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INTERNATIONAL TRANSPORT COSTS AND
INDUSTRIAL DEVELOPMENT IN THE
LEAST DEVELOPED COUNTRIES*

Prepared by

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International transport costs and industrial development in the Least Developed African Countries¹

1. Introduction

There are 36 countries classified as 'least developed' (LDC's). These are often resource-poor, although some may have minerals. Their prospects specifically of industrial development and of creating any significant segment of industrial employment in the long term appear severely constrained by two other factors, their small economic size, affecting the size of their domestic markets, and high external transport costs. In exploring this problem we shall focus here on the 26 African LDC's and specifically on the extent and impact of high transport costs.

Small economic size

Small economic size is a result of small population and low income per capita. Thirteen LDC's have populations of less than 2 million (nine of these in Africa) and ten less than 1 million (eight in Africa) (see Tables 1 and 2). Twelve African countries have GNP's (in 1981) below \$1 billion, while the combined GNP of the 26 was \$38.4 billion, less than that of Algeria or of Greece². Per capita GNP is also extremely low,

-
1. The considerable assistance of Mr. Michael Jackson of the Crown Agents, Surrey, U.K., in calculating the transport margins is hereby acknowledged, as are helpful comments by Arthur Hazlewood of Queen Elizabeth House, Oxford. Responsibility for the final product is my own. The study has been carried out at the instigation of John Cody.
 2. Precise calculation of economic size is not required in the calculations or discussion here. However as pointed out for instance by Hazlewood (1969) the size of the market depends not only on GDP but on the proportion of the population located near to established communications: GDP is an imperfect measure of this size because of the eroding effect of distance from the centre of manufacturing.

Table 1: Basic data for 10 Non-African least developed countries

Country	1981 Population (millions)	1981 GNP/Capita (\$)	1981 GNP (\$) (billions)	Growth rate, GNP/Capita real 1970- 1980 (%)	1981 MVA/GDP (%)
Afghanistan	16.3	n.c.	n.a.	n.a.	n.a.
Bangladesh	90.7	140	12.8	1.4	8
Bhutan	1.3	80	0.1	0	n.a.
Haiti	5.1	300	1.5	1.8	n.a.
Laos, P.D.R.	1.5	80	0.3	n.a.	n.a.
Maldives	0.2	n.a.	n.a.	n.a.	n.a.
Nepal	15.0	150	2.3	-0.3	n.a.
W. Samoa	0.2	n.a.	n.a.	n.a.	n.a.
Yemen, A.R.	7.3	460	3.3	6.1	6
Yemen, P.D.R.	2.0	460	0.9	10.7	14 ^{a/}

a/ 1981

Source: 1983 World Bank Atlas; World Development Report 1983 (for MVA/GDP)

less than \$400 in all but 5 of the 36 countries. The share of manufacturing value added was low: for 14 out of 18 countries for which a figure is available the percentage lies between 4 and 9 per cent. From Table 3, which compares 1980 figures with those for 1970, it can be seen that manufacturing value added (MVA) per capita at constant 1970 prices fell from \$8 to \$7 for the African LDC's, while the share of MVA in GDP (f.c.) fell from 8.7 per cent to 7.3 per cent. Eight of the countries contained significant semi-arid lands.

Table 2: Basic data for 26 African least developed countries

Country	1981 Population (millions)	1981 GNP/Capita (\$)	1981 GNP (\$ million)	Growth Rate, GNP/Capita real 1970 - 1980 (%)	1981 MVA/GDP (%)
Benin	3.6	320	1140	1.2	7
Botswana	0.9	1010	940	9.0	na
Burundi	4.2	230	990	1.5	9
Cape Verde	0.3	340	100	5.5	na
Central African Rep.	2.4	320	770	-0.2	6
Chad	4.5	110	490	-3.6	4 ^{a/}
Comoros	0.4	320	110	-2.4	na
Djibouti	0.4	480	180	na	na
Eq. Guinea	0.3	180	62	na	na
Ethiopia	31.8	140	4530	0.6	11
Gambia	0.6	370	220	3.1	na
Guinea	5.6	300	1660	0.4	4 ^{b/}
Guinea-Bissau	0.8	190	150	na	na
Lesotho	1.4	540	740	8.6	5 ^{b/}
Malawi	6.2	200	1250	2.8	13 ^{b/}
Mali	6.9	190	1340	2.3	6
Niger	5.7	330	1890	-0.8	8
Rwanda	5.3	250	1340	1.7	16
Sao Tome and Principe	0.1	370	40	-0.2	na
Sierra Leone	3.6	320	1140	-1.1	6
Somalia	4.4	280	1240	1.1	3 ^{a/}
Sudan	19.2	380	7390	0.9	6
Tanzania U.R.	19.1	280	5260	1.1	7
Togo	2.7	380	1010	0.9	9
Uganda	13.0	220	2890	-4.1	9 ^{b/}
Upper Volta	6.3	240	1490	1.6	12

a/ 1960

b/ 1980

Notes:

- Population - 4 countries have populations exceeding 10 million,
8 countries have populations of less than 1 million
(combined population - 149.7 million)
- GNP/Capita - 3 countries are in the range \$480-1010,
12 countries are below \$300 (average - \$260)
- GNP - 3 countries are in the range of \$4.5 - 7.4 billion,
12 countries are below \$1 billion (combined GNP of \$38.4 is
less than that of Algeria or Greece)
- GNP/Capita growth - 3 countries are in the range of 5.5 - 9.0 percent,
7 countries have negative growth
- MVA/GDP - 1980-1981 shares range from 4 to 16 per cent.

Source: 1983 World Bank Atlas; World Development Report 1983 (for MVA/GDP).

Small economic size may affect transport directly or indirectly. The indirect effect is that the small size of their domestic market severely restricts scope for even the elsewhere much criticized import-substituting industrialisation and increases the need to look towards the export of manufactures, where the transport factor becomes critical. Table 4 indicates a relationship between economic size and the degree of 'openness' of an economy. There may be direct costs associated with small size: the low level of incomes may be insufficient to develop transport infrastructure to an adequate level, while, secondly, such facilities as are developed may be expensive relative to the small amount of trade passing through. In other words, there may be economies of scale in the provision of transport facilities. Beyond this, thirdly, there may be both administrative and actual financial costs associated with the infrequency and unreliability of the service. Because LDC's are of small economic size they are of minor potential as trading partners, and international transport facilities will not have been developed with them in mind. Even islands and coastal countries with access to the sea may be given a wide berth by the shipping liner conferences because they are insufficiently profitable to merit becoming regular ports of call. Because of this factor, small size may produce an additional element of "remoteness" which is independent of actual geographical distance. 'Remoteness' is considered by Srinivasan (1985), for example, as a factor independent of small size. Many islands in particular are remote in terms of geographical distance from markets and trade routes, but mini-states such as Guinea-Bissau are geographically less distant than, say, Nigeria but more remote in terms of being served by shipping: due to economic size.

Table 3: MVA per capita and share of MVA in GDP, African developing countries and country share in MVA of African countries, by country or territory and by economic grouping, 1970 and 1980

Country or territory and economic grouping	MVA per capita (dollars)			Share, MVA in GDP at factor cost (percentage)			Country share in MVA of African developing countries (percentage)		
	1970	1980 (constant)	1980 (current)	1970	1980 (constant)	1980 (current)	1970	1980 (constant)	1980 (current)
Main oil-exporting countries	14	26	92	5.2	6.4	5.0	18.46	28.34	35.09
Algeria	30	43	135	11.2	11.1	8.1	7.48	8.57	9.53
Gabon	23	121	456	4.1	10.2	7.7	0.21	0.72	0.97
Libyan Arab Jamahiriya	32	144	271	1.8	5.6	2.2	1.91	4.60	3.10
Nigeria	9	17	72	4.4	5.2	5.0	9.58	14.46	21.49
Least developed countries	8	7	25	8.7	8.1	7.3	15.16	11.24	13.74
Benin	7	6	14	8.4	6.3	5.2	0.35	0.19	0.19
Botswana	10	6	68	7.8	10.3	6.9	0.11	0.22	0.21
Burundi	4	6	19	6.8	7.8	11.6	0.28	0.26	0.32
Cape Verde	5	5	17	5.2	5.9	5.6	0.02	0.02	0.02
Central African Republic	13	13	41	13.1	14.0	14.0	0.44	0.30	0.36
Chad	4	4	19	5.5	5.2	9.1	0.30	0.18	0.34
Comoros	6	2	10	6.7	4.7	5.3	0.03	0.02	0.02
Ethiopia	7	7	13	9.6	9.7	10.6	3.11	2.43	1.63
Gambia	6	3	9	5.1	2.6	2.6	0.05	0.02	0.02
Guinea	5	5	10	2.9	3.0	3.1	0.33	0.25	0.20
Guinea-Bissau	1	1	4	1.1	1.1	1.8	0.01	0.01	0.01
Lesotho	2	5	11	2.7	5.0	4.9	0.03	0.07	0.06
Malawi	10	16	36	15.4	16.1	15.7	0.85	1.04	0.85
Mali	5	5	22	10.5	10.8	13.2	0.50	0.34	0.57
Niger	6	6	21	6.0	5.7	5.3	0.43	0.33	0.44
Rwanda	2	10	28	3.5	12.2	12.8	0.13	0.53	0.52
Somalia	5	7	29	6.5	8.2	8.6	0.26	0.27	0.41
Sudan	14	10	32	10.2	7.1	7.0	3.56	2.02	2.29
Uganda	9	4	57	7.5	4.8	4.8	1.05	0.63	3.03
United Republic of Tanzania	9	8	25	10.1	7.8	7.9	2.14	1.59	1.70
Burkina Faso	6	7	21	10.9	14.6	13.9	0.58	0.51	0.55

Source: Industry and Development, No. 8, January 1984.

**Table 4: Relationship of GDP size to ratio, imports to GDP, 1983,
for 62 developing countries**

	size of countries in sample measured by GDP		
	small size <\$5bn.	medium \$5<size<\$50bn	large size >\$50bn
no. of countries in sample	30	25	7
average GDP	\$2.5bn	\$21.4bn	\$127.9bn
total GDP	\$74bn	\$534bn	\$895bn
M/GDP (unweighted)	29.9%	23.9%	14.7%
M/GDP (weighted)	28.0%	24.4%	11.9%

Source: compiled from World Development Report, 1985
Appendix tables 3 and 9.

Note: M = value of imports. In a cases data are for 1982. Numerous countries were not included because of insufficient data. Countries with population of less than one million were not included in the data, and the M/GDP ratio may be even higher for the smallest countries.

For all these reasons, it is plausible to test for an effect of economic size on international transport costs.

The expectation that small economic size would affect transport costs is expressed in an UNCTAD report (UNCTAD, 1984, p.76) which states that:

Since economies of scale apply to transport as to other sectors of the economy, it is to be expected that the LDC's would face higher transport costs than developing countries in general. Other reasons why freight factors are likely to be higher on imports from LDC's are that these countries generally export goods with lower value to weight ratios than other countries and that they may have inferior transport facilities.

Landlocked LDCs

In addition to this potential disadvantage of small economic size, a further 15 LDCs are landlocked, including 11 of the 26 African countries. This leads to additional costs of distance due to the additional loading and other transfer costs involved and to the heavier costs of overland transportation as compared with movement by ship; to costs associated with poorly developed transport infrastructure in the transit country, resulting from that country's own poverty or lack of economic interest in developing infrastructure for the benefit of transit trade of more importance to its neighbour; and thirdly, to costs associated with delays, irregularities, and uncertainties (including the possibility of theft) in the shipment of goods, particularly where there are political problems in the transit country, all outside the control of the landlocked country. A separate empirical question, therefore, is the quantitative size of this second handicap and its implications.

