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LIABILITY AND INSURANCE

Value/weight ratios for multimodal cargoes

Note by the UNCTAD secretariat

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INTRODUCTION

1. At its fifty-first meeting, the Intergovernmental Preparatory Group on a Convention on International Multimodal Transport requested the UNCTAD secretariat to prepare, inter alia, information on available data concerning value/weight ratios for different cargoes carried in multimodal transport. 1/ This note has been prepared pursuant to that request.

2. The aim has been to determine, as far as possible, the value of commodities that may be carried by multimodal transport, in order to facilitate consideration by the Group of levels of monetary limitations of liability under multimodal transport operations.

3. Monetary limitations of liability could be considered in relation to numerous different units, such as packages, kilogrammes of net weight, kilogrammes of gross weight, freight units, pallet-loads, containers, or various other shipping units. However the only one of these units in respect of which reasonably comprehensive and reliable statistical data is available is the kilogramme of net weight. Consequently if other units were to be adopted as the basis of liability limitations, the monetary values would have to be calculated approximately rather than based upon statistical data.

4. In this situation efforts have been concentrated upon producing statistical data on values per kilogramme of net weight, either to serve as a basis for limitation provisions based on net weight, or to serve as a basis for approximate calculation of the values of other units which may be selected.

5. The determination of value/weight ratios for cargoes moving by multimodal transport has involved working from sources relating to total worldwide trade and eliminating those cargoes considered unlikely to be transported by multimodal methods. Within the present context it has been assumed that most cargoes transported multimodally are transported in containers, and consequently the tabulations relate cargo which is either containerized or believed to be containerizable. Naturally the elimination and retention of different cargoes from the basic sources has involved a certain amount of judgement.

I. APPROACH

6. The development of value/weight data involved three basic steps. First was the need to obtain comprehensive information on world wide trade. The United Nations' Yearbook of International Trade Statistics, 1975 and supporting publications (Commodity Trade Statistics, Statistical Papers, Series D) provided the initial data. This information includes: (1) annual international commodity trade figures by the Standard International Trade Classification (SITC, revised) code; (2) origin/destination countries; (3) quantities; and (4) volumes.

1/ Cf. the report of the Intergovernmental Preparatory Group on its fifth session (TD/B/731 - TD/B/AC.15/48) para. 98.

7. As the mode of transport is not contained in this basic data, the second step was to exclude bulk commodities and other cargoes that are not ordinarily carried in multimodal transport. These include such items as bulk raw materials, semi-manufacturers and products usually moving in large parcels. After excluding these non-containerized cargoes, the remaining commodities were generally considered suitable for multimodal transport even though they may not be moving in containers at this point in time. It is necessary to note that the commodities evaluated are potential volumes and not actual tonnages moving in today's world-wide container trades.

8. The third step was the computation of unit values and a statistical analysis. This was achieved by compiling the quantity and f.o.b. export value for each commodity by reporting country, and dividing the total value (US dollars) of each commodity by the total quantity (metric tons) for each commodity. The result is a range of weight/values by commodity and by country which are in turn aggregated into a world total. The mathematical calculations are the conversion of the metric ton values into dollars per kilo, assigning the resultants to value categories (e.g. $/kilo .0-.49, .50-.99) by commodity, and to sum the total tons within a given value range. The final computer manipulation determined the percentage distribution of the world containerizable tonnage by value ranges, and calculated the weighted average value for all commodities.

II. LIMITATION OF THE DATA

9. Although the survey covers 99 countries and includes almost a third of the 1975 World trade (by value), the data is subject to limitations. Specifically, not all countries are included in the series D, and even for those countries included individual commodities are sometimes excluded because of differences in reporting formats, e.g. omissions of values and/or quantities reported in units other than metric tons.

10. In addition, the basic data has a downward bias because a wider range of commodities, with lower values, are used than is actually found in existing container trades. The reason for including these commodities and countries is that they have the potential for entering into multimodal transport systems as containerization expands to developing nations and wider trading patterns.

III. STATISTICAL SUMMARY AND CONCLUSIONS

11. The results of the secretariat's review of available data indicate that 83 per cent of the potential containerized cargo for 1975 have value of $US 1.50/net kilo or less and the weighted average for all containerized commodities is $US 1.12/net kilo. Details are noted on table 1.

12. The range of individual values is widely dispersed as values range from $US .02/net kilo (non-alcoholic beverages) to over $US 30/net kilo (office machines) but the most frequent values are concentrated towards the lower portion of the range, e.g. under $1.50/net kilo.

13. Future distribution of values is expected to remain oriented towards the lower ranges as containerization diversifies into the trade of developing countries whose exports are generally low value commodities, while in developed countries containerization will continue to expand its market share of lower value semi-manufacture goods.

Table 1

Summary of unit value distribution of containerizable cargo in world exports, 1975

(at SITC 3-digit level)

Value range US dollars per net kilogramme	Tons	Percentage of the total	Cumulative percentage
$ 0.00 - 0.49	129 512 973	48.8	48.8
$ 0.50 - 0.99	57 439 430	21.6	70.4
$ 1.00 - 1.49	33 646 440	12.7	83.1
$ 1.50 - 1.99	6 204 339	2.3	85.4
$ 2.00 - 2.49	8 829 439	3.3	88.7
$ 2.50 - 2.99	9 120 437	3.4	92.1
$ 3.00 - 3.49	3 542 393	1.3	93.4
$ 3.50 - 3.99	3 808 442	1.4	94.8
$ 4.00 - 4.49	277 915	0.1	94.9
$ 4.50 - 4.99	607 097	0.2	95.1
$ 5.00 - 5.49	5 309 397	2.0	97.1
$ 5.50 - 5.99	1 663 215	0.6	97.7
$ 6.00 - 6.99	1 602 803	0.6	98.3
$ 7.00 - 7.99	2 112 961	0.8	99.1
$ 8.00 - 8.99	228 554	0.1	99.2
$ 9.00 and over	1 577 450	0.6	99.8
Total	265 483 293	100.0	100.0

Source: United Nations Statistical Office, Trade Data Tapes, Series D.