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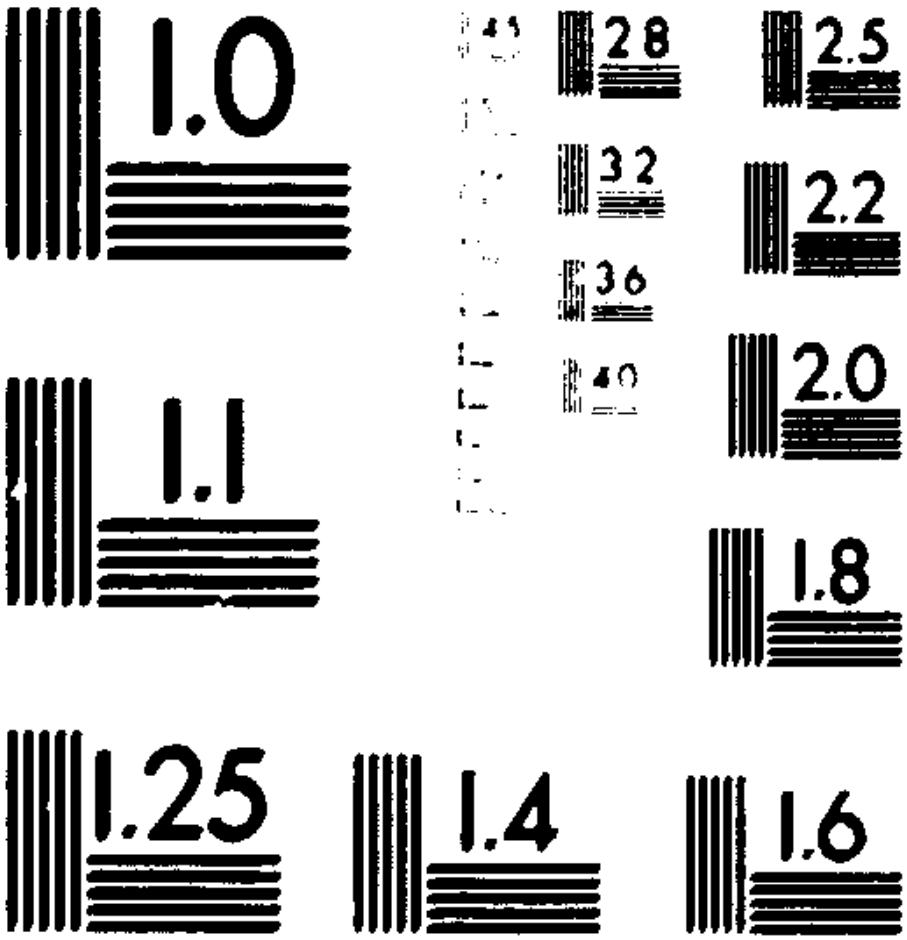

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TARIFF AND NON-TARIFF MEASURES IN THE WORLD TRADE OF BUILDING MATERIALS.

(prepared by the UNCTAD secretariat)

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SECTORAL WORKING PAPERS

In the course of the work on major sectoral studies carried out by the UNIDO Division for Industrial Studies, several working papers are produced by the secretariat and by outside experts. Selected papers that are believed to be of interest to a wider audience are presented in the Sectoral Working Papers series. These papers are more exploratory and tentative than the sectoral studies. They are therefore subject to revision and modification before being incorporated into the sectoral studies.

This paper was prepared by the UNCTAD secretariat as a contribution to the UNIDO study entitled "The building materials industry in developing countries: an analytical appraisal" (UNIDO/IS.512), Sectoral Studies Series No. 16, January 1985.

Foreword

The building materials industries have in recent years come to play an important role in economic development. This fact is also reflected in the decision of the Industrial Development Board of UNIDO to organize the first global consultation on the sector, held in Athens from 25 to 30 March 1985.

A global study of the sector has been issued in UNIDO's Sectoral Studies Series. It is entitled "The building materials industry in developing countries: an analytical appraisal" (UNIDO/IS.512). Because of the importance of international trade in building materials UNIDO asked the UNCTAD secretariat to prepare a special study of the tariff and non-tariff barriers in the sector. The main results were incorporated in the global study. The study carried out for UNIDO by UNCTAD is hereby presented in its entirety. The views expressed are those of the UNCTAD secretariat.

