

GENERAL AGREEMENT ON TARIFFS AND TRADE

RESTRICTED

COM.TD/71

19 February 1970

Limited Distribution

Committee on Trade and Development

IMPORT DUTIES ON COPPER AND COPPER PRODUCTS

Study by the Secretariat

Contents

	<u>Page</u>
I. Introduction	1
II. Trade of developing countries in copper and copper products	3
III. Copper tariff structure of selected developed countries and the tariff escalation between different stages of processing	7
1. Summary	7
2. Country notes	15
A. European Economic Community	15
B. Japan	18
C. United Kingdom	22
D. United States	25
E. Denmark, Finland, Norway and Sweden	29
F. Switzerland	36
G. Austria	39
H. Canada	42
<u>Annex:</u> Illustrative calculations of the effective incidence of duties on copper semi-manufactures	45
A. Formula for the effective incidence of duties	45
B. Application of the formula to selected copper semi-manufactures	46

I. Introduction

At their twenty-fourth session in 1967, the CONTRACTING PARTIES agreed that studies should be undertaken of those areas of trade in which serious tariff problems persist for developing countries after the Kennedy Round, with particular attention

being paid to tariffs which disproportionately protect processed products as compared with primary products (see BISD, Fifteenth Supplement, page 73). A systematic study of differential tariff rates on products of interest to developing countries will be undertaken in the context of the general tariff analysis agreed upon at the same session (see COM.TD/W/111). However, pending such a study, a preliminary sample study on differential tariff rates affecting copper and copper products (COM.TD/W/74) was made by the secretariat in June 1968. Copper and copper products were one of the product groups to which specific reference was made at a meeting in 1967 of the Committee on Trade and Development and the study was made because of the importance of these products in the exports of certain developing countries and the increasing interest of developing countries in exporting copper in semi-manufactured and manufactured forms. The sample study was presented to the Committee in 1968 (cf. document L/3102, paragraphs 21 and 22). At a meeting in June 1969 of the Committee on Trade in Industrial Products, it was suggested by Chile that the study should be completed by bringing out more clearly the rôle of differential tariffs in determining the composition of trade in copper. The Committee agreed that governments should be invited to present their comments on the preliminary study and that the secretariat should attempt to work out a more complete study which could be of use when the Committee came to act on the tariff study (COM.IND/W/7, paragraph 8). Comments have been received from Canada, Sweden, Switzerland, the United Kingdom and the Commission of the European Communities.

The points made in the comments received include the following:

- (i) In addition to tariff structure and imports, other important factors, e.g. technological changes in the industry, raw material availabilities, consumption and its rate of growth should be taken into account. These factors, too, may have considerable influence on the actual composition of imports which should not be considered to be determined by the tariff structure alone.
- (ii) Inclusion of intra-Community trade in the tables cannot bring any valid contribution in a study focussed on the tariff protection afforded by the common customs tariff.
- (iii) The relationship between the tariff structure and the composition of imports would become clearer if a uniform classification by stages of processing could be adopted for all countries under study.
- (iv) Account should be taken of the supplies of secondary raw material from domestic sources.
- (v) Account should be taken of the specific characteristics of semi-manufactures, the price of which can vary according to their form, proportion of alloys, and quality.

- (vi) Account should be taken of the difference in copper prices in North America and other markets in recent years.

To the extent possible, these comments have been taken into account in the present study. The secretariat also wishes to acknowledge valuable information and statistical data received from individual delegations and from the Inter-governmental Council of Copper Exporting Countries (CIPEC/Paris) and the International Council for the Development of Copper (CIDEC/Geneva).

The present study deals with post-Kennedy Round import duties on copper and copper products in ten developed countries and the EEC.

II. Trade of developing countries in copper and copper products

Copper is one of the products in which several developing countries have a major interest as exporters. The imports of copper (ore and metal) into the developed countries under study originating in developing countries amounted to approximately \$2.2 billion in 1968. This accounts for nearly two thirds of their imports (excluding intra-EEC trade). At present, copper accounts for more than 90 per cent of the exports of Zambia, approximately one half of the exports of the Democratic Republic of the Congo and 10-20 per cent of the exports of Peru and the Philippines; copper and copper products account for approximately two thirds of the exports of Chile. Copper products are also important among the manufactures exported by Yugoslavia, accounting for approximately 4 per cent of Yugoslavia's total exports.

The major exporting countries of copper (ore and metal) are Chile, Zambia, Canada; the Democratic Republic of the Congo, Peru and the Philippines, in that order. Among these countries, Chile, Zambia, the Democratic Republic of the Congo and Peru export copper mostly in the form of unrefined and refined metal. As shown in Table 1, Chile and Zambia have recently sold an increasing proportion of their copper in the form of refined metal. All exports from the Philippines and approximately one third of the Canadian exports of copper are in the form of ores and concentrates. By far the largest import market for copper is the EEC, which in 1968 accounted for 40 per cent of the total imports into the developed countries under study, followed by the United States - 20 per cent, Japan - 19 per cent, the United Kingdom - 16 per cent, Sweden - 2.9 per cent, and Switzerland 1.3 per cent and Austria 0.8 per cent.

