effective rates of protection capture the joint effects of tariffs on prices of output and inputs to identify protection of the value added. Protection of final output raises (while that on inputs lowers) the value added relative to that given by the free trade prices. That is, effective rates of protection are an increasing function of output tariffs and a decreasing function of input tariffs. The effective rate of protection (ERP) is a net effect of these two counteracting effects on the domestic value added. ERP is computed using the following formula.

$$Ej = \frac{tj - \sum_{i=1}^{n} aijti}{1 - \sum_{i=1}^{n} aij} \qquad [1]$$

Equation [1] shows that the effective rate of protection on product or sector *j*, E_j, depends on nominal tariff rate (t_j) on the product *j*, tariff rate (t_i) on traded input *i* and the free trade input coefficient (a_{ij}). The computation of ERP is straightforward if all intermediate inputs are tradables whose domestic prices are affected by trade distortions. The production process may also employ nontraded inputs, which may be influenced indirectly by protection (Balassa, 1965; Corden, 1966). The presence of non-traded inputs (e.g. health, electricity and transport services, etc.) creates difficulties in quantifying effective protection accorded to a given economic activity[6]. The literature identifies two approaches (the Balassa and Corden methods) for the treatment of non-traded inputs in the computation of ERPs (Balassa, 1982; Tsakok, 1990). The current estimation process treats nontraded inputs according to the Balassa method following Milner *et al.* (2000) and Rudaheranwa (1999 and 2000). If t_j and t_i are nominal tariff rates on output and inputs respectively and a_{ij} (a_{mj}) is the technical coefficient for tradable (nontradable) inputs, we modify equation [1] is modified to obtain the ERP formula used in the current estimation:

$$Ej = (t_j - \Sigma_i a_{ij} t_i) / (1 - \Sigma_i a_{ij} - \Sigma_m a_{mj}) \qquad [2]$$

The ERP estimation process requires information on technical coefficients and actual or scheduled tariff rates on *i* and *j*. Technical coefficients are extracted from the thirty-sector input-output table for Uganda produced in 1992 (provided by the *Uganda Bureau of Statistics*). These are post-protection technical coefficients and are deflated using 1994 actual tariff rates

to estimate adjusted technical coefficients[7] in terms of free trade (border) prices (see Appendix B). Post-protection coefficients are deflated first and the estimated free-trade technical coefficients are then employed throughout the ERP estimation process.

Tariff rates are available on 97 commodities at the two-digit *HS* level, which are then aggregated into fourteen groups consistent with tradable sectors given in the Ugandan input-output table.[8] There are three sets of tariff rates, corresponding to actual and detailed tariff rates of 1997 and 2001, and scheduled maximum rates of 2001. The actual import tariff rates used for 1997 and 2001 ERP estimates are *ex-post ad valorem* rates computed by dividing tariff revenue by the corresponding value of imports[9]. Different taxes employed in Uganda include import duties, withholding tax, commission charges, excise and sales taxes, etc. Of these, only those taxes that have price-raising effects on imports are considered, that is, import duty, withholding tax and commission charges. Sales and excise taxes are imposed on domestic products as well and therefore do not provide protection to economic activities relative to imports. The withholding tax was intended for greater tax compliance but it created additional bureaucratic requirements and associated transaction costs for investors. The tariff rate is given by $t = (custom\ duty + withholding\ tax + commission)/c.i.f.\ value$.

Incorporating Transport Costs

High transport costs have negative effects on trade and economic growth particularly of landlocked countries like Uganda, which is served by Mombasa and Dar-es-Salaam seaports[10]. First, high shipping costs reduce profits from exports and thus reduce the country's level of income. Second, high freight costs inflate the price of imported inputs,

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[6] These inputs are non-traded internationally precisely because of prohibitive costs of transportation.

[7] On a sector level the assumption of fixed technical coefficients is not necessary but would be essential once estimation of ERP is undertaken on a more disaggregated (commodity rather than sector) level.

[8] Input coefficients used to weight input tariff rates are available on sector rather than commodity level. It follows that tariff rates used for each sector are average rates on commodities in that sector. Commodity tariff averaging in a given sector has a potential problem of masking tariff rate dispersion across commodities in that sector (for example see Rudaheranwa, 1999).

[9] Average tariff rates for 1997 and 2001 are computed using information from the Customs and Excise Department (Uganda Revenue Authority) and the maximum tariff rates for 2001 are scheduled tariff rates from the Finance Bill.

[10] Ugandan exports and imports connect to seaports by different modes (road, rail, water) and through four main routes namely (i) Mombasa–Kampala railway route (1,331 km), (ii) Mombasa-Malaba-Kampala road route (1,170km), (iii) Mombasa-Kisumu-Kampala rail/lake route (1,148 km) and (iv) Dar es Salaam-Mwanza-Port Bell (Kampala) rail/lake route (1,680 km).

which is harmful to an economy highly dependent on imported raw materials and semi-finished/intermediate goods. Third, high transport costs reduce the level of investment, both directly through increasing costs of imported capital and indirectly through reducing the level of total savings that is available for investment. Fourth, the availability of a well-functioning transport system is essential not only for trade to take place but also for attracting foreign direct investment (FDI). Indeed, among economic factors considered for selecting a host country for FDI, physical infrastructure, availability of reliable, affordable and efficient transport and communication services feature prominently. Thus, high transport costs make Uganda less likely to attract export-oriented FDI, which denies the country both new technologies and increased productivity. Finally and as will be seen in discussion later in the paper, transport costs have influence on the country's selection of trading partners.

Uganda's maritime trade is unavoidably dependant on transit through Kenya and/or Tanzania. Uganda has no control over development of the infrastructure, transport management and policies in transiting countries. However, the establishment of efficient transit transport system to seaports for Uganda depends on cooperative arrangements with Kenya and Tanzania, which is very possible through the East African Community Customs Union, a treaty signed in March 2004 and is soon to come into force.

Extending the analysis of effective protection/taxation to include the influence of transport costs requires a simple modification of the relationship given in equation [2]. We start by assuming a free trade world without tariffs and consider the protection afforded to domestic industries by shipping costs on imports relative to the situation where they do not exist. The effective rate of protection is then the percentage increase in the value added per unit in any economic activity made possible by freight charges relative to the situation in the absence of transport costs. If we let d_j and d_i be the *ad valorem* freight rates borne when shipping output j and input i respectively in the absence of artificially induced-barriers to trade, then we have the following equation.

$$Ej = [d_j - \sum_i a_{ij} d_i]/[1 - \sum_i a_{ij} - \sum_i a_{mj}] \qquad [3]$$

Freight costs provide an implicit subsidy/protection to domestic producers of import-competing goods but a tax on exports, however transport costs on inputs increase costs of production both for domestic and export markets. The impact of transport costs on imported inputs is slightly different from that originating from tariffs. Under tariffs, exemptions are often granted to producers regarding imported inputs. For example, Ugandan exporters benefit from the Fixed Duty Drawback and the Manufacturing Under Bond (MUB) Schemes introduced in Uganda in July 2000. Under the fixed duty drawback scheme, duties paid on inputs that go into production of exports are refunded as a way of increasing export competitiveness while the Manufacturing Under Bond Scheme was intended to permit duty-free imported inputs into 100% exporting activities[11]. Such exemptions reduce the tariff-related taxing influence on exports. In contrast, it is difficult to avoid the tax burden due to 'natural' barriers (e.g. transport costs) for various reasons including the difficulty in computing the subsidy equivalent to the tax originating from a given 'natural' barrier.