As we shall see again later, it is not so much being landlocked which is the problem, but being landlocked by other very poor countries, such that important potential markets lie outside the ring of surrounding countries: being surrounded by high-income countries, like Switzerland, countries which provide good immediate markets, is positively advantageous.

2. Some statistical evidence on the effects of small economic size

McFarland has provided some statistical evidence of the effects of the level of development on transport costs, using U.S. import data which, giving relatively reliable f.o.b. and c.i.f. figures for imports from different destinations, allows one to calculate the transport cost element. Table 5 gives weighted average freight factors by country category and product category. This shows that the freight factor is greater for advanced and middle developing countries than for developed and greater still for the least developed: indeed the difference is

Table 5: Weighted average freight factors by level of development and product category, 1981 (percent)

	all products	manufactured products	agricultural products	mining products
Developed countries	5.2	5.3	9.7	12.0
Advanced developing countries	6.5	7.3	11.0	16.6
Middle developing countries	6.5	6.5	11.8	22.4
Least developed countries	9.3	10.9	17.1	24.4

Source: McFarland (1983)

Note: the freight factor is the ratio of international transportation costs to the free alongside (f.a.s.) value of the product being shipped.

much the more significant in the latter case, the former not being very large. In the case of the least developed countries substantial differences exist in the case of both agricultural and manufactured products, compared with the middle group of countries, and with mining products as well compared with developed countries and advanced developing countries. One of the characteristics of the LDCs as a category is their small economic size.

The same study finds that the transport disadvantage of LDCs has been increasing: since 1965 the freight factor for U.S. imports from all overseas sources declined from 10 percent to 4.5 percent in 1981, in part for reasons of technical innovation in transportation. Since the (percentage) fall was greater for manufactured products the prices of which rose relative to those of non-petroleum raw materials, this benefitted the LDCs least.

The data above are classified only by level of development, and not specifically by size. Moreover, as noted in the UNCTAD quotation reproduced earlier, one important reason for the larger freight factor in developing countries' trade is the bulkier, lower-valued commodities which they export. While higher transport costs increase the likelihood of their dependence on such products, this dependence in turn increases the transport margin. Table 5 allows for this to some extent, by providing separate data for different categories of product, each of which provides evidence of increasing costs: but these categories are highly aggregated, and leave open the possibility of different "baskets" of goods within each category in part producing the divergence of freight factor.

For these two reasons we have thought it worthwhile re-examining the U.S. import data for 1980 for a selection of 26 specific commodities, for more heterogeneous groupings of countries. The 26 representative commodities are listed in Table A.1.

Table 6 summarises the results, with details for individual countries given in Table A.1. The percentage freight factor is negligible in the case of adjacent countries (Canada and Mexico), suggesting that c.i.f. and f.o.b. values are calculated at the border rather than actual production centres within the countries concerned, which is misleading of the advantage of Mexico, say, over Panama. The data does not suggest small economic size is a particular disadvantage. The freight factor for small Central American and Caribbean countries, for instance, is 4.7, compared with 5.8 for European and 5.0 large Latin American countries. This result may in part reflect the advantage of proximity, although the importance of coffee and sugar, with high value relative to bulk, despite their being agricultural products, is probably the more important explanation. Similarly the transport factor is not very different as between large and small African countries. Interestingly, the freight factor is significantly higher for East Asian NICs and potential NICs (7.3), compared with African and Central American countries. Their obvious success, nevertheless, in manufacturing for export suggests that a transport disadvantage can be overcome if other conditions are favourable. On the other hand, given the advantage of proximity, small size should not be a factor holding back export-oriented

Table 6: Freight factors in U.S. imports, 1980, calculated for regional country groupings based on 26 selected representative commodities

Regional Groupings	Freight Factor (% excess cif over fob)	Mean of Ratios*
Adjacent countries	0.2	0.185
European countries/Japan	5.8	0.975
Landlocked European countries	6.6	1.003
European/Mediterranean islands	8.4	1.131
Latin American countries	5.0	1.251
Landlocked Latin America (Paraguay)	4.7	0.958
Small Central American/Caribbean countries	4.5	0.938
East Asian NICs/potential NICs	7.3	1.145
Low-income Asian countries	9.7	1.667
Australia, N. Zealand, R.S.Africa	7.3	1.445
Larger African countries	5.9	1.237
Small African countries, not landlocked	6.0	1.338
Small African countries, landlocked	5.3	1.137

Note: *Mean of Ratios = mean of ratios of country freight factor for product to the factor for the product as a whole.

Adjacent Countries = Canada, Mexico

European countries/Japan = U.K, France, FRG, Italy, Netherlands, Spain, Portugal, Sweden, Denmark, Poland, Japan.

Landlocked European countries = Switzerland, Austria, Hungary

European/Mediterranean islands = Iceland, Cyprus, Malta

Latin American countries = Brazil, Argentina, Chile, Uruguay, Peru, Colombia, Ecuador

Landlocked Latin American countries = Paraguay

Small Central American/Caribbean countries = Honduras, Nicaragua, Costa Rica, Bahamas, Guyana, Dominican Republic, Guatemala, Salvador, Panama, Haiti, Trinidad, Jamaica

East Asian NICs/potential NICs = Singapore, Hong Kong, Korean Republic, Taiwan, Phillipines, Thailand, Malaysia, Indonesia

Low-income Asian countries = China mainland, India, Bangladesh, Pakistan, Sri Lanka, Papua New Guinea

Larger African countries = Nigeria, Zaire, Kenya

Small African countries = Cameroon, Senegal, Sierra Leone, Ivory Coast, Congo-Braz., Mozambique, Ghana, Liberia, Guinea, Ethiopia, Tanzania, Mauritius

Small African countries, landlocked = Swaziland, Zimbabwe, Malawi, Burundi, Uganda

development in Central America, at least to the extent that these calculations are meaningful.

The major weakness of the data lies in the dependence of the calculated freight factors on the commodities actually traded. The most important such commodities are listed in Table A.2. In many cases these are the high-valued (relative to weight) agricultural products such as coffee, sugar and cocoa.

This may also in part explain why those countries which are landlocked do not have very much higher freight factors: the European countries show a percentage of 6.6 compared with 5.8 for the non-landlocked, Paraguay has a low value (certainly coffee in this case) of 4.7, and the landlocked African countries actually have a lower value than the non-landlocked.

To at least partly counteract the effect of actual traded consignments, we have in addition calculated for each commodity traded the ratio of the individual country's freight factor to the product freight factor for all the countries trading. A high value would then show a transport disadvantage facing the country in question compared with other countries exporting the same product to the U.S.A.. The second column in the tables gives the mean, unweighted, of such ratios for all the products in the list of 26 which the country exports to the U.S.A..

The value for European countries, below 1.0, suggests we could take this as a reference point. The value for East Asian NICs/potential NICs is not much above 1.0, suggesting that, after all, their disadvantage is not so great when traded product

composition is taken into account. The low value for small Central American and Carribean countries does not indicate, until, a disadvantage from small economic size, though even then these ratios, not covering all potentially traded products, are not independent of actual traded product composition.

3. Direct valuations of transport costs from selected African countries

Ultimately, the only means of overcoming this problem is to obtain direct figures for cost of shipping. This has been done for four selected products using quotations made by regular shippers to the Crown Agents, for shipment from the U.K. to Africa. The commodities selected were enamelware, leather footwear, cotton clothing and machinery. These vary widely in respect of their value in relation to bulk, which is revealed to be a major influence on costs of shipment per freight tonne, a freight tonne being determined either by weight or by cubic capacity as one cubic metre. The assumption made here is that the pattern of transport costs from the U.K. to Africa can serve as an indicator of that in the reverse direction for potential manufactured exports.

The precise figures used for ex-works values of one freight-tonne of each product are not too important, so long as realistic and representative values are taken: the figures used in the first three cases were calculated as means from a sample of 5-6 invoices of shipments by a Birmingham-based shipping agent.

Because 'machinery' varies so widely in nature from consignment to consignment in this case an ex-works value of £4500 was taken as realistic in relation to that obtained for cotton clothing. The detailed breakdown of transportation charges is derived from actual quotations made to the Crown Agents in November, 1985. It must be stressed that quotations given by shippers are volatile, varying between shippers and between regular and non-regular customers, cargos, and places, as well as from week to week, so that it is difficult to state precisely what is the cost of shipment of a particular product from A to B. It may be the case also that the Crown Agents, as a major customer, are offered more favourable quotations. There are also differences as between containerised and non-containerised cargo (the data here refer to container cargo). Nevertheless the structure of charges shown here is likely to represent a realistic picture for these representative products at the end of 1985.

The cost breakdown Birmingham-Mombasa is presented here as Table 7. Those for other destinations can be consulted in Table A.2(a)-(g). Birmingham was selected as a representative industrial centre in the U.K. in the light of its central situation. The data shows that the percentage oncost (over the ex-works value) from Birmingham to the U.K. port is as great as (or more than) the ocean freight to the African port. Costs of shipment (including transfer costs) per mile may also be greater within the U.K. than over longer distances within Africa. Insurance is not a particularly large item, here adding about one percent to cost.

Table 7: Estimated total distribution costs, one freight tonne of cargo, Birmingham-Nombasa

	Enamelware		Leather Footwear		Cotton Clothing		Machinery	
	£	%	£	%	£	%	£	%
Primary packed ex. works, Birmingham	1150	100	2430	100	3000	100	4500	100
Packing into strong wooden crates	69		69		69		69	
Collection and delivery to Liverpool	24.60		24.60		24.60		24.60	
Port charges	20		20		20		20	
F.o.b. Liverpool	1263.60	109.9	2543.60	104.7	3113.60	103.8	4613.60	102.5
Ocean freight, net of currency bunker adjustment factors, including loading	96.19	(8.4)	128.24	(5.3)	83.36	(2.8)	115.42	(2.6)
C & F Nombasa	1359.79		2671.84		3196.96		4729.02	
Wharfage @ 1.5% c.i.f. Nombasa	20.62)		40.52)		48.48)		71.72)	
Port costs	11.00)	(3.6)	11.00)	(2.5)	11.00)	(2.3)	11.00)	(2.1)
Delivery to store	10.00)		10.00)		10.00)		10.00)	
Insurance @ 0.7775%	11.99	(1.0)	23.38	(1.0)	27.94	(0.9)	41.24	(0.9)
c.i.f. Nombasa store	1413.40	122.9	2756.74	113.4	3294.38	109.8	4862.98	108.0

The freight factors calculated for the four representative products to different African destinations are summarised in Table 8. The destinations have been selected to provide a comparison between countries of smaller and larger economic size, landlocked and non-landlocked, on both sides of the continent. The upper part of the table gives the percentage oncost to the

destination over the Birmingham ex-works value, and the lower part gives the ratio of these freight factors to that for cotton clothing, used as a reference point.

