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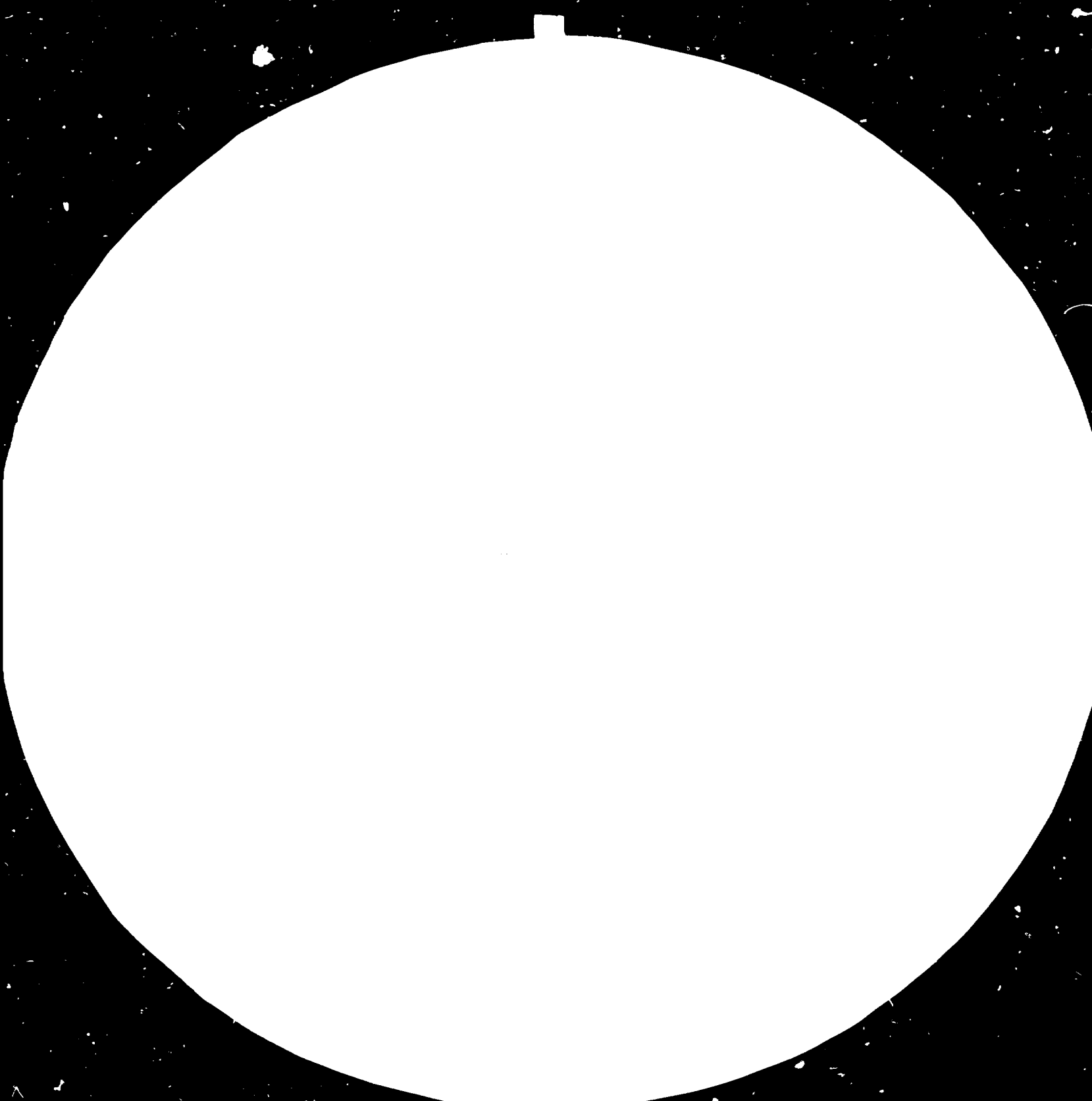
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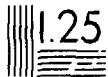
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TARIFF AND NON-TARIFF OBSTACLES TO INTERNATIONAL

TRADE IN BUILDING MATERIALS

Report by the UNCTAD secretariat
prepared with the assistance of
Andrzej Olechowski

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1984

INTRODUCTION

1. International trade in building materials accounts for a significant proportion of both world production of building materials and total world trade. For this reason its development and the problems associated with it should be considered when discussing the current situation in the building materials sector. This study was prepared to facilitate such a discussion and its objective is to provide empirical evidence on tariff and non-tariff obstacles to international trade in this sector. Consequently, after a review of the salient features of international trade flows in chapter I, tariffs are discussed in chapter II and non-tariff obstacles in chapter III. In Chapter IV an attempt is made to provide tentative evaluation of the effects of trade liberalization, and finally, in Chapter V, the summary and conclusions are followed by some suggestions for international action.

I. TRADE

2. It is a difficult task to estimate the value of international trade in the sector of building materials. This is because this category includes several types of products which for statistical purposes are classified in disaggregated 4 and 5 digit SITC groups (see Annex, table A-1). While nowadays a considerable amount of data on international trade is available, detailed statistics at such low levels of aggregation are still very incomplete, especially in respect of the socialist countries of Eastern Europe and Asia as well as for a large number of developing countries. For this reason, therefore, table 1 below - showing flows of trade during the 1970-1980 period - cannot contain precise data on trade among the socialist countries and of necessity, several figures shown are only estimates, based on the statistics available.

3. Table 1 shows that the market-economy country imports of building materials totalled over \$US 26 billion in 1970 and increased in 1980 to over 140 billion; they accounted for 9.3 per cent of the total exports of these countries in 1970 and 7.9 per cent in 1980. This drop in relative importance was due to the increase in the

importance of fuels, as the share of building materials in the total of industrial exports (i.e. exports other than food and fuel) remained stable throughout the decade of the 1970s (12.2 percent in 1970 and 12.1 per cent in 1980). Total (market-economy country) exports expanded between 1970 and 1980 at the rate of 18.7 per cent, while corresponding imports grew at the rate of 18.3 per cent. Both, exports and imports of developing countries grew faster (21.4 and 23.3 per cent respectively) than those of developed countries (18.3 and 16.4 per cent).

Table 1
Market-economy country trade in building materials
for the period 1970-1980

(\$US billion)

Origin	Destination	Year	Developed market-economy countries	Developing countries	Socialist countries of EE and Asia
Developed market-economy countries		1970	16 982	4 734	1 277
		1975	36 417	20 377	6 667
		1980	76 602	38 203	8 409
Developing countries		1970	1 882	800	162
		1975	3 258	2 270	480
		1980	10 385	8 450	950
Socialist countries of Eastern Europe and Asia		1970	1 047	570	n.a.
		1975	1 926	1 560	n.a.
		1980	3 881	2 720	n.a.

Source : Estimates based on data from the UNSO trade tapes.