The computation of ERP estimates arising from transport costs requires information on *ad valorem* freight rates on output *j* and input *i*, and on technical coefficients. The technical coefficients are extracted from the 1992 Uganda national input-output table classified into 30 producing sectors, 14 of which represent sectors producing tradables while sectors 16 to 30 produce and supply nontraded goods[12]. However, the information from shipping agents provides transport costs per unit of weight/volume rather than per unit value (not as *ad valorem* rates).

Given data limitations and the need for comparing the impact of transport costs over the last ten years, a methodology was developed to compute changes in transport costs over the period. From earlier studies (e.g. Rudaheranwa, 1999 and 2000), there is some information on (i) technical coefficients for transport and communication services from the 1992

[11] The major problem with these schemes is the complexity and cumbersome processes involved in getting refunds particularly in the case of MUB. MUB essentially allows a manufacturer, upon payment of a bond, to defer payment of duties until the product is sold. The necessary paperwork aligning imported inputs to exported output has to be produced each time there is an export, particularly if a firm produces for the domestic and export markets. There is a complex set of administrative controls, which are cumbersome for both the Uganda Revenue Authority (URA) and the manufacturer. These can pose considerable costs. See REPIM (2000) for details of complex requirements of MUB in Uganda

[12] See Rudaheranwa (1999) for detailed discussion on the choice and classification of these sectors.

Ugandan input-output table and (ii) estimates of transport costs by sector for 14 tradable sectors for Uganda in 1994 (as *ad valorem* freight rates). Interviews carried out in October 2003 with freight agents (combined with information posted on the Ugandan Investment Authority (UIA) website in August 2003) provide some information on transport costs as shipment costs per unit of weight (ton). We use the freight costs given as costs per ton from the World Bank (1994) to compute changes in the transport cost over the last ten years. That is, if transport costs in 1994 are T_{1994} and transport costs in 2003 are T_{2003}, then the change in transport costs is given $\Delta T = (\frac{T_{2003} - T_{1994}}{T_{1994}}) \times 100$. This proportional change in transport costs is used to update *ad valorem* freight rates from earlier studies notably Rudaheranwa (1999 and 2000). For illustration purposes, let P_{1994i} give *ad valorem* freight rates in 1994 and P_{2003i} give that in 2003 where *i* refers to tradable sector (*i* =1, 2… 14). The freight rates in 2003 are updated using the following relationship; $P_{2003i} = (1 + \Delta T)\ P_{1994i}$. This approach allows us to generate updated *ad valorem* freight rates that are used in the computation of effective rates of protection/taxation reportedbelow. It is important to note that *ad valorem* freight rates for 2003 are computed first, which are then used to compute updated ERP rates of protection due to transport costs. ERP estimates are computed for overland transport costs on the Northern Corridor only due to data difficulties and for comparison purposes.

4. ESTIMATES AND RESULTS

As noted above, the number of tariff bands was reduced from five in 1995 to three (zero, 7% and 15%) in 2001. Uganda grants preferential tariff treatment to other members of COMESA with preferential tariff bands of zero, 4% and 6% and there are no export taxes in Uganda since 1996. Protection rates are computed using equation [2] and data described above, and on simplifying assumptions that (i) input coefficients are fixed, (ii) general repercussions do not exist and (iii) domestic and imported goods are perfect substitutes. Table 4 summarizes 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.[13] Note that data sources, hence actual

[13] These results are consistent with those of the Research on Economic Policy Implementation and Management (REPIM) in May 2000 where, using detailed costs and revenues for 59 manufacturing firms across a range of sectors, the ERP fell from about 34% to about 15% and the standard deviation dropped from 46.6 to 22.6 between 1994 and 1999.

measures, differ each year so one should focus on relative trends rather than precise estimates.

Table 4: Average Protection for Ugandan imports (%)

	Nominal protection				Effective protection			
Sector	*1994*	*1997*	*2001a*	*2001b*	*1994*	*1997*	*2001a*	*2001b*
Food products	0.270	0.502	0.028	0.150	0.274	0.510	0.027	0.152
Animal products	0.310	0.168	0.008	0.150	0.324	0.163	0.006	0.154
Forestry products	0.135	0.328	0.063	0.150	0.148	0.372	0.068	0.167
Fish products	0.333	0.018	0.071	0.150	0.351	-0.056	0.066	0.159
Minerals (fertilizers)	0.133	0.725	0.067	0.150	0.165	1.026	0.084	0.191
Coffee and sugar goods	0.253	0.829	0.136	0.150	0.299	0.980	0.160	0.175
Manufactured foods	0.143	0.503	0.054	0.150	0.172	0.885	0.091	0.234
Tobacco and beverages	-	0.544	0.114	0.150	-	0.729	0.189	0.204
Textiles and footwear	0.559	0.715	0.177	0.150	1.510	1.645	0.434	0.311
Building materials	0.249	-	-	0.150	0.560	-	-	0.269
Chemicals	0.099	0.093	0.380	0.150	0.114	-0.360	1.187	0.278
Machinery	0.202	0.152	0.062	0.150	0.388	0.042	0.078	0.250
Other manufactures	0.146	0.275	0.077	0.150	0.213	-0.103	0.007	0.255
Transport equipment	0.215	1.490	0.137	0.150	0.427	3.721	0.290	0.246
Average	0.218	0.453	0.098	0.150	0.353	0.657	0.183	0.217

Notes and source: Tariff rates for *2001a* refer to actual rates computed as a ratio of price-raising tariff revenue to the c.i.f. import value of the commodity under consideration while tariff rates for *2001b* refer to scheduled maximum tariff rates. The 1997 and 2001a tariff rates were computed using data provided by The Customs and Excise Department of the Uganda Revenue Authority while both NRP and ERP for 1994 are adapted directly from Rudaheranwa (1999).

Between 1994 and 1997, effective protection increased in six out of 14 sectors - Transport equipment, minerals, forestry products (paper and other printing materials), manufactured foods, coffee and sugar products, textiles and footwear. Such protection increases may partly be attributed to the removal of tariff exemptions particularly on output and/or conversion of non-tariff barriers into tariffs on some products in some sectors. Effective protection fell in five sectors - animal products, fish products, chemicals, other manufactures and machinery. These are sectors identified for diversification of the economy (favored manufacturing). However, ten sectors experienced a significant decline in effective rates of

protection between 1997 and 2001 (actual tariff rates), the exceptions being fish products, chemical, other manufactures and machinery whose NRP and ERP have increased instead. Between 1994 and 2001, protection (NRP and ERP) declined in all sector except in chemicals and in most cases the decline was significant.

Impact of East African Community Customs Union

As noted earlier, Uganda is involved in a number of regional trade arrangements notably the Common Market for Eastern and Southern Africa (COMESA) and the East Africa Community (EAC) Customs Union whose treaty was signed on 2 March 2004. According to Articles 3 and 10 of the treaty, the ultimate objective of the EAC Customs Union is to eliminate tariffs (and other charges of equivalent effect) on intra-region trade with the aim of promoting commodity trade within Member States. Article 11 of the EAC Customs Union treaty makes a number of provisions regarding the flow of goods within the customs union. First, the establishment of the Customs Union is to be a gradual but progressive process over a transition period of five years. During the transition period to a full Customs Union, Member States agreed that (a) goods to and from the Republic of Uganda and the United Republic of Tanzania are to be duty free and (b) goods from the Republic of Uganda and the United Republic of Tanzania into the republic of Kenya will be duty free.

