# Tariff and overland transport barriers to Uganda's Trade

**Ugandan Progress Report on the EC-PREP Study**

*Trade Policy and Transport Costs: How EU aid Can Promote Export Growth in East Africa*

By

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## 1.    Introduction

Uganda is 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 the GDP declined from about 54% in 1987 to just less than 39% in 2004 (The Republic of Uganda, 1997 and 2004) but it remains a significant sector to the Ugandan economy. The share of agricultural sector has declined by about 2.4 percentage points since 1999/00 while the shares of industry and services increased by 0.8 and 1.6 percentage points respectively (Table 1).

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

| Sector | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 |
|---|---|---|---|---|---|
| Agriculture | 40.1 | 40.7 | 39.7 | 38.7 | 38.5 |
| Industry | 18.6 | 18.7 | 19 | 19.5 | 19.5 |
| Services | 40.5 | 40.6 | 41.2 | 41.8 | 42 |

*Source*: The Republic of Uganda (2004)

Over the last decade, policy makers in Uganda have maintained stable macroeconomic policy environment by ensuring low and stable inflation, market determined and competitive exchange rates, etc. This policy stance largely benefited from trade-policy reforms initiated in Uganda since 1987 comprising the removal of controls in financial and commodity markets; elimination of protection to import-competing firms; simplification of the tariff structure. The country's tariff structure had 5,300 tariff lines with five tariff bands namely 0%, 10%, 20%, 30% and 60% in 1993. More than 95 percent of tariff lines were between 10 and 30 percent with a simple average tariff rate of 17% (WTO, 1995; Kasekende, Abuka and Asea, 2001). However, the number of tariff bands has reduced to three namely zero, 7% and 15% since 2001 (WTO, 1995 and 2002; see Table A2)[2]. Uganda grants preferential treatment in form of duty reductions to COMESA member states on 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 a tariff rate of 6% only.

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[2] About 16.4% of all tariff lines were duty free by 2001 while 39.3% carry the maximum rate of 15%. A few

Quantitative restrictions (e.g. import licensing requirements, quotas, bans, etc.) have been eliminated or converted into tariff equivalent. 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 the agricultural produce has been eliminated[3].

Policy-induced barriers to trade (e.g. tariffs, control of commodity and foreign exchange markets, quantitative trade restrictions, etc.), which have substantially reduced in case of Uganda, are but one of many constraining factors to the country's export and import trade. Other barriers to trade tend to arise from poorly functioning of trade-promoting institutions (Rudaheranwa, *et al.*, 2003), inadequate, inefficient and costly infrastructure systems or natural barriers for example long distance to markets or landlockedness (Milner, et al., 2000; Rudaheranwa, 1999). The current analysis intends to look at the relative effects of trade policy reforms (e.g. reduction in tariffs) and non-policy barriers (e.g. transport costs) on the Ugandan trade sector. The rest of the paper is organized as follows. Section 2 gives an overview of dynamics in the Uganda's trade structure over the last decade. Section 3 spells out the analytical framework while sections 4 and 5 provide and discuss effective rate of protection (ERP) estimates relating to tariffs and transport costs respectively. Transport costs and export competitiveness is provided in Section 6. Policy implications and concluding remarks are provided in Sections 7 and 8 respectively.

## 2.      Uganda's trade structure, development and performance

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, improve export competitiveness and trade performance. As a result, Ugandan trade has evolved drastically over the last ten years. The country's 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.

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exceptions include cigarettes with 130% and alcoholic beverages with 70%.

[3] The monopoly of market boards was eliminated as follows: Coffee Marketing Board in 1991, the Produce

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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, which reduced from about 80 percent in 1992 to about 55% and 21% in 1998 and 2003 respectively[4] due to deteriorating terms of trade. 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.



Figure1: Composition of Ugandan Exports 1990-2001 (%)
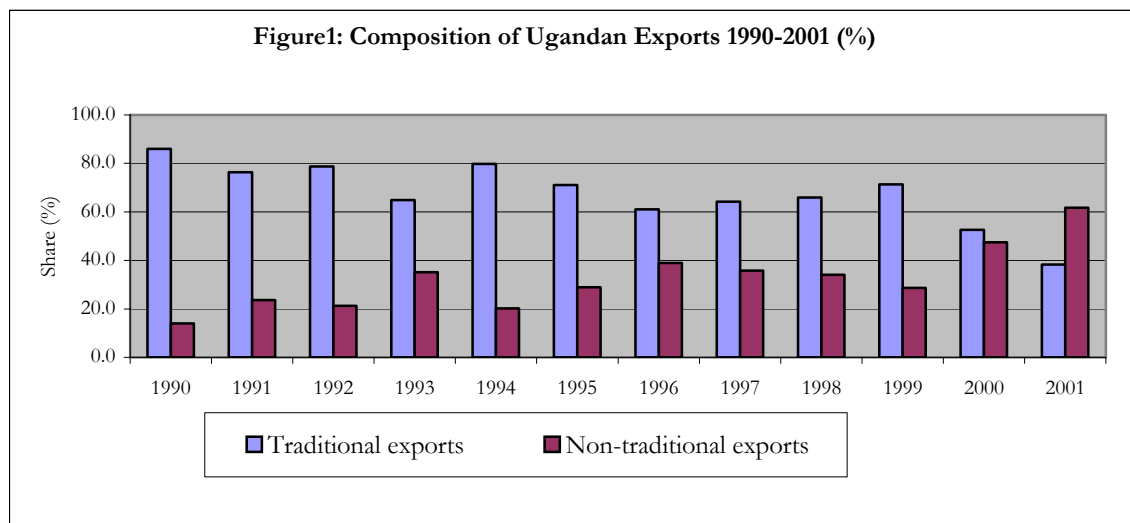
Non-traditional exports (Ugandan exports other than coffee, cotton, tea and tobacco) increased both in volume and value due to the export-diversification policy drive initiated in the country during the early 1990s. The share of non-traditional exports rose from about 14

Marketing Board in 1989 the Lint Marketing Board in 1994 and the Tea Export Authority in 1993.
[4] 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.