4. Developed market-economy countries are the dominant exporters of building materials and they accounted for 89 per cent of world exports in 1970 and 86.2 per cent in 1980. While the share of these countries in imports is very large, it is nonetheless much smaller than in exports, and is decreasing - from 76.5 per cent in 1970 to 64.8 per cent in 1980. During the decade of the 1970s, developing countries emerged as major importers of building materials. Due to the very high annual rate of growth (at 23.3 per cent - higher than that for developed country imports, at

16.4 per cent, and that for total industrial imports of developing countries, 12.8 per cent), they increased their share by almost 12 percentage points. A significant consequence of this rapid expansion was a large and increasing negative balance of trade. In 1970, developing countries' net imports of building materials amounted to \$US 3.3 billion; in 1975 to \$18.2 billion, in 1980 to \$29.6 billion and in 1982 to about 35 billion: building materials were responsible for a considerable outflow of foreign exchange from developing countries.

5. Another important development in the international trade of these goods is the very fast expansion of trade among the developing countries. Between 1970 and 1980 this trade increased almost eleven-fold, i.e., growing at an average annual rate of 26.6 per cent. This rate is over one percentage point higher than that recorded for the total intra-developing country trade in industrial goods, and 3.4 percentage points higher than the annual growth rate of developing country imports of building materials from the developed market-economy countries. Growth was particularly high during the 1975-1980 period (30.1 per cent) when the rate considerably exceeded that for imports from the developed countries. Since the rate of growth of developing country exports in other directions was also very fast, it indicates a considerable increase in developing countries' capacity to produce and export building materials. Thanks to this expansion, the share of developing country products in total developing country imports of building materials increased from 13.1 per cent in 1970 to 17.1 per cent in 1980.

6. A third important characteristic of the trade (in addition to growth and geographical distribution), is its commodity structure. For the purpose of this study building materials were classified into six product groups: articles of wood, mineral products, glass, paint, metal products and equipment (for details, see Annex table A-1). Three of these groups together accounted for as much as 91 per cent, namely: metal products- 45.4 per cent, equipment - 23.6 percent and articles of wood - 21.8 per cent. A fourth group was that of mineral products (7.5 per cent), while paints and glass accounted for only a very small proportion of the total trade.

7. The high and predominant share of metal products warrants a few comments particularly in view of the complex state of affairs in today's world metal trade, and in particular in the steel industry. The steel industry is characterized by three significant features. First, by its widespread production in about 70 countries. However, the world steel industry is dominated by four strong economies (the USSR the EEC, the United States and Japan), which together account for about 70 per cent of world production and about 65 per cent of the world market.¹ Secondly, the steel industry of the developed countries is characterized by excess capacity, while a continued expansion of capacity is seen in developing countries. Production in the developed market-economy countries dropped from 99 per cent of effective capacity in 1973 to 79 per cent in 1975, and 76 per cent in 1977. In contrast, the capacity of developing countries expanded by some 50 per cent since 1974. Thirdly, a large proportion of the steel industry is owned by the State. It is estimated that the proportion of world steel production accounted for by state-owned enterprises approaches 55 per cent and is growing. Consequently the State (both in developed and developing countries) is frequently influencing national steel production and regulating its foreign trade in steel.

8. In addition, building materials have also been classified into three product categories and a distinction was made between resource, labour- and capital-intensive products.² It is argued frequently that *"the chief gains which accrue from exports of "unskilled" commodities are employment and the profits that accrue therefrom. The chief gains from the exports of skilled and highly capitalized commodities are the realization of economies of scale (where they exist) and the learning associated with producing at a more optimal scale; a faster growth rate of output of the exports in question, which sets in motion a learning process associated with the introduction of new investment goods or the stretching of existing capacity, etc.; and learning associated with greater exposure to international com-*

¹ All data in this paragraph are drawn from B. Kneeling, "The World Steel Industry", *The Economist Intelligence Unit Special Report No.128*, London, 1982.

² See Annex, table A-1. Products were classified into these three categories on the basis of UNIDO, *World Industry in 1980* ID/269, New York, 1981, pp.63-108.

petition".³ Expressed in simple terms, the exports of skilled-labour- and capital-intensive products generate more extensive and "complete" benefits for the economy of the exporting country. Building materials are, to a large extent, capital-intensive (47 per cent of total world exports) and labour-intensive⁴ (25.1 per cent). Resource-based products account for less than one-third of total world trade.

9. However, as table 2 shows, resource-based products account for as much as 77.5 per cent of the developing countries' exports to the developed market-economy countries, with capital-intensive goods accounting for only 20 per cent. The relatively low proportion of capital-intensive exports only to a certain degree indicates the smaller production capacity in developing countries, since the commodity structure of their exports to other markets is strikingly different. For example, metal products, which account for only 16.7 per cent in the developing country exports to developed market-economy countries, have a share of 29.6 per cent in intra-developing country trade and 37.7 per cent in the exports to socialist countries. Similarly, equipment accounts for 6.9 per cent, 15.1 per cent and 25.7 per cent of these respective trade flows. In contrast, the share of articles of wood in the exports to socialist countries is only 18 per cent, whereas in the intra-developing country trade it is 41.4 per cent, and as much as 74.4 per cent in exports to developed market-economy countries. As a consequence, the share of resource-based products increases from 29.1 per cent in exports to the socialist countries to - as already mentioned - the high 74.4 per cent in the exports to developed market-economy countries. To a large extent, an explanation for these differences can be found in the protectionist import policies of many developed market-economy countries, which protect their domestic capital- and labour-intensive industries, rendering difficult an expansion of developing country exports. Before investigating this problem in more detail, however, let us conclude for the present that the com-

³ A. Amsden, Profit Effects, Learning Effects and the Direction of Trade, World Bank Conference "Does the Direction of Trade Matter", Brussels, Feb. 28 - March 2, 1983, p.13-14.

⁴ It was not possible to distinguish between skilled and unskilled labour in this exercise.

modity structure of developing country intra-trade and their exports to the socialist countries indicates a potential for an increase in the share of processed, labour- and capital-intensive goods in their exports to developed market-economy countries and therefore for more extensive benefits from the exports of building materials.

Table 2
Commodity structure of selected trade flows of
building materials, 1980

(percentage)

Product Group	Developed market-economy country exports to :		Developing countries exports to :		
	Other developed market-economy countries	Developing countries	Developed market-economy countries	Other developing countries	Socialist countries
Wood articles	21.1	4.7	74.4	41.4	18.0
Mineral products	7.5	7.5	3.4	13.2	6.1
Glass	1.4	0.6	0.0	0.3	0.0
Paints	3.5	3.2	0.1	1.9	14.4
Metal products	47.1	53.6	16.7	29.6	37.7
Equipment	22.1	32.9	6.9	15.1	25.7
Total	100.0	100.0	100.0	100.0	100.0
Resource-based	29.0	8.0	77.5	46.3	29.1
Labour-intensive	23.0	37.5	2.6	17.8	16.6
Capital-intensiv	48.0	54.5	19.9	35.9	54.3

Source: Estimates based on data from the UNSO trade tapes.

II. TARIFFS

10. While international trade faces a variety of barriers, the type of restraint most often encountered is the import tariff. Stated in simple terms, a tariff is a tax placed on a product as it enters a country, calculated either as a monetary amount in relation to the volume of goods entered, or as a percentage of the value of the goods as assessed at the point of entry. While it would appear to be a simple matter to compare levels of tariff protection in various countries and for various products, such comparisons are in fact hindered by a number of practical problems, one of them being the choice of averaging procedure.