Article 11 of the treaty categorizes goods from the Republic of Kenya into the Republic of Ugandan and the United Republic of Tanzania into two groups namely (i) Category A goods, which will be eligible for immediate duty free treatment (ii) category B which are eligible for gradual tariff reduction. Category B goods from the Republic of Kenya into Uganda are to have a phased out tariff reduction for a period of five years (with an annual 2% tariff reduction) for all products starting with 10% in the first year of the implementation of the EAC Customs Union. Since it is difficult to isolate products originating within the Customs union from imports origination outside the Customs Union, we generate two categories of ERP estimates reflecting zero and 10% rated imported inputs into production[14].

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[14] It is highly possible that Uganda's trade structure (commodity composition and market of destination/origin) will change once the EAC Customs Union is implemented probably with more imports coming from EAC (and therefore more inputs attracting 0% tariff rates as envisaged under Article 10 of the treaty) than is the current practice. This however could be taken care of by the current ERP estimates computed using zero percent tariff rate in Table 5.

The Partner states established a three-band common external tariff rate system with a tariff rate of 0% for raw materials, 10% for semi-finished goods and a maximum tariff rate of 25% for all final products imported into the community. The maximum common external tariff proposed is higher than that currently prevailing in Uganda, and tariffs increase for some other products. We use these rates to estimate their protection implications for Uganda once the Customs Union is implemented.

Table 5: Potential tariff protection facing Uganda under EAC Customs Union

Sector	*NRP2001*	*ERP2001*	*NRP2005*	*ERP2005 (0%)*	*ERP2005 (10%)*
Food products	0.150	0.152	0.250	0.260	0.257
Animal products	0.150	0.154	0.250	0.264	0.261
Forestry products	0.150	0.167	0.250	0.345	0.318
Fish products	0.150	0.159	0.250	0.305	0.289
Minerals and quarry	0.150	0.191	0.250	0.376	0.354
Coffee, cotton and sugar	0.150	0.175	0.250	0.308	0.301
Manufactured goods	0.150	0.234	0.250	0.605	0.519
Tobacco and beverages	0.150	0.204	0.250	0.487	0.428
Textiles and footwear	0.150	0.311	0.250	0.871	0.730
Building materials	0.150	0.269	0.250	0.711	0.606
Chemicals	0.150	0.278	0.250	0.848	0.694
Metals and machinery	0.150	0.250	0.250	0.713	0.594
Other manufactures	0.150	0.255	0.250	0.704	0.592
Transport equipment	0.150	0.246	0.250	0.688	0.577
Average	*0.150*	*0.217*	*0.250*	*0.535*	*0.466*

Notes: The maximum external tariff is assumed to apply to final goods for each sector in NRP2005. The percentage figures in brackets for ERP2005 refer to tariff rates applicable to imported inputs used in production across different sectors.
Source: Own computation using EAC Customs Union proposed common external tariff rates

It is clear that the Customs Union will increase protection for Ugandan producers of import-competing products (Table 5). When the tariff rate on imported inputs is 10%, the average ERP will rise from just less than 22% in 2001 to almost 47% once the EAC Customs Union is implemented in 2005 (an increase of more than 100%). The protection to domestic producers will even be higher once tariff rates on intermediate inputs are eliminated (i.e. rated at 0%). Under this scenario, the average effective rate of protection (ERP) accorded to

Ugandan producers of importable products will be as high as 53% (only 12 percentage points lower than the average ERP in 1997).

All sectors will experience increased protection once the EAC Customs Union comes into effect. However there are sectors whose ERP will more than double (when imported inputs are rated at 0%). These include manufactured goods (from 23% to over 60%); tobacco and beverages;(from 20% to about 49%); textile, clothing and footwear (from 31% to about 87%); building materials (from 27% to about 71%); chemicals (from 28% to about 85%); metals and machinery (from 25% to over 71%); other manufactures (from 26% to 70%); and transport equipment (from 25% about 69%). Thus, the coming into force of the EAC Customs Union will increase protection to Ugandan producers, a step backward from the progress made in pursuing a liberal trade regime over the past decade. This may however be offset by increased efficiency in trade facilitation as provided for in Article 6 of the treaty establishing the Customs Union. This is possible for example through a reduced number (and adoption of common standards) of trade documentation and procedures, collection and dissemination of information on trade, ensuring adequate coordination and increasing efficiency transport services within the Customs Union. We provide more discussion on implications of the Customs Union for increased trade facilitation and reduced transaction costs of trade within the Union later in the paper.

Protection/tax burden relating to freight costs

The foregoing discussion shows that Uganda has made major steps in liberalizing the economy to improve the country's export competitiveness by reducing distortions associated with protection. The Ugandan producers, mainly of light industrial goods for domestic consumption, have faced increased import competition following trade liberalization, which was expected to induce efficiency and improve productivity. The response to such competition pressures has been constrained by poorly functioning trade-promoting institutions, and costly, inadequate and inefficiently functioning infrastructure system such as unreliable and costly electric power supply and transport services. In as much as other institutional and infrastructure-related barriers to trade are important, the focus here is on how transport costs impact on the competitiveness of Ugandan exports.

Table 6: Protection due to Overland Transport Costs (%)

Sector	Protection due to freight Costs (%)					
	1994		2003			
			40 FT CNT		20 FT CNT	
	NRP	*ERP*	*NRP*	*ERP*	*NRP*	*ERP*
Food products	32.9	33.7	22.0	22.6	26.3	27.0
Animal products	10.6	10.7	7.1	7.2	8.5	08.6
Forestry products	21.6	26.3	14.5	17.9	17.3	21.4
Fish products	10.9	11.6	7.1	7.8	8.5	9.3
Minerals and quarry	16.3	22.2	10.8	15.1	12.9	18.0
Coffee, cotton and sugar	16.0	18.9	10.7	12.8	12.8	15.2
Manufactured foods	29.3	57.1	19.6	39.6	23.4	47.3
Tobacco and beverages	49.5	82.2	33.1	56.8	39.6	67.8
Textiles, cloth and footwear	12.3	25.3	8.2	19.0	9.8	22.7
Building materials	31.1	70.4	20.8	48.6	24.8	58.0
Chemicals	10.1	09.0	6.8	8.3	8.1	10.0
Metals and machinery	9.5	16.4	6.4	12.0	7.6	14.3
Other manufactures	14.4	23.4	9.6	17.4	11.5	20.8
Transport equipment	10.0	17.5	6.7	12.7	8.0	15.2
Average	*19.6*	*30.3*	*13.1*	*21.3*	*15.6*	*25.4*

Note: FT refers to foot (length) and CNT refers to containerized cargo.
Source: The 1994 estimates are extracted directly from Rudaheranwa (2000) while 2003 estimates are own computation using current shipments costs to update nominal and effective rates of protection. The 1994 ERP estimates on exports are extracted directly from Rudaheranwa (1999).