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).

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$ 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 country's trade deficit has however continued to rise mainly because import expenditures 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[5]. Third, Uganda's industries have a high content of imported inputs into their production structure[6]. 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

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[5] 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.
[6] Hence the critical importance of freight costs as discussed later in the document.

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.

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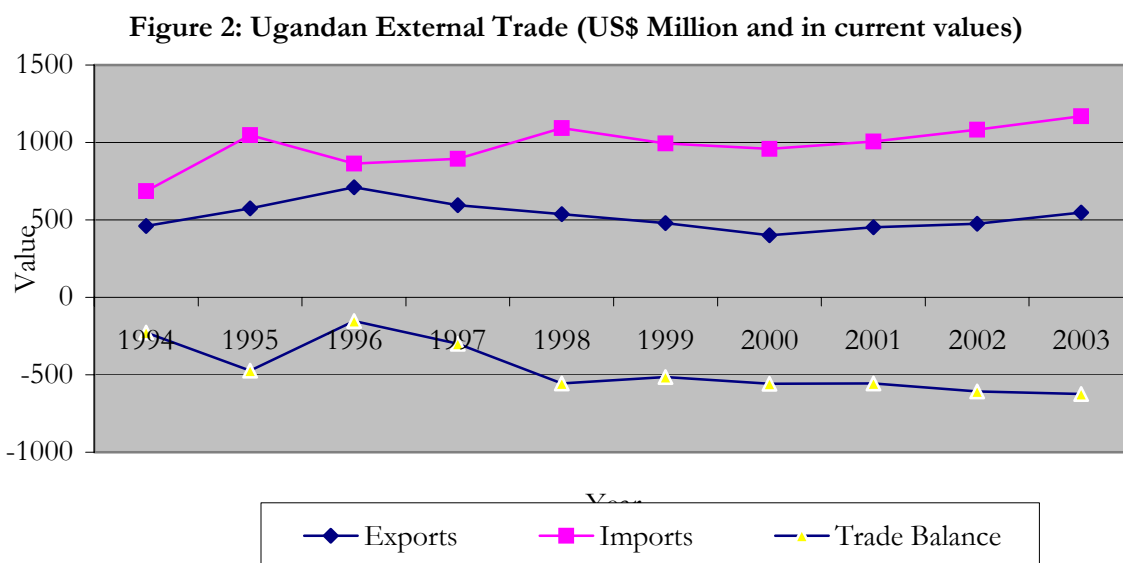


*Source*: The Republic of Uganda (2002b)

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 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.

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 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 the Ugandan trade has improved in terms of commodity composition/diversification but it is still concentrated in terms of market destination/source mainly to the European Union and regional markets such as COMESA. Import expenditures are higher and have been increasing faster than export earnings, hence the widening of the trade deficit. 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)

The trade imbalance between import expenditures and export earnings has implications for the country's external debt. As clearly indicated in Table 4, the external debt stock that stood at about US$ 3.5 billion in 1998/99, was projected to rise to US$ 4.3 billion by the end of June 2004. The ratio of the debt stock to the country's GDP continues to rise (from about 62% in 1998/99 to about 70 percent in 2003/04). Over the same period, the ratio of debt servicing to exports of goods and services fluctuated between 19% and 24%. Similarly, the ratio of debt servicing to domestic revenue has fluctuated but is expected to fall from 23% in 1998/99 to about 20% by the end of June 2004. Generating export revenue needed to service the debt and finance import expenditures requires to focus on ways of enhancing the development and competitiveness of the export sector for example by understanding the extent and importance of various policy induced and non-policy barriers (e.g. transport costs) to trade.

**Table 4: Key Indicators of Uganda's debt**

| Years | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|
| Debt Stock/GDP (%) | 61.9 | 67 | 68 | 71 | 74 | 70 |
| Debt Service/Export of goods and services (%) | 22.4 | 20 | 24 | 19 | 22 | 19 |
| Debt service/Domestic Revenue (%) | 23.3 | 20 | 26 | 19 | 23 | 20 |
| Debt service after HIPC/Export of goods & services (%) | 16.2 | 12.1 | 13 | 8 | 10 | 10 |
| Debt service after HIPC/domestic revenue (%) | 16.8 | 11 | 14 | 7 | 10 | 11 |
| Total debt stock (in US$ million) | 3,494 | 3,613 | 3,575 | 3,786 | 4,284 | 4,310 |
| NPV of debt/export of goods and services (%) | - | 150 | 171 | 286 | 186 | 305 |

*Note*: Periods refer to fiscal years, e.g. 1999 refers to 1998/99 while 2004 refers to 2003/04, etc.
*Source*: The Republic of Uganda (2003 and 2004)

## 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[7]. 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.

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.

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[7] 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.

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

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[8]. 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] to obtain the ERP formula used in the current estimation:

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

It is clear that carrying out 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[9] 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.

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

[9] 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.

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[10]. 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[11]. 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.*

## 4.      Tariff related effective rates of protection

As noted above, the Ugandan tariff structure has been simplified significantly over the last ten years (see Table A2). The number of tariff bands was reduced from 5 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 5 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[12].

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[10] 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).

[11] 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 (see Appendix A2).

[12] 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

**Table 5: Average tariff protection of domestic sales against Uganda imports (%)**

| Sector | Nominal protection | | | | Effective protection | | | |
|---|---|---|---|---|---|---|---|---|
| | *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, the effective protection reduced in only five out of 14 sectors. Notable sectors whose protection reduction reduced include animal products, fish products, chemicals, other manufactures and machinery. Transport equipment, minerals, forestry products (paper and other printing materials), manufactured foods, coffee and sugar products, textile and foot wear experienced increased effective protection between 1994 and 1997. 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. Alternatively, sectors experiencing increased protection are likely to be those 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) with the exception of fish products, chemical, other manufactures

to 22.6 between 1994 and 1999.