11. Two techniques are most frequently used in this respect. The first is a simple average of tariff rates over the relevant group of products. This method has the advantage of being quite easy to compute but it rests on the assumption that all items in the group are of equal importance. The second method is an average of tariff rates weighted by the values of imports for each product in the group. Such average, however, is known to be downward biased since import values will be inversely related to tariff levels.

12. The first technique was employed to obtain tariff averages shown in table 3. Due to a lack of detailed tariff line data, both on duties and on trade flows, only simple (unweighted) averages could be computed for developing and socialist countries,⁵ and only for large product groups covering, *inter alia* building materials. For the purpose of comparison, similar calculations were made for developed market-economy countries, even though more detailed data are available for these countries. Thus, the data in table 3 provides a general idea of the magnitude of nominal tariff protection facing international trade in building materials.

13. The level of this protection seems to be quite significant. Average tariff rates range from 4.5 to 7.8 per cent in the developed market-economy countries; from 9.7 to 15.6 per cent in the socialist countries of Eastern Europe and from 19.5 to 36.9 per cent in developing countries. The highest duties are assessed on

imported glass and the lowest are applied to mineral products. While the tariffs applied in the developed market-economy countries seem to escalate with the level of fabrication (duties on wood and mineral products are lower than those on other products which are processed and transformed) this phenomenon does not seem to be present in the tariff profiles in the other groups of countries.

Table 3

The nominal level of tariff protection by large product groups covering building materials

	Developed market-economy countries	Developing countries	Socialist countries of Eastern Europe
Wood	4.5	31.9	14.4
Crude minerals and products thereof	5.0	25.0	9.7
Glass	7.4	36.9	15.6
Chemicals	6.9	19.5	10.5
Metal manufactures	6.3	25.4	10.8
Machinery	7.8	23.9	14.9

Source: UNCTAD Data Base on Trade Measures.

14. Since the detailed, tariff-line data on imports are available only for selected developed market-economies, the *weighted* tariff rates could only have been computed for 10 major developed markets. As can be seen from table 4⁶ they are rather low and the overall average ranges from 1.6 per cent in the case of imports from developing countries to 3.2 per cent in the case of intra-developed market-economy country trade. This difference is due to two reasons. Firstly the two groups of products - namely metal manufactures and equipment, which account for 70 per cent of developed market-economy country imports from other developed market-economy countries, face relatively high duties (see table 3), while wood - which accounts for 74 per cent of developed market-economy country imports from developing coun-

⁵ 26 developing countries, 4 socialist countries of Eastern Europe and 21 developed market-economy countries were included in this exercise.

⁶ The weighted tariff rates shown in this table combine MFN as well as preferential rates. In order to calculate them, the following procedure was applied. First, a tariff average for each tariff line was calculated, using actual trade weights together with the import duty facing the individual exporting countries (i.e., MFN, GSP, special preferences). Second, the average rate for each tariff line was aggregated to the product level, using weights based on the tariff line's importance in the total imports of a product group.

tries, is subject to low tariffs. Secondly, developing countries benefit from special preferences and in particular from the Generalized System of Preferences (GSP) extended to them by the importing countries included in table 4.

Table 4

Weighted average post-Tokyo Round tariff rates facing the imports of building materials in 10 major developed market-economy countries

(by product group)

Product groups	Imports from :		
	Developed market-economy countries	Developing countries	Socialist countries of Eastern Europe
Articles of wood	2.2	0.8	1.4
Mineral products	3.5	3.5	1.9
Glass	1.6	6.2	5.4
Paints	2.4	6.4	8.7
Metal products	2.7	4.1	4.2
Equipment	3.2	4.6	4.4
Total	1.6	3.2	2.3
Resource-based	1.4	1.1	1.5
Labour-intensive	5.3	3.2	4.6
Capital-intensive	2.2	4.2	4.1

Source: Annex, table A-1.

Table 5

An impact of the GSP reductions on the average tariff rate facing imports of building materials from developing countries to 10 major developed market-economy countries.

Importing market	Average post-Tokyo Round tariff rate	
	Including GSP	Not including GSP
EEC	1.3	2.1
Austria	2.0	2.9
Japan	0.4	0.5
Finland	0.8	1.9
Canada	5.9	6.4
Australia	7.9	10.3
United States of America	4.3	5.1
Switzerland	0.2	1.7
Norway	0.0	2.9
Sweden	0.0	1.8
Total	1.6	2.2

Source: UNCTAD Data Base on Trade Measures

15. As table 5 informs us, due to the GSP, the average weighted rate facing developing countries is reduced by 0.6 per cent. In other words, if the GSP was not applied, the average tariff on imports from developing countries would have been 2.2 per cent.

16. Another important conclusion which can be drawn from estimates in table 4 is that the highest duties face imports which exert the strongest competitive pressures on domestic producers in the developed market-economy countries. Imports of labour-intensive products from developing and socialist countries face rates of 5.3 per cent and 4.6 per cent respectively, and the imports of capital-intensive manufactures from developed market-economy and socialist countries face rates of 4.2 and 4.1 per cent respectively. While labour-intensive building materials account only for a small percentage of current developing country exports to the developed market-economy countries, they have - as it was already noted - considerable growth potential. The high duties facing these products should therefore be of concern, since they adversely affect their expansion.

17. Finally, it should be noted that the GSP preferences of individual developed market-economy countries have a varying impact on average tariff duties facing developing countries. While in two countries - Norway and Sweden - they provide for duty-free treatment, in Japan and Canada they allow only very small reductions. As it is clearly indicated by the data in table 5, there is still a lot of scope for improvements in the GSP treatment by extending it to products which are not yet covered by the present schemes and/or by increasing preferential margins on products already benefitting from the preferences.

III. NON-TARIFF MEASURES

18. While the role of tariffs as trade barriers has been declining due to a series of multilateral negotiations, the application of non-tariff measures and their restrictive effects has become more intensive. Governments find these measure to be more convenient to operate than tariffs which are subject to various international commitments and constraints. An important reason for the lack of progress in removing NTMs, or restraining their wider application, is that in many cases the most trade-restrictive measures are concentrated in the most politically-sensitive sectors such as agriculture, textiles or iron and steel: the magnitude of the potential structural adjustment needed in these sectors in the developed countries has limited any attempts to liberalize trade.

19. While a full discussion of all the implications is beyond the scope of the present report, it is acknowledged that the trade, economic and welfare effects of non-tariff measures may be quite different from those created by import duties. In general it is conceded that the effects of such measures are often more detrimental than tariffs for the international community.⁷ The nature of these effects can be illustrated by reference to a quantity-control measure such as a quota.

20. In simple terms, a quota is a quantitative restraint that stops the import of specific goods once a predetermined ceiling is reached. However, several different types of quotas exist. Specifically, global quotas fix the total amount of a product that can be imported from *any source* during a given time period, while selective discriminatory (country-specific) quotas apply to specific foreign suppliers. Seasonal quotas are used in the agricultural sector to limit importing to those periods when there is no domestic harvest or when domestic supply conditions are tight. Where a tariff quota applies, a pre-determined volume of goods is admitted under a base tariff rate, while additional imports incur higher duties.