This is the third UNCTAD study on trade barriers undertaken for UNIDO's Sectoral Studies Branch. The other two are: "Tariff and non-tariff measures in the world trade of wood and wood products" (UNIDO/IS.396), Sectoral Working Paper Series No. 6 and "Tariff and non-tariff measures in the world trade of oilseeds, vegetable oils and related products" (UNIDO/IS.519), Sectoral Working Paper Series No. 28. The valuable co-operation of UNCTAD in this endeavour is appreciated by UNIDO.

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EXPLANATORY NOTES

References to dollars ($) are to United States dollars, unless otherwise stated.

A comma (,) is used to distinguish thousands and millions.

A full stop (.) is used to indicate decimals.

A slash between dates (e.g., 1980/31) indicates a crop year, financial year or academic year.

Use of a hyphen between dates (e.g., 1960-1965) indicates the full period involved, including the beginning and end years.

Metric tons have been used throughout.

The following forms have been used in tables:

Three dots (...) indicate that data are not available or are not separately reported.

A dash (-) indicates that the amount is nil or negligible.

A blank indicates that the item is not applicable.

Totals may not add up precisely because of rounding.

Besides the common abbreviations, symbols and terms and those accepted by the International System of Units (SI), the following abbreviations and contractions have been used in this report:

CCCN	Customs Co-operation Council Nomenclature
EEC	European Economic Community
FAO	Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
GSP	Generalized System of Preferences
MFN	Most favoured nations
NTM	Non-tariff measures
OECD	Organization for Economic Co-operation and Development
SITC	Standard International Trade Classification
UNCTAD	United Nations Conference on Trade and Development
UNSO	United Nations Statistical Office

1. TRADE IN BUILDING MATERIALS

International trade in building materials accounts for a significant proportion of both world production of building materials and of total world trade. For this reason international trade aspects should be considered when discussing the current situation in the building materials sector. This paper aims at facilitating such a discussion. Its objective is to provide empirical evidence on tariff and non-tariff obstacles to international trade in this sector. After a review of the salient features of international trade flows in this chapter, tariffs are discussed in chapter 2 and non-tariff obstacles in chapter 3. In chapter 4 there is an evaluation of the effects of hypothetical trade liberalization, and finally, in chapter 5 the summary and conclusions are followed by some suggestions for international action.

It is a difficult task to estimate the value of international trade in the sector of building materials. This is because the category includes several types of products which, for statistical purposes, are classified in disaggregated 4 and 5 digit groups (see appendix table A.1). While a considerable amount of data on international trade is available, detailed statistics at such low levels of aggregation are still very incomplete, especially for the centrally planned economy countries of Eastern Europe and Asia as well as for a large number of developing countries. Therefore, table 1, showing flows of trade during the 1970-1980 period, does not contain precise data on trade among the centrally planned economy countries and several figures shown there are only estimates based on the limited statistics available.

In nominal terms, market economy country imports of building materials totalled over $US 26,000 million in 1970 and increased by 1980 to over $US 140,000 million; they accounted for 9.3 per cent of the total exports of these countries in 1970 and 7.9 per cent in 1980. The 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 per cent in 1970 and 12.1 per cent in 1980). Total exports of the

market economy countries in current prices expanded between 1970 and 1980 at a rate of 18.7 per cent, while corresponding imports grew at a 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, respectively.

Table 1. Market-economy country trade in building materials for the period 1970-1980 ($ billion)

Origin \ Destination	Year	Market-economy countries: Developed countries	Market-economy countries: Developing countries	Centrally planned economy countries of Europe and Asia
Market-economy countries				
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 market economy countries	1970	1,882	800	162
	1975	3,258	2,270	480
	1980	10,385	8,450	950
Centrally planned economy countries of Europe and Asia	1970	1,047	570	...
	1975	1,926	1,560	...
	1980	3,881	2,720	...

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

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. The share of these countries in imports is 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 increasing their share by almost 12 percentage points. In 1970, developing countries' net imports of building materials amounted to $US 3,300 million; in 1975 to$US 18,200 million

in 1980 to $US 29,600 million and in 1982 to about $US 35,000 million: building materials were responsible for a considerable outflow of foreign exchange from the developing countries.