Total imports of copper semi-manufactures into the developed countries under study amounted to \$336 million in 1965 and \$417 million in 1968. Major exporters of copper semi-manufactures in 1968 were the following countries: the EEC, which supplied 27 per cent of imports into the developed countries under study, Canada - 17 per cent, the United Kingdom - 14 per cent, Sweden - 11 per cent, the United States - 8 per cent, Japan - 5 per cent, Yugoslavia - 4 per cent, Finland - 4 per cent, Switzerland - 3 per cent, Austria and Chile - 1 per cent each. In 1965, however, when its exports attained a record level, Chile accounted for 12 per cent of the imports into the developed countries under study. As Table 2 shows, Chile's exports have been subject to large fluctuations. They amounted to

TABLE 1 - DEVELOPMENTS IN THE EXPORTS OF MAJOR COPPER SUPPLYING COUNTRIES BY STAGES OF PROCESSING

A: Ores and concentrates (copper content)
B: Blister copper
C: Refined copper
T: Total

('000 metric tons)

Country		1957		1965		1966		1967		1968	
Chile	A	25.7	(5%)	27.8	(5%)	30.8	(5%)	29.8	(5%)	35.1	(6%)
	B	232.4	(49%)	274.1	(53%)	235.1	(40%)	240.7	(38%)	224.4	(35%)
	C	216.0	(46%)	216.8	(42%)	317.1	(55%)	361.3	(57%)	377.8	(59%)
	T	474.1	(100%)	518.7	(100%)	583.0	(100%)	631.8	(100%)	637.3	(100%)
Zambia	B	173.9 ^{2/}	(42%)	159.7	(24%)	90.4	(15%)	79.9	(13%)	91.6	(14%)
	C	241.3 ^{2/}	(58%)	510.4	(76%)	501.6	(85%)	527.0	(87%)	544.5	(86%)
	T	415.2	(100%)	670.1	(100%)	592.0	(100%)	606.9	(100%)	636.1	(100%)
Canada	A	42.2 ^{1/}	(19%)	78.9	(30%)	86.1	(33%)	117.0	(32%)	146.8	(37%)
	B)	-	-	-	-	-	-	-	-	-	-
	C)	180.3	(81%)	181.3	(70%)	173.0	(67%)	250.3	(68%)	250.9	(63%)
	T	222.5	(100%)	260.2	(100%)	259.1	(100%)	367.3	(100%)	397.7	(100%)
Congo, D.R. of	B	116.0	(48%)	136.0	(47%)	159.3	(50%)	160.5	(50%)	159.5	(49%)
	C	125.9	(52%)	152.6	(53%)	157.6	(50%)	161.0	(50%)	166.0	(51%)
	T	241.9	(100%)	288.6	(100%)	316.9	(100%)	321.5	(100%)	325.5	(100%)
Peru	A	14.8	(29%)	23.5	(13%)	23.5	(14%)	25.3	(14%)	24.4	(12%)
	B	12.0	(24%)	118.3	(66%)	115.3	(67%)	123.2	(69%)	148.2	(72%)
	C	24.0	(47%)	37.9	(21%)	32.6	(19%)	29.3	(17%)	32.2	(16%)
	T	50.8	(100%)	179.7	(100%)	171.4	(100%)	177.8	(100%)	204.8	(100%)

Philippines

The Philippines has exported copper ore and concentrates to Japan and the United States. In 1968 imports of copper ore and concentrates from the Philippines into Japan and the United States amounted to 417,000 and 13,000 metric tons in gross weight respectively.

¹Including matte.

²Including exports from Rhodesia.

TABLE 2 - DEVELOPMENTS IN THE EXPORTS OF COPPER SEMI-MANUFACTURES
FROM CHILE AND YUGOSLAVIA

(1) Exports of Chile (1000 metric tons)

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Wire and cables	13.7	7.5	1.8	20.6	21.3	3.4	3.0	3.3	2.8	26.5	33.5	29.3	7.7	10.7
Sheets and strips	8.8	5.0	0.3	1.5	10.0	0.5	0.6	0.1	0.1	22.8	27.2	3.1	0.1	0.2
Pipes and tubes	-	1.0	1.4	1.3	1.2	1.1	0.4	0.5	2.0	0.6	0.6	0.9	0.8	0.4
Rods and bars	0.4	1.1	-	-	-	-	-	-	-	-	-	0.2	0.5	0.6
Total	22.9	16.4	3.5	23.4	32.5	5.0	4.0	3.9	4.9	49.9	61.3	33.5	9.1	11.9

TABLE 2 - DEVELOPMENTS IN THE EXPORTS OF COPPER SEMI-MANUFACTURES
FROM CHILE AND YUGOSLAVIA (cont'd)

(2) Exports of Yugoslavia

('000 metric tons)

	1965	1966	1967	1968
Semi-manufactures of copper	11.8	17.4	11.5	16.1
Semi-manufactures of copper alloys	11.7	16.6	17.7	17.9
Total	23.5	34.0	29.2	34.0

(3) Imports from Chile and Yugoslavia into selected markets

(\$ million)

Imports into	Imports from	1964	1965	1966	1967	1968
EEC	World ¹	31.2	59.9	69.9	35.7	52.7
	Yugoslavia	2.6	5.3	7.6	5.8	6.3
	Chile	2.6	10.1	2.1	0.3	1.6
United States	World	72.3	98.3	168.0	131.2	191.8
	Yugoslavia	1.9	2.3	3.6	3.6	7.0
	Chile	3.4	10.3	4.1	0.7	1.9
Japan	World	6.1	11.7	10.5	5.4	5.7
	Chile	2.4	7.4	3.4	-	-
United Kingdom	World ²	11.4	11.0	13.4	13.7	19.3
Sweden	World ²	19.0	42.3	46.7	26.6	27.2
	Yugoslavia	0.04	1.3	2.5	1.0	1.2
	Chile	0.5	8.1	4.2	0.5	0.3
Switzerland	World ²	18.9	27.9	34.0	28.2	31.3
	Yugoslavia	-	-	-	0.05	0.8
	Chile	-	1.8	0.5	-	0.2
Total	World	158.9	251.1	342.5	240.8	328.0
	Yugoslavia	4.5	8.9	13.7	10.45	15.3
	Chile	8.9	37.7	14.3	1.5	4.0

¹Excluding intra-EEC trade.