⁷ For related analyses, see J. Bhagwati, "On the Equivalence of Tariffs and Quotas", in R. E. Baldwin, *et al* (eds), *Trade, Tariffs and Growth* (Chicago: Rand McNally, 1965); M. E. Kreinin, "The Equivalence of Tariffs and Quotas once again", *Kyklos* (March 1970), pp.165-199; or A. Yeats, *Trade Barriers facing Developing Countries*, (London: Macmillan Press, 1979), pp.108-112.

"Voluntary" export restraints are bilateral agreements under which a particular country agrees to reduce exports to a particular market. In spite of their variety, however, the welfare and trade effects of these quotas on quantitative restraints are much alike.

21. From the viewpoint of international price stability, a tariff is preferable to a quantitative restraint. In a period of falling international demand and prices, the duty collected under an *ad valorem* tariff would decline as prices drop. The declining prices and lower import duties would have the effect of reducing the landed price of foreign goods. As a consequence, there would be a rise in import demand which, in turn, would act as a brake on the decline in production or prices. However, under a fixed import quota, demand is insensitive to the changes in world prices. After the quota ceiling is reached, further imports are not allowed, irrespective of how far these prices decline. Thus, prices at the lower end of the range may be less stable under a regime of fixed import restraints than under tariffs. In a period of economic expansion a quota can curtail imports and shift demand to (more expensive) domestic goods, with the result that domestic inflation is accelerated.

22. Similarly, differences exist in the longer-term production or welfare effects of tariffs and quotas. Under a fixed, legally-bound, import duty, foreign producers may be able, over time, to offset the effects of the restriction if their efficiency rises relative to that of producers in their export markets. However, such is not the case with fixed import quotas, since no improvement in the efficiency of foreign firms can offset the effects of the restriction. For this reason, it is generally agreed that the longer-term trade and welfare effects of tariffs are less

* The differences may be more apparent when examined in the context of the limit-pricing model. Limit-pricing suggests that firms may purposely hold prices at levels that discourage entry by outsiders. Under tariffs, domestic firms are still faced with the threat of foreign competition if their prices become excessive. Thus, the uncertainty as to the potential reaction of foreign firms, and the amount of the tariff they may be willing to absorb, can have a moderating influence on price and production policies of domestic producers. In other words, the threat of entry causes them to follow more competitive pricing practices. However, where a quota is applied, this competitive stimulus is missing, since the measure sets a limit to the market share and extent of potential entry by foreign firms.

detrimental than those of quantitative restrictions.*

23. Given a large diversity of non-tariff measures (some sources suggest the existence of more than 200 different types of NTMs), what method should be used to assess the trade-restrictive effects of these measures? Two general methods have been used. The first involves an estimation of the price effects or the price increase in the landed price of the foreign goods due to the imposition of the non-tariff measures. The second method has consisted of tabulating the value of the trade, or the number of items, in a particular product group which is subject to trade restraints.

24. As far as the first method is concerned, attempts to estimate the price effects of NTMs have employed two rather different procedures. One technique involves pricing goods covered by non-tariff measures in domestic markets and then comparing the results with prices for similar items in international markets. The resulting price differentials are then taken as a measure of the influence of the non-tariff restraints, although it is realized that differences in quality, demand, transport costs and other factors can affect the estimation. A second and more reliable technique exists for measuring the effects of certain types of NTMs that are expressed in a form in which the price effects can be directly determined. In these cases, for example where the measure takes the form of a minimum import price or variable levy, the ratio of the import charge to the final price of the product provides a fairly reliable estimate of the *ad valorem* equivalent of the non-tariff restraint.

25. In cases where such *ad valorem* equivalents cannot be derived, other indicators must be used for assessing the influence of non-tariff measures. One such indicator is a frequency index that shows the share of the four-digit CCCN groups affected by non-tariff restraints in a particular product category (i.e., an aggre-

* Even though data on NTMs exists for the more detailed, tariff-line level, the four-digit CCCN level is used since it represents the lowest level at which meaningful cross-country comparisons can be made. At lower levels, the tariff structures of individual countries become too dissimilar to permit reliable comparisons.

gation of several four-digit CCCNs).⁹ The word "affected" is used here in preference to "restricted" or "covered" as a given NTM may apply only to a part of a given four-digit CCCN, thus, this measure provides, essentially, an *uncertainty* index for exporters because similar restrictions could be (and in fact are, as historical experience demonstrates) extended to other items in the group which may be close substitutes for the affected products. This index (F_{ui}) is defined as :

$$(1) \quad F_{ui} = \frac{N_{ci}}{NCi}$$

where N_{ci} is the number of 4-digit CCCNs where at least one tariff line is subject to reported NTMs, while NCi denotes the total number of CCCNs within a given product class.

26. A second way to assess the importance of non-tariff measures is to calculate the proportion of total imports subject to NTMs. Specifically, this NTM *coverage measure* (V_{ji}) is defined as :

$$(2) \quad V_{ji} = \frac{M_{ri}}{M_{ji}}$$

where M_{ri} represents the value of imports from exporter i subject to restraints, and M_{ji} is the total value of imports from exporter i in the product category j .

27. Both indicators have shortcomings which should be noted. First, as already mentioned, F_{ui} would tend to overestimate the extent of NTMs since it assumes that measures applied only to a part of the 4-digit CCCN affect all products covered by the CCCN. Secondly, both indicators cannot account for cases where more than one NTM is applied to the same product. This problem of "stacking" NTMs is particularly important in sectors such as food, textiles, or iron and steel. Third, an obvious defect of the V_{ji} is that in the calculation of this index, those products which face very restrictive NTMs will be assigned zero or very low weights. The index is therefore downward biased since it fails to account fully for the importance of the most restrictive non-tariff measures. Fourth, there is no inherent reason why coverage or frequency of application should necessarily be related to the restrictive effects of NTMs. Therefore, the primary utility of both indices should be to serve as indicators pointing to areas where NTMs are most extensively applied or may be exerting their maximum effect. Thus no conclusions concerning restriction

effects of NTMs should be formulated in the absence of supplementary (and not easily obtainable) information about price effects (like domestic-world price differentials).

28. While nothing could be done about conceptual deficiencies of the measures, another important shortcoming which has hindered several previous attempts to evaluate the extent of NTMs - incomplete coverage or outdated information on non-tariff measures - could have been overcome. Specifically, the UNCTAD secretariat has established a comprehensive data base in which information on a large number of NTMs applied in 45 countries is being collected.¹⁰ From this data base information on 8 selected types of measures (listed in table 6) was studied. These measures are "explicit" non-tariff barriers, that is to say they are designed to regulate the quantity (quota, prohibitions, discretionary import authorizations), or the price (minimum price systems, variable levies, anti-dumping and countervailing duties) of imports. Automatic import authorizations and price investigations and surveillance are measures designed to monitor import transactions - frequently with the aim of facilitating subsequent specification to regulate prices and volume;¹¹ they therefore create uncertainty, act as a harassment¹² to imports and encourage self-restraint in exports.

¹⁰ For a description of this data base, see "Non-tariff barriers affecting the world trade of developing countries, and transparency in world trading conditions: the inventory of non-tariff barriers", UNCTAD, TD/B/940.