Another important development is the growth in trade among the developing countries. Between 1970 and 1980 this trade increased almost eleven-fold in nominal terms. Growth was particularly high during the 1975-1980 period, namely 30.1 per cent. Developing country exports to non-market countries and trade amongst themselves also increased rapidly, indicating their ability to produce and market building materials.

A third important characteristic of the trade relates to 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 (see appendix 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 per cent 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.

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, especially in the steel industry. The steel industry is characterized by three significant features. First, by its widespread production in about 70 countries, even though it is dominated by four large economies, namely 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/] Second, 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 has

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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.

expanded by some 50 per cent since 1974. Third, a large proportion of the steel industry is state-owned. It is estimated that the proportion of world steel production accounted for by state-owned enterprises approaches 55 per cent and is growing. Consequently national governments, both in developed and developing countries, frequently influence national steel production and regulate foreign trade in steel.

For purposes of this report, building materials have been classified into three product categories and a distinction has been made between resource-, labour- and capital-intensive products.[2/] It can be argued 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 competition."[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 exports are, to a large extent, capital-intensive (47 per cent of total world exports of building materials) and labour-intensive (25.1 per cent). Resource-based products account for less than one-third of total world trade.

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

3/ A. Amsden, Profit effects, learning effects and the direction of trade, World Bank Conference "Does the Direction of Trade Matter", Brussels, 28 February - 2 March 1983, p. 13-14.

However, as table 2 shows, resource-based products account for over 75 per cent of developing country 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 trade among developing countries and 37.7 per cent in the exports to centrally planned economy 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 centrally planned economy countries is only 18 per cent, whereas in trade among developing countries it is 41.4 per cent, and nearly 75 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 centrally planned economy countries to, as already mentioned, the high 74.4 per cent in the exports to developed market economy countries. A possible explanation for these differences is 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 issue in more detail, however, it is possible to conclude that the commodity structure of developing country intra-trade and their exports to the centrally planned economy 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.

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	Centrally planned 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	-	0.3	-
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-intensive	48.0	54.5	19.9	35.9	54.3

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

2. TARIFFS ON BUILDING MATERIALS

While international trade faces a variety of barriers, the most common is the import tariff. A tariff is a tax on imports calculated either on a per unit basis or as a percentage of market value, i.e. an ad valorem tariff. While it would appear to be a simple matter to compare levels of tariff protection in various countries for various products, such comparisons are in fact hindered by a number of practical problems, one of them being the choice of averaging procedure.

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 unlikely assumption that all items in the group are of equal importance. The second method is to compute an average of tariff rates weighted by the values of imports for each product in the group. Such an average, however, is known not to reflect the full impact of tariffs since imports of a commodity are reduced by high tariffs. In the extreme case a tariff high enough to choke off all imports would carry exactly zero weight in the computation.

The first technique was employed to obtain tariff averages (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 centrally planned economy countries and only for large product groups covering, inter alia building materials. Twenty-six developing countries, 4 centrally planned economy countries of Eastern Europe and 21 developed market economy countries were included in this exercise. 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 provide a general idea of the magnitude of nominal tariff protection facing international trade in building materials.

Table 3. Unweighted average tariff rates by large product groups covering building materials

	Developed market economy countries	Developing countries	Centrally planned economy countries of Europe and Asia
Wood products	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 database on trade measures.

The level of this protection is significant. Average tariff rates range from 4.5 to 7.8 per cent in the developed market economy countries; from 9.7 per cent to 15.6 per cent in the centrally planned economy 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 escalate with the level of fabrication (duties on wood and mineral products are lower than those on other products which are more intensively processed and transformed) this phenomenon does not seem to be present in the tariff profiles in the other groups of countries.