²Including intra-EFTA trade.

20,000 metric tons on an average in 1955-59, fell to the level of 4,000-5,000 metric tons in 1960-63, thereafter rising to the level of 33,500-61,300 metric tons in 1964-66, and declined again to 9,100 and 11,900 metric tons in 1967 and 1968, respectively. Yugoslav exports of copper semi-manufactures, on the other hand, have grown in a relatively stable fashion in these years, at the level of 23,500 metric tons in 1965 and 29,200-34,000 metric tons in 1966-68.

By far the largest market for copper semi-manufactures is the United States, accounting for 29.2 per cent in 1967, and for 46.0 per cent in 1968, of the total imports into the developed countries under study, followed by the EEC - 17.8 per cent and 12.6 per cent, Denmark - 9.1 per cent and 7.9 per cent, Switzerland - 8.3 per cent and 7.5 per cent, Sweden - 12.6 per cent and 6.5 per cent, Norway - 6.7 per cent and 6.5 per cent, the United Kingdom - 3.3 per cent and 4.6 per cent, Canada - 6.1 per cent and 3.9 per cent, Austria - 1.9 per cent and 1.8 per cent, Japan - 3.5 per cent and 1.4 per cent and Finland - 1.5 per cent and 1.3 per cent.

Table 4 lists copper manufactures important in international trade together with other information. There are, however, many other products in which copper accounts for a less substantial but still important proportion of gross value, e.g. electric generators and motors, dynamos, lighting equipment, electric heating apparatus, radio, telephonic apparatus, switches, radiators, storage batteries. The pattern of the use of copper by different industries in the major countries is roughly as follows: electrical industry - 50 per cent, transport industry - 20 per cent, construction industry - 15 per cent, general engineering industry - 10 per cent and domestic consumer industry - 5 per cent.

One of the most important copper manufactures in international trade is insulated wire and cable. Yugoslavia has recently exported the item in significant quantity. Most of the exports from Yugoslavia are destined to the EEC and the United States (see Table 3). Yugoslav exports increased sharply in 1965 and 1966 when world trade expanded. Having attained their highest level in 1967, they declined somewhat in 1968.

TABLE 3 - DEVELOPMENTS IN THE IMPORTS OF INSULATED WIRE AND CABLE FROM YUGOSLAVIA INTO THE OECD COUNTRIES

(\$ million)

Imports into	Imports from	1964	1965	1966	1967	1968
EEC	World ¹	14.4	20.0	21.3	17.9	20.5
	Yugoslavia	0.5	1.2	1.6	1.2	1.1
United States	World	16.1	23.1	68.7	66.0	62.9
	Yugoslavia	0.3	2.1	4.8	6.5	3.5
Total of the two markets	World	30.5	43.1	90.0	83.9	83.4
	Yugoslavia	0.8	3.3	6.4	7.7	4.6
Total of OECD countries	World ¹	130.9	160.5	224.2	217.8	228.1
	Yugoslavia	1.2	3.6	6.7	8.0	4.7

¹Excluding intra-EEC trade.

III. Copper tariff structure of selected developed countries and the tariff escalation between different stages of processing

1. Summary

Information on post-Kennedy Round import duties of ten developed countries and the EEC on copper and related products is provided in a consolidated form in Table 4. These products have been classified into three stages, i.e. primary products, copper semi-manufactures and copper manufactures. In view of the fact that most of the copper mining countries export copper to a large extent in the form of metal, copper metal as well as copper ore, concentrates and matte have been considered primary products. To simplify the analysis of tariff structure and tariff escalation, import duties on items which are relatively unimportant in world trade, i.e. master alloys, beryllium alloys and products thereof, products plated with precious metals, nickel silver, powders and flakes and products for certain special uses, have not been taken into account in the country notes. Information on these products is, however, given in Table 4.

The tariff structure of the countries under study has been analyzed in the country notes below, against the background of their production, trade and consumption.¹ Tariff differentials were calculated from post-Kennedy Round duty rates, i.e. rates when all concessions have been fully implemented. The existence of positive tariff differentials means that the effective incidence of duties on semi- and finished manufactures is higher than the nominal level of these duties would indicate. It may be noted that tariff differentials of the same size could mean significantly different effective incidence between different products, depending on the level of these duties and on the proportion of value added in the gross value of the product. (The formula for the calculation of effective incidence is explained, and its application illustrated, in the Annex.) It should also be noted that, as a result of the sharp increase in copper prices in recent years, which far exceeded the relative increase in manufacturing costs, the share of value added in the gross value of copper semi-manufactures and manufactures has decreased and hence the effective incidence of ad valorem duties on these products has generally increased.

At present imports of copper ore, matte, unrefined copper (blister etc.) and refined but unwrought copper are admitted duty free into all the markets studied with the exception of copper alloys from most-favoured-nation sources into the United Kingdom and Canada, which are subject to 5 per cent duty. In the United States and Japan, duty-free entry is granted to these products by virtue of a temporary duty suspension motivated by the prevailing high level of international prices. In all of these countries, therefore, the effective protection granted to the manufacturing of products from copper exceeds the rate of duty on corresponding manufactured imports.