¹¹ EEC regulations (e.g Council regulation (EEC) 288/82) explicitly refer to surveillance for this purpose (see *Official Journal of the European Communities*, No.L.35, 9 February 1982.

¹² An empirical investigation of anti-dumping and countervailing duty actions revealed that these actions have an adverse impact on imports, regardless of their final outcome, i.e., that the anti-dumping and countervailing duty investigations are *in themselves* impediments to trade. See "Anti-dumping and countervailing duty practices", UNCTAD, TD/B/979, pp.11-12.

Table 6

SELECTED NON-TARIFF BARRIERS

1. QUOTAS

Ceilings (specified in value or quantitative terms) imposed on the importation of products to be effected within a given period of time. These include global and country-specific quotas, seasonal quotas and "voluntary" export restraints.

2. DISCRETIONARY IMPORT AUTHORIZATIONS

Permission granted by the competent authorities (customs or other) to effect the importation of a specified product. This category covers discretionary authorization (i.e. permission granted at the discretion of the competent authority upon submission of an application), and conditional authorization (i.e. permission granted subject to the importer undertaking commitments in areas other than importation, or to specified overall economic conditions, e.g., authorization dependent upon export or upon availability of domestic supply).

3. AUTOMATIC IMPORT AUTHORIZATIONS

Freely-granted permission to import. Such licensing procedures are used either for surveillance (i.e. close monitoring of imports of sensitive products), or for other purposes (such as for statistical records, or for the administration of international agreements).

4. PROHIBITIONS

Various forms of ban or embargo on the importation of a product. The prohibition may be total, may admit exceptions at the discretion of the competent authority, or may operate only under certain conditions.

5. TARIFF QUOTA

The application of two tariff rates, the higher rate being applied when the quantity of imported goods exceeds a specified level.

6. MINIMUM PRICE SYSTEMS

Setting of minimum import prices decreed by the importing country for specific products. Actual import prices below the decreed minimum may trigger action in the form either of the imposition of additional duties or of price investigations. Included here are also "voluntary" price undertakings.

7. CHARGES APPLIED ON THE BASIS OF DECREED VALUE

Charges which are calculated on the basis of the difference between the value established (decreed) by the authorities in the importing country and the value declared by the importers. This category includes variable levies, variable components and anti-dumping and countervailing duties

8. PRICE INVESTIGATIONS

Formal investigations triggered by an import price which is lower than that decreed or regarded as normal. Anti-antidumping and countervailing duty investigations are covered by this category.

29. Table 7 provides *Fui* indices computed for non-tariff measures (as defined in table 6) affecting imports of building materials in 23 developed market-economy and 22 developing countries. Three major comments can be made about these estimates. First, the average frequency index appears to indicate a considerably wide application of non-tariff measures to the imports of building materials: over one-fifth of all product groups is subject to one or more of the selected NTMs. Barriers seem to occur more frequently in the developing countries, where over one-fourth of the product groups examined is affected by NTMs than in the developed market-economy countries where about 18 per cent of the products is affected. This difference can be explained to a large extent by the severe balance-of-payments difficulties of developing countries. Despite various international efforts to resolve these difficulties, a very large number of developing countries are still dramatically short of vital foreign exchange and thus constrained to keep tight control over their expenditures for the import of goods and services. This control is particularly rigorous in the case of investment goods (including building materials), the importation of which is permitted only for essential projects.

Table 7

Frequency of non-tariff measures a_/ affecting imports of building materials

Product group	Importing markets		
	Developed b_/	Developing c_/	All
Articles of wood	16.2	27.0	21.5
Mineral products	12.1	23.3	17.6
Glass	14.1	20.5	17.2
Paint	5.8	24.2	14.8
Metal products	29.1	30.8	30.0
Equipment	12.3	30.3	21.1
Total	17.7	27.2	22.3
Resource-based	11.2	24.2	17.5
Labour-intensive	14.3	24.3	19.2
Capital-intensive	24.8	31.0	27.8

Source: UNCTAD Data base on trade measures.

a_/ For list of measures, see table 6.

b_/ Algeria, Brazil, Cameroon, Chile, Guatemala, Hong Kong, Indonesia, Ivory Coast, Kenya, Korea, Malawi, Mexico, Nigeria, Pakistan, Peru, Philippines, Saudi Arabia, Sri Lanka, Thailand, Tunisia, Turkey, Venezuela.

c_/ Australia, Austria, Belgium, Canada, Denmark, Fed.Rep.of Germany, Finland, France, Greece, Ireland, Israel, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

30. Second, there are marked differences in the frequency of application of NTMs in individual product groups. While in the developed market-economy countries only 5.8 per cent of paints are affected by NTMs, the corresponding percentage for metal products is 29.1 per cent. This extraordinarily large extent of the application of non-tariff protection in the metal sector demonstrates the structural difficulties felt in particular in the iron and steel industry, which is fast becoming as tightly regulated as the textile sector. A feature of the measures applied in respect of imports of metal products is the intensive use of price controls. Among them, anti-dumping and countervailing duty procedures are prominent. In 1982, for example, 234 anti-dumping and countervailing actions (or 58 per cent of all actions taken in the developed market-economy countries) affected metals and basic metal products. In the first half of 1983 a further 18 anti-dumping and countervailing duty actions were initiated. This indicates a disturbing phenomenon, namely the use

of these measures (designed for other purposes) in an attempt to remedy problems of a structural character.

31. Third, the malaise being felt in the steel industry is also responsible for the high indice values calculated for capital-intensive goods. As can be seen from table 7, in both developed and developing countries these products face non-tariff measures much more frequently than resource-based or labour-intensive manufactures. This could indicate that non-tariff barriers in the trade of building materials affect primarily the exports of the developed market-economy countries - since capital-intensive goods account for almost 90 per cent of these countries' exports.

32. This suggestion could have been verified by comparing frequency indices with trade coverage indices. For technical reasons, however, the necessary computations were carried out only for the EEC Member States. It should be noted here that individual EEC countries apply both EEC and national non-tariff measures and thus NTMs - in contrast to tariffs - need to be evaluated for each country separately and not for the European Community as a whole. The import statistics employed were for 1980 while the data on non-tariff barriers is for 1983. All calculations were performed at the tariff-line level. The results are shown in table 8.

Table 8

Estimates of the frequency (F) and trade coverage (V) indices for non-tariff measures applied by the EEC member countries to imports of building materials

	Imports from :					
	Developing countries		Developed market-economy countries		Socialist countries of E.Europe and Asia	
	F	V	F	V	F	V
Belgium/Luxembourg	12.7	6.8	16.5	12.0	22.8	28.5
Denmark	12.7	20.2	12.7	16.6	20.3	39.8
Fed.Rep.of Germany	12.7	4.6	13.9	16.2	24.1	42.0
France	19.0	37.5	19.0	49.4	25.3	83.2
Ireland	12.7	0.2	12.7	4.3	15.2	51.2
Italy	13.9	16.1	16.5	17.4	35.4	48.8
Netherlands	12.7	0.7	16.5	7.4	22.8	17.9
United Kingdom	12.7	12.1	12.7	14.3	15.2	14.5

Source: UNCTAD Data Base on Trade Measures.