We may comment first on the size of the freight factors compared with those calculated by McFarland in Table 5. The freight factors of 13.4 and 9.8 percent Birmingham-Mombasa, for instance, are high in relation to the 5.3 percent in Table 5 for manufactured products imported by the U.S.A. from developed countries or the 6.5 percent from 'middle developing' countries, and consistent with or greater than the 10.9 percent for least developed countries. They are significantly higher than the freight factors in Table 6 (5.8 percent for European countries but only 6.0 percent for small African countries) where the figures reflect commodities actually exported. Compared with the McFarland figure cited and in relation also to the differences shown in his table between developed and least developed countries, some of the figures here, such as the 22.7 percent for footwear to Bujumbura and the 40.5 percent for enamelware to Bujumbura are astronomic. Since McFarland's figures are based on c.i.f./f.o.b. differences we should compare rather the figures in brackets in Table 6, based on f.o.b. Liverpool values, but these are still relatively high.

From Table 6, the effect of small economic size does not appear substantial. Despite Mombasa's far larger volume of trade compared with Dar es Salaam, for instance, the percentage oncosts are identical. Similarly the percentage oncosts for Lagos are not significantly different from those of Accra or Banjul despite Nigeria's much more substantial economic size. These costs are

Table 8: Summary of freight factors for different destinations for four representative products, end-1985

Destination	Percentage oncosts over ex-works values			
	enamelware	leather footwear	cotton clothing	machinery
Mombasa	22.9 (11.9)	13.4 (8.4)	9.8 (5.8)	8.0 (5.4)
Dar es Salaam	22.9 (11.9)	13.4 (8.4)	9.8 (5.8)	8.0 (5.4)
- Moshi	27.0 (15.6)	15.4(10.2)	11.4 (7.3)	9.1 (6.4)
- Mwanza	28.8 (17.2)	16.2(11.0)	12.1 (8.0)	10.0 (6.9)
Banjul	20.3 (9.5)	11.2 (6.2)	9.3 (5.4)	6.6 (3.9)
Accra/Tema	25.8 (14.5)	13.5 (8.4)	10.8 (6.7)	7.9 (5.3)
Lagos	22.5 (11.5)	12.2 (7.2)	10.2 (6.2)	7.1 (4.4)
Ouagadougou via Abidjan	35.9 (23.7)	17.7(12.5)	14.6 (10.5)	10.2 (7.5)
Bujumbura via Mombasa	40.5 (27.9)	22.7(17.2)	17.6 (13.3)	13.8(11.1)
Blantyre via Durban	32.8 (20.9)	17.3(12.0)	14.8 (10.6)	10.8 (8.1)
Mean, all destinations ¹	27.95 (16.5)	15.08(10.0)	12.11 (8.0)	9.30(6.4)
Difference in means (from cotton clothing)	+15.84 (8.5)	+2.97(2.0)	- (-)	-2.81(-1.6)
Mean, coastal countries	22.88 (11.86)	12.74(7.72)	9.98 (5.98)	7.52(4.88)
Mean, landlocked cos.	36.40 (24.17)	19.23(13.90)	15.67(11.47)	11.60(8.90)
Difference in means (coastal & landlocked)	+13.52(+12.31)	+6.49(6.18)	+5.69(+5.49)	+4.08(+4.02)

Ratios of oncost percentages				
Small & large countries				
Mombasa	2.337	1.367	1	0.816
Dar es Salaam	2.337	1.367	1	0.816
Banjul	2.183	1.204	1	0.710
Accra/Tema	2.389	1.250	1	0.731
Lagos	2.206	1.196	1	0.695
Coastal & landlocked				
Mombasa	2.337	1.367	1	0.816
Bujumbura	2.301	1.290	1	0.784
Blantyre	2.216	1.169	1	0.730
Accra/Tema	2.389	1.250	1	0.731
Ouagadougou	2.459	1.212	1	0.699
Mean (coastal)	2.290	1.277	1	0.754
Mean (landlocked)	2.325	1.224	1	0.738

Figures in brackets show percentage oncost over f.o.b. Liverpool values.

¹ Excluding those within Tanzania.

limited to direct shipping costs, of course, and do not take into account such indirect and perhaps quite important costs associated with infrequency of service for instance affecting the

capacity to respond effectively and quickly to overseas market demands, longer periods in transit, or unpredictability of delivery.

Being landlocked has a much more significant effect. The percentage oncost for cotton clothing for example, jumps from 9.8 at Mombasa to 17.6 at Bujumbura. The mean for enamelware to coastal countries is under 23 percent compared with over 36 percent for landlocked countries. For products in the middle of the value per freight tonne range, footwear and cotton clothing, the oncost is 10-13 percent for coastal countries and 16-19 percent for the landlocked countries.

What makes the greatest difference to the percentage oncost proves to be the type of product, specifically value relative to weight or bulk. The mean for all destinations is close to 28 percent for enamelware - compared with just 12 percent for cotton clothing. Looking at the ratios in the bottom half of the table it can be seen that the pattern of ratios for different products is almost the same for small and 'large' countries and for landlocked and non-landlocked countries, suggesting that the relative impact of different values per tonne is independent of these factors. The absolute impact may be a different matter since the 36 and 40 percent oncosts at Ouagadougou and Bujumbura respectively, for example, may exceed the level where even manufacturing industries which can take advantage of cheap labour in the LDC can tolerate, where the lower values at Mombasa might fall within the limits of tolerance. A low value ex-works such as the £1150 per tonne here for enamelware will therefore produce

a strong comparative disadvantage in export production and in general the data points to the need to concentrate on higher-valued (per tonne) manufactured goods for export and to high natural protection for production of low-valued (per tonne) goods for the domestic market.

As already stressed the margins revealed by these quotations relate only to direct costs of shipment. In the case of landlocked countries the problems of delays and general unpredictability associated either with bureaucratic interference in the transit country or in some cases political dislocation, or losses from damage or theft (not fully compensated by insurance) can not only add greatly to costs but interfere with the capacity to deal in foreign markets. The capacity to deliver to overseas markets on a reliable basis may be affected in both directions, availability of imported inputs becoming less reliable as well as the supply of the finished product.

The freight factors calculated above will also be increased to the extent that the manufactured goods produced incorporate some import content, in the form of capital equipment as well as materials and components, which itself has an inflated element of international transport. Data for precise calculation are not readily available, but illustrative calculations are shown in Table 9, assuming in each case that the import content amounts to 30 percent of the ex-works value, that it is subject to the freight factor already calculated for machinery, and that the freight factor from Africa to Europe is identical to that in the reverse direction. This adds a significant amount to the size of the freight factor in all cases. The absolute increase in the

Table 9: Effect on freight factors of assumed import content of the goods manufactured¹

Commodity and destination/ origin	Freight factor (Percentage oncost) with transport		Absolute increase in freight factor %	Proportionate increase in freight factor %
	as already calculated	oncost on 30% imported capital content		
Footwear				
Mombasa	13.4	16.0	2.6	19.4
Bujumbura	22.7	27.4	4.7	20.7
Accra/Tema				
Ouagadougou	13.5	16.0	2.5	18.5
	17.7	21.1	3.4	19.2
Enamelware				
Mombasa	22.9	25.7	2.8	12.2
Bujumbura	40.5	45.9	5.4	13.3
Accra/Tema				
Ouagadougou	25.8	28.6	2.8	12.2
	35.9	39.8	3.9	10.9
Cotton Clothing				
Mombasa	9.8	12.3	2.5	25.5
Bujumbura	17.6	22.0	4.4	25.0
Accra/Tema				
Ouagadougou	10.8	13.3	2.5	23.1
	14.6	17.9	3.3	22.6

¹Import content of goods calculated as 30% of ex-works value in African country, subject to freight factor calculated already for machinery.

size of the freight factor is slightly higher in the case of enamelware (the goods with low value to bulk). But since export production of goods such as this may already be ruled out, it is worth noting that the proportionate increase in size of freight factor - some 22-25 percent in the case of cotton clothing - increases for higher value-to-bulk goods, i.e. inversely with the size of freight factor: decreasing the competitiveness of those

goods that the countries in question might have had in relation to these goods. The proportionate change is about the same for landlocked and non-landlocked countries, the absolute increase larger for landlocked. Since even within the category of least developed countries there is potential competition as supply centres to developed country markets between the large number of islands and coastal countries on the one hand, and landlocked LDCs on the other, the element of import content will add a further important disadvantage in the latter's case.

Reference should be made to two important issues with policy implications raised by Yeats. In one paper (Yeats, 1977), based on data from India, he shows that ad valorem transport rates for some important products tend to escalate with each stage of processing in the same way as tariffs, compounding the negative effect on the growth of processing industries in developing countries. In his book (Yeats, 1981), he demonstrates that tariff valuation procedures using a base of c.i.f. rather than f.o.b. figures severely disadvantage exports from developing countries and particularly those landlocked countries for which freight factors are highest. He notes (p.89) that many products with production characteristics that make them especially suitable for developing countries have freight factors which range from 20 to 50 percent or more.

3. General Implications of high external transport costs.

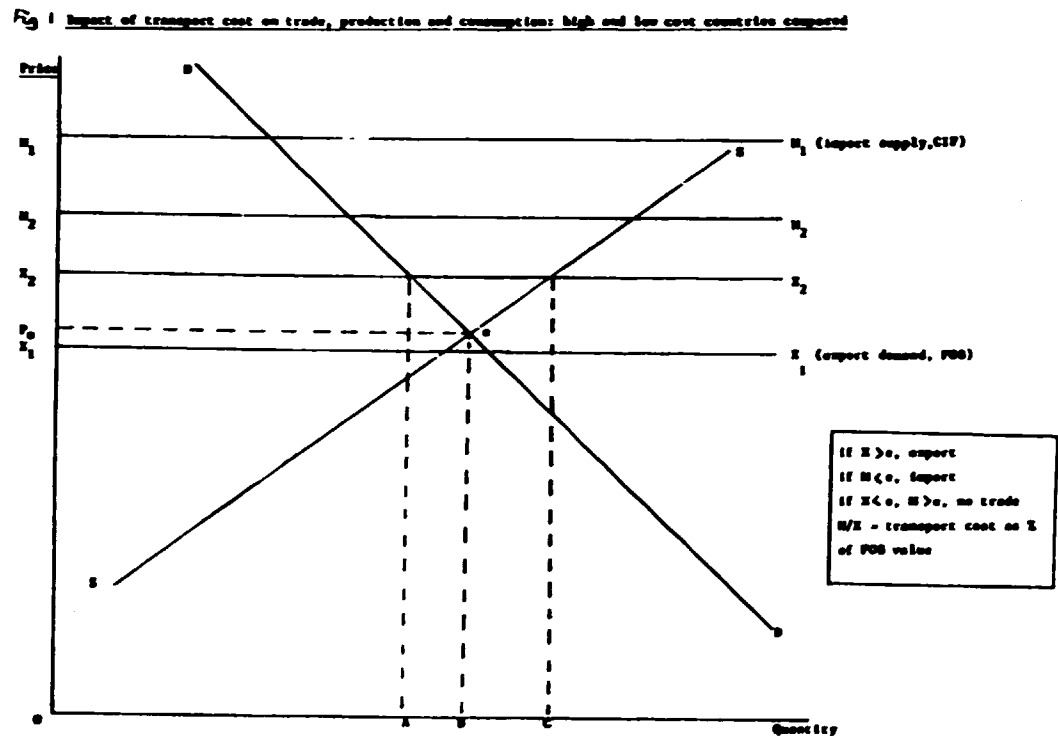
The effects of high external transport costs are in many respects opposite to those of small market size, for transport costs provide a 'natural' barrier to trade, favouring the

domestic rather than the external market, and thus tend to reduce the ratio of trade to GDP. Small countries with high external transport costs could be said to have suffered disadvantages in producing for both domestic and external markets, despite the natural barrier advantage. However Figure 1 illustrates the effect of the latter. Assume that "small" countries 1 and 2 have equivalent domestic demand and supply functions for steel (say), DD and SS (small means here that import supply and export demand elasticities are infinite, so that, for traded goods, prices are set externally, with trade adjusting for supply-demand differences). Country 1 faces higher external transport cost than country 2, since the difference between what would be paid for imported steel (M_1) and what would be received for steel exports (X_1) is much higher than $M_2 - X_2$. For country 1, the domestic equilibrium (e) lies between the import supply price (M_1) and the export demand price (X_1), resulting in steel being non-traded. Quantity OB will be produced (and consumed). For country 2, the export demand price (X_2) lies above e, so that steel is exported (note that the import supply line for a given good always exceeds the export demand line, since the former includes transport cost). Quantity OA will be consumed and AC will be exported. An important point of the diagram is that it shows that high transport costs imply that many goods which would be traded in the case of low transport costs become non-traded.