The information and methodology detailed above is used to update the ERP estimates relating to freight costs and results are in Tables 6 and 7. The ERP estimates for 1994 period relating to freight costs are directly extracted from Rudaheranwa (2000) while those on tax burden for the same period are directly extracted from Rudaheranwa (1999). All figures refer to containerized cargo on Northern Corridor (Kampala-Mombasa). Shipping agents charge different rates on 20-foot or 40-foot containers (Appendix A3). The 40-foot containers attract lower rates per unit weight for obvious reasons (e.g. economies of scale). In these results, a 20-foot container has been used to be equivalent to about 15 tones while a 40-foot container is equivalent to 30 ton (shipment costs given by shipping agents are per container). Thus, freight rates used in this analysis refer to light cargo and non-perishable products. Frozen fish transported through Mombasa attracts considerably higher freight rates because special requirements such as speed and time delivery may be critical. Thus two rates are given, for 20 and 40 foot containerized dry cargo.

Results indicate that protection of import-competing products (Table 6) and taxation of exports (Table 7) arising from freight rates have been reduced since 1994, although the reduction may not be dramatic (and appears somewhat more for imports than for exports). 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 given several complaints from transporting and clearing agents, etc. It may also reflect increased competition between Northern Corridor in Kenya and Central Corridor in Tanzania, and probably also among shipping agents along the two routes.

Table 7: Tax Burden on Exports due to Overland Transport Costs (%)

Sector	Export taxation due to freight Costs					
	1994		2003			
			40 FT CNT		20 FT CNT	
	NRP	*ERP*	*NRP*	*ERP*	*NRP*	*ERP*
Food products	17.1	18.4	14.9	15.8	17.8	18.9
Animal products	5.9	6.4	5.2	5.7	6.2	6.9
Forestry products	12.4	20.6	10.8	16.9	12.9	20.2
Fish products	5.4	8.3	4.7	6.5	5.6	7.8
Minerals and quarry	9.9	17.0	8.6	14.1	10.2	16.9
Coffee, cotton and sugar	8.8	11.6	7.7	9.9	9.2	11.8
Manufactured foods	15.9	52.2	13.8	40.9	16.5	48.8
Tobacco and beverages	24.0	61.1	20.9	48.5	25.0	57.9
Textiles, cloth and footwear	6.6	39.4	5.7	25.4	6.9	30.3
Building materials	17.3	67.4	15.1	53.3	18.0	63.6
Chemicals	5.6	44.6	4.9	30.7	5.9	36.6
Metals and machinery	5.6	26.7	4.9	20.1	5.9	24.0
Other manufactures	8.0	39.8	7.0	29.4	8.4	35.1
Transport equipment	5.6	25.3	4.9	19.2	5.9	22.9
Average	*10.6*	*31.3*	*9.2*	*24.0*	*11.0*	*28.7*

Note: As for Table 6.

Generally, shipping costs have fallen as shown in Table A4 in the Appendix. The freight costs for a 20-foot-container fell from US$ 3,750 in 1995 to US$ 1,850 in 2003 (about 50% decline) and from US$ 5,700 in 1995 to US$ 3,100 in 2003 in the case of the 40-foot-container (about 46% decline). On average, the effective rates of protection due to freight costs between sea and inland ports fell from 30% in 1994 to 21% and 25% in 2003 for 40-

foot and 20-foot containerized imported shipments respectively with variations across the 14 sectors[15]. Equally, the taxation/burden on exports relating to transport costs has declined on average over the last ten years, i.e. the average effective rate of taxation declined from just over 31% in 1994 to about 24% and 29% in 2003 for 40-foot and 20-foot containerized exports respectively. The general observation is that the export burden arising from freight rates is still high at 29% on average (although down from 31% in 1994) as there are no policy-induced or explicit export taxes. The effective protection to import-competing products arising from freight costs is still high (about 25%) relative to that arising from tariff rates (about 22%) seen earlier in Table 4. This simply means that freight costs have gained more significance than tariffs in impeding trade.

There seem to have been considerable reductions in the transit times since 1994 (Appendix A3). Transit time, which used to range from 39 to 46 days between Kampala and Mombasa for import shipment before 1994 (World Bank, 1994), fell to between 12 to 15 days for road and 18 to 21 days for rail transport, based on information available in October 2003. The transit time for exports used to be between 40 and 44 days, but has been reduced to as little as 4 to 7 days by October 2003. The transit period for 2003 does include the period involved in processing documents within the seaport. Our analysis is unable to quantify (put a monetary value on) the effect of the reduction in transaction costs due to improved efficiency in transit procedures but this is likely to be significant.

As noted earlier, the EAC Customs Union provides for increased trade facilitation (Article 6) and the simplification, standardization and harmonization of trade information and processing of the documentation (Article 7), commodity description and coding system. Articles 4 and 13 of the treaty imply that institutional and infrastructural barriers to trade, and therefore implied transaction costs, will reduce considerably following the implementation of the EAC Customs Union. This may partially offset increased protection to import-competing products and subsequent implicit export-bias that may arise from higher common external tariff rates.

[15] The interactive effect of tariff and freight rates has not been computed on assumption that it is negligible given that both tariff and freight rates has reduced considerably over the last ten years.

One can make simulations of the likely changes in freight costs following the full implementation of the EAC Customs Union assuming a reduction in freight costs by 20% and 50%, applied to all the 14 sectors. Estimates of nominal and effective rates of protection (tax burden) implied by such reductions are reported in Table A5 in the Appendix. These protection estimates make it clear that the burden to Ugandan producers relating to freight costs would fall considerably if the Customs Union improved the transport system and the flow of goods at the border crossing points, within transit countries and in sea and inland ports. A reduction in freights costs by 20% and 50% would translate into lower average rates of effective protection of 15% and 9% respectively, while the corresponding tax burden to exporting sector would fall to about 19% and 12% respectively. Simulations in Table A5 suggest that improvements in the transport system would substantially reduce (i) the protection for all sectors producing import-competing products and (ii) the implicit tax burden on exporting sectors.

It was observed earlier that the EAC Customs Union will result in increased protection (and associated implicit export bias) regarding Ugandan producers due to higher common external tariffs relative to those prevailing before the EAC Customs Union comes into force. Simulations in Table A5 suggest that the elimination of non-tariff barriers[16] to trade could offset the effects of a high common external tariff. Reduction in non-tariff barriers to trade could include harmonization of clearing procedures within and between ports, reduction of documentation that accompany goods, further investment to upgrade infrastructure, among others as enshrined in articles 5, 6 and 7 of the treaty. This significance of this major outcome regarding the reduced protection and tax burden due to freight costs clearly calls for increased efforts in forms of more investment in transport infrastructure and efficiency of transport services in the region.

So far the focus has concentrated on the impact of overland transport costs on Uganda's trade. However, Ugandan import and export trade is also affected by maritime transport

[16] According to the treaty establishing the EAC Customs Union (Article 1), non-tariff barriers means laws, regulations, administrative and technical requirements other than tariffs imposed by a Partner State whose effect is to impede trade. Article 13 of the same treaty indicates that Partner States agreed to remove all (and not to impose new) non-tariff measures to the importation into their territories of goods originating in other Partner States.

costs to overseas markets. Updated protection accorded to Ugandan producers of import-competing products by (and tax burden to Ugandan exports arising from) maritime freight costs are given in Table A6 in the Appendix. Although these are crude estimates, they suggest that, between 1994 and 2000, the protection to Ugandan producers due to sea transport costs rose in all sectors except (i) food products, (ii) coffee, cotton and sugar, (iii) manufactured goods, (iv) tobacco and beverages and (v) building materials. The average ERP due to sea transport costs increased by about two percentage points. The taxing influence of the marine freight costs also worsened between 1994 and 2000 in all but four sectors namely (i) food products, (ii) manufactured goods, (iii) tobacco and beverages, and (iv) building materials. Uganda is a small economy with limited influence on maritime freight costs but increasing efficiency to reduce overland transport costs could partially offset the effect of maritime freight costs.