33. These results seem to confirm the earlier observation. The share of imports which are subject to non-tariff measures is higher in the case of imports from the developed countries than from developing countries. Only in one instance (Denmark) is the value of V higher for developing countries than for the developed market-economy countries. Since the prime objective of non-tariff barriers is a protection of capital-intensive production, and given the existing geographic structure of imports, the highest proportion of trade affected by NTMs is to be found in imports from the developed countries. This, however, does not mean that imports from the developing countries are less affected. On the contrary, the NTMs facing capital-intensive products are an important constraint on the expansion of the developing countries' exports of these products and freeze their share in total shipments at the low level.

34. Another and important conclusion to be drawn from the figures in table 8, is that socialist countries of Eastern Europe and Asia are particularly affected by NTMs applied by the European Communities. Not only is the share of exports affected by NTMs the highest in the case of socialist countries (as high as 83.2 per cent in France), but also the frequency index is larger than for other exporters. This second finding indicates that many of the NTMs facing socialist countries are of a country-specific, discriminatory character, with a particularly detrimental effect on trade.

35. Finally, it is worth noting that among the European Economic Community Member States, France appears to be the most protective. However, with some exceptions, indices are disturbingly high for all countries. They bear witness to the fact that non-tariff protection is a major factor to be taken into account in examining international trade in building materials.

IV. POTENTIAL TRADE EXPANSION EFFECTS FROM THE REMOVAL OF TRADE BARRIERS

36. It is unfortunately impossible to give an estimate of and consider in this study all the possible effects of tariff and non-tariff obstacles to trade: the lack of reliable, acknowledged methodology (in particular to permit an assessment of the elimination of NTMs), and the lack of sufficiently detailed and comprehensive statistics on trade and obstacles to trade, are among the main reasons for this. However, even under these circumstances a partial but tentative evaluation can be attempted: specifically, the assessment of potential expansion of imports into the three major developed market-economies resulting from the elimination of tariffs imposed in these markets.

37. Such an evaluation, therefore, was attempted by using a partial equilibrium trade model to estimate the trade creation and trade diversion effects of the removal of the post-Tokyo Round MFN tariffs rates in the EEC, the United States and Japan, i.e., those markets which account for the biggest proportion of world imports of building materials. Tariff removal creates increased demand for (cheaper than before) imports - the phenomenon called trade creation. As, however, individual exporters were not faced by the same tariff duties (some of them were able to benefit from lower, preferential duties), the removal of such tariffs will also result in another effect, called trade diversion. The erosion of preferential margins enjoyed by some suppliers will make other suppliers more competitive, thus increasing their trade at the expense of the first group of suppliers. "Preferential" suppliers will therefore register "negative" diversion, while those exporters not benefitting from preferences will register "positive" diversion of trade. The magnitude of both effects will therefore depend upon the size of the tariff, the amount of trade, the values of price elasticity of import demand (for trade creation), and the cross-price elasticity between suppliers (for trade diversion). Since estimates for this second elasticity are considered very unreliable (and certainly less reliable than those for the import demand elasticities), two different values representing high and low estimates (-2.5 and -1.5) were employed, based on existing empirical evidence.¹³ This generated projections of a probable range in

trade diversion and in total trade effects of tariff liberalization, which are shown in table 9.

Table 9
Estimates of trade effects of the removal of the post-Tokyo Round
MFN tariff rates

Importing market	Value in 1976 dollars			Percentage of imports from:		
	Developed market-economy countries	Developing countries	Socialist countries of Eastern Europe and Asia	Developed market-economy countries	Developing countries	Socialist countries of Eastern Europe and Asia
EEC	179-154	37-36	86-108	2.4-2.1	2.0-1.9	6.4-8.1
United States	359-362	37-36	9-6	5.6	4.5-4.4	4.4-2.9
Japan	47-48	7	3-2	2.1	0.4	0.5
Total	585-564	81-79	98-116	3.7-3.5	1.8	4.7-5.6

Source: Estimates, based on statistics from UNCTAD Data Base on Trade Measures.

38. There are three major conclusions to be drawn from this table. Firstly, that the removal of tariffs would have significant expansion effects for imports of the developed market-economy countries. While the percentage increase may seem to be not very impressive (3.5 - 3.7 per cent) the absolute amount (computed in 1976 dollar values) is very considerable, over 500 million dollars, to which the results of tariff liberalization in other countries should be added. Secondly, the group which obtains the highest relative gains from the liberalization are the socialist countries of Eastern Europe: their trade would increase by 4.7 to 5.6 per cent. In contrast, developing countries' gains would be smallest, due to the ("negative") trade diversions caused by the erosion of preferential margins. These gains would increase to about 2.9 per cent (i.e., over 1 percentage point over the estimate shown in table 9) if the tariffs were removed *only* for developing countries'

¹³ For a detailed outline of the procedure employed, see A. Olechowski, A. Yeats, "Implication of the Tokyo Round for East-West Trade Relations", *Oxford Bulletin of Economics and Statistics* February, 1982, pp.94-96.

exports. Clearly, while the overall trade liberalization is beneficial to developing countries, comprehensive (and - what is very important - unrestrained and stable) tariff preferences are even more beneficial. Thirdly, the highest expansion would be experienced by the United States' building material imports. The expansion of this market would account for over 50 per cent of the overall expansion effect computed for all three markets.

39. The rare empirical estimates of the restrictive impact which non-tariff barriers exert on trade indicate that it is in general much higher than that of tariffs. For example, the United Kingdom Consumers Association concluded that NTMs embodied in the Multifibre Arrangement had increased prices of 60 per cent of all British clothing imports by between 15 and 40 per cent; the North-South Institute (Canada) placed the annual cost to consumers of bilateral quotas on clothing, instituted in 1979 at \$CAN 198 million; the Australian Industries Assistance Commission estimated that the total annual cost of protection in the clothing sector was \$A 235 per household, and the International Food Policy Research Institute estimated that the agricultural exports of 56 developing countries would increase by \$US 3 billion annually, if the OECD countries would lower trade barriers by 50 per cent.¹⁴ Thus, even though it is not possible to evaluate potential expansion of trade resulting from the removal of non-tariff barriers, it should be concluded that it would be of considerable magnitude and would exceed that which would result from the elimination of tariffs.

¹⁴ For more details and other examples, see "Protectionism and structural adjustment in the world economy", report by the UNCTAD secretariat, UNCTAD, TD/B/981 (Part I), pp.39-41.

V. SUMMARY AND CONCLUSIONS

40. Trade in building materials accounted for a large proportion of international trade in the decade of the 1970s: in 1980 it totalled over \$US 140 billion, i.e., approximately 12 per cent of the market-economy country exports of industrial products. The principal features of this period were: (1) the dominant role played by the developed market-economy countries in world exports (86.2 per cent in 1980); (2) an emergence of developing countries as major importers, reflected in the increase of their share of world imports, from 23.5 per cent in 1970 to 35.2 per cent in 1980; (3) the high and still growing negative balance of developing country trade (almost \$US 30 billion in 1980) : building materials were responsible for a considerable outflow of developing country foreign exchange: (4) the very rapid expansion of trade among developing countries (it increased almost elevenfold), indicating a considerable increase in their capacity to produce and export building materials; (5) the high and predominant share of metal products among building materials (45.4 per cent of world exports in 1980), that is, of products of an industrial sector characterised by severe structural problems and, in particular, by the high excess production capacity in developed countries; and (6), that building materials consist mostly of processed, capital-intensive (47 per cent of world exports), and labour-intensive (25.1 per cent) products, generating more extensive benefits to national economies than the "unskilled", resource-based goods. While the capital- and labour-intensive products accounted for a substantial share of developing country exports to the developing countries and the socialist economies (53.7 and 70.9 per cent respectively), they are relatively insignificant (9.2 per cent) in exports to the developed market-economy countries. This characteristic indicates the importance of intra-developing country trade, as well as a strong potential for the expansion of exports of "skilled" products to the developed country markets.