The effect of high transport costs may be either to reduce the net return received by producers for undertaking an export activity or to make this activity non-competitive and non-viable. The first effect will most often hold in the case of primary products where farmers and other producers are price-takers in

the world market, and will result in lower incomes per unit of effort or resources used up in production.

Figure 1: Impact of transport cost on trade, production and consumption: high and low cost countries compared.



A numerical example may serve to indicate the orders of magnitude involved. Suppose footwear may be produced either in Accra or Birmingham, and that the wage bill at U.K. wage levels amounts to 30 percent of the ex-works value. The freight factor in either direction is 15 percent of the U.K. ex-works price, but measures the transport disadvantage faced by Ghana in supplying the U.K. market (compared with 13.5 percent calculated above for Accra/Tema). Assuming Ghana is a price-taker in the U.K. market and is able to absorb the export oncost only via reduction in the

wage bill, the 15 percent would need to come out of the 30 percent for the wage bill, implying wages at just half the U.K. level. If the transport oncost were higher, at 25 percent (compare 22.7 percent for footwear Birmingham-Bujumbura), a similar calculation would allow wages of only one-sixth of the U.K. level. This indicates that even for coastal countries the transport factor may significantly erode the cheap labour advantage of a developing country in relation to manufacturing, but that for landlocked countries the effect on the return to labour may be catastrophic.

In the case of agricultural export commodities, there may be no choice but to accept a reduced return to labour, the alternative being purely subsistence agriculture. If a high-priced export crop is involved, such as coffee, incomes may still be very satisfactory and since there will not be the same problem of economies of scale in production - peasant farming units being entirely viable - small economic size (of country) may not affect the viability of production. This may not hold in the case of manufacturing where capital is mobile and able to seek alternative locations, not leaving labour the option of accepting a lower wage.

Table 10 shows the negligible extent of manufacturing for export in the African least developed countries. These frequently amount to no more than a few per cent of exports, which are overwhelmingly of primary products. Such manufactured exports as exist are invariably resource-based, vegetable oils, for example, animal feeding stuff (cattle cake from oil seeds) or manufactured tobacco.

As stated at the outset, small domestic markets make a standard import-substitution strategy even more problematic: this may also affect potential for export of manufactures where domestic production would have provided the foundation required for subsequent export promotion. Exports to neighbouring countries are often of this type. More generally Srinivasan (1985, p.1) states that

even if there are no constraints on size of the market for a product because of possibilities for export, to the extent that penetration into foreign markets depends on the experience gained in producing and selling in the domestic market, smallness of the latter may preclude export development.

It has been remarked elsewhere (UNIDO, 1983b, p.56) that the small LDCs 'are utterly lacking in the institutional infrastructure needed for export promotion policies' and that transnational enterprises with their extensive marketing network throughout the world, and their acquired skills in this direction, might be the best means, or one means of overcoming this problem. TNCs may be persuaded to locate in a country for offshore production and export, taking advantage of cheap labour or tax concessions, independently of any domestic market: but the existence of such a market could undoubtedly provide a reason for selecting one location rather than another - Brazil, say, rather than Ghana. Industries which are directed simultaneously towards domestic and export markets have been referred to as 'Janus' industries.¹ If these are important, small economic size can handicap a country's industrial progress in both domestic and export markets.

¹After the Greek god Janus who faced in two directions.

Table 10: Export structure of LDCs: leading exports and share of different manufactured exports in total (%), 1981

Country	Leading exports	manufactured exports and proportion of total domestic exports (%)
Benin	cocoa fixed vegetable oil cotton	cement, building products (5.74) animal feeding stuff(4.21) woven cotton fabrics(2.10) clothing(1.44) other inorganic chemicals(1.09) cereal, etc. preparations(0.69)
Botswana	n.a.	n.a.
Burkina Faso	cotton live animals oil seeds, nuts, etc	
Burundi	coffee	textile yarn and thread(0.11) animal feeding stuff(0.11)
Cape Verde	fresh fish other crude mineral	tinned fish(12.07) animal feeding stuff(1.62) machinery for special industries(0.56) metal manufactures n.e.s.(0.44) power machinery, non- electric(0.41)
Central African Republic	diamonds coffee	veneers, plywood, etc(1.30) tobacco afres(1.27) natural abrasives(0.70) coal and coke briquettes(0.69) rub- ber, crude, synthetic(0.24) proces- sed animal vegetable oil, etc(0.16)
Chad	cotton	cotton fabrics, woven(13.45) animal feeding stuffs(0.93) alcoholic beverages(0.41) leather(0.39) sugar and honey(0.16)
Ethiopia	coffee, hides and skins	animal feeding stuff(1.01) processed animal vegetable oil(0.33)
Gambia	oil seeds, nuts, etc	fixed vegetable oil(31.6) animal feeding stuff(12.46) clothing(0.72) gold, silver, jewellery(0.47)

Malawi	tobacco, sugar, tea	clothing(0.66) textile yarn and thread(0.49) animal feeding stuff (0.44) footwear(0.39) textile products, nes(0.34)
Mali	cotton, oilseeds	cotton fabrics, woven(2.0) animal feeding stuff(2.0) leather(0.3)
Niger	non-ferrous basic metal ore	tobacco mfres(3.25) cotton fabrics, woven(0.54) non-cotton woven textiles(0.25) coal, coke briquettes (0.23) machinery for special industries(0.14) lace, ribbons, etc(0.11)
Rwanda	coffee	toys, sporting goods etc(0.04) textile yarn and thread(0.03) clothing(0.03)
Sierra Leone	diamonds, natural abrasives, non-ferrous base metal ore, cocoa, coffee	animal feeding stuff(1.05) fixed vegetable oil, nonsoft(1.86)
Somalia	live animals, fresh fruit and nut	tinned meat, leather
Sudan	oilseeds, etc. cotton cereals, nes	animal feeding stuff(3.39) fixed vegetable oil, nonsoft(2.40) textile yarn and thread(0.63)
Togo	crude fertilisers cocoa	cement, etc(10.64) petroleum product (1.32) iron and steel shapes(0.71) cotton fabrics, woven(0.61) machines, nes, non-electric(0.43) clothing(0.4) animal feeding stuff (0.26) textile products, nes(0.26)
Uganda	coffee	electrical energy(0.53) textile yarn and thread(0.13) iron and steel shapes(0.10) iron and steel plate and sheet(0.07) iron and steel primary forms(0.06) organic chemicals(0.05)
United Republic of Tanzania	coffee, cotton, cashew nuts, spices	animal feeding stuff(2.22) special textile products(1.98)

Source: Handbook of International Trade and Development Statistics, 1984, Supplement

The data provided above have indicated the size of the relative transport handicap faced by the landlocked among the least developed countries. It is necessary to be more specific about the nature of this handicap, particularly as transport costs between port cities and interior areas of non-landlocked countries may be just as large and are frequently larger than those of the landlocked. One specific difference is that transport costs to the interior are in the latter case payable in foreign exchange, and generate incomes to nationals. An obvious problem, secondly, is that the country in the former case retains control over procedures, conditions, facilities and rates affecting transport, including transport investment. Thirdly, due to the import content of manufacturing, a large proportion of manufacturing is frequently located at the port, as at Lagos, Accra, or Mombasa: in the case of landlocked countries this locational factor takes industry out of the country altogether. Related to this, fourthly, labour mobility permits migration to the coast in search of employment, where also a significant part of the national (urban) market is found. The same mobility for a landlocked country to coastal country industries does not exist, and any employment obtained abroad is less secure and less durable than employment at home.

The effect of transport costs on the location of industry is particularly critical for landlocked countries because of reliance on foreign investment and the international mobility of TNCs. There is no obvious reason to locate in the landlocked country rather than the transit, coastal country, particularly as the domestic market of the latter is almost invariably the larger of the two: and indeed there will always be many coastal

countries - and islands - to choose from. Landlocked countries may thus be at the end of a long queue from the point of view of internationally footloose industry, with many implications for their long run development.

This will apply also to the location of industry geared to a local regional market as well as to overseas markets. Here the import content of manufacturing with weight loss in processing at the port will be important also, as already mentioned. One example of the impact of this is cited by Selwyn (1973, p-5):

Thus in the trade between Upper Volta and the Ivory Coast, 80% of Upper Volta's exports to the Ivory Coast in 1969 consisted of live animals and animal products, and a further 15% of vegetable products. Ivory Coast's exports to Upper Volta were far more diversified, including cement (15.6%), wood and cork products (10.3%), textiles (9.6%), chemical products (9.2%), transport products (8.6%), food, drink and tobacco products (5.6%) and base metal products (4.9%). This structure clearly shows the peripheral relation of Upper Volta to the Ivory Coast economy.

A similar fate may befall Uganda, for instance, in relation to Kenya. The effect of externalities in producing polarisation of industry around established centres will tend to render this cumulative.

Even though landlocked LDCs are particularly disadvantaged as a sub-group, the least developed countries themselves constitute a special group with a number of compounded disadvantages: small domestic market; high external transport cost; a poor resource base (in some cases there is the good fortune of minerals which however do not create significant employment or widely spread incomes); very often a semi-arid climate producing a weak agricultural economy lacking potential linkages with industry and creating a special problem of labour

absorption; and vicious circle effects due to poverty, such as underdeveloped transport and other infrastructure, low savings and lack of education and technical/managerial know-how.

The problem of labour absorption needs special emphasis since the advent of medical services in semi-arid countries, by reducing the death rate, is resulting in a specific population problem affecting countries which have a fragile resource base and may face increasingly serious problems of resource conservation in the future. While countries with a fertile agriculture can use this to buy time, the agriculture sector serving as a 'sponge' to absorb population pending the eventual development of manufacturing, it is more difficult to see even a temporary solution in some of the semi-arid countries.

An obvious advantage which LDCs might exploit, for labour-intensive export manufacturing, is cheap labour. A major problem here is that the number of candidates for location of such enterprise is far greater than viable: just as in the case of primary product exports, there may be a "fallacy of composition" in expecting that many new such centres can be established. The entire sub-group of LDCs in fact, may be late-comers or rather 'last-comers' in this respect.