Transport costs relating to air shipments

The commodity composition of Uganda exports has changed significantly over the last decade. As noted earlier, the contribution of non-traditional exports increased from 14% in 1990 to just over 61% in 2001. Most of these nontraditional exports are agricultural products with a short shelf life (perishables) and where quality standards are stringent (Rudaheranwa *et al.*, 2003), therefore the speed in delivery, handling and distribution efficiency is critical. The competitiveness of these products, into which Uganda is diversifying, is important for boosting export earnings. This section focuses on transaction costs relating to handling services and freight charges on export products shipped through Entebbe International Airport (EIA) to overseas markets.

As shown in Table 8, the amount Uganda exports through Entebbe International Airport (EIA) has increased from 1,367 tons in 1991 to about 22,791 tons in 2001 (an increase of about 1500%). Ugandan exports through EIA comprise agricultural perishables such as chilled and frozen fish, flowers, beef, vanilla, asparagus, and fresh produce consisting of vegetables, bananas, hot paper, jack fruits, fresh beans, passions fruits, pineapples, premature mangoes among others. Potentially, some of these products could be shipped by surface transport if the overland and sea transport system together with inland and sea ports were efficient to ensure faster clearing process, appropriate conditions (temperatures, relative

humidity, packaging, etc.) and timely delivery so as not compromise the approximate storage life and quality of the shipment. Kyamuhangire (1992) gives a list of non-traditional exports currently exported from Uganda by air shipment yet their storage life ranges from weeks to months, for example, the average storage life for passion fruits (3 to 5 weeks), avocadoes (2 to 8 weeks), pepper (dry) (over 3 months), papayas and mangoes (1 to 3 weeks), bananas and pineapples (2 to 4 weeks), garlic (6 to 7 months), onion (dry) (1 to 8 months), etc. Thus there is great potential to take advantage of surface shipments as transport costs between inland and seaports and sea transport continue to decline.

Table 8: Exports through Entebbe International Airport 1991-2001 (tons)

Period	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
January	110	152	163	375	533	1112	1275	684	1399	588	1771
February	100	139	174	368	616	921	491	752	1273	632	1767
March	88	106	184	392	600	989	607	645	1345	767	2054
April	138	195	229	350	593	1077	789	680	1064	691	1959
May	124	137	212	437	714	1045	1592	1005	825	759	1825
June	112	121	245	426	751	1023	1270	919	1079	648	1916
July	144	149	269	259	706	1079	887	1368	949	603	1765
August	114	167	313	304	587	1091	822	1381	696	801	1732
September	79	168	308	383	716	1212	810	1726	565	1341	1920
October	118	136	285	455	889	1568	1467	1615	592	1419	2138
November	112	146	311	520	882	1722	1493	1786	649	1578	2032
December	128	158	372	479	839	1788	1237	1414	1269	1757	1912
Total	1,367	1,774	3,065	4,748	8,426	14,627	12,740	13,975	11,705	11,584	22,791

Source: Civil Aviation Authority (CAA) (2003)

The favorable policy environment and incentives put in place in the 1990s assisted producers of flowers, fish, vegetables, etc. increase volume of exports but charges at EIA have been identified as constraining the competitiveness of these products in overseas markets. Charges at Entebbe International Airport (EIA) relate to air navigation, landing, parking fees and aviation fuel. On average, landing charges at Entebbe are relatively higher than those charged at any other East African airports (personal discussion with CAA officials, 2003). For example, a B747 aircraft with the capacity of 395 tons is currently charged US$ 1,975 at Entebbe but US$ 1,750 and US$ 1,430 at Nairobi and Dar es Salaam airports respectively. Relatively higher aviation fuel and handling costs are partly responsible for higher freight

charges at Entebbe compared to Nairobi and Dar es Salaam. For example, freight charges in 1999 ranged from US$1.80 to US$ 1.90 in Uganda but US$1.65 to US$ 1.85 in Kenya (ADC, 1999). Additional factors responsible for lower freight charges in Kenya include large volume of available charter space (more aircraft charters) and the number of agents who negotiate for cargo space in Kenya.

Table 9: Tax burden due to air shipping costs on selected products, late 1990s

	Air freight		Policy		Total tax burden (%)	
Product	*NRT*	*ERT*	*NRT*	*ERT*	*NRT*	*ERT*
Fish and Fish products	0.56	0.57	0.00	0.06	0.56	0.63
Flowers	0.58	0.58	0.00	0.01	0.58	0.58
Passion fruits	0.48	0.48	0.00	0.01	0.48	0.48
Apple banana	0.55	0.56	0.00	0.01	0.55	0.57
Okra	0.60	0.60	0.00	0.01	0.60	0.61
Green beans	0.53	0.53	0.00	0.01	0.53	0.54
Hot pepper	0.67	0.67	0.00	0.01	0.67	0.68

Note: NRT refers to nominal rate of tax burden and ERT represent effective rate of nominal taxation. Input shares used to compute the effect of tariffs in imported inputs into the production of these commodities were extracted from the Uganda input-output table compiled in the early 1990s when nontraditional agricultural exports were still negligible. It is highly possible that flowers and other horticultural exports use a good amount of imported inputs such as packaging materials, chemicals, PVC, etc. However, tariff rates on imported inputs are negligible and exporters get refunds of import duties on these inputs. Thus, the taxation arising from tariffs on imported inputs is still negligible.
Source: Own computation with airfreight rates from ADC (1999) while tariffs are from Milner et al (2000).

Uganda is a landlocked country and all its perishable exports airlifted to their respective destinations. Freight costs are one of the decisive elements in export marketing of perishable products given high international competition. The transport costs account for a major part of the Uganda exports destined the European market. A sample shipment of passion fruit from Uganda to the United Kingdom shows that airfreight charges represented 49 per cent of the total c.i.f. costs in 1996 (ADC, 1999) and percentage shares for other fruits and vegetables have been estimated to be even higher: apple bananas 55 to 58 per cent, okra 60 per cent and bobby beans 67 per cent. Table 8 clearly shows that the effective tax burden facing perishable products airlifted is very high. This suggests that the value added for these selected products has to be lowered by a range of 40% to 70% in order to effectively compete in export market. Low freight costs make a country's exports attractive. *Ceteris paribus*, freight costs partly determine whether importers prefer apple bananas, passion fruit,

okra, fresh beans and hot peppers from Uganda or elsewhere. While the distance to be flown determines freight costs, the efficiency in transportation and handling systems during production and distribution could partially offset the impact of freight costs. The relative low utilisation of the EIA and cargo flights increases the cost of Ugandan exports relative to competitors such as Kenya, Zimbabwe and South Africa.

6 CONCLUSIONS AND POLICY IMPLICATIONS

The recent decline in policy-induced barriers (such as tariffs) to trade has implied an increased relative importance of transport and infrastructure services in explaining trade, access to markets, and income growth. The significance of transport services as a determinant of export competitiveness is clear. Transport services are essential intermediate inputs into many other sectors of the economy and producers depend on such services to deliver their output to end-users.