Since the detailed, tariff-line data on imports are available only for selected developed market economies, the weighted tariff rates have been computed for only 10 major developed markets. As can be seen from table 4[4/] they are rather low and the overall average ranges from 1.6 per cent in the

4/ The weighted tariff rates shown in table 4 combine most favoured nation (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.

case of imports from developing countries to 3.2 per cent in the case of trade among developed market economy countries. There are two reasons for this difference. First, the two groups of products, namely metal products 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 countries, 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 developed 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 group	Imports from:		
	Developed market economy countries	Developing countries	Centrally planned economy countries of Europe and Asia
Articles of wood	0.8	1.4	1.4
Mineral products	3.5	3.5	1.9
Glass	6.2	1.6	5.4
Paints	6.4	2.4	6.7
Metal products	4.1	2.7	4.2
Equipment	4.6	3.2	4.4
Overall average	3.2	1.6	2.3
Resource-based	1.1	1.4	1.5
Labour-intensive	3.2	5.3	4.6
Capital-intensive	4.2	2.2	4.1

Note: For product definitions see appendix table A.1.

Source: UNCTAD database on trade measures.

Another important conclusion which can be drawn from estimates in table 4 is that the highest duties face trade flows which exert the strongest (in comparison with imports from other sources) competitive pressure on domestic producers in the developed market economy countries. Imports of labour-intensive products from developing and centrally planned economy

countries face rates of 5.3 per cent and 4.6 per cent respectively, while products from the developed market economy countries face the rate of only 3.2 per cent, and the imports of capital-intensive manufactures from developing countries and centrally planned economy 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 considerable growth potential. The high duties facing these products should therefore be of concern.

Due to GSP, the average tariff rate, over all building materials, facing developing countries is reduced by 0.6 points (table 5). In other words, if the GSP was not applied, the average tariff on imports from developing countries would have been 2.2 per cent instead of 1.6 per cent.

Table 5. An impact of the GSP reductions on the weighted 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	4.3	5.1
Switzerland	0.2	1.7
Norway	-	2.9
Sweden	-	1.8
Average	1.6	2.2

Source: UNCTAD database on trade measures.

Finally, it should be noted that the GSP preferences of individual developed market economy countries have a varying impact on average tariff 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 is indicated by the data in table 5, there is still 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.

3. THE RESTRICTIVE EFFECTS OF NON-TARIFF MEASURES

While the role of tariffs as trade barriers has been declining due to a series of multilateral negotiations, the application of non-tariff measures (NTM) and their restrictive effects has become more intensive. Governments are substituting these measures as tariffs fall. 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 their attempts to liberalize trade.

While a full discussion of all the implications is beyond the scope of the present report, it is asserted that the trade, economic and welfare effects of non-tariff measures may be quite different from those created by import duties. The effects of such measures are often more detrimental than tariffs for the international community.[5/] The nature of these effects can be illustrated by reference to a quantity control measure such as a quota.

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

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5/ 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, p. 165-199; and A. Yeats, Trade barriers facing developing countries, Macmillan Press, London, 1979, p. 108-112.

additional imports incur higher duties. Voluntary export restraints are bilateral agreements under which a particular country agrees to reduce exports to a particular market. Despite these differences, the welfare and trade effects of these quotas are much alike.

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. 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 imports, which from the global perspective would act as a brake on the decline in production or prices. However, under a fixed import quota, imports are 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.

Given the large diversity of non-tariff measures, perhaps 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 effect, i.e. the increase in the landed price of the foreign goods, due to the imposition of the non-tariff measures. The second method consists of tabulating the value of the trade, or the number of items, in a particular product group which is subject to trade restraints.

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 such that 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.

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 aggregation of several four-digit CCCNs).[6/] The word affected is used here instead of restricted or covered since a given NTM may apply only to a part of a given four-digit CCCN. 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 (Fui) is defined as:

$$(1) \quad Fui = \frac{Nci}{NCi}$$

where:

Nci is the number of 4-digit CCCNs with at least one tariff line subject to reported NTMs,

NCi denotes the total number of CCCNs within a given product class.

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 (Vji) is defined as:

6/ Even though data on NTMs exist 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.

$$(2)\quad Vji = \frac{Mri}{Mji}$$

where:

Mri represents the value of imports from exporter i subject to restraints, and

Mji is the total value of imports from exporter i in the product category j.

Both indicators have shortcomings which should be noted. First, as already mentioned, Fui 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 Vji 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. No conclusions concerning restrictive effects of NTMs can be formulated in the absence of supplementary and not easily obtainable information about price effects, such as domestic versus world price differentials.