It is quite possible, therefore, that the existing gap between this sub-group and other developing countries will widen. Table 11 shows that the LDCs have experienced a lower growth rate of manufacturing value added, and that this rate has also fallen behind that of GDP over the decade, particularly during 1975-80,

implying a falling share of MVA in GDP, while this has not been true in other African countries.¹ Table 12, relating to all LDCs, shows that their income per head was only an estimated 23 percent of that in all developing countries in 1981 and that this figure might actually fall, to below 18 percent by 1990: suggesting that there is a clear segment of the world's population which is extremely poor and becoming, in relative terms, progressively poorer.²

4. Specific implications for industrial development policy

One of the clearest implications of Table 8 incorporating our international transport cost calculations is the sensitivity of the freight factor to the value of the commodity relative to weight or bulk. This points to identification of high value-to-bulk commodities for the export market, as those most able to bear high external transport costs³, and to domestic production rather than imports, when this is feasible, where low value-to-bulk goods are needed at home.

The latter may tie in with a second criterion, the maximisation of local content. Thus instead of imported

¹ Statistical data on manufacturing value added is often misleading when the industrial sector is comparatively underdeveloped, because it may reflect processing of a single mineral or one or two high-valued crops, e.g. sugar and tobacco in Malawi.

² The GDP per capita figures quoted here cannot be considered very reliable indicators, of course, for well-known reasons, but the general conclusion may nonetheless stand.

³ This has to be qualified to take account of resource-based export commodities, as discussed presently.

Table 11: Expansion of manufacturing value added in the least developed African countries, 1970-80

Grouping	Real growth rate of NVA (%)			Real growth of NVA less that of GDP(%)		
	1970-75	1975-80	1970-80	1970-75	1975-80	1970-80
	21 least developed countries	3.0	2.1	2.6	0.2	-1.4	-0.6
Main oil-exporting countries	11.6	9.1	10.4	4.1	0.7	2.4
Other African countries	5.2	3.9	4.6	1.6	0.1	0.8

Source: UNIDO Secretariat (1983a)

Table 12: Per capita GDP and population in different regions of the world in 1981

Country Grouping	Population 1981 (mn)	Value in 1981 (\$)	GDP per capita		
			Annual average growth rate (%)		Projected value in 1990 (\$)
			1960-70	1970-80	
Least developed countries (LDCs)	292	227	0.3	0.4	235
All developing countries	2280	1003	2.9	3.1	1320
Developed market economies	789	9723	3.7	2.5	12143
Socialist countries of Eastern Europe	383	5005	5.6	4.4	7374
LDCs as % of all developing	12.8	22.6	-	-	17.8
LDCs as % of developed market economies	37.0	2.3	-	-	1.9

Source: UNCTAD (1984)

enamelware, or domestically-produced enamelware with a high import content and low value added, domestically-produced cooking pots and containers can be used. This would simply be a response to comparative advantage and is, of course, already in evidence in developing countries, particularly those landlocked countries with exceptionally high external transport costs. A major example of a commodity produced with maximum local content (and labour-intensive construction techniques) is, of course, housing, while furniture, baskets and mats (serving as carpets), and other household equipment and agricultural transport (ox-carts) are others.

Maximisation of local content is related to an emphasis on 'appropriate products'. Care should be taken in the use of this latter term, not to imply that consumers in particular countries should be content with inferior products or forms of the product: rather, it is suggested here that the most should be made of comparative advantage, selectively, in the choice of domestic production of manufactured goods and, related to this, of choice of technique¹. Thus it will not make sense to eschew factory production of cheap leather or plastic shoes with high import content, or even importation of cheap shoes, in order to protect laborious production of the hand-made article. This would not promote the attainment of basic needs. On the other hand the pushing of import-substituting industrialisation beyond the limits of a very narrow domestic market, such that factories exhibiting colossal excess capacity have to be subsidised directly or through tariff and import controls, as in Somalia,

¹ The theoretical basis of these arguments is explored at some length in Stewart (1977).

for instance, should be avoided. The suggestion here is that efforts be made to identify local products which can perform the equivalent function, and thus economize foreign exchange at minimum cost to consumers.

In some cases advertising and sales promotion by expatriate or other large-scale enterprises has influenced tastes in the direction of 'Western' products produced by more capital-intensive methods. An example is traditional bread versus the factory-packed 'English' white bread produced in many African countries, particularly for the benefit of urban consumers but now extending into rural areas. Middle Eastern oven-baked flat bread produced by small enterprises, or the Indian chapati, might be more suitable types of product to encourage here, and small enterprises producing such a product should be given at least equivalent assistance as the large firm.

Similar considerations can be extended to energy, where charcoal supplies need to be preserved and hydro-electric power may be available.

Maximisation of domestic value added together with minimisation of transport cost content may be secured in some cases by importing and distributing a basic input. Thus sheet metal may be imported and converted locally into basic items such as water containers, cases or pipes using what scale of production the size of the market can support. Very often internal costs of transport for such items is substantial, and can be reduced by producing them through a dispersed local craft industry. Thus in Tanzania in the early 1970s supply of sheet

metal to artisans working under the National Small Industry Corporation (NSIC)'s promotional scheme proved very successful.¹

Production of appropriate goods may more generally be linked to the promotion of small-scale industry and informal sector manufacturing. Advocates of small industry and informal sector development programmes sometimes have romantic notions of their potential, but clearly the two conditions obtaining here (particularly in small landlocked countries), a restricted domestic market and high external transport costs affecting the imported good, together create the situation most favourable to the economics of such production.

While import-substituting factory production generally benefits from substantial protection and priority in foreign exchange allocations, small and rural industry usually obtains no such assistance and suffers chronic problems of access to credit, equipment, materials and means of obtaining import requirements. The nature and scope of the products involved and some of the difficulties encountered by their producers are indicated by the following observations of Shula and Maleka (1984), based on a recent survey of artisan industry in the Nchelenge District of Zambia:

Common products by carpenters include boats, wooden doors, window and door frames, chairs, dining and side tables, baby cots, stools, cupboards, bookshelves, wardrobes and so forth. The more prominent carpenters do engage in upholstery work, producing advanced sofas, on orders from well-to-do customers from both inside and outside the district. Here we are talking of items found to cost more than K1500 a piece...Products of the two crafts [knitting

¹ Described in Livingstone (1972) and (1982).

and sewing] include jerseys, hats, sack bags, shawls, rompers, socks, tablecloths and dresses of various types. These are in high demand in local communities but their production is often hampered by difficulties with input supply to the district...The District has approximately 40 registered pitsawing groups spread all over from Kabalenge to Chipingu. Of late pitsawyers have been experiencing a crisis, a limited but growing crisis of insufficient productivity in timber supply industry due to receding stock of suitable species...Products [from basket/mat-making] are equally in high demand throughout the district. Those involved normally produce baskets of various types, drying mats, side tables, bamboo/reed bowls, sun hats, baby cots, stools, water stands, chairs, fish traps and other items for home decor. And to get the bamboo long journeys to sources are a must. (pp. 42-47)

The references to timber and bamboo indicate that policy for the promotion of such industrial activities should include the conservation and development of natural materials, an area where private and social interests may diverge, requiring intervention.

Two further examples of really quite significant small scale production activities may be cited from Malawi. An estimate for 1978 indicated that over 15,000 persons (including women and children) were engaged in small-scale brickmaking throughout the country, attached to some 400 enterprises producing rather attractive bricks which make rural houses and other buildings in Malawi some of the most attractive and well-built in Africa. In 1981 these were producing, by the most simple, labour-intensive methods, some 70 million bricks per annum, compared with only about one million machine-made bricks, the latter accounting for no more than 1.4 per cent of the combined total. Although the hand-made bricks were of lower quality and durability, they cost only 10 to 20 per cent of the machine-made. Even in the urban market 15 to 20 per cent of higher quality bricks are made in the informal sector and an attempt to promote a machine-based enterprise failed because of competition from the informal industry (UNIDO, 1982. p.50).

Likewise, informal sector tailoring is a significant employer in Malawi. Although there was a substantial number of persons, some 5,400 in 1977, employed in a modern textile sector, the number engaged in the traditional sector was between 25,000 and 30,000, about five times as many. An interesting aspect is that David Whitehead's, a large-scale transnational enterprise producing cotton fabrics, felt it more advantageous to supply material for purchase by informal sector tailors than to extend its own activities vertically (UNIDO, 1982, p.55). In many African countries making substantial numbers of sewing machines, new or second-hand, available to small-scale entrepreneurs, on a hire-purchase basis, might have a greater impact and show a higher rate of return than the same amount of capital invested in a single large industrial project.

Small-scale industry in general has the advantages of being dispersed, often local resource-using, and labour-intensive. Moreover dispersed rural industry can be combined by rural households with agricultural production as supplementary non-farm activities, helping to maintain rural household viability and reduce rural-urban migration. By maintaining a larger proportion of households in the rural areas where they are in a position to provide much of their own food supply, the costs and difficulties of providing for an expanding urban population are reduced. Dispersed small industry reduces internal transport cost where these are especially high due to dispersed populations, underdeveloped roads, and low value of goods transported relative to distance, common characteristics in the

least developed countries, probably more so in the landlocked ones. This applies particularly to resource-based activities.

Hughes (1984) points out that the natural protection given by high transport costs affords opportunities for development of semi-service activities such as baking, dry cleaning, printing and motor repair. In fact most of these do not require much protection and additional protection is redundant. The significant element is where the commodity is expensive, due to high external transport costs, and imported, involving scarce foreign exchange. Where also consumers are poor, it will pay them to prolong the life of the item as far as possible by constant repair rather than replace it. This applies to items such as motor vehicles, particularly, but also radios, watches, clothes, and shoes, and indeed any consumer or producer durable, but especially expensive imported items. The greater relative importance of repair activities in developing countries is evident. What is less evident, perhaps, is that entrepreneurs e.g. in motor repair may require some promotion and credit facilities on the same basis as other entrepreneurs.

The type of products mentioned so far reflect two general points. The standard import-substituting industrial strategy pursued by so many countries has been much criticised in part because it provides for a restricted market weighted heavily in favour of a high-income consuming elite. The size of the market in the countries considered here is much smaller still, particularly if based on the very small minority of higher-income consumers within the towns. For this reason any import-substituting response to high external transport cost should be

directed towards goods more widely consumed by low or average income consumers: on a selective basis, as already stressed. The production of such goods may not require other than natural protection but may benefit from other specific forms of assistance or promotion, including training and technological development.

Secondly, the activities promoted must reflect the nature of the economies concerned and a long term development perspective appropriate to their circumstances: particularly the compound of disadvantages described earlier. Kuznets (1971) has stressed the need 'for devising variants of a theory of economic growth for the many small national units different from those for the few large ones'. More recently Nixon (1984) has stressed the specificity of the processes of growth and change occurring in the developing and other countries, and the need to consider the historical circumstances - and presumably geographical and resource endowment - of each. A general tendency among not only economists but also policy-makers in the countries concerned is to assume a standard sequential model in which every country will follow in due course the same sequence of economic - and industrial - development, en route to joining the ranks of the industrialised nations. The need is rather to assess the individual circumstances and to devise a set of strategies and policies which will make the most of the opportunities actually offered, and which can hope to produce benefits - and avoid disasters - for the majority of the people in the short and medium as well as the long term. This points among other things to a basic needs orientation in industrial and other development.

Many of the products and activities identified above are consistent with this.