As noted earlier, higher shipping costs reduce returns on exports and resources for investment (Amjadi and Yeats, 1995) and determine a country's selection of trading partners (Hummels, 2001; Limao and Venables, 2001). Hummels' (2001) analysis shows that each additional day spent in transport reduces the probability that the United States (USA) will source from that country by a range of 1% (all goods) to 1.5% (manufactures). Inefficient transport service provision acts as a tax on production and prevents the realization of significant gains in productivity (Naude, 1999 and World Bank, 2001) and greatly undermines the ability of firms to compete in foreign markets. Improving the efficiency of transport services within and in transit countries is crucial to unlock the economic potential of both maritime and landlocked countries. The major interest of landlocked countries like Uganda with respect to transit transport services is to (i) secure unfettered access to the sea by all means of transport (ii) reduce shipping costs and improve transport services so as to improve the competitiveness of exports (iii) reduce delivered costs of imports (iv) have routes free from delays and uncertainties (v) reduce losses relating to damage and deterioration and (vi) open the way for export expansion.

Recent studies (notably Amjadi and Yeats, 1995; Limao and Venables, 1999; Milner Morrissey and Rudaheranwa, 2000) do indicate that transport costs are a significant factor in explaining sub-Saharan Africa's poor trade performance. Net freight payments to foreign

transport service providers absorbed as much as 15% of Africa's export earnings compared to a developing country average of 5.8% in the 1990s and, for landlocked countries, the freight cost ratio exceeds 30% (Amjadi and Yeats, 1995). Limao and Venables' (1999 and 2001) studies of intra-African trade flows indicate that their relatively low trade is largely explained by infrastructure limitations. The implicit taxation of Ugandan exporters arising from high transport costs in the 1990s ranged from 40% for food exports to 24% for coffee; goods that make up the majority of the country's exports (Milner, Morrissey and Rudaheranwa, 2000). Sectors that produce goods (namely manufactured foods; tobacco and beverages; textile, clothing and foot wear; building materials and chemicals) that are bulky relative to value and /or require imported inputs had an implicit transport tax rate in excess of 100%.

Limao and Venables (1999) show that a landlocked economy usually has about 30% of the trade volume of a maritime economy of a similar income level and argue that halving transport costs increases the volume of trade by a factor of five. Clark, Dollar and Micco (2001) further argue that improving port efficiency from 25th percentile to 75th percentile reduces the shipping costs by 12% (or equivalent of 5,000 miles in distance) and that inefficiency in ports is equivalent to being 60% farther away from markets for the average country. World Bank (2001) cites studies that estimate additional costs of transportation borne by landlocked countries to the tune of more than 50% of that paid by maritime countries. However, the extra overland distance to sea alone cannot explain additional transport costs facing landlocked countries. There are *genuine* and *avoidable* costs of transportation (Milner, 1996); the *avoidable* component of transportation costs arises from border delays, transportation coordination problems, uncertainty and inefficiency at inland and seaports.

High costs of transportation feed into import and export prices, which reduce returns to capital, wages and productivity. Under circumstances of unreliable and infrequent transport services, firms are likely to maintain higher inventory holdings at every stage of the production chain, with significant financial costs particularly in developing countries where capital is scarce and rates of interest are high. As countries reduce tariffs and other barriers to trade, effective rates of protection, for example in the manufacturing sector, may become

negative if they continue to face input prices that are higher than they would if services markets were competitive (World Bank, 2001).

The limited literature (see Tovar, Jara-Diaz and Trujillo, 2003) available indicates that transport costs are negatively related to trade. Any deficiencies in logistical operations directly affect the price of imported inputs and the export competitiveness thereby negatively affecting trade. Lengthy transit times impose inventory holding and depreciation costs on traders, for example the spoilage of perishables, items with immediate information content, and mismatch between what is produced and what consumers desire to buy later. Shipping time strongly affects both the selection of trading partners and raises costs of trade, which may explain the extent and composition of Ugandan trade growth. Wilson, Mann and Otsuki (2004) have shown that benefits of increased efficiency in logistical services delivery are very large and gains fall disproportionately on exports.

Policy implications

An efficient transport system (in terms of speed, reliability and affordability) is very critical for the export competitiveness of landlocked countries like Uganda. High shipping costs associated with inadequate infrastructure, imbalance of trade flows, inefficient transport system, cumbersome clearing procedures and documentation pose serious constraints to Uganda's trade and economic development. Shipping costs arise from a number of sources including handling charges at inland and seaports; costs incurred on customs clearance; security costs incurred in providing additional security arrangements (convoys) for avoiding dilution and pilferage of the transit shipment; delays and fees for various overlapping sanitary or health inspections, addition costs for delays in excess of normal transit time, etc. Some of these sources of transport costs lie in the domain of policy makers and could be influenced.

Uganda's trade depends on Kenya and Tanzania for access to and from seaports and reducing transport costs will require more effective cooperation and collaboration with these countries. Uganda is privileged to be in the East African Community (EAC) Customs Union and the Common Market for Eastern and Southern Africa (COMESA) regional grouping. Already the COMESA and the Northern Corridor Transit Transport Authority (TTA) have adopted a number of regional transit and transport instruments including the application of

harmonised road transit charges and axle limits, regional third-party motor insurance scheme (COMESA Yellow Card) which reduced costs and delays associated with multi-insurance coverage. Under the EAC Customs Union, Uganda should push for a common customs control document that is acceptable and enforceable by customs administration along the transport corridors. In this way, transaction costs and delays associated with national customs clearances and documentation for transit shipment could be reduced through the harmonisation, simplification and standardisation of these processes.

Transport policy reforms, (e.g. the commercialisation of Ugandan Railways to compete with road transportation in the early 1990s) improved efficiency in rail transportation and had a positive impact in reducing transport costs and associated delays. Similar policy reforms should be encouraged. Further efforts should be made to improve constraints relating to poorly functioning institutions and regulatory systems by liberalising and commercialising auxiliary services in inland and seaports. Currently custom officers at border entry points (e.g. Malaba, Busia, etc.) do not work on weekends and after 5.00 pm on workdays. In addition, there is no priority given to merchandise imports and exports of critical urgency. Simply by designating categories of items for customs clearance and accord priority to perishable exports and other urgently needed imported inputs could significantly reduce trade costs and improve Uganda's competitiveness. Introducing a 24-hour clearing service throughout the week (including weekends) through working shifts is another way of minimising delays and associated trade costs.

The long-term solution to high shipment costs will be increased investment both in Uganda and transit countries specifically to upgrade and improve the efficiency of the transportation systems (roads, rails, water transport, inland and sea ports). However, Uganda, Kenya and Tanzania are developing countries facing economic difficulties including inadequate infrastructure in the transport sector. Infrastructure rehabilitation and development requires heavy investments. Hence, some external assistance to rehabilitate (roads, ports, railway) and further develop the transport system could be timely and beneficial for the three countries. Efforts could also be focused on increasing the value-added of exports. The share of shipping costs in high value exports is likely to be lower than would be the case for low and bulky commodities.