While conceptual difficulties remain, another shortcoming which has hindered several previous attempts to evaluate the extent of NTMs viz., incomplete coverage or outdated information on non-tariff measures, has been overcome. Specifically, the UNCTAD secretariat has established a comprehensive database which contains information on a large number of NTMs applied in 45 countries.[7/] From this database information on 8 selected

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7/ For a description of this database, 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).

types of measures (shown on the following page) can be analyzed. 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.[8/] They therefore create uncertainty, act as a form of harrassment[9/] to imports and encourage self-restraint in exports.

Table 6 provides Fui indices computed for non-tariff measures affecting imports of building materials in 23 developed market economy and 22 developing countries. Three important comments can be made about these estimates. First, the average frequency index indicates wide application of non-tariff measures to imports of building materials: over one-fifth of all product groups are subject to one or more of the selected NTMs. Barriers occur more frequently in the developing ccuntries, where over one-fourth of the product groups examined are affected by NTMs, than in the developed market economy countries where about 18 per cent of the products are affected.

8/ 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.

9/ 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.

Definitions of selected types of non-tariff barriers

1. Quotas

Ceilings (specified in monetary or physical terms) imposed on the imports of products within a given period of time. These include global and country-specific quotas, seasonal quotas and voluntary, (so called) export restraints.

2. Discretionary import authorizations

Requirement that special permission be granted by the competent authorities to import a particular 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).

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 types of import bans or embargoes. 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-dumping and countervailing duty investigations are covered by this category.

Table 6. Frequency of non-tariff measures affecting imports of building materials

Product group	Importing markets		
	Developed[a/]	Developing[b/]	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
Average over above products	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

a/ Australia, Austria, Belgium, Canada, Denmark, Federal Republic of Germany, Finland, France, Greece, Ireland, Israel, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

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

Source: UNCTAD database on trade measures.

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 application of non-tariff protection in the metal sector demonstrates the structural difficulties that exist in particular in the iron and steel industry, which is fast becoming as tightly regulated as the textile sector. As applied to imports of metal products NTMs make extensive 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, to attempt to remedy problems of a structural character.

Third, the problem in the steel industry is also responsible for the high index values calculated for capital-intensive goods. As can be seen from table 6, 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.

This last hypothesis 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 are from 1983. All calculations were performed at the tariff-line level. The results are shown in table 7.

These results seem to confirm the earlier observation. The share of imports subject to non-tariff measures is higher in the case of imports of building materials from the developed countries than from developing countries. However, 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 a low level.

Another conclusion to be drawn from the figures in table 7 is that centrally planned economy countries of Eastern Europe and Asia are particularly affected by NTMs applied by other European countries. Not only is the share of exports affected by NTMs the highest in the case of centrally planned economy 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 centrally planned economy countries are of a country-specific, discriminatory character, with a particularly detrimental effect on trade.

With some exceptions, indices are disturbingly high for all countries and need to be taken into account in examining international trade in building materials.

Table 7. 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		Centrally planned economy countries of 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
Federal Republic 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 database on trade measures.

4. SUMMARY AND CONCLUSIONS

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, or about 12 per cent of the market economy country exports of industrial products. Its main features during this period were:

(a) The dominant role played by the developing market economy countries in world exports (86.2 per cent in 1980);

(b) 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;

(c) The high and still growing negative balance of developing country total trade (almost $US 30 billion in 1980): building materials were responsible for a considerable outflow of developing country foreign exchange;

(d) The very rapid expansion of building material trade among developing countries (it increased almost elevenfold in nominal terms), indicating a considerable increase in their capacity to produce and export building materials;

(e) The high and predominant share of metal products among building materials exports, that is, of products of an industrial sector characterized by severe structural problems and, in particular, by large excess production capacity in developed countries; and

(f) The large volume of building materials exports which consist of processed, capital-intensive (47 per cent of world exports), and labour-intensive (25.1 per cent) products, relative to resource-based exports.

In connection with the last observation (f) above it has been argued that the exporting country benefits more from exporting processed goods than from exporting resource-based goods. While capital- and labour-intensive products accounted for a substantial share of developing country exports to the

developing countries and the centrally planned 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-labour-intensive products to the developed country markets.