The problem of labour absorption in semi-arid and other economies with a weak agricultural base was emphasised above. This is also reflected in many of the countries under discussion here in migration and the export of labour to other economies: Somali's labour to the Gulf, Malawian and BLS labour to South Africa, and Burkina Faso labour to the Ivory Coast. This kind of participation by labour in a regional economy where the national economy is weak must be accepted - with efforts to promote the regional economy, and discussion on distribution of benefits and safeguards to labour: apart from the direct employment opportunities involved, remittances may be valuable to maintain household viability at home and have important multiplier effects, as in the case, for example, of Somalia (ILO/JASPA, 1985).

Standard import-substitution strategies do not create much employment and may be employment-destroying. This may be more so in the kind of economies discussed here because the limited range of industrial activities for which import-substituting factory production can be contemplated may lead to direct competition with traditional industries already established in these fields. Thus for example Ethiopia's fine traditional cottage cloth-making industry, which employs more than 10,000 people throughout the country, having already been substituted by factory production to a great extent around the capital, is under threat from a decision to distribute new textile factories around the country as part of regional development policy. The small-

scale, basic needs manufacturing activities discussed earlier, not, it should be stressed again, to be pursued in isolation but as one component part of industrial development policy - do have the advantages from the labour absorption point of view of being both labour-intensive and dispersed.

Resource-poor least developed countries are quite likely to exhibit major rural-urban dichotomies. Somalia, once more, and Ethiopia are obvious examples. There is a need, therefore, to assist the interdependence of the two sectors, again for instance by promoting resource-based industries. Leather goods production in a livestock economy would be an example.

An important issue is what capital goods production should be contemplated by economies such as these. If more advanced developing countries have difficulty in justifying a capital goods industry, the much smaller size of domestic market here and more severely restricted range of import-substituting consumer goods industries will produce an even stronger limitation. However, as Stewart (1977) and Pack and Todaro (1969) have argued, capital goods industries in the sense of machine-making industries rather than large-scale iron and steel production or a chemical industry may be both essential in developing countries for ensuring some technical capacity and progress and also more viable development. In our case high external transport costs, limited foreign exchange, and a range of smaller enterprises points to some small-scale machine-making industry (for smaller, custom-built items), machine assembly and - where lines of communication with the original machine-makers overseas are extended - machine-

repair activities. Such industry might make parts and spares, including equipment used in agriculture, livestock industry (e.g. for boreholes) or transportation - providing a further urban-rural linkage and some promise of technological development.

The discussion so far has concentrated on manufacturing for the domestic market, taking into account small market size but also the element of natural protection afforded by external transport costs. We can examine, secondly, the possibilities for producing for the export market.

Labour-intensity is an obvious criterion for choice of export-oriented industry in coastal countries, though the 'fallacy of composition' involved in suggesting that all such countries could follow this path has been pointed out. For landlocked countries the criterion is valid in respect of inward-oriented industry, certainly, capital equipment being expensive to import, but is still more problematic for export industry.

The calculations carried out above did not refer specifically to resource-based industry. In this case, however, some of the external transport costs of manufacturing value added are already borne by agricultural or mineral exports. Manufacturing in the form of processing which reduces bulk may in effect carry negative external transport costs, particularly as the country is likely to have no alternative to the exports in question, the only issue being whether these are exported in processed or unprocessed form. Moreover agricultural exports, in raw or processed form, may provide the necessary scale for transportation, limiting the effects of small economic size on

transport costs. Apart from the absolute advantage of reduced transport costs, resource-based manufacturing will derive a relative advantage as compared with other possible manufacturing activity, particularly, of course, in landlocked countries where the external transport costs are highest. We have, therefore, an important additional argument, apart from the obvious benefit of using local resources, for exploring as fully as possible the possibilities for resource-based manufacturing. It is significant that such exports constitute most of the limited manufacturing exports which exist at present (Table 10).

There may also be scope for resource-based manufacturing activity by land-locked countries for export to other countries further inland: such as sugar production in Uganda for export to Sudan or Burundi. These opportunities also need to be explored.

Small economic size suggests a need for countries in their search for viable manufacturing export activities to concentrate and specialize. This has been argued, for instance, by Hughes (1984, p.90):

[small countries'] opportunities for exploiting internal and external economies of scale in production (including sales and marketing) are limited in an absolute sense by the size of the labour force and the capacity to absorb immigrants, so that small countries are restricted in specialization options and must choose their industries carefully to ensure competitiveness and an ensuring build-up of comparative advantage in specific areas of industrial production.

The emphasis here on the size of the labour force is probably not justified, except in the case of very small island economies. The proportion of the labour force engaged in manufacturing is usually no more than 5-10 percent, and the supply of labour to the sector perfectly elastic at a low wage.

It may be sensible to specialise in some specific activities, however, in order to concentrate the limited amount of savings available for investment in a small economy, given also the large number of potential competitors in the 'queue' for exporting to major world markets. This is illustrated by the data presented in Table 13, which gives economic size relative to the U.K. (U.K. GDP = 100) and the level of investment, also relative to the U.K. (= 100), both figures being minute in most cases, even if comparison is made with the smallest European countries such as Belgium and Finland, or even with Singapore.

There may, secondly, be external economies at the level of the industry, either in production or in marketing and sales promotion, which favour specialization. The fact that the developing countries which have already broken into manufacturing export markets have done so often in particular lines, initially at least, offers some evidence of this. Thus Mauritius, for example, has relatively recently established a niche in the international knitwear industry, but on the basis of a number of separate small firms, all engaged in the same line of production, suggesting economies external to the firm but internal to the industry. Unfortunately it is not possible to be more specific than this because of the general lack of empirical investigation specifically of industry-level externalities.

In some cases a 'Janus' industry would provide the basis for the externalities. Experience in production and in product design and development may provide the basis for exports and suggests an obvious advantage in concentrating on lines already successfully developed. However, the smaller the country the

Table 13: Level of investment in African countries compared with other selected countries

Country	Year to which data applies	GDP (\$ mn)	GDP/capita (\$)	Index of GDP (UK = 100)	Investment (GFCF + increase in stocks)			Index of investment UK = 100
					Year (if different)	% of GDP	\$ mn (est.)	
UK	1982	478,588	8495	100	-	15	71,788	100
France	1982	540,124	11015	112.9	-	22	118,827	165.5
Belgium	1982	86,229	8754	79.5	-	17	14,659	20.4
Finland	1982	49,168	10201	10.3	-	24	11,800	16.4
India	1982	173,883	242	36.3	-	25	43,471	60.6
Singapore	1982	14,928	6044	3.1	-	45	6,718	9.4
Mauritius	1982	1,078	1135	0.2	-	18	194	0.3
Benin	1979	910	272	0.2	1978	17	155	0.2
Botswana	1980	981	1087	0.2	-	46	451	0.6
Burundi	1980	889	216	0.2	-	14	124	0.2
Congo	1981	1,994	1270	0.4	-	48	957	1.3
Ghana	1979	3,656	339	0.8	1978	5	183	0.3
Ivory Coast	1981	8,519	996	1.8	-	25	2,130	3.0
Kenya	1982	6,264	344	1.3	-	22	1,378	1.9
Lesotho	1982	352	250	0.1	-	37	130	0.2
Liberia	1982	834	419	0.2	-	21	175	0.2
Malawi	1982	1,334	213	0.3	-	20	267	0.4
Nigeria	1982	71,044	825	14.8	-	30	21,313	29.7
						(Est)	(Est)	
Rwanda	1980	1,163	230	0.2	-	8	93	0.1
Sierra Leone	1980	1,231	373	0.3	-	19	234	0.3
Tanzania	1982	5,127	253	1.1	-	20	1,025	1.3
B. Faso	1979	1,209	200	0.3	-	18	218	0.3
Zaire	1979	6,423	233	1.3	1977	37	2,377	3.3

Source: UN National Accounts Statistics: Analysis of Main Aggregates, 1982, Tables 1 and 3.

less likely it is to be able to establish an initial industry based on the home market.

Externalities may arise out of product differentiation in the export market and the need to establish credibility for a Mauritian, Malawian or Burundian product, as well as in marketing itself, input availability or bank credit and government assistance. The need to keep up with changing fashions and for awareness of detailed market demands is clearly a major handicap for developing countries trying newly to establish a foothold in foreign markets and leads to advantages in specialising in certain product lines.

In some markets it may be necessary to secure specific market quotas on a national basis, as in the case of Mauritian knitwear, and this will concentrate opportunity for new firms within the quota areas. Attention might be given internationally to offering favourable initial quotas to allow a degree of participation by small countries with promising but as yet unestablished new lines.

5. Conclusions

1. This paper focusses on the implications of two particular aspects of the category known as 'least developed countries' (LDCs), small economic size, as measured by population or more accurately by aggregate GDP, affecting the size of the domestic market, and high external transport costs, affecting access to export markets but also affording a degree of natural protection.

2. The interdependence between the two, i.e. the effect of small economic size on external transport cost, was investigated by examining U.S. import data for different categories of country for 26 representative commodities and directly by obtaining quotations from shippers for shipment U.K.-Africa for four representative commodities.

3. Freight factors calculated by McParland from the same U.S. import data vary according to level of economic development and are particularly high for the LDCs.

4. Although these were calculated separately for different categories of product, any calculation based on goods actually traded is biased to the extent that the goods traded will be those with relatively favourable freight factors, e.g. with high value to bulk.

5. The data for the 26 representative commodities do not suggest that small economic size necessarily produces a high freight factor and is lower for small Central American countries with low success in exporting manufactures to the U.S.A. market, for instance, than for the south-east Asian NICs with a good record of success.

6. Despite the application of a correction factor to reduce bias, however, this data remains biased by dependence on cost data relating to goods actually exported, including high valued products such as coffee with proportionately very low freight factors.

7. This points to the need for direct valuations of transport cost as provided here for four representative commodities with varying value-to-bulk ratios.

8. A major limitations of the data presented here is that it uses quotations for shipment from a representative point in Europe (Birmingham) to varying destinations in Africa as an indication of costs from these destinations to Europe. This may be defended in part by the likelihood that relative transport costs for different kinds of manufactured goods would remain substantially the same in the reverse direction and also by the fact that, while it may be possible to take advantage opportunistically of cheap backhaul, the appropriate costs would be those which approximate the rates which would obtain were trade to settle to an equilibrium and regular pattern.

9. Once again the data, restricted, it should be said, to direct costs of transportation, do not suggest that economic size itself produces high external transport costs, countries of different economic size in terms of GDP and volume of exports having similar and sometimes identical costs.

10. Part of the reason for this appears to be shared shipping lines, for instance along the West African coast, where ships call at successive ports independently of coastal country size, and perhaps a degree to bureaucratic 'averaging' of shipping charges by liner companies.

11. The far bigger differences in shipping costs are (a) between coastal and landlocked countries and (b) between goods of differing ratios of value to bulk, tending to dwarf other factors.

12. These direct cost estimates do show relatively high freight factors even for coastal countries, however, compared with, for example, the figures provided by McFarland for actual Europe-U.S. trade, i.e. between developed countries.

13. These direct costs will underestimate the full costs of shipment to small countries off the main shipping routes and especially to landlocked countries as a result of delays, losses, uncertainties, and other factors. These could seriously affect the capacity to export.

14. The freight factors should be increased to take account of import content, in the form of capital equipment as well as materials and components. Illustrative calculations show that this increases the freight factor significantly.

15. Further illustrative calculations show that freight factors of the orders of magnitude calculated would require substantial reductions in wage levels in the exporting countries if competitiveness is to be maintained through reductions in the wage bill.