Uganda is now characterized by a relatively more liberal trade regime after rationalizing the tariff structure and reducing the maximum tariff rate from 60% to 15%. Both financial and commodity markets have been liberalized. This analysis shows that the average nominal rate of protection due to applied tariff rates fell from 22% in 1994 to about 10% in 2001 with corresponding average effective rates of protection of 35% in 1994 and 18% in 2001. However, policy-induced barriers to trade is but one of the many constraints facing traders. The effective rate of protection arising from transportation costs reduced slightly from 30% in 1994 to 25% in the early 2000s. Clearly, this is still above the protection accorded to import-competing producers from tariff measures.

There are no explicit taxes on Ugandan exports but the effective burden to exporters due to costs of overland transportation only is high, although it has been reduced slightly from over 30% on average to about 28% in the early 2000s. However, air freight costs for perishable exports are considerably higher, as much as 50% of the unit price. Uganda is attempting to diversify into non-traditional agricultural exports, the majority of which are perishable products. The limited analysis here indicates that high freight and other charges place Ugandan exports at a competitive disadvantage relative to other exporters. Policy implications are clear (some of which are outlined above), that non-policy induced barriers such as transport system should be given attention as a way of minimizing implied transaction costs and improving the competitiveness of Ugandan exports.

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Table A1: DOMESTIC EXPORTS BY VALUE (US$ '000): 1990-1996

Commodity	1990	1991	1992	1993	1994	1995	1996
Traditional exports							
Coffee	140,384	117,641	95,372	106,775	343,289	384,122	396,206
Cotton	5,795	11,731	8,218	5,505	3,485	9,697	15,330
Tea	3,566	6,780	7,721	11,141	11,804	7,143	15,305
Tobacco	2,941	4,533	4,204	7,011	8,269	7,395	7,275
Non-traditional exports							
Maize	3,318	4,188	3,894	23,319	28,666	23,054	18,143
Beans and other legumes	4,150	4,274	2,782	12,580	12,900	16,147	16,050
Fish and fish products	1,386	5,313	6,498	8,943	10,403	32,262	46,251
Cattle hides	4,072	3,363	3,375	5,228	10,549	10,152	7,787
Sesame seeds	5,234	10,517	6,478	2,776	1,548	5,899	9,563
Soya beans		468		2,056	756	1,826	2,913
Soap				1,302	1,739	2,981	2,289
Electric current	1,218	923	1,537	728	2,245	2,405	4,163
Cocoa beans	504	374	281	714	586	479	1,105
Goat and sheep skins	2,064	968	664	619	344	37	1
Hoes and hand tools	109	445	462	381	1,018	1,888	820
Pepper		197	210	350	444	94	73
Vanilla		176		328	674	8	809
Live animals	106			285	150	86	113
Fruits				265	238	279	36
Groundnuts		121	34	251	365	395	15
Bananas		162	208	173	658	451	908
Roses and cut flowers				158	531	343	2,809
Ginger		121	105	132	20	45	61
Gold and gold compounds		9,648	49	89	224	27,240	65,066
Other precious compounds							
Other products (1)	2,811	2,320	4,675	10,122	19,034	39,838	97,564
Traditional exports	**152,686**	**140,685**	**115,515**	**130,432**	**366,847**	**408,357**	**434,116**
Non-traditional exports	**24,972**	**43,578**	**31,252**	**70,799**	**93,092**	**165,909**	**276,539**

Table A2: DOMESTIC EXPORTS BY VALUE (US$ '000): 1997-2002

Commodity	1997	1998	1999	2000	2001	2002
Traditional exports						
Coffee	309,362	295,666	287,958	125,316	97,652	109,200
Cotton	29,197	7,691	17,408	22,088	13,434	26,150
Tea	30,483	28,181	21,425	37,889	30,031	29,800
Tobacco	12,576	22,332	14,673	26,889	32,096	51,100
Non-traditional exports						
Maize	15,063	9,359	5,291	2,437	18,339	10,609
Beans and other legumes	11,875	6,451	8,754	4,454	2,354	3,283
Fish and fish products	27,864	39,879	24,837	30,818	78,233	87,945
Cattle hides	10,020	6,088	2,967	12893	25,405	9,810
Sesame seeds	1,448	11	1,420	747	796	510
Soya beans	236	29		0		
Soap	2,273	1,727	1,960	1,639	2,700	3,434
Electric current	11,688	11,741	13,209	18,634	10,554	15,910
Cocoa beans	1,300	1,429	1,474	1,491	19,23	2,023
Goat and sheep skins	0	16		0		
Hoes and hand tools	262	247	242	334	359	
Pepper	81	117	692	354	397	
Vanilla	4	1,260		0		
Live animals	30	75	58	0	199	
Fruits	314	386	111	733		
Groundnuts	21	118	228	14	26	
Bananas	52	257	473	983	672	
Roses and cut flowers	3,592	7,502	7,328	9,912	14,750	17,828
Ginger	23	21		0		
Gold and gold compounds	80,615	19,493	33,485	43,285	49,293	60,342
Other precious compounds			2,682	10,963	12,656	
Other products (1)	46,249	76,673	32,075	50,899	47,379	73,465
Traditional exports	**381,618**	**353,870**	**341,464**	**211,341**	**173,213**	
Non-traditional exports	**213,010**	**182,882**	**137,286**	**190,229**	**278,161**	**285,528**

Table A3: UGANDA TRANSPORT COSTS AND TRANSIT TIMES IN 2003

Agent	Road					
	Costs (US$)				*Transit time*	
	Imports		*Exports*		*Imports*	*Exports*
	20ft	40ft	20ft	40ft		
Transami	1,850	3,100	1,200	1,600	12-15days	4-7days
Tanzania Harbour Authority*	90	100	180	270		
Kenya Ports Authority					14-16days	13*** days
P&O Ned Lloyd	1,950			2,750		
Kenfreight		3,200	1,400	2,800	15-21days	8days
Railways (Northern Corridor)						
Mombasa/Kampala	1270	2540	1225	2250	18 - 21 days**	
Railways (Central Corridor)						
Kampala/Dar-es-Salaam	1150	2305	743	1485		

Note:

* These are port and other handling charges

** This information was provided by one shipping company (Transami) and should be regarded as indicative but not average.

*** The information available from the Kenya Ports Authority indicates that the overall average transit time both for export and import rail shipments is 14 days for Mombasa-Kampala; 16 days for Mombasa-Kampala (via Tororo) and 13 days Mombasa-Kampala (via wagon ferry through Kisumu to Port Bell). More generally, the transit times may range between 5 and 46 days in certain cases but the majority of the containerised cargo take a range of 8 to 12 days. These transit times were derived from the rail study conducted in August 2003 by Kenya Ports Authority and covering about 377 TEU containers.