41. For the period 1980-1982 only data for the developed market-economy countries is available. Their analysis reveals that trade in building materials *decreased* substantially: imports in fact declined by 17.4 per cent and exports by 7.6 per

cent. This decline was the result of the economic recession in the developed market-economy countries during this period, involving, *inter alia* the construction sector. The demand for imported building materials was particularly weak in the case of the socialist countries' products (developed market-economy country imports from this direction decreased by 29.3 per cent) and developing country products (19.1 per cent). In contrast, both developing and socialist countries performed well as importers and the developed market-economy country exports to these countries increased by 5.3 per cent and 3.1 per cent respectively. Thus, in building materials - as in the case of many other product groups - developing countries provided an extremely important cushion to the developed market-economy countries during a period of sluggish demand.

42. International trade in building materials - as in so many other product sectors - faces considerable tariff and non-tariff obstacles. The level of tariff protection is indeed quite significant: unweighted average tariff rates range from 4.5 to 7.8 per cent in the developed market-economy countries, from 9.7 to 15.6 per cent in the socialist countries of Eastern Europe and Asia and from 19.5 to 36.9 per cent in the developing countries. More thorough investigation of the tariffs applied in the developed market-economy countries indicates that the highest duties face those imports which exert the strongest competitive pressures on domestic producers. Imports of labour-intensive products from developing and socialist countries face (weighted) rates of 5.3 and 4.6 per cent respectively, and the imports of capital-intensive manufactures from developed market-economy countries and socialist countries face rates of 4.2 and 4.1 per cent respectively.

43. The Generalized System of Preferences (GSP) has an important moderating influence on tariff rates facing developing countries, particularly in such countries as Norway and Sweden. There is, however, a lot of scope for further improvements both in the product coverage and in the extent of preferential margins provided under the existing schemes.

44. The effects of non-tariff barriers are generally acknowledged to be more detrimental to the international community than those of tariffs. Investigation of

the extent of application of 8 selected types of such measures (all of them being "explicit", non-tariff barriers, i.e., measures designed to regulate the quantity or the price of imports, or to create uncertainty and encourage self-restraint by exporters), in 23 developed market-economy countries and 22 developing countries, revealed frequent use of NTMs in the trade of building materials. Over one-fifth of all building material product groups is subject to one or more of the NTMs investigated. Barriers seem to occur more frequently in the developing countries (they are applied to 27.2 per cent of product groups) than in the developed market-economy countries (17.7 per cent), which - to a large extent - can be explained by the severe balance-of-payments difficulties encountered in the first group of countries.

45. Metal products are the most affected by NTMs (29.1 per cent), this being a demonstration of the structural difficulties felt in particular in the iron and steel industry which is fast becoming as tightly regulated (with the use of NTMs) as the textile sector. An especially disturbing feature of NTM protection in the metals sector is the use of price controls: the use of measures which were not intended to be remedies for problems of a structural nature.

46. Protection afforded to the domestic metal industries is one of the reasons for the high level of non-tariff barriers for imports of capital-intensive building materials, for it is a fact that both in developed and developing countries this product category faces the most frequent use of NTMs (24.8 per cent in the developed countries and 31 per cent in the developing countries). For this reason and bearing in mind the existing structure of trade, when the trade coverage of NTMs applied by the European Economic Community was investigated, the highest proportion of trade affected by NTMs was found to be in imports from the developed market-economy countries. This, however, does not prove that imports from the developing countries are less affected. On the contrary, NTMs facing capital-intensive products are an important inhibitor of the expansion of developing country exports of these products and in fact freeze their share in total shipments at their low level.

47. Another important conclusion resulting from the investigation of NTMs applied in the European Economic Community is that the socialist countries of Eastern Europe and Asia are particularly affected by these measures, many of which are of the discriminatory nature. Among the individual member States of the European Community, France appears to be the most protective. However, with some exceptions, NTM indices are disturbingly high for all countries of the European Economic Community.

48. While it is impossible to estimate with any accuracy all the effects which could be obtained by the removal of obstacles to trade, partial evaluation nevertheless indicates that they would be very considerable. For example, the elimination of tariffs in three major markets (the European Economic Community, the United States and Japan), would result in the increase of imports by over \$US 500 million (at 1976 values). Since several empirical findings indicate that the impact of non-tariff measures on trade is much higher than that of tariffs, it is concluded that the results of the elimination of NTMs would be of considerable magnitude and would in any case be in excess of those estimated for tariff measures.

49. Several features of international trade in building materials make this sector an important area for international co-operation and action. In particular three issues should be addressed when discussing such co-operation and action: the sharp decline in the volume of trade in the 1980s, the high and increasingly negative balance of developing country trade, and the adverse commodity structure seen in developing country exports to the developed market-economy countries.

50. The economic recovery currently being experienced in some developed countries is also apparent in the construction sector. There will not be any sufficient impact, however, on international trade in building materials if the present tendency to impose tight restrictions on imports continues. To revitalize trade and to re-establish expansion at the previous higher growth rates, the multiple obstacles now facing international trade in this sector need to be removed. In this respect, developed market-economy countries should implement their recent commitments to counter protectionism. In particular, the commitments undertaken at UNCTAD VI

should be strictly followed. They provide that developed countries should "*halt protectionism by fully implementing and strictly adhering to the standstill provisions they have accepted, in particular concerning imports from developing countries*" and "*to work systematically towards reducing and eliminating quantitative restrictions and measures having similar effect, in accordance with Conference resolution 131(V), in particular paragraph 7, and periodically to review progress with a view to maintaining impetus to this process*".¹⁵ As the developed market-economy countries are the dominant exporters of building materials, it is in their own interest that the above commitments should be implemented.

51. As has been noted, the performance of developing countries as importers of building materials continued to be strong also during the 1980s. However, the large and increasingly negative balance in their trade in building materials, if continued, will restrain further expansion of imports. To counter this barrier, developing countries should endeavour to give high priority in their trade policies to trade among themselves, and should take every step to facilitate its expansion. With this aim in mind, the existing high tariff and non-tariff barriers should be removed, in the framework, for instance, of the Global System of Trade Preferences (GSTP). Other preferential arrangements could also be envisaged. For example the provision of duty- and barrier-free entry for building materials imported for construction projects carried out by foreign companies from other developing countries.