16. Because capital is mobile, transport costs and difference in economic size will always favour location of industry in coastal over landlocked countries. Landlocked countries may be at the

end of a long queue from the point of view of internationally footloose industry.

17. The LDCs constitute a sub-group of countries suffering from compounded disadvantages of domestic market, high external transport costs, a poor resource base including a weak agricultural economy, producing a problem of labour absorption, and various 'vicious circle' effects. As a group these exhibited relatively weak growth performance during the 1970s and can expect to fall further behind even other developing countries in respect of the share of MVA in GDP and of GDP per capita.

18. On the export side the high freight factors revealed point to concentration on high value-to-bulk products and on the domestic side to low value-to-bulk products.

19. In respect of the latter, there should also be maximisation of local content. This would be in line with comparative advantage.

20. This may be related to an emphasis on appropriate products, which use local content, applied on a selective basis to avoid conflict with economies of scale. Such an emphasis would be in line with existing observed responses to comparative advantage.

21. Local energy sources, equally, need to be developed.

22. Maximisation of domestic value added and minimisation of transport cost content may be secured in some cases by importing

and distributing a basic input for local fabrication.

23. Production of appropriate goods can be linked to the promotion of small industry and informal sector manufacturing, which are made more economic by the combination of a restricted domestic market and high external transport costs. Such industry is capable of producing a wide range of the basic consumer goods consumed by the population.

24. The promotion of such activity should include the conservation and development of natural materials.

25. Dispersed rural industry can be combined by rural households with agricultural production as supplementary non-farm activities, helping to maintain rural household viability and reduce rural-urban migration. It also reduces the internal transport costs content of goods consumed, often also high in the LDCs under consideration.

26. A conventional import-substitution strategy biased towards the consumer goods consumed by the higher income groups is less viable in countries with even smaller domestic markets. Hence any import-substituting response should be directed towards consumers with low or average incomes.

27. Development strategy as a whole and for manufacturing specifically should be devised in the light of the individual circumstances of each country and to make the most of the opportunities actually offered.

28. This points among other things to a basic needs orientation in industrial and other development.

29. The kind of activities suggested under the preceding criteria would also be favourable to labour absorption compared with conventional import substitution.

30. Participation by migrant labour in a developing regional economy will need to be accepted where the national economy is weak, with discussion on distribution of benefits (e.g. freedom to remit foreign exchange) and safeguards to labour.

31. There is a need to promote the interdependence of urban and rural sectors in the economy, for instance by encouraging resource-based industries.

32. High external transport costs, limited foreign exchange, and a range of smaller enterprises point to the need for a capital goods industry in the form of some small-scale machine-making industry for smaller, often custom-built items, machine assembly, and machine-repair activities, also making parts and spares, and including equipment used in agriculture, the livestock industry and in transportation.

33. Labour intensity is an obvious criterion for choice of export-oriented industry in coastal countries, but expectation of general development here may be subject to a 'fallacy of composition', limiting the aggregate volume of output which can be established in the developing countries.

34. For landlocked countries especially, the labour intensity criterion will be valid for inward-oriented industry.
35. Manufacturing in the form of processing which reduces bulk may in effect carry negative external transport costs if the country has no alternative to the exports, processed or unprocessed, in question.
36. This will reduce not only the absolute transport costs for value added in resource-based manufacturing, but also cost relative to alternative manufacturing activity, especially in landlocked countries.
37. This provides a further strong argument for a resource-based industrial development strategy.
38. There may also be scope for resource-based manufacturing activity by the landlocked countries for export to other countries still further inland.
39. Small economic size suggests a need in respect of export manufacturing for specialisation. This may be justified, not on the basis of labour force size, except in the case of very small islands, but in terms of the need to concentrate the limited amount of savings available for investment and by the existence of industry-level external economies in production and marketing. The fact that many countries have made their initial breakthrough into export markets in just one or two industries is suggestive of the existence of industry-level externalities.

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Appendix 1

Table A.1: Products selected for calculation of freight factors
in U.S. imports by category of country

- 1 Fish, filleted.
- 2 Shrimps, peeled.
- 3 Cane or beet sugar, etc.
- 4 Cocoa beans.
- 5 Coffee, crude.
- 6 Tea.
- 7 Lumber, hardwood, rough, n.e.s.
- 8 Hardwood veneers, n.e.s.
- 9 Men and boys cotton knit shirts.
- 10 Men's cotton sports shirts.
- 11 Men's sweaters, wool knit.
- 12 Women's cotton dresses.
- 13 Women's other wool knit sweaters over \$5.
- 14 Women's man-made fibre blouses and skirts.
- 15 Natural rubber, dry form.
- 16 Screwdrivers.
- 17 Hand tools NSPF
- 18 Aluminium cookware ex cast.
- 19 Digital clock radios.
- 20 Electrical switches NSPF.
- 21 Transistors.
- 22 Footwear, leather uppers, for men.
- 23 Footwear, leather, cement soles for women.
- 24 Handbags or pocket books, women/girls.
- 25 Luggage, bags and cases, leather, except reptile.
- 26 Furniture of wood, NSPF.

Table A.2

	Freight factor (% excess) (cif over) (fob)	Mean of ratios of country freight factor for product to factor for the product as a whole	
<u>Adjacent countries</u>	0.2	0.185	
Canada	0.1	0.032	Wooden furniture
Mexico	0.2	0.347	Coffee, crude, peeled shrimp
<u>Large European countries/Japan</u>	5.8	0.975	
United Kingdom	11.2	0.930	
France	4.1	0.757	Coffee, crude
F.R. Germany	3.8	0.751	Coffee, crude
Italy	5.4	1.058	Footwear, leather, for women
Netherlands	6.0	0.742	
Spain	5.7	1.236	Footwear, leather, for women
Portugal	6.7	1.400	
Sweden	6.7	1.069	
Denmark	9.1	-	Wooden furniture
Foland	7.6	1.663	
Japan	3.7	0.969	
<u>Landlocked European countries</u>	6.6	1.003	
Switzerland	3.6	0.710	
Austria	9.1	1.120	
Hungary	7.9	1.590	
<u>European/Mediterranean islands</u>	8.4	1.131	
Iceland	7.8	1.026	
Cyprus	9.2	1.251	
Malta	6.4	1.310	
<u>Large Latin American countries</u>	5.0	1.251	
Brazil	5.6	1.363	Coffee, footwear for women, sugar, cocoa beans
Argentina	7.0	1.538	Sugar
Chile	15.3	1.556	
Uruguay	9.7	1.255	
Peru	5.6	1.301	
Colombia	3.6	0.864	Coffee
Ecuador	4.4	1.069	Coffee, sugar
<u>Landlocked Latin American (Paraguay)</u>	4.7	0.958	
<u>Small Central American/ Carribean countries</u>	4.5	6.938	
Honduras	1.4	0.915	Coffee, sugar
Nicaragua	4.7	0.758	Coffee, sugar
Costa Rica	5.1	0.999	Coffee, sugar
Bahamas	5.3	0.515	
Guyana	4.4	0.853	
Dominican Republic	4.8	0.774	Sugar, coffee, cocoa beans
Guatemala	4.2	0.863	Coffee, sugar

Salvador	4.6	0.944	Coffee
Panama	5.7	1.024	Sugar
Haiti	4.4	0.942	
Trinidad	7.6	1.624	
Jamaica	9.1	1.219	Sugar
<u>East Asian NICs/potential NICs</u>	<u>7.3</u>	<u>1.145</u>	
Singapore	5.9	1.084	Natural rubber
Hong Kong	6.0	1.062	
Korea, Republic of	5.5	1.019	?
Taiwan, Province of China	8.7	1.021	
Phillipines	7.9	1.334	Sugar
Thailand	7.4	1.134	Rubber, sugar
Malaysia	6.6	1.081	Rubber
Indonesia	8.0	1.539	Rubber, coffee
<u>Low Income Asian countries</u>	<u>9.7</u>	<u>1.667</u>	
China	11.9	1.335	
India	8.2	1.906	Peeled shrimp
Bangladesh	16.2	1.391	
Pakistan	13.9	2.160	
Sri Lanka	13.0	1.561	
Papua New Guinea	4.9	1.101	
<u>Australia, N. Zealand, R.S. Africa</u>	<u>7.3</u>	<u>1.445</u>	
Australia	7.0	1.273	Sugar
N. Zealand	13.9	1.401	-
Republic of South Africa	7.5	1.612	Sugar
<u>Larger African countries</u>	<u>5.9</u>	<u>1.237</u>	
Nigeria	4.0	1.621	Cocoa beans
Zaire	5.6	1.043	
Kenya	10.3	1.143	
<u>Small African countries, not</u>			
<u>landlocked</u>	<u>6.0</u>	<u>1.338</u>	
Cameroon	5.5	1.189	
Senegal	5.5	1.157	
Sierra Leone	5.5	1.593	
Ivory Coast	5.1	1.269	Cocoa beans
Congo-Brazzaville	17.8	2.479	
Mozambique	7.8	0.932	Sugar
Ghana	4.4	1.012	Cocoa beans
Liberia	7.4	1.159	
Guinea	2.5	0.641	
Ethiopia	4.9	1.260	
Tanzania	5.9	1.170	
Mauritius	11.5	1.894	Sugar
<u>Small African countries,</u>			
<u>landlocked</u>	<u>5.3</u>	<u>1.137</u>	
Swaziland	5.9	0.950	Sugar
Zimbabwe	?	1.367	
Malawi	10.2	1.039	
Burundi	5.1	1.288	
Uganda	4.5	1.140	

Table A.3(a): Estimated total distribution costs, 1 freight tonne of cargo, Birmingham - Dar es Salaam - Moshi/Mwanza/Mbeya

	Enamelware		Leather Footwear		Cotton Clothing		Machinery	
	£	%	£	%	£	%	£	%
Primary packed, ex works Birmingham	1150	100	2430	100	3000	100	4500	100
Packing into strong wooden crates	69		69		69		69	
Collection and delivery to Liverpool	24.60		24.60		24.60		24.60	
Port charges	20		20		20		20	
f.o.b. Liverpool	1263.60	109.9	2543.60	104.7	3113.60	103.8	4613.60	102.5
Ocean freight, net of currency/bunker adjustment factors & including loading	96.16	(8.4)	128.24	(5.3)	83.36	(2.8)	15.42	(2.6)
C & F Dsm.	1359.79		2671.84		3196.96		4729.02	
Wharfage @ 1.5% of C.I.F. Dar	20.62)		40.50)		48.48)		71.72)	
Port costs	11)	(3.6)	11)	(2.5)	11)	(2.3)	11)	(2.1)
Del'y to store, DSM	10)		10)		10)		10)	
Insurance @ 0.7775% cif Dar es Salaam store	11.99 (1.0)		23.38 (1.0)		27.94 (0.9)		41.24 (0.9)	
	1413.40	122.9	2756.74	113.4	3294.38	109.8	4862.98	108.0
Transport to Moshi	41.40)		41.40)		41.40)		41.40)	
Del'y to store Moshi	5)	(4.1)	5)	(1.9)	5)	(1.6)	5)	(1.0)
Additional insurance to Moshi	0.40)		0.40)		0.40)		0.40)	
cif Moshi store	1460.20	127.0	2803.54	115.4	3341.18	111.4	4909.78	109.1
Transport to Mwanza	61.83)		61.83)		61.83)		61.83)	
Del'y to store, Mza	5)	(5.9)	5)	(2.8)	5)	(2.2)	5)	(1.5)
Additional insurance to Mwanza	0.57)		0.57)		0.57)		0.57)	
cif Mwanza store	1480.80	128.8	2824.14	116.2	3361.78	112.1	4930.38	110.0
Transport to Mbeya	99)		99)		99)		99)	
Del'y to store, Mba	5)	(9.1)	5)	(4.3)	5)	(3.5)	5)	(2.3)
Additional insurance to Mbeya	0.89)		0.89)		0.89)		0.89)	
cif Mbeya store	1518.29	132.0	2861.63	117.8	3399.27	113.3	4967.87	110.4