¹In view of significant changes in the production, trade and consumption in a number of countries in recent years, data for two years, i.e. 1965 and 1968 have been given. Production, trade and consumption have been derived from the data supplied by the CIDEA and from OECD Commodity Trade Statistics and national trade statistics.

TABLE 4 - IMPORT DUTIES OF SELECTED DEVELOPED COUNTRIES ON PRIMARY PRODUCTS (ORE AND METAL), SEMI-MANUFACTURES AND MANUFACTURES OF COPPER
WHEN THE CONCESSIONS MADE IN THE KENNEDY ROUND HAVE BEEN FULLY IMPLEMENTED

Symbols used:(..%): Ad valorem incidence of specific duties supplied by governments in the context of the general tariff analysis. Base years are 1968 for Switzerland and 1967 for other countries.

* : Duties temporarily suspended.

BTN	Description	EEC	Japan	United Kingdom (m.f.n.)	United States ^{1/}	Austria	Denmark	Finland	Norway	Sweden	Switzerland	Canada ^{1/}
	<u>Stage I Primary products</u>					A Unworked, B Worked						
ex 2601	Ores and concentrates, of copper	)	Free	Free	Free; (3%)*	)	)	)	)	)	Free	Free
7401	Copper matte	)	Free	Free	(2%)*	)	)	)	)	)	)	Free
	Unrefined copper: unalloyed alloys	)	8.5%*	Free	)	)	4	)	)	)	)	Free
	Refined copper: unalloyed alloys	Free	(6-7%)*	Free	(3%)*	Free	Free	Free	Free	Free	(0.1%)	5% ^{13/} ; Free ^{14/}
	Waste and scrap, of copper	)	2.5%*	Free	(3%)*; (7%) ^{4/}	)	)	)	)	)	)	Free
7402	Master alloys, of copper	)	5%; 15% ^{2/}	5%; 10% ^{2/}	(11%)	Free; 2%	)	)	)	)	)	Free; 5%*
	<u>Stage II Copper semi-manufactures</u>											
7403	Bars, rods, angles, shapes, sections; wire, of copper	8%	)	8%; 10% ^{2/}	(2-13%); (15-16%) ^{4/}	A8%; S 2.52 per kg; B9%	Free ^{7/} ; 5%; 4%	2%; 3%; 7.5% ^{3/}	Free; (0.1%); 10% ^{10/}	3%	(1-4%); (6%) ^{11/}	5%; 10% ^{15/}
7404	Plates, sheets and strip of copper	8%	15%; 20% ^{2/}	8%; 15% ^{2/}	(2-13%)	A8%; B10%	5%	4.5%	(0.1-0.3%)	3%	(2-3%); (3-5%) ^{12/}	5%; Free ^{16/}
7405	Foil of a thickness not exceeding 0.15 mm, of copper	8%	)	8%; 15% ^{2/}	(2-9%)	10%; 11%	1.5%	7.5%	Free	3%	(2-4%)	20%
7406	Powders and flakes, of copper	1.5%; 10%	)	10%	(5-10%)	17%	Free	Free; 5%	Free	Free; 5%	(3%; 13%)	Free
7407	Tubes and pipes and blanks therefor; hollow bars, of copper	8%	)	10%; 15% ^{2/}	(2-11%)	A12%; B15%	5%	5%	5%	3%	(3%)	5%; Free ^{16/}
	<u>Stage III Copper manufactures</u>											
7408	Tube and pipe fittings of copper	7.5%	10%	10%; 15% ^{2/}	(8-11%)	16%	3%	6%	7.5%	4%	(3-5%)	17.5%
7410	Wire, cables, ropes, etc. not insulated of copper	8%	15%	10%	4%; 9.5%; 6%	16%	6%	5%	(0.1-0.3%)	3%	(5%)	17.5%
7411	Gauze, cloth, netting, fencing etc., of copper wire	8%	7.5%; 10%	10%	(5-13%); 17.5% ^{5/} ; 25% ^{5/}	12%; 16%	5%	2.5%; 5%	5%; Free	4%	(2%)	17.5%; 15%
7415	Nuts, bolts, screws, rivets, washers, of copper	4.5%; 7%	10%	6%; 10%	(2%)-11.5%	12%	6%	7.5%	7.5%	4%	(1-5%)	17.5%
7417	Domestic stoves, boilers, cookers, ovens, space heaters, of copper	6.5%; 7.5%	10%	10%	9.5%; 6%	35%; S 10.50 per kg	Free	7.5%; 2.5%	5%	4%	(1-5%)	n.a.
7418	Domestic utensils, of copper	7%	10%; 25% ^{3/}	10%	5%; 7.5%	15%; 29%; 30%	7.5%; 15% ^{3/}	7.5%	2.5%; 5%	4%	(1-6%)	17.5%
7419	Other articles, of copper	7%	7.5%; 10%; 25% ^{3/}	10%	(8-11%); 2%; 17.5% ^{5/}	12%; 25%	8%	7.5%	5%	4%; 5%	(1-4%)	5-17.5%; Free ^{16/}
ex 8461	Taps, cocks, valves for pipes, boiler shells, tanks and vats, of copper	6%; 6.5%	7.5%; 10%	8%	(10%)	15%	9%; 12% ^{8/}	Free-7.5%	10%	5%	(1-2%)	Free-17.5%
ex 8523	Insulated wire and cable, of copper	11%	15%	8%	8.5%	20%; 15%; 21%; 22%; S 6 per kg	10%; Free ^{4/}	7.5%	(0.1-4.3%)	8%	(4-7%)	15-17.5%; Free ^{16/}

1/ Tariff nomenclatures of the United States and Canada are different from the BTN.