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.

## 4.1    Impact of East African Community Customs Union

As noted earlier, Uganda is involved in a number of regional trade arrangements notable 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-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 goods 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[13].

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[13] 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 6.

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. These common external tariff rates proposed are higher than those currently prevailing in Uganda are (Table A2 in the Appendix). We use these rates to estimate their protection implications for Uganda once the Customs Union is implemented.

It is clear that the Customs Union will increase protection for Ugandan producers of import-competing products. 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).

**Table 6: Potential tariff protection facing Uganda under EAC Customs Union**

| Sector | NRP2001 | ERP2001 | NRP2005 (0%) | 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, cloth 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 percentage figures in brackets along the NRP and ERP refers 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

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

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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 last 5 or so years. 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.

## 5.       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.

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[14]. First, high shipping costs reduce profits from exports and thus reduce the

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[14] 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

country's level of income. Second, high freight costs inflate the price of imported inputs, 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.

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

Bell (Kampala) rail/lake route (1,680 km).

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[15]. 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 difficult in computing the subsidy equivalent to the tax originating from a given 'natural' barrier.

## 5.1 Data and estimation procedure

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[16]. 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

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[15] 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

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

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 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 reported in Table 7 below. 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. Furthermore, ERP estimates are computed for overland transport costs on the Northern Corridor only due to data difficulties and for comparison purposes.

## 5.2 Updated ERP due to freight costs

The information and methodology detailed in Sub-section 5.1 above are used to update the ERP estimates relating to freight costs and results are in Table 7. The ERP estimates for 1994 period relating to freight costs are directly extracted from Rudaheranwa (2000) while those on tax burden arising from freight costs 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 (Table 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

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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.

**Table 7: Protection and tax burden due to overland transport costs (%)**

| | Protection due to freight Costs | | | | | | Export taxation due to freight Costs | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sector | 1994 | | 2003 | | | | 1994 | | 2003 | | | |
| | | | 40 FT CNT | | 20 FT CNT | | | | 40 FT CNT | | 20 FT CNT | |
| | NRP | ERP | NRP | ERP | NRP | ERP | NRP | ERP | NRP | ERP | NRP | ERP |
| Food products | 32.9 | 33.7 | 22.0 | 22.6 | 26.3 | 27.0 | 17.1 | 18.4 | 14.9 | 15.8 | 17.8 | 18.9 |
| Animal products | 10.6 | 10.7 | 7.1 | 7.2 | 8.5 | 08.6 | 5.9 | 6.4 | 5.2 | 5.7 | 6.2 | 6.9 |
| Forestry products | 21.6 | 26.3 | 14.5 | 17.9 | 17.3 | 21.4 | 12.4 | 20.6 | 10.8 | 16.9 | 12.9 | 20.2 |
| Fish products | 10.9 | 11.6 | 7.1 | 7.8 | 8.5 | 9.3 | 5.4 | 8.3 | 4.7 | 6.5 | 5.6 | 7.8 |
| Minerals and quarry | 16.3 | 22.2 | 10.8 | 15.1 | 12.9 | 18.0 | 9.9 | 17.0 | 8.6 | 14.1 | 10.2 | 16.9 |
| Coffee, cotton and sugar | 16.0 | 18.9 | 10.7 | 12.8 | 12.8 | 15.2 | 8.8 | 11.6 | 7.7 | 9.9 | 9.2 | 11.8 |
| Manufactured foods | 29.3 | 57.1 | 19.6 | 39.6 | 23.4 | 47.3 | 15.9 | 52.2 | 13.8 | 40.9 | 16.5 | 48.8 |
| Tobacco and beverages | 49.5 | 82.2 | 33.1 | 56.8 | 39.6 | 67.8 | 24.0 | 61.1 | 20.9 | 48.5 | 25.0 | 57.9 |
| Textiles, cloth and footwear | 12.3 | 25.3 | 8.2 | 19.0 | 9.8 | 22.7 | 6.6 | 39.4 | 5.7 | 25.4 | 6.9 | 30.3 |
| Building materials | 31.1 | 70.4 | 20.8 | 48.6 | 24.8 | 58.0 | 17.3 | 67.4 | 15.1 | 53.3 | 18.0 | 63.6 |
| Chemicals | 10.1 | 09.0 | 6.8 | 8.3 | 8.1 | 10.0 | 5.6 | 44.6 | 4.9 | 30.7 | 5.9 | 36.6 |
| Metals and machinery | 9.5 | 16.4 | 6.4 | 12.0 | 7.6 | 14.3 | 5.6 | 26.7 | 4.9 | 20.1 | 5.9 | 24.0 |
| Other manufactures | 14.4 | 23.4 | 9.6 | 17.4 | 11.5 | 20.8 | 8.0 | 39.8 | 7.0 | 29.4 | 8.4 | 35.1 |
| Transport equipment | 10.0 | 17.5 | 6.7 | 12.7 | 8.0 | 15.2 | 5.6 | 25.3 | 4.9 | 19.2 | 5.9 | 22.9 |
| Average | 19.6 | 30.3 | 13.1 | 21.3 | 15.6 | 25.4 | 10.6 | 31.3 | 9.2 | 24.0 | 11.0 | 28.7 |

*Note*: FT refers to foot 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).

Results in Table 7 seem to indicate that protection of import-competing products and taxation of exports arising from freight rates has reduced considerably since 1994. 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.

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[17]. 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 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 5. 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 (Table A3). Transit time, which used to range from 39 to 46 days between Kampala and Mombasa for import shipment before 1994 (World Bank, 1994), has reduced to a range of 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 4 and 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

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[17] 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.

to import-competing products and subsequent implicit export-bias that may arise from higher common external tariff rates noted earlier (Table 6).