Table A4: Transport Costs (US$) over time from TRANSAMI Shipping Company

Year	**Imports**	**20ft**	**40ft**
2003	Up to 15/30 tons gross weight	1,850	3,100
	Per extra ton from 15 to 18 tons gross weight	115	
2000	Up to 15/30 tons gross weight	2,000	3,650
	Per extra ton from 15 to 18 tons gross weight	110	
1999	Up to 15/30 tons gross weight	2,150	3,750
	Per extra ton from 15 to 18 tons gross weight	110	
1998	Up to 15/30 tons gross weight	2,400	4,000
	Per extra ton from 15 to 18 tons gross weight	150	
1997	Up to 15/30 tons gross weight	3,000	4,500
	Per extra ton from 15 to 18 tons gross weight	150	
1996	Up to 15/30 tons gross weight	3,500	5,200
	Per extra ton from 15 to 18 tons gross weight	220	
1995	Up to 15/30 tons gross weight	3,750	5,700
	Per extra ton from 15 to 18 tons gross weight	250	

Source: Transami (2003)

Table A5: Protection and tax burden implied by freight costs under EAC (2005)

	Imports					
	Nominal rate of protection			*Effective rate of protection*		
Sector	*2003*	*(-20%)*	*(-50%)*	*2003*	*(-20%)*	*(-50%)*
Food products	0.220	0.176	0.110	0.226	0.180	0.113
Animal products	0.071	0.057	0.035	0.072	0.057	0.036
Forestry products	0.145	0.116	0.072	0.179	0.138	0.086
Fish products	0.071	0.057	0.035	0.078	0.060	0.037
Minerals and quarry	0.108	0.087	0.054	0.151	0.117	0.073
Coffee, cotton and sugar	0.107	0.086	0.054	0.128	0.101	0.063
Manufactured goods	0.196	0.157	0.098	0.396	0.293	0.183
Tobacco and beverages	0.331	0.265	0.166	0.568	0.425	0.266
Textiles, cloth and footwear	0.082	0.066	0.041	0.190	0.129	0.081
Building materials	0.208	0.166	0.104	0.486	0.360	0.225
Chemicals	0.068	0.054	0.034	0.083	0.021	0.013
Metals and machinery	0.064	0.051	0.032	0.120	0.081	0.050
Other manufactures	0.096	0.077	0.048	0.174	0.110	0.069
Transport equipment	0.067	0.054	0.033	0.127	0.087	0.054
Average	*0.131*	0.105	*0.065*	*0.213*	*0.154*	*0.096*

	Exports					
	Nominal rate tax burden			*Effective rate of tax burden*		
Sector	*2003*	*(-20%)*	*(-50%)*	*2003*	*(-20%)*	*(-50%)*
Food products	0.149	0.119	0.075	0.158	0.126	0.079
Animal products	0.052	0.042	0.026	0.057	0.046	0.029
Forestry products	0.108	0.086	0.054	0.169	0.135	0.084
Fish products	0.047	0.038	0.024	0.065	0.053	0.033
Minerals and quarry	0.086	0.069	0.043	0.141	0.113	0.071
Coffee, cotton and sugar	0.077	0.062	0.039	0.099	0.079	0.050
Manufactured goods	0.138	0.110	0.069	0.409	0.326	0.204
Tobacco and beverages	0.209	0.167	0.105	0.485	0.388	0.242
Textiles, cloth and footwear	0.057	0.046	0.029	0.254	0.201	0.126
Building materials	0.151	0.121	0.076	0.533	0.427	0.267
Chemicals	0.049	0.039	0.025	0.307	0.245	0.153
Metals and machinery	0.049	0.039	0.025	0.201	0.160	0.100
Other manufactures	0.070	0.056	0.035	0.294	0.235	0.147
Transport equipment	0.049	0.039	0.025	0.192	0.153	0.096
Average	*0.092*	*0.074*	*0.046*	*0.240*	*0.192*	*0.120*

Notes: Estimates in this table are simulated based different scenarios of 20% and 50% reductions in freight costs under the EAC Customs Union being established. These rates are based on 2004 actual freights rates of shipping of a 40-foot container (obviously they would be higher if freights rates relating to a 20-foot container are used).
Source: Own computation (2004)

Table A6: Protection and tax burden due to sea shipment

	Protection(1994)		Protection(2000)	
	NRP	ERP	NRP	ERP
Food products	0.227	0.232	0.105	0.106
Animal products	0.081	0.081	0.105	0.107
Forestry products	0.148	0.170	0.225	0.269
Fish products	0.075	0.074	0.225	0.252
Minerals and quarry	0.117	0.155	0.195	0.267
Coffee, cotton and sugar	0.115	0.134	0.100	0.115
Manufactured goods	0.195	0.334	0.130	0.205
Tobacco and beverages	0.306	0.454	0.160	0.244
Textiles, cloth and footwear	0.108	0.206	0.170	0.377
Building materials	0.226	0.461	0.075	0.035
Chemicals	0.065	-0.034	0.110	0.185
Metals and machinery	0.071	0.096	0.100	0.162
Other manufactures	0.096	0.099	0.150	0.286
Transport equipment	0.072	0.099	0.110	0.183
Average	*0.136*	*0.183*	*0.140*	*0.199*

	Taxation (1994)		Taxation (2000)	
	NRP	ERP	NRP	ERP
Food products	0.179	0.192	0.105	0.113
Animal products	0.062	0.070	0.105	0.116
Forestry products	0.130	0.214	0.225	0.352
Fish products	0.056	0.086	0.225	0.297
Minerals and quarry	0.103	0.176	0.195	0.320
Coffee, cotton and sugar	0.092	0.121	0.100	0.132
Manufactured goods	0.166	0.539	0.130	0.421
Tobacco and beverages	0.251	0.631	0.160	0.379
Textiles, cloth and footwear	0.069	0.405	0.170	0.702
Building materials	0.181	0.696	0.075	0.391
Chemicals	0.059	0.455	0.110	0.551
Metals and machinery	0.059	0.275	0.100	0.407
Other manufactures	0.084	0.408	0.150	0.558
Transport equipment	0.059	0.260	0.110	0.421
Average	*0.111*	*0.323*	*0.140*	*0.368*

Notes: Extra caution is needed while interpreting the 2000 estimates as they are crude estimate based on indicative rather than actual freight costs.
Source: Information used to 2000 ERP estimates regarding sea shipment is adapted from Kiringai (2004) while 1994 ERP estimates are extracted in Milner, Morrissey and Rudaheranwa (2000).

Appendix B: Deflating technical coefficients

The post-protection technical coefficients have to be deflated to generate the adjusted technical coefficients in terms of free trade (border) prices. Here we employ a transformation system, used by Balassa *et al* (1982) to deflate technical coefficients, given by the expression $\boldsymbol{a_{ij}^{w}} = \frac{(1+t_j)}{(1+t_i)}\boldsymbol{a_{ij}}$ relating the post-protection (a_{ij}) and free trade (a_{ij}^{w}) input-output coefficients in which t_j and t_i are tariff rates on final output and inputs respectively. Tariffs imposed on inputs would discourage the production of *j* (thus reduced output) and therefore $a_{ij} > a_{ij}^{w}$ while tariffs on output would encourage production of output *j* thus $a_{ij} < a_{ij}^{w}$ and would be given by the following relationship $\boldsymbol{a_{ij}} = \frac{(1+ti)}{(1+tj)}\boldsymbol{a_{ij}^{w}}$. In transforming the input-output coefficients for the production of non-traded inputs, t_i is assumed to equal zero because the Balassa method is employed, which assumes there is no distortion in production of non-traded goods. Post-protection coefficients are to be deflated first and the estimated free trade technical coefficients are then to be employed throughout the ERP estimation process. Tariff-adjusted coefficients (a_{ij}^{w}) may be lower or higher than tariff-distorted coefficients (a_{ij}) depending on relative sizes of output and input tariffs: $a_{ij}^{w} > a_{ij}$ under escalating tariff conditions but $a_{ij}^{w} < a_{ij}$ otherwise.