2/ Beryllium alloys and products of beryllium alloys.

3/ Products plated or coated with precious metals.

4/ Products of nickel silver.

5/ Products to be used for paper-making machines.

6/ 22% on flat goods of metal valued not over \$5 per dozen and 17.5% on those valued over \$5 per dozen.

7/ Rolled and extruded products, unworked, of which the greatest cross-sectional dimension does not exceed 20 mm, coiled.

8/ Oil output regulators for radiators, burners and the like.

9/ Mine sweeping cable.

10/ Gilded or silvered wire.

11/ Certain copper wire, bar and angles the greatest cross-sectional dimension of which is 0.5 mm or less.

12/ Products perforated, bent or otherwise machined.

13/ Brass ingot.

14/ Nickel silver, German silver and copper chromium alloy.

15/ Electric wire excluding beryllium alloy wire; nickel silver and German silver products.

16/ Certain products for special use.

Table 5 shows that Denmark, Finland, Norway, Sweden and Switzerland have duties of not more than 5 per cent on all, or practically all, semi-manufactures of copper. The United States and Canada have duties not exceeding 5 per cent in respect of certain semi-manufactures important in trade but maintain higher duties on copper wire and some other semi-manufactures. The EEC maintains a duty of 8 per cent on all important semi-manufactures and the United Kingdom an identical rate on all important semi-manufactures except tubes and pipes, subject to a duty of 10 per cent. If Japanese duties on copper metal bound in the Kennedy Round are taken into account, the effective protection granted by a duty of 15 per cent on semi-manufactures will not differ greatly from that granted by the EEC and the United Kingdom; the effective protection has been significantly increased, however, by the suspension of the duties on copper metal in April 1966. Austria has duties of 8-12 per cent on unworked semi-manufactures and 9-15 per cent on worked ones, but certain products not manufactured or manufactured in insufficient quantities in Austria are partially or totally exempt from these duties.

One of the most important copper manufactures exported by developing countries is insulated wire and cable.¹ Japan and the United Kingdom maintain duties of 15 and 8 per cent respectively on insulated wire and cable of copper as well as on copper wire from which these are manufactured. Consequently, the effective incidence of duties of these countries on insulated wire and cable correspond to the actual duty rates. In other countries, duties on insulated wire and cable are generally higher than those affecting copper wire. Duties on copper wire compared with those on insulated wire and cable are as follows:

the EEC 8 per cent v. 11 per cent; the United States 7 per cent v. 8.5 per cent; Denmark 0-5 per cent v. 10 per cent; Finland 2-3 per cent v. 7.5 per cent; Norway 0-0.1 per cent v. 0.1-4 per cent; Sweden 3 per cent v. 8 per cent; Switzerland 1-4 per cent v. 4-7 per cent; Austria 8-9 per cent v. 15-22 per cent; Canada 10 per cent v. 15-17.5 per cent.

Household articles of copper are also exported by developing countries, though not in a significant quantity. The EEC and Japan maintain duties of 8 and 15 per cent, respectively, on copper plates and sheets and duties of 6.5-7.5 per cent and 7.5-10 per cent respectively on household articles of copper under BTN headings 74.17, 74.18 and 74.19. If copper plates and sheets are considered to be the main inputs in the production of household articles of copper, the tariff differentials are negative and the effective incidence of duties on household articles lower than their nominal level would indicate. Duties maintained by other countries on copper plates and sheets compare with those on the household articles of copper as follows:

the United Kingdom 8 per cent v. 10 per cent; the United States 2-4 per cent v. 5-22 per cent; Denmark 5 per cent v. 0-8 per cent; Finland 4.5 per cent v. 2.5-7.5 per cent; Norway 0.1-0.3 per cent v. 2.5-5 per cent; Sweden 3 per cent v. 4-5 per cent; Switzerland 2-3 per cent v. 1-6 per cent; Austria 8-10 per cent v. 12-35 per cent; Canada 5 per cent v. 5-17.5 per cent.

¹In the discussion of insulated conductors, both here and in the remainder of this note, account has not been taken of the materials other than copper entering into production and of tariff rates and differentials applicable to such materials. The indications of tariff differentials given here are thus illustrative and would be amended if all material inputs could be accounted for in the calculation.

The effects of tariff escalation, or positive tariff differentials, should be visible in the proportion which semi-manufactures and manufactures of copper represent in total imports of copper ore, metal and products into each country. These proportions indeed appear to be inversely related to the level of tariff protection in each country. The share of copper semi-manufactures and manufactures, by value, in the total imports of copper ore, metal and products in 1968 was as follows: Denmark and Norway - 89 per cent, Switzerland and Finland - 47-54 per cent, Austria and Canada - 32-33 per cent, Sweden and the United States - 29 per cent, the EEC and the United Kingdom - 5-6 per cent and Japan - 2 per cent.^{1, 2}

Similarly, the ratio of imports to national consumption appears to be higher in countries with low effective duties and vice versa. Among the countries studied in this note, consumption of copper semi-manufactures is most import intensive in the four Nordic countries where imports correspond to 30-32 per cent, by volume, of apparent internal consumption. In Switzerland, the ratio was 25-26 per cent, for Austria 13-14 per cent, in the United States 4 per cent in 1965 and 6 per cent in 1968, in Canada 8 per cent in 1965 and 4 per cent in 1968, in the EEC 3 per cent in 1965 and 2 per cent in 1968, in the United Kingdom 1 per cent in 1965 and 2 per cent in 1968, and in Japan 2 per cent in 1965 and a small fraction of 1 per cent in 1968.