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 reduce considerably if the Customs Union would improve 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 reduction in tax burden to exporting sector would stand at about 19% and 12% respectively. Simulation in Table A5 in the appendix suggest that improvements in the transport system would substantially reduce (i) the protection for all sectors producing import-competing products and (ii) the tax burden impacting on exporting sectors.

It was observed earlier on (Table 6) that the EAC Customs Union will result into 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[18] to trade could off set the effects of high Common External Tariff (CET) as envisaged under the EAC Customs Union. Reduction in non-policy barriers (transport costs) 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. The 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.

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[18] 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.

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 costs to overseas markets. Updated rates 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, information in Table A6 shows that, between 1994 and 2000, the protection to Uganda 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 2 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.

## 5.3 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 7, 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 1567%). Ugandan exports through EIA comprise agricultural perishables such as chilled and frozen fish, flowers, beef, papain, 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 7: 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, fruits and 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 8: Tax burden due to air shipping costs on selected products**

|  | 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 |
| Boby beans | 0.53 | 0.53 | 0.00 | 0.01 | 0.53 | 0.54 |
| Hot paper | 0.67 | 0.67 | 0.00 | 0.01 | 0.67 | 0.68 |

*Note*: NRT refers to nominal rate of tax burden and ERT represents effective rate of 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, duties on imported products in Uganda, particularly on imported inputs, are however negligible and export producers 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 are 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 suggest 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.     Transport costs and the export competitiveness

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' analysis (2001) 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 services act as a tax on production and prevent the realization of significant gains 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 export competitiveness (iii) reduce delivered costs of imports particularly imported inputs (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 in puts 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 $25^{th}$ percentile to $75^{th}$ 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. Sources of transportation costs are of two categories: *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 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. Limao and Venables (2001) show that raising transport costs by 10 percent reduces trade volume by more than 20% and that poor infrastructure accounts for more than 40% and 60% of the predicted transport costs for maritime and landlocked countries respectively. Hummels' analysis (2001) shows that each day saved in shipping time is worth of 0.8% of the value of the good per day, equivalent to 16% tariff of the average length ocean shipping of 20 days. 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.

## 7.    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 documentation and clearing procedures 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 loss of 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. This is the current practice at Entebbe International Airport and could be emulated at other border crossing points.

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. These infrastructure rehabilitation and development require 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.

## 8.    Conclusion

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 reducing from 35% in 1994 to 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 only 25%. 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 from over 30% on average to about 25% for exports (mainly non-traditional exports). However, transport (air freight) costs for perishable exports are considerably higher, as high as 50% of unit price. Uganda is attempting to diversify into non-traditional agricultural exports, majority of which are perishable products. A limited analysis done under this study indicates that high freight and other charges place Ugandan exports at competitive disadvantage relative to other exporters. Policy implications of study findings 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): 1990-2002

| Commodity | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Traditional exports** | | | | | | | | | | | | | |
| Coffee | 140,384 | 117,641 | 95,372 | 106,775 | 343,289 | 384,122 | 396,206 | 309,362 | 295,666 | 287,958 | 125,316 | 97,652 | 109,200 |
| Cotton | 5,795 | 11,731 | 8,218 | 5,505 | 3,485 | 9,697 | 15,330 | 29,197 | 7,691 | 17,408 | 22,088 | 13,434 | 26,150 |
| Tea | 3,566 | 6,780 | 7,721 | 11,141 | 11,804 | 7,143 | 15,305 | 30,483 | 28,181 | 21,425 | 37,889 | 30,031 | 29,800 |
| Tobacco | 2,941 | 4,533 | 4,204 | 7,011 | 8,269 | 7,395 | 7,275 | 12,576 | 22,332 | 14,673 | 26,889 | 32,096 | 51,100 |
| **Non-traditional exports** | | | | | | | | | | | | | |
| Maize | 3,318 | 4,188 | 3,894 | 23,319 | 28,666 | 23,054 | 18,143 | 15,063 | 9,359 | 5,291 | 2,437 | 18,339 | 10,609 |
| Beans and other legumes | 4,150 | 4,274 | 2,782 | 12,580 | 12,900 | 16,147 | 16,050 | 11,875 | 6,451 | 8,754 | 4,454 | 2,354 | 3,283 |
| Fish and fish products | 1,386 | 5,313 | 6,498 | 8,943 | 10,403 | 32,262 | 46,251 | 27,864 | 39,879 | 24,837 | 30,818 | 78,233 | 87,945 |
| Cattle hides | 4,072 | 3,363 | 3,375 | 5,228 | 10,549 | 10,152 | 7,787 | 10,020 | 6,088 | 2,967 | 12893 | 25,405 | 9,810 |
| Sesame seeds | 5,234 | 10,517 | 6,478 | 2,776 | 1,548 | 5,899 | 9,563 | 1,448 | 11 | 1,420 | 747 | 796 | 510 |
| Soya beans | | 468 | | 2,056 | 756 | 1,826 | 2,913 | 236 | 29 | | 0 | | |
| Soap | | | | 1,302 | 1,739 | 2,981 | 2,289 | 2,273 | 1,727 | 1,960 | 1,639 | 2,700 | 3,434 |
| Electric current | 1,218 | 923 | 1,537 | 728 | 2,245 | 2,405 | 4,163 | 11,688 | 11,741 | 13,209 | 18,634 | 10,554 | 15,910 |
| Cocoa beans | 504 | 374 | 281 | 714 | 586 | 479 | 1,105 | 1,300 | 1,429 | 1,474 | 1,491 | 19,23 | 2,023 |
| Goat and sheep skins | 2,064 | 968 | 664 | 619 | 344 | 37 | 1 | 0 | 16 | | 0 | | |
| Hoes and hand tools | 109 | 445 | 462 | 381 | 1,018 | 1,888 | 820 | 262 | 247 | 242 | 334 | 359 | |
| Pepper | | 197 | 210 | 350 | 444 | 94 | 73 | 81 | 117 | 692 | 354 | 397 | |
| Vanilla | | 176 | | 328 | 674 | 8 | 809 | 4 | 1,260 | | 0 | | |
| Live animals | 106 | | | 285 | 150 | 86 | 113 | 30 | 75 | 58 | 0 | 199 | |
| Fruits | | | | 265 | 238 | 279 | 36 | 314 | 386 | 111 | 733 | | |
| Groundnuts | | 121 | 34 | 251 | 365 | 395 | 15 | 21 | 118 | 228 | 14 | 26 | |
| Bananas | | 162 | 208 | 173 | 658 | 451 | 908 | 52 | 257 | 473 | 983 | 672 | |
| Roses and cut flowers | | | | 158 | 531 | 343 | 2,809 | 3,592 | 7,502 | 7,328 | 9,912 | 14,750 | 17,828 |
| Ginger | | 121 | 105 | 132 | 20 | 45 | 61 | 23 | 21 | | 0 | | |
| Gold and gold compounds | | 9,648 | 49 | 89 | 224 | 27,240 | 65,066 | 80,615 | 19,493 | 33,485 | 43,285 | 49,293 | 60,342 |
| Other precious compounds | | | | | | | | | | | 2,682 | 10,963 | 12,656 |
| Other products (1) | 2,811 | 2,320 | 4,675 | 10,122 | 19,034 | 39,838 | 97,564 | 46,249 | 76,673 | 32,075 | 50,899 | 47,379 | 73,465 |
| **Traditional exports** | **152,686** | **140,685** | **115,515** | **130,432** | **366,847** | **408,357** | **434,116** | **381,618** | **353,870** | **341,464** | **211,341** | **173,213** | |
| **Non-traditional exports** | **24,972** | **43,578** | **31,252** | **70,799** | **93,092** | **165,909** | **276,539** | **213,010** | **182,882** | **137,286** | **190,229** | **278,161** | **285,528** |