For the period 1980-1982 only data for the developed market economy countries are available. These data indicate that trade in building materials decreased substantially: imports (in current values) in fact declined by 17.4 per cent and exports by 7.6 per cent. This decline was the result of the recession in the developed market economy countries during this period. Developed country imports of building materials was particularly weak in the case of those from centrally planned economy countries. In contrast, both developing and centrally planned economy 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 important cushion to the developed market economy countries during a period of sluggish demand.

International trade in building materials - as in many other product sectors - faces considerable tariff and non-tariff obstacles. The level of tariff protection is significant: unweighted average tariff rates range from 4.5 to 7.8 per cent in the developed market economy industries. A 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 centrally planned economy countries face (weighted) average rates of 5.3 and 4.6 per cent respectively, and the imports of capital-intensive manufactures from developed market economy countries and centrally planned economy countries face rates of 4.2 and 4.1 per cent respectively.

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

The negative effects of non-tariff barriers on global economic welfare are generally worse 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).

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 manipulating NTMs, measures which were not intended to be remedies for problems of a structural nature.

Protection afforded to the domestic metal industries is one of the reasons for the high level of non-tariff barriers on 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). This helps explain why for the trade coverage NTM indices for the European Economic Community the highest proportion of trade affected by NTMs was found to be in imports from the developed market economy countries. However, NTMs on 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.

A conclusion resulting from the investigation of NTMs applied in the European Economic Community countries is that the centrally planned economy countries of Eastern Europe and Asia are particularly affected by these measures, many of which are of a discriminatory nature.

While it is impossible to estimate with any accuracy all the effects which would result from the removal of obstacles to trade, partial evaluation nevertheless indicates that they would be 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.

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 negative balance of developing country trade and the less desirable commodity structure in developing country exports to the developed market economy countries.

The economic recovery currently being experienced in developed countries is also apparent in the construction sector, but there will not be a sufficient impact 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 growth rates, the multiple obstacles now facing international trade in this sector must 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 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), and periodically to review progress with a view to maintaining impetus to this process".[10/]

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 negative balance in their trade in building materials, if continued, will restrain further expansion of imports. To counter this, 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.

The low level of capital- and labour-intensive products in developing country exports to the developed market economy countries is to a certain degree the direct result of trade barriers erected against these products. Removal of these barriers is not an easy task, since many are used to protect domestic industries struggling with structural difficulties. However, prolonged protection of inefficient industries imposes high penalties in the long run on the economies of both importing and exporting nations. Since in many cases, stuctural problems are the result of a failure to anticipate correctly important developments in international trade (e.g., global expansion of production capacity and technological innovation), there is a strong case for systematic international efforts to improve transborder information flows. 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

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

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	Wood in the rough, or roughly squared (excluding pulp and fuel wood)
248	Wood, simply worked, and railway sleepers of wood
634	Veneers, plywood, improved or reconstituted wood, worked
633.3	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 class, 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 light

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 and steel
674	Universals, plates and sheets or iron and steel
676	Rails and railway track construction material of iron and steel
678	Tubes, pipes and fittings of iron and 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

Table A.1. Building materials - product coverage

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

Table A.2. Average post-Tokyo Round tariff rates facing imports of building materials from developing countries, developed market-economy countries and the socialist countries of Eastern Europe and Asia

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	-	5.3	2.4	7.6
Mineral products	3.4	1.3	2.9	2.7	5.8	4 9	-	1.0	-	18.9	3.3	1.4	9.2	3.8	11.8
Glass	-	1.8	4.6	10.9	9.8	14.6	-	5.3	2.4	8.4	27.2	10.5	2.1	4.5	5.8
Paints	-	4.3	9.1	8.3	9.4	9.6	-	5.5	5.7	-	7.1	3.1	3.8	9.0	-
Metal products	2.0	3.0	4.4	8.5	9.8	6.7	1.4	6.1	9.8	-	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	-	5.2	0.1	0.2	4.9	4.1	6.1	6.4	6.6

Notes: (1) Developing countries
(2) Developed market economy countries
(3) Socialist countries of Eastern Europe and Asia

Table A.2. Average post-Tokyo Round tariff rates facing imports of building materials from developing countries, developed market-economy countries and the socialist countries of Eastern Europe and Asia (cont'd)

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

Notes: (1) Developing countries
(2) Developed market economy countries
(3) Socialist countries of Eastern Europe and Asia

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