The relationship between the structure of the tariff and the structure of copper imports should not be over-emphasized however, since the tariff is only one among many factors influencing the composition of imports. The history and structure of each national copper-working industry, the natural endowments in ores, and the pattern and growth of demand for copper semi-manufactures and manufactures (reflecting both consumer preferences and the structure and growth of the whole manufacturing sector of the national economy) can be expected to have a degree of influence on the composition of imports comparable to that exerted by the tariff. Nonetheless, the ratios given in the preceding two paragraphs are indications of a general, though not strictly systematic, correlation between the level of tariff protection and its structure, the composition of imports, and the ratio of imports to consumption.

¹In assessing the data relating to some countries, account should be taken of their duty-free imports from preferential sources. Imports of copper semi-manufactures and manufactures into Norway, Switzerland, Finland, Austria, Sweden and the United Kingdom from preferential sources accounted for 35-50 per cent of their imports from all sources respectively in 1968 and the corresponding percentage for Denmark exceeded 50 per cent.

²In Japan, this share had been 5 per cent in 1965, i.e. before the duties on copper metal were suspended; the sharp decrease in 1967 and 1968 could thus be attributable to the significant increase in the tariff escalation resulting from the suspension of duties on copper metal in April 1966.

TABLE 5 - SUMMARY OF POST-KENNEDY ROUND DUTIES ON COPPER
METAL AND SEMI-MANUFACTURES

	Duty on copper metal	Duty on semi- manufactures	Remarks
EEC	0	8%	
Japan	8.5% ^a	15%	^a At present totally suspended
United Kingdom	0 ^b 5% ^c	8% ^d 10% ^e	^b Unalloyed copper ^c Alloys ^d Semi-manufactures other than tubes and pipes ^e Tubes and pipes
United States ¹	3% ^f	2-4% ^g	^f A substantial part of imports would be exempted from the duty. These duties are at present totally suspended. ^g Rods, bars, plates, sheets, relatively unprocessed and seamless pipes and tubes. These items together with 'h' below account for more than 90 per cent of US imports of semi-manufactures
	3% ^f 3% ^f	7% ^h 8-13% ⁱ	^h Wire, other than of nickel silver ⁱ Other items excluding nickel silver products
Denmark	0	0 ^j	^j Rolled and extruded products, of which the greatest cross-sectional dimension does not exceed 20 mm., coiled
	0	4-5% ^k	^k Other semi-manufactures
Finland	0	2-3% ^l 4.5-5% ^m	^l Bars, rods, sections and wire ^m Plates, sheets, strip, tubes and pipes
Norway	0	0-0.3% ⁿ	ⁿ Semi-manufactures other than tubes and pipes
	0	5% ^o	^o Tubes and pipes
Sweden	0	3%	
Switzerland	0.1	1-4% ^p	^p A few sub-items among a large number of sub-items are subject to duties of 5-6 per cent

¹F.o.b. duties.

	Duty on copper metal	Duty on semi- manufactures	Remarks
Austria	0	8% ^q	^q Unworked bars, rods, sections, plates, sheets and strip, and wire of 0.25 mm. or more in thickness
	0	9-10% ^r	^r Worked bars, rods, sections, plates, sheets and strip
	0	12% ^s	^s Unworked tubes and pipes and blanks therefor
	0	15% ^t	^t Worked tubes and pipes
Canada ¹	0 ^u	5% ^w	^u Unalloyed copper
	5% ^v	5% ^w	^v Brass
	0 ^u	10% ^x	^w Bars, rods, plates, sheets, tubes, etc. ^x Electric wire

¹F.o.b. duties.

2. Country notes

A. EUROPEAN ECONOMIC COMMUNITY

Depending for practically all of their copper requirements on overseas supply, the EEC countries admit free of duty imports of copper ranging from ore to refined copper (see Table 6). The bulk of the copper imports into the EEC are in the form of metal, a greater part being refined rather than unrefined copper. Unrefined copper imports go mostly to the refineries in Belgium and the Federal Republic of Germany, and practically all imports of ore are absorbed by the Federal Republic of Germany. The major suppliers of unrefined copper are the Democratic Republic of the Congo, Zambia, Chile, and Peru while refined copper comes mainly from Chile, the Democratic Republic of the Congo, the United States and the United Kingdom. The EEC production of refined copper accounted for 62-63 per cent of its consumption in 1965 as well as in 1968 (see Table 7).

The EEC is a net exporter of copper semi-manufactures and its imports of these products correspond to only 2-3 per cent of its consumption (see Table 7). Chile and Yugoslavia are among the important suppliers of copper semi-manufactures to the EEC. A uniform rate of 8 per cent remains after the Kennedy Round on semi-manufactures of copper.

On most copper manufactures listed in Table 6, import duties range between 4.5 per cent and 8 per cent; a positive tariff differential of 8 per cent exists between the raw and semi-processed stage, whereas between the semi- and fully processed stage the differential is zero or negative. On insulated wire and cable, a duty of 11 per cent remains. Hence, a tariff differential of 3 per cent exists between this item and the semi-product from which it is manufactured, i.e. copper wire. Yugoslavia is among the important suppliers of this item to the EEC market.