**Table A2: Ugandan Tariff Schedule for Selected years in the 1990s (%)**

| HS | CHAPTER | IMPORT DUTY | | | COMESA DUTY | | |
|---|---|---|---|---|---|---|---|
| | | 1996 | 1999 | 2002 | 1996 | 1999 | 2002 |
| 1 | LIVE ANIMALS AND PRODUCTS | 10 | 7 - 15 | 7 | 2 | 4 - 6 | 4 |
| 2 | MEAT AND EDIBLE MEAT OFFAL | 30 | 15 | 15 | 6 | 6 | 6 |
| 3 | FISH AND AQUATIC INVERTEBRATES | 30 | 15 | 15 | 6 - 30 | 6 | 6 |
| 4 | DAIRY PRODUCTS EGGS AND HONEY | 10 - 30 | 15 | 15 | 2 - 6 | 6 | 6 |
| 5 | PRODUCTS OF ANIMAL ORIGIN | 0 - 30 | 15 | 15 | 0 -6 | 6 | 6 |
| 6 | VEGETABLE PRODUCTS | 0 - 10 | 0 - 7 | 0 - 7 | 0 - 4 | 0 - 4 | 0 - 4 |
| 7 | EDIBLE VEGETABLES | 30 | 15 | 15 | 6 | 6 | 6 |
| 8 | EDIBLE FRUIT AND NUTS | 20 | 15 | 15 | 4 | 6 | 6 |
| 9 | COFFEE, TEA, MATE AND SPICES | 10 -30 | 15 | 0 - 7 | 2 - 6 | 6 | 0 - 4 |
| 10 | CEREALS | 0 - 20 | 0 - 15 | 0 - 15 | 0 - 4 | 0 - 6 | 0 - 6 |
| 11 | PRODUCTS OF THE MILLING INDUSTRY | 10 - 30 | 7 - 15 | 15 | 2 - 6 | 6 | 6 |
| 12 | OIL SEEDS AND OLEAGINEOUS FRUITS | 10 - 30 | 7 | 7 | 0 - 6 | 4 | 4 |
| 13 | LAC, GUMS, RESINS AND OTHER SAPS | 10 - 30 | 7 | 7 | 2 -6 | 4 | 4 |
| 14 | VEGETABLE PLAITING MATERIALS | 10 - 30 | 7 | 7 | 2 - 6 | 4 | 4 |
| 15 | ANIMAL OR VEGETABLE FATS ANDOILS | 5 - 30 | 7 - 15 | 0 - 15 | 2 - 6 | 4 - 6 | 0 - 6 |
| 16 | PREPARATIONS OF MEAT OR FISH | 30 | 15 | 15 | 6 | 6 | 6 |
| 17 | SUGARS AND SUGAR CONFECTIONERY | 10 - 30 | 15 | 7 - 15 | 2 - 6 | 6 | 4 - 6 |
| 18 | COCOA AND COCOA PREPARATIONS | 30 | 15 | 15 | 6 | 6 | 6 |
| 19 | PREPARATIONS OF CEREALS, FLOUR | 5 - 30 | 7 - 15 | 15 | 2 - 6 | 4 - 6 | 6 |
| 20 | PREPARATIONS OF VEGETABLES | 30 | 15 | 15 | 6 | 6 | 6 |
| 21 | MISCELLANEOUS EDIBLE PREPARATIONS | 5 - 30 | 7 - 15 | 7 | 2 - 6 | 4 - 6 | 4 |
| 22 | BEVERAGES, SPIRITS AND VINEGAR | 30 | 15 | 15 | 12 | 6 | 6 |
| 23 | RESIDUES AND WASTE FROM FOOD INDs | 10 | 15 | 15 | 2 | 6 | 6 |
| 24 | TOBACCO AND TOBACCO SUBSTITUTES | 30 - 60 | 15 | 15 | 12 | 6 | 6 |
| 25 | SALT, SULPHUR AND STONE, CEMENT | 5 - 20 | 7 - 15 | 7 - 15 | 2 - 5 | 4 - 6 | 4 - 6 |
| 26 | ORES, SLAG AND ASH | 10 | 7 | 7 | 2 | 4 | 4 |
| 27 | MINERAL OILS, FUELS AND MINERALS | 10 | 7 - 15 | 0 - 15 | 0 - 2 | 4 - 6 | 0 - 6 |
| 28 | ORGANIC CHEMICALS AND COMPOUNDS | 5 | 7 | 0 - 7 | 5 | 4 | 0 - 4 |
| 29 | ORGANIC CHEMICALS | 5 | 7 | 0 - 7 | 5 | 4 | 0 - 4 |
| 30 | PHARMACEUTICAL PRODUCTS | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | FERTILIZERS | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | TANNING OR DYEING EXTRACTS | 5 | 7 - 15 | 0 - 15 | 5 | 4 - 6 | 0 - 6 |
| 33 | ESSENTIAL OILS AND RESINOIDS | 30 | 15 | 0 - 15 | 6 | 6 | 0 - 6 |
| 34 | SOAP, WASHING AND DENTAL PRODUCTS | 10 - 30 | 7 - 15 | 0 - 15 | 2 - 6 | 4 - 6 | 0 - 6 |