Table A.3(b): Estimated total distribution costs, 1 freight tonne of cargo, Birmingham-Banjul

	Enamelware		Leather Footwear		Cotton Clothing		Machinery	
	£	%	£	%	£	%		
Primary packed, ex works	1150	100	2430	100	3000	100	4500	100
Packing into strong wooden crates	69		69		69		69	
Collection & delivery to Liverpool	24.60		24.60		24.60		24.60	
Port charges	20		20		20		20	
f.o.b. Liverpool	1263.60	109.9	2543.60	104.7	3113.60	103.8	4613.60	102.5
Ocean freight, net of currency/bunker adjustment factors & including loading	66.80	(5.8)	87.59	(3.6)	87.59	(2.9)	81.65	(1.8)
C & F Banjul	1330.40		2631.19		3201.19		4695.25	
Landing costs ¹	3.63)		3.63)		3.63)		3.63)	
Wharfage (est)	20)	(2.9)	20)	(1.4)	20)	(1.1)	20)	(0.7)
Oncarriage to Banjul store(est)	10)		10)		10)		10)	
Insurance @ 1.2775%	19.17	(1.7)	37.45	(1.5)	45.46	(1.5)	66.45	(1.5)
c.i.f. Banjul	1383.20	120.3	2702.27	111.2	3280.28	109.3	4795.33	106.6

¹Could be included in C&F Banjul, but here listed alongside, wharfage etc.

Table A.3(c): Estimated total distribution costs, 1 freight tonne of cargo, Birmingham - Accra/Tema

	Enamelware		Leather Footwear		Cotton Clothing		Machinery	
	£	%	£	%	£	%	£	%
Primary packed, ex works	1150	100	2430	100	3000	100	4500	100
Packing into strong wooden crates	69		69		69		69	
Collection and delivery to Liverpool	24.60		24.60		24.60		24.60	
Port charges	20		20		20		20	
f.o.b. Liverpool	1263.60	109.9	2543.60	104.7	3113.60	103.8	4613.60	102.5
Ocean freight, net of currency/bunker adjustment factors & including loading	84.56	(7.4)	97.74	(4.0)	105.34	(3.5)	97.74	(2.2)
Handling costs	1.10		1.10		1.10		1.10	
C & F Tema Wharfage	1349.26		2642.44		3200.04		4712.44	
Clearance/oncarrriage to Accra store	78	(6.8)	78	(3.2)	78	(3.2)	78	(1.7)
C & F Accra Insurance @ 1.25%	1427.26		2720.44		3278.04		4790.44	
	19.62	(1.7)	37.41	(1.5)	45.07	(1.5)	65.87	(1.5)
c.i.f. Accra store	1446.88	125.8	2757.85	113.5	3323.11	110.8	4856.31	107.9

Table A.3(d): Estimated total distribution costs, 1 freight tonne of cargo, Birmingham - Lagos

	Enamelware		Leather Footwear		Cotton Clothing		Machinery	
	£	%	£	%	£	%	£	%
Primary packed, ex works	1150	100	2430	100	3000	100	4500	100
Packing into strong wooden crates	69		69		69		69	
Collection and delivery to Liverpool	24.60		24.60		24.60		24.60	
Port charges	20		20		20		20	
f.o.b. Liverpool	1263.60	109.9	2543.60	104.7	3113.60	103.8	4613.60	102.5
Ocean freight, net of currency/bunker adjustment factors & including loading	75.50	(0.6)	96.00	(4.0)	96.00	(3.2)	87.59	(1.9)
Landing costs	25-----)		25-----)		25-----)		25-----)	
))))	
	)	(4.3)	)	(2.1)	)	(1.7)	)	(1.1)
C & F Lagos port	1364.10)		2664.60)		3234.60)		4726.19)	
Clearance/oncarr- iage to Lagos store (est)	25-----)		25-----)		25-----)		25-----)	
Insurance @ 1.2775%	19.52	(1.7)	37.80	(1.6)	45.81	(1.5)	66.77	(1.5)
c.i.f. Lagos store	1408.62	122.5	2727.40	112.2	3305.41	110.2	4817.96	107.1

Table A.3(e): Estimated total distribution costs, 1 freight tonne of cargo, Birmingham - Ouagadougou via Abidjan

	Enamelware		Leather Footwear		Cotton Clothing		Machinery	
	£	%	£	%	£	%	£	%
Primary packed, ex works	1150	100	2430	100	3000	100	4500	100
Packing into strong wooden crates	69		69		69		69	
Collection and delivery to Liverpool	24.60		24.60		24.60		24.60	
Port charges	20		20		20		20	
f.o.b. Liverpool	1263.60	109.9	2543.60	104.7	3113.60	103.8	4613.60	102.5
Ocean freight, net of currency/bunker adjustment factors & including loading	111.17	(9.7)	111.17	(4.6)	111.17	(3.7)	111.17	(2.5)
C & F Abidjan Landing costs (est)	1374.77		2654.77		3224.77		4724.77	
Insurance to Abidjan @ 1.2775%	20		20		20		20	
	19.60		37.59		45.60		66.68	
c.i.f. Abidjan	1414.37	123.0	2712.36	111.6	3290.37	109.7	4811.45	106.9
Remaining clearance and oncarriage to Ouagadougou store	146.75)		146.75)		146.75)		146.75)	
Additional insurance to Ouagadougou @ 1.2775%	) (12.9)		) (6.1)		) (5.0)		) (3.3)	
))))	
	2.06)		2.06)		2.06)		2.06)	
c.i.f. Ouagadougou store	1563.12	135.9	2861.17	117.7	3439.18	114.6	4960.26	110.2
Total insurance	21.66	(1.9)	39.65	(1.6)	47.66	(1.6)	68.74	(1.5)

Table A.3(f): Estimated total distribution costs, 1 freight tonne of cargo, Birmingham - Bujumbura, via Mombasa

	Enamelware		Leather Footwear		Cotton Clothing		Machinery	
	£	%	£	%	£	%	£	%
Primary packed, ex works	1150	100	2430	100	3000	100	4500	100
Packing into strong wooden crates	69		69		69		69	
Collection and delivery to Liverpool	24.60		24.60		24.60		24.60	
Port charges	20		20		20		20	
f.o.b. Liverpool	1263.60	109.9	2543.60	104.7	3113.60	103.8	4613.60	102.5
Ocean freight, net of currency/bunker adjustment factors & including loading	96.19	(8.4)	128.24	(5.3)	83.36	(2.8)	115.42	(2.6)
Total	1359.79		2671.84		3196.96		4729.03	
Wharfage @ 2.6% c.i.f. Mombasa ¹	35.74	(4.1)	70.23	(3.3)	84.04	(3.2)	124.31	(3.0)
Port costs	11	)	11	)	11	)	11)
C & F Mombasa	1406.53		2753.07		3292.00		4864.34	
Insurance to Mombasa @ 1.275%	19.73		38.61		46.17		68.22	
c.i.f. Mombasa	1426.26	124.0	2791.68	114.9	3338.17	111.3	4932.56	109.6
Additional clearance and oncarriage to Bujumbura store	187.40	(16.3)	187.40	(7.7)	187.40	(6.2)	187.40	(4.2)
Additional insurance to Bujumbura @ 1.275%	2.63		2.63		2.63		2.63	
c.i.f. Bujumbura store	1616.29	140.5	2981.71	122.7	3528.20	117.6	5122.59	113.8
Total insurance	22.36	(1.9)	41.24	(1.7)	48.80	(1.6)	70.85	(1.6)

Table A.3(g): Estimated total distribution costs, 1 freight tonne of cargo, Birmingham - Blantyre, via Durban

	Enamelware		Leather Footwear		Cotton Clothing		Machinery	
	£	%	£	%	£	%	£	%
Primary packed, ex works	1150	100	2430	100	3000	100	4500	100
Packing into strong wooden crates	69		69		69		69	
Collection and delivery to Liverpool	24.60		24.60		24.60		24.60	
Port charges	20		20		20		20	
f.o.b. Liverpool	1263.60	109.9	2543.60	104.7	3113.60	103.8	4613.60	102.5
Ocean freight, net of currency/bunker adjustment factors & including loading	122.86	(10.7)	104.29	(4.3)	82.86	(2.8)	89.29	(2.0)
C & F Durban	1386.46		2647.89		3196.46		4702.89	
Wharfage @ 1.8% of f.o.b. value	22.74		45.78		56.04		83.04	
Insurance to Durban @ 1.0275%	15.93		30.45		36.76		54.09	
c.i.f. Durban	1425.13	123.9	2724.12	112.1	3289.26	109.6	4853.05	107.8
clearance and on-carriage to Blantyre store	101	)	124	)	154	)	145)
	)	(8.9)	)	(5.2)	)	(5.2)	)	(3.3)
Additional insurance to Blantyre @ 1.0275%	1.14	)	1.40	)	1.74	)	1.64)
c.i.f. Blantyre store	1527.27	132.8	2849.52	117.3	3445.00	114.8	4986.66	110.8
Total insurance	17.07	(1.5)	31.85	(1.3)	38.50	(1.3)	55.73	(1.2)

Notes

1. The data are based on quotations made by shippers to Crown Agents and may be somewhat more favourable than general market rates for reasons of goodwill, but not significantly.
2. Freight costs are volatile due to the competitive nature of cargo movement to East and West Africa and fluctuations in fuel costs, currency values or sudden government-imposed changes in port charges. These quotations were obtained in November, 1985.
3. Items included among the charges and their description vary between shippers and between destinations, and the overall quotation to destination is more reliable than its component parts.
4. Wharfage is a particularly loose term and can include other costs (e.g. agency, indirect taxes, etc.). It may also be included in clearance costs and not consequently shown as a percentage of the value of the goods (as for Ghana here). It may be charged either on the f.o.b. value (as here for Malawi) or c.i.f. port of discharge value (as here for Tanzania). In Tanzania a nominal insurance rate of 1/2 - 1 percent is calculated before estimating wharfage.

The usual calculation is to take the C plus F value, uplifted by 10 percent, before calculating insurance at, say, 1 percent, adding this to the C & F value to obtain a c.i.f. value to which a 1.5 percent wharfage may be applied. The insurance element here is unrelated to the actual marine insurance payable

on the goods.

5. Marine insurances rates are governed by market conditions, nature of cargo, destination, special risks involved, the assured's insurance claims record, type of cover required, and method of shipment, and may vary from those obtained in these quotations.

6. Rates differ as between containerised, as quoted here, and non-containerised cargo. Small and remote countries are quite likely to have a higher proportion of non-containerised export and import cargo.

7. It is assumed throughout that a full containerised freight tonne is shipped, except in the case of transport between Dar es Salaam and internal Tanzanian destinations, where transportation charges for minimum shipments of 30 tonnes have been increased by 50 per cent to allow for smaller consignments.

8. There are differences in rates between conference line shippers used here and more competitive non-conference agents.

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QUESTIONNAIRE

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