TABLE 6 - TARIFF AND IMPORT STRUCTURE OF THE EEC

	Post-Kennedy Round duty	Imports in 1965 from		Imports in 1968 from	
		World ¹ (%)	Developing countries (%)	World ¹ (%)	Developing countries (%)
Stage I - Primary products					
ex 2601 Ores and concentrates of copper	Free	35.3 (3)	28.6 (5)	53.3 (3)	30.1 (3)
7401 Copper mattes	Free				
Unrefined and refined copper	Free	846.1 (81)	567.6 (89)	1,304.2 (83)	932.0 (94)
Waste and scrap	Free	83.1 (8)	19.0 (3)	146.2 (9)	20.8 (2)
Stage II - Semi-manufactures					
7403; 7404; 7405; 7407 Bars, rods, shapes, wire plates, sheets, foil, tubes and pipes	8%	56.5 (5)	17.2 (3)	49.3 (3)	10.9 (1)
Stage III - Manufactures					
7408; 7410; 7411; 7415; 7417; 7418; 7419; (see Table 4 for the description of these items)	6-8%; 4.5%	11.8 (1)	0.5 (-)	11.4	0.3 (-)
8523 Insulated wire and cable, of copper ²	11%	20.0 (2)	1.4 (-)	20.5	1.3 (-)
Total imports		1,050.8 (100)	634.3 (100)	1,584.9 (100)	995.4 (100)

¹Not including intra-EEC trade.

²Statistics include wire and cable of aluminium.

TABLE 7 - PRODUCTION, TRADE AND CONSUMPTION OF THE EEC

	1965		1968	
	'000 metric tons	(%)	'000 metric tons	(%)
<u>Copper</u>				
Production: Blister and anodes	139		200	
of which: From ores	76		96	
From scrap	52 ^{1/}		96 ^{1/}	
Refined copper	706 ^{1/}	(62)	805 ^{1/}	(63)
Copper alloy ingots	92		97	
Imports ^{2/} : Ores (gross weight)	}		221	
Copper matte			2	
Unwrought copper and alloy			1,168	
Waste and scrap			157	
Exports ^{2/} : Ores (gross weight)	}		13	
Copper matte			-	
Unwrought copper and alloy			273	
Waste and scrap			10	
Consumption: Refined copper	1,147	(100)	1,282	(100)
<u>Copper semi-manufactures</u>				
Production: Total	1,660	(104.5)	1,766	(106.2)
of which: copper semi's	978	(61.6)	1,042	(62.7)
alloy semi's	682	(43.0)	724	(43.5)
Imports ^{2/} : Total	46	(2.8)	33	(1.9)
Exports ^{2/} : Total	119	(7.4)	136	(8.1)
Apparent consumption: Total	1,587	(100)	1,663	(100)

^{1/} Includes copper alloy ingots produced in Belgium.

^{2/} Not including intra-EEC trade.

B. JAPAN

Raw materials such as ores, concentrates and matte enjoy duty-free treatment in Japan. Being one of the copper-mining countries, Japan maintains a duty of 8.5 per cent on unrefined copper, not alloyed, and a duty of ¥ 24 per kg. on other copper metal. The ad valorem incidence of this specific duty was 10 per cent on the basis of 1964 price. However, in view of the currently high world market price of copper, these duties have been temporarily suspended since April 1966. As Table 9 shows, Japanese consumption of refined copper increased by 62 per cent by weight between 1965 and 1968. This remarkable increase was met mainly by the increased production of refined copper from imported concentrates and unrefined copper and, secondarily, by increased imports of refined copper. Imports of concentrates increased by 82 per cent and those of copper metal, i.e. unrefined and refined copper, by 154 per cent by weight between 1965 and 1968. As a result imports of copper metal exceeded those of concentrates in 1968. The sharper increase in the imports of copper metal appears to be attributable to the suspension of duties on the item.

On copper semi-manufactures Japan maintains a post-Kennedy Round duty of 15 per cent. Since April 1966 when duties on copper metal were suspended the tariff escalation between copper metal and semi-manufactures has been increased significantly.¹ Japan is one of the net-exporting countries of copper semi-manufactures. Its imports, which corresponded to 2 per cent of its consumption of copper semi-manufactures in 1965, decreased absolutely by more than a half and represented a fraction of 1 per cent of domestic consumption in 1967 and 1968 (see Table 9).

On copper wire and cable, insulated or not, Japan has a duty of 15 per cent, identical to duties on copper semi-manufactures; the effective incidence of duties on wire and cable thus corresponds to the nominal duty rate of 15 per cent. On other copper manufactures, Japan has duties of 7.5-10 per cent, which are lower than duties on semi-manufactures. The effective incidence of these duties is thus less than 15 per cent.

¹In April 1966 when the Kennedy Round concessions had not yet been implemented, duties on semi-manufactures amounted to 20 per cent. Copper duty of 10 per cent at that time having been suspended, the tariff differentials increased from 10 per cent to 20 per cent.