| 35 | ALBUMINOIDAL SUBSTANCES | 5 - 10 | 7 | 0 - 7 | 2 - 6 | 4 | 0 - 6 |
|---|---|---|---|---|---|---|---|
| 36 | EXPLOSIVES AND MATCHES | 10 - 30 | 15 | 15 | 2 - 6 | 6 | 6 |
| 37 | PHOTOGRAPHIC AND CINEMATOGRAPHICS | 0 - 20 | 7 - 15 | 0 - 15 | 0 - 4 | 4 - 6 | 0 - 6 |
| 38 | MISCELLANEOUS CHEMICAL PRODUCTS | 0 - 20 | 0 - 7 | 0 - 7 | 0 - 5 | 0 - 4 | 0 - 4 |
| 39 | PLASTICS AND ARTICLES THEREOF | 0 - 20 | 7 - 15 | 7 | 0 - 5 | 4 - 6 | 4 |
| 40 | RUBBER AND ARTICLES THEREOF | 0 - 20 | 0 - 15 | 0 - 15 | 0 - 6 | 0 - 6 | 0 - 6 |
| 41 | RAW HIDES AND SKINS | 30 | 7 | 7 | 6 | 4 | 4 |
| 42 | ARTICLES OF LEATHER | 10 - 30 | 15 | 15 | 2 - 6 | 6 | 6 |
| 43 | FUR SKINS AND ARTIFICIAL FUR | 10 - 30 | 15 | 7 - 15 | 2 - 6 | 6 | 4 - 6 |
| 44 | WOOD AND ARTICLES OF WOOD | 0 - 30 | 7 - 15 | 7 - 15 | 0 - 6 | 4 - 6 | 4 - 6 |
| 45 | CORK AND ARTICLES OF CORK | 10 - 30 | 15 | 15 | 2 - 6 | 6 | 6 |
| 46 | STRAWS, PLAITING AND BASKET WARE | 30 | 15 | 7 - 15 | 6 | 6 | 4 - 6 |
| 47 | PULP OF WOOD AND FIBROUS MATERIAL | 10 - 20 | 7 | 7 | 2 - 4 | 4 | 4 |
| 48 | PAPER AND PAPER BOARD | 5 - 30 | 7 -15 | 7 | 2 - 6 | 4 - 6 | 4 |
| 49 | PRINTED BOOKS AND NEWSPAPERS | 0 - 10 | 0 - 7 | 0 - 7 | 0 - 2 | 0 - 4 | 0 - 4 |
| 50 | SILK | 10 | 15 | 15 | 2 | 6 | 6 |
| 51 | WOOL, FINE OR COARSE ANIMAL HAIR | 10 | 7 - 15 | 15 | 2 | 4 - 6 | 6 |
| 52 | COTTON | 10 - 20 | 7 - 15 | 7 - 15 | 2 - 4 | 4 - 6 | 4 - 6 |
| 53 | OTHER VEGETABLE TEXTILE FIBRES | 5 - 20 | 15 | 7 - 15 | 2 - 5 | 6 | 4 - 6 |
| 54 | MAN MADE FILAMENTS | 5 - 30 | 7 - 15 | 7 - 15 | 2 - 5 | 4 - 6 | 4 - 6 |
| 55 | MAN MADE STAPLE FIBRES | 10 - 30 | 7 - 15 | 7 - 15 | 2 - 6 | 4 - 6 | 4 - 6 |
| 56 | WADDING, FELT AND NON WOVENS | 10 - 20 | 7 - 15 | 0 - 15 | 2 - 4 | 4 - 6 | 0 - 6 |
| 57 | CARPETS AND TEXTILE FLOOR COVERS | 20 | 15 | 15 | 4 | 6 | 6 |
| 58 | SPECIAL WOVEN FABRICS | 10 - 30 | 15 | 15 | 4 - 6 | 6 | 6 |
| 59 | INPREGNATED, COATED TEXTILE FABRICS | 10 - 20 | 15 | 7 - 15 | 2 - 4 | 6 | 4 - 6 |
| 60 | KNITTED OR CROCHETED FABRICS | 20 | 15 | 15 | 4 | 6 | 6 |
| 61 | ARTICLES OF APPAREL AND CLOTHING | 20 | 15 | 15 | 4 | 6 | 6 |
| 62 | ARTICLES OF APPAREL, CLOTHING NOT KNITTED | 20 | 15 | 15 | 4 | 6 | 6 |
| 63 | OTHER MADE UP TEXTILE ARTICLES | 0 - 20 | 15 | 0 - 15 | 0 - 6 | 6 | 0 - 6 |
| 64 | FOOTWEAR, GAITERS AND THE LIKE | 20 | 15 | 15 | 4 | 6 | 6 |
| 65 | HEADGEAR AND PARTS THEREOF | 30 | 15 | 15 | 6 | 6 | 6 |
| 66 | UMBRELLARS WALKING STICKS AND WHIPS | 30 | 15 | 15 | 6 | 6 | 6 |
| 67 | PREPARED FEATHERS, HAIR AND FLOWERS | 30 | 15 | 15 | 6 | 6 | 6 |
| 68 | ARTICLES OF STONE, PLASTER, CEMENT E.T.C. | 0 - 10 | 15 | 0 - 15 | 2 | 6 | 0 - 6 |
| 69 | CERAMIC PRODUCTS | 10 | 7 - 15 | 15 | 2 | 4 - 6 | 6 |
| 70 | GLASS AND GLASS WARE | 10 | 15 | 7 - 15 | 2 | 6 | 4 - 6 |
| 71 | PRECIOUS PEARLS, STONE AND METAL, COINS | 0 - 30 | 0 - 15 | 15 | 0 - 6 | 0 - 6 | 6 |
| 72 | IRON AND STEEL | 0 - 10 | 7 | 0 - 7 | 0 - 5 | 4 | 0 - 4 |