52. The rather low level of capital- and labour-intensive products in developing country exports to the developed market-economy countries is - as evidenced - to a certain degree the direct result of high barriers applied to these products. Removal of these barriers is not an easy task, since many are used to protect domestic industries struggling with structural difficulties. It is imperative, however, that the developed market-economy countries intensify their efforts to promote structural adjustment in industries where comparative advantages have shifted in favour of foreign suppliers. Prolonged protection of inefficient industries

¹⁵ Conference resolution 159 (VI), paragraphs 1 and 2.

imposes high penalties in the long run on the economies of both importing and exporting nations. Governments should therefore encourage and enforce structural adjustment through the use of positive adjustment measures. Also, since in many cases structural problems are the result of a failure (or difficulty) to anticipate correctly important developments in international trade (i.e., expansion of production capacity and technological innovation abroad, etc.), there is a strong case for systematic international efforts for the close monitoring of current and probable future developments in international trade. If governments wish to have the capacity to respond effectively and quickly to structural changes in the world economy, then the relevant information has to be made available. In this respect, it could be proposed that governments consider all possible and practical arrangements which could be established for the exchange of information - both on current developments and on *intentions* concerning investment, production and trade, as well as on policies and instruments being evolved in this regard.

Table A.1

Building materials - product coverage

A. PRODUCT GROUPS (SITC Rev.2)

1. Articles of wood

247	Other wood in the rough, or roughly squared
248	Wood, simply worked, and railway sleepers of wood
634	Veneers, plywood, "improved" or reconstituted wood, worked
635.3	Builders' carpentry and joinery
641.6	Fibre building board of wood or other vegetable material

2. Mineral products

273	Stone, sand and gravel
661	Lime, cement and fabricated construction materials
662	Clay and refractory construction materials

3. Glass

664.4	Cast, rolled, drawn or blown glass, in rectangles, ground/polished
664.5	Cast or rolled glass, unworked, in rectangles, unworked
664.6	Bricks, tiles, slabs, paving blocks, squares, etc. of glass
664.91	Cast, rolled, drawn or blown glass, shaped, and worked; leaded lights.

4. Paints

533.4	Varnishes and lacquers, distempers, paints, enamels, dyes, etc.
533.51	Prepared pigments, opacifiers, colours, enamels and glazes, etc.
533.54	Glaziers' putty, fillings, surface preparations, mastics, etc.

5. Metal products

672	Ingots and other primary forms, of iron or steel
673.3	Angles, shapes and sections and sheet piling, of iron or steel
674	Universals, plates and sheets, of iron or steel
676	Rails and railway track construction material, of iron or steel
678	Tubes, pipes and fittings, of iron or steel
682.25	Tubes and pipes, and hollow bars of copper
682.26	Tube and pipe fittings of copper
684.21	Bars, rods, angles, shapes and sections, of wrought aluminium, and wire
684.22	Plates, sheets and strip, wrought aluminium
684.25	Tubes, pipes and blanks, hollow bars, aluminium
684.26	Tube and pipe fittings of aluminium
691	Structures and parts of iron and steel, plates, strip, rods, angles, etc.
694	Nails, screws, nuts, bolts, rivets etc., of iron, steel or copper

6. Equipment

723	Civil engineering/contractors' plant, equipment and parts
773	Equipment for distributing electricity
812	Sanitary, plumbing, heating and lighting fixtures and fittings

B. FACTOR-INTENSITY GROUPS

- Resource-based products : SITC 247, 248, 273, 634, 635.3, 641.6, 682.25, 682.26, 684.21, 684.22, 684.25, 684.26
- Labour-intensive products : SITC 662, 691, 723, 813
- Capital-intensive products : SITC 533, 661, 664.4, 664.5, 664.6, 672, 673.3, 674, 676, 678, 694, 773

ANNEX

Table A.2

Average post-Tokyo Round tariff rates
facing imports of building materials from
developing countries (1), developed market-economy countries (2)
and the socialist countries of Eastern Europe and Asia (3)

Product group	EEC			Austria			Japan			Finland			Canada		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Articles of wood	1.1	0.8	0.8	0.7	6.5	1.1	0.4	0.1	0.4	0.1	0.8	0.0	5.3	2.4	7.6
Mineral products	3.4	1.3	2.9	2.7	5.8	4.9	0.0	1.0	0.0	18.9	3.3	1.4	9.2	3.8	11.8
Glass	0.0	1.8	4.6	10.9	9.8	14.6	0.0	5.3	2.4	8.4	27.2	10.5	2.1	4.5	5.8
Paints	0.0	4.3	9.1	8.3	9.4	9.6	0.0	5.5	5.7	0.0	7.1	3.1	3.8	9.0	0.0
Metal products	2.0	3.0	4.4	8.5	9.8	6.7	1.4	6.1	9.8	0.0	3.5	3.8	6.2	5.8	6.6
Equipment	4.1	3.0	6.2	9.8	7.1	7.9	0.1	4.9	0.4	5.5	4.6	5.2	8.0	6.0	7.0
TOTAL	1.3	2.1	2.3	2.0	8.1	2.6	0.4	0.9	0.5	0.8	4.3	1.6	5.9	5.3	7.4
Resource-based	1.2	1.0	0.9	0.8	7.7	1.1	0.4	0.2	0.5	0.1	1.4	0.1	5.2	2.5	7.6
Labour-intensive	5.0	2.8	6.0	7.4	6.7	6.7	0.1	4.7	2.2	6.0	4.5	5.1	9.1	5.9	7.2
Capital-intensive	1.4	3.0	4.4	7.4	9.4	7.2	0.0	5.2	0.1	0.2	4.9	4.1	6.1	6.4	6.6

Product group	Australia			United States			Switzerland			Norway			Sweden		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Articles of wood	8.1	6.3	36.7	5.6	0.4	7.2	0.0	3.8	2.2	0.0	0.8	0.9	0.0	0.6	0.2
Mineral products	2.1	12.1	3.9	6.4	5.3	2.5	3.1	2.8	2.0	0.0	0.9	0.4	0.0	1.7	0.8
Glass	12.0	8.9	13.4	2.0	4.3	5.1	0.0	2.4	4.0	0.0	6.2	3.8	0.0	5.2	3.4
Paints	1.1	9.7	0.0	2.3	5.7	0.0	0.2	3.0	0.4	0.0	6.7	0.0	0.0	7.4	9.3
Metal products	2.5	11.6	16.0	3.1	4.2	2.4	0.4	1.7	0.9	0.0	2.5	0.6	0.0	4.6	4.9
Equipment	15.8	10.7	4.5	2.6	3.1	2.9	1.2	1.7	2.8	0.0	5.7	6.5	0.0	4.1	5.6
TOTAL	7.9	10.4	28.7	4.3	3.2	4.7	0.2	2.0	1.3	0.0	3.1	1.1	0.0	4.0	2.5
Resource-based	8.1	6.3	36.6	5.3	0.6	7.1	0.0	3.7	2.1	0.0	2.2	0.8	0.0	1.3	0.3
Labour-intensive	14.5	10.9	6.0	5.3	3.7	3.4	2.1	1.9	2.1	0.0	5.4	3.4	0.0	3.7	3.6
Capital-intensive	1.8	4.5	9.2	2.7	4.2	2.1	0.9	1.6	1.1	0.0	2.5	1.0	0.0	5.0	5.3