TABLE 8 - TARIFF AND IMPORT STRUCTURE OF JAPAN

(\$ million)

	Post-Kennedy Round duty	Tempo-rary duty	Imports in 1965 from		Imports in 1968 from	
			World (%)	Less-developed countries (%)	World (%)	Less-developed countries (%)
Stage 1 - Primary products						
ex 2601 Ores and concentrates of copper	Free		128.2 (47)	76.9 (46)	287.7 (41)	144.8 (33)
7401 Copper matte, cement copper	Free					
Unrefined copper, not alloyed	8.5%	Free				
Unrefined copper alloys	(10) ^{1/}	Free	86.5 ^{2/} (32)	63.0 (33)	351.0 ^{2/} (50)	270.5 (63)
Refined copper, not alloyed and refined copper alloys		Free	45.1 (16)	19.0 (11)	48.1 (7)	15.8 (4)
Waste and scrap	2.5%	Free				
Stage 2 - Semi-manufactures						
7403-7407 ^{3/}	15%		11.5 (4)	7.7 (5)	4.7 (1)	
Stage 3 - Manufactures						
7408, 7411, 7415, 7417, 7418, 7419 ^{3/}	7.5-10% 15%		1.1 (-)	0.1 (-)	1.5 (-)	0.2
7410 Wire, cable, etc., not insulated, of copper						
ex 8523 Insulated wire and cable, of copper ^{4/}	15%		2.3 (1)	-	3.9 (1)	-
Total imports			274.7 (100)	166.7 (100)	696.9 (100)	431.3 (100)

^{1/} Ad valorem incidence of a rate of ¥ 24 per kg. based on the average import price of 1964. The incidence is 6-7 per cent if based on the price of 1967.

^{2/} Breakdown of the figures by different types of copper metal;

	1965 (\$ million)	1968 (\$ million)
Copper, unrefined	19.6	157.0
Copper, refined	64.4	187.0
Copper alloys	2.5	7.0
Total	86.5	351.0

^{3/} For the description of these items see Table 4.

^{4/} Statistics include wire and cable of aluminium.

TABLE 9 - PRODUCTION, TRADE AND CONSUMPTION OF JAPAN

	1965		1968	
	'000 metric tons	(%)	'000 metric tons	(%)
<u>Copper</u>				
Production: Concentrates (copper content)	107	(25)	120	(17)
Refined copper -				
Total of which	366	(86)	548	(79)
from: ores	307	(72)	477	(69)
scrap	59	(14)	71	(10)
Imports: Concentrates (gross weight)	584		1,061	
Copper matte	34		24	
Unrefined and refined copper	112		284	
Copper alloy ingots and billets	3		7	
Scrap: copper	13		8	
brass and bronze	52		51	
Exports: Refined copper	3		12	
Consumption: Refined copper	428	(100)	695	(100)
<u>Copper semi-manufactures</u>				
Production: Total	684	(106)	1,040	(104)
of which: copper semi's	453		700	
alloy semi's	231		339	
Imports: Total	11	(2)	2	(-)
of which: copper semi's	8		1	
alloy semi's	3		1	
Exports: Total	50	(8)	43	(4)
of which: copper semi's	31		27	
alloy semi's	19		16	
Apparent consumption: Total	645	(100)	998	(100)
of which: copper semi's	430		674	
alloy semi's	215		324	

C. UNITED KINGDOM

Having no mining production, the United Kingdom admits imports of primary products ranging from copper ore to unalloyed copper metal free of duty from both preferential and most-favoured-nation sources, but maintains a duty of 5 per cent on imports of unwrought copper alloys from most-favoured-nation sources (see Table 10). A substantial amount of copper alloys is produced from domestic scrap reserves (see Table 11) and imports of copper alloys are therefore negligible. All United Kingdom copper imports are in the form of metal, approximately 90 per cent of which is refined. In 1968, Zambia and Chile met approximately two thirds of these import requirements.

The United Kingdom is one of the net-exporting countries of copper semi-manufactures, and its imports of the items correspond only to 1-2 per cent of domestic consumption (see Table 11). A most-favoured-nation duty of 10 per cent is maintained on tubes and pipes, and 8 per cent on other semi-manufactures. Hence, tariff differentials of 8-10 per cent exist between unalloyed copper metal and semi-manufactures of unalloyed copper. Between copper alloys and semi-manufactures of them, the differentials correspond to 3-5 per cent.

Most-favoured-nation duties on copper manufactures are generally 8 per cent or 10 per cent. This means that tariff differentials between semi-manufactures and manufactures are either negative, none, or 2 per cent at most.

TABLE 10 - TARIFF AND IMPORT STRUCTURE OF THE UNITED KINGDOM

	Post-Kennedy Round m.f.n. duty	Common-wealth and EFTA	Imports in 1965 from		Imports in 1968 from		(\$ million)
			World (%)	Developing countries	World (%)	Developing countries	
<u>Stage 1 - Primary products</u>							
ex 2601 Ores and concentrates of copper	Free	Free	-	-	-	-	-
7401 Copper matte	Free	Free	0.2 (-)	0.2	0.5 (-)	-	-
Unalloyed copper, refined and unrefined	Free	Free	487.2 (95)	276.1	544.9 (93)	339.9	339.9
Copper alloys	5%	Free					
Waste and scrap	Free	Free	3.9 (1)	0.5	6.5 (1)	1.1	1.1
<u>Stage 2 - Semi-manufactures</u>							
7403, 7404, 7405	8%	Free	10.6 (2)	0.1	18.6 (3)	0.1	0.1
Bars, rods, shapes, wires, plates, sheets and foil							
7407 Tubes and pipes	10%	Free					
<u>Stage 3 - Manufactures</u>							
ex 7408, 7410, 7411, ex 7415, 7417, 7418, 7419 (see Table 4 for description of these items)	10%	Free	5.0 (1)	0.2	5.8 (1)	0.3	0.3
ex 7415 Screws for wood	6%	Free					
ex 8523 Insulated wire and cable, of copper ¹	8%