| 73 | ARTICLES OF IRON OR STEEL | 0 - 20 | 0 - 7 | 0 - 7 | 0 - 4 | 0 - 4 | 0 - 4 |
|----|---------------------------|--------|-------|-------|-------|-------|-------|
| 74 | COPPER AND ARTICLES THEREOF | 5 - 20 | 7 | 7 | 2 - 5 | 4 | 4 |
| 75 | NICKEL AND ARTICLES THEREOF | 10 - 20 | 7 - 15 | 7 - 15 | 2 - 4 | 4 - 6 | 4 - 6 |
| 76 | ALUMINIUM AND ARTICLES THEREOF | 5 - 10 | 7 - 15 | 0 - 15 | 5 | 4 - 6 | 0 - 6 |
| 78 | LEAD AND ARTICLES THEREOF | 5 | 7 | 0 - 7 | 5 | 4 | 0 - 4 |
| 79 | ZINC AND ARTICLES THEREOF | 5 - 20 | 7 | 0 - 7 | 2 - 5 | 4 | 0 - 4 |
| 80 | TIN AND ARTICLES THEREOF | 10 - 20 | 7 | 0 - 7 | 2 - 4 | 4 | 0 - 4 |
| 81 | OTHER BASE METALS, CERMETS | 10 | 7 | 7 | 2 | 4 | 4 |
| 82 | TOOLS, IMPLEMENTS AND CUTLERY | 10 | 7 | 7 | 2 | 4 | 4 |
| 83 | MISCELLANEOUS ARTICLES OF BASE METAL | 10 - 20 | 15 | 7 - 15 | 2 - 4 | 6 | 4 - 6 |
| 84 | NUCLEAR REACTORS, BOILERS, MACHINERY | 0 - 20 | 0 - 7 | 0 - 7 | 0 - 4 | 0 - 4 | 0 - 4 |
| 85 | ELECTRICAL MACHINERY AND EQUIPMENT | 0 - 30 | 0 - 15 | 0 - -15 | 0 - 6 | 0 - 6 | 0 - 6 |
| 86 | RAILWAY OR TRAMWAY LOCOMOTIVES | 0 | 0 - 15 | 0 | 0 | 0 - 6 | 0 |
| 87 | VEHICLES OTHER THAN TRAMWAYS | 0 - 30 | 0 - 15 | 0 - 15 | 0 - 6 | 0 - 6 | 0 - 6 |
| 88 | AIR CRAFT, SPACECRAFT AND PARTS | 0 - 10 | 0 - 15 | 0 - 15 | 0 - 2 | 0 - 6 | 0 - 6 |
| 89 | SHIPS, BOATS AND FLOATING STRUCTURES | 0 - 10 | 0 - 15 | 0 - 7 | 0 - 6 | 0 - 6 | 0 - 4 |
| 90 | OPTICAL, PHOTOGRAPHIC, PRECISION E.T.C. | 0 - 30 | 0 - 15 | 0 - 15 | 0 - 6 | 0 - 6 | 0 - 6 |
| 91 | CLOAKS AND WATCHES AND PARTS | 30 | 15 | 15 | 6 | 6 | 6 |
| 92 | MUSICAL I NSTRUMENTS AND PARTS | 30 | 15 | 7 | 6 | 6 | 4 |
| 93 | ARMS AND AMUNITION AND PARTS THEREOF | 0 - 10 | 7 | 7 | 0 - 2 | 4 | 4 |
| 94 | FURNITURE BEDDINGS AND ILLUMINATIONS | 0 - 30 | 7 - 15 | 15 | 0 - 6 | 4 - 6 | 6 |
| 95 | TOYS GAMES AND SPORTS REQUISITES | 10 - 30 | 7 - 15 | 7 - 15 | 2 - 6 | 4 - 6 | 4 - 6 |
| 96 | MISCELLANEOUS MANUFACTURED ARTICLES | 10 - 30 | 7 - 15 | 7 - 15 | 2 - 6 | 4 - 6 | 4 - 6 |
| 97 | WORKS OF ART, COLLECTIONS AND ANTIQUES | | | 15 | | | 6 |

*Source*: Morrissey, Rudaheranwa and Moller (2003)

**Table A3: UGANDA TRANSPORT COSTS AND TRANSIT TIMES IN 2003**

| Agent | Road | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | *Costs (US$)* | | | | *Transit time (road unless otherwise stated)* | |
| | *Imports* | | *Exports* | | *Imports* | *Exports* |
| | | | | | | |
| | 20ft CNT | 40ft CNT | 20ft CNT | 40ft CNT | | |
| 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) | | | | | | |
| Containers | | | | | | |
| 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 Customs Union (2005)**

| Sector | Imports | | | | | | Exports | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Nominal rate of protection* | | | *Effective rate of protection* | | | *Nominal rate tax burden* | | | *Effective rate of tax burden* | | |
| *Sector* | *2003* | *(-20%)* | *(-50%)* | *2003* | *(-20%)* | *(-50%)* | *2003* | *(-20%)* | *(-50%)* | *2003* | *(-20%)* | *(-50%)* |
| Food products | 0.220 | 0.176 | 0.110 | 0.226 | 0.180 | 0.113 | 0.149 | 0.119 | 0.075 | 0.158 | 0.126 | 0.079 |
| Animal products | 0.071 | 0.057 | 0.035 | 0.072 | 0.057 | 0.036 | 0.052 | 0.042 | 0.026 | 0.057 | 0.046 | 0.029 |
| Forestry products | 0.145 | 0.116 | 0.072 | 0.179 | 0.138 | 0.086 | 0.108 | 0.086 | 0.054 | 0.169 | 0.135 | 0.084 |
| Fish products | 0.071 | 0.057 | 0.035 | 0.078 | 0.060 | 0.037 | 0.047 | 0.038 | 0.024 | 0.065 | 0.053 | 0.033 |
| Minerals and quarry | 0.108 | 0.087 | 0.054 | 0.151 | 0.117 | 0.073 | 0.086 | 0.069 | 0.043 | 0.141 | 0.113 | 0.071 |
| Coffee, cotton and sugar | 0.107 | 0.086 | 0.054 | 0.128 | 0.101 | 0.063 | 0.077 | 0.062 | 0.039 | 0.099 | 0.079 | 0.050 |
| Manufactured goods | 0.196 | 0.157 | 0.098 | 0.396 | 0.293 | 0.183 | 0.138 | 0.110 | 0.069 | 0.409 | 0.326 | 0.204 |
| Tobacco and beverages | 0.331 | 0.265 | 0.166 | 0.568 | 0.425 | 0.266 | 0.209 | 0.167 | 0.105 | 0.485 | 0.388 | 0.242 |
| Textiles, cloth and footwear | 0.082 | 0.066 | 0.041 | 0.190 | 0.129 | 0.081 | 0.057 | 0.046 | 0.029 | 0.254 | 0.201 | 0.126 |
| Building materials | 0.208 | 0.166 | 0.104 | 0.486 | 0.360 | 0.225 | 0.151 | 0.121 | 0.076 | 0.533 | 0.427 | 0.267 |
| Chemicals | 0.068 | 0.054 | 0.034 | 0.083 | 0.021 | 0.013 | 0.049 | 0.039 | 0.025 | 0.307 | 0.245 | 0.153 |
| Metals and machinery | 0.064 | 0.051 | 0.032 | 0.120 | 0.081 | 0.050 | 0.049 | 0.039 | 0.025 | 0.201 | 0.160 | 0.100 |
| Other manufactures | 0.096 | 0.077 | 0.048 | 0.174 | 0.110 | 0.069 | 0.070 | 0.056 | 0.035 | 0.294 | 0.235 | 0.147 |
| Transport equipment | 0.067 | 0.054 | 0.033 | 0.127 | 0.087 | 0.054 | 0.049 | 0.039 | 0.025 | 0.192 | 0.153 | 0.096 |
| *Average* | *0.131* | 0.105 | *0.065* | *0.213* | *0.154* | 0.096 | *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) | | Taxation (1994) | | Taxation (2000) | |
|---|---|---|---|---|---|---|---|---|
| | NRP | ERP | NRP | ERP | NRP | ERP | NRP | ERP |
| Food products | 0.227 | 0.232 | 0.105 | 0.106 | 0.179 | 0.192 | 0.105 | 0.113 |
| Animal products | 0.081 | 0.081 | 0.105 | 0.107 | 0.062 | 0.070 | 0.105 | 0.116 |
| Forestry products | 0.148 | 0.170 | 0.225 | 0.269 | 0.130 | 0.214 | 0.225 | 0.352 |
| Fish products | 0.075 | 0.074 | 0.225 | 0.252 | 0.056 | 0.086 | 0.225 | 0.297 |
| Minerals and quarry | 0.117 | 0.155 | 0.195 | 0.267 | 0.103 | 0.176 | 0.195 | 0.320 |
| Coffee, cotton and sugar | 0.115 | 0.134 | 0.100 | 0.115 | 0.092 | 0.121 | 0.100 | 0.132 |
| Manufactured goods | 0.195 | 0.334 | 0.130 | 0.205 | 0.166 | 0.539 | 0.130 | 0.421 |
| Tobacco and beverages | 0.306 | 0.454 | 0.160 | 0.244 | 0.251 | 0.631 | 0.160 | 0.379 |
| Textiles, cloth and footwear | 0.108 | 0.206 | 0.170 | 0.377 | 0.069 | 0.405 | 0.170 | 0.702 |
| Building materials | 0.226 | 0.461 | 0.075 | 0.035 | 0.181 | 0.696 | 0.075 | 0.391 |
| Chemicals | 0.065 | -0.034 | 0.110 | 0.185 | 0.059 | 0.455 | 0.110 | 0.551 |
| Metals and machinery | 0.071 | 0.096 | 0.100 | 0.162 | 0.059 | 0.275 | 0.100 | 0.407 |
| Other manufactures | 0.096 | 0.099 | 0.150 | 0.286 | 0.084 | 0.408 | 0.150 | 0.558 |
| Transport equipment | 0.072 | 0.099 | 0.110 | 0.183 | 0.059 | 0.260 | 0.110 | 0.421 |
| *Average* | *0.136* | *0.183* | *0.140* | *0.199* | *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 $a_{ij}^{w} = \frac{(1 + t_j)}{(1 + t_i)} a_{ij}$ 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 $a_{ij} = \frac{(1 + ti)}{(1 + tj)} a_{ij}^{w}$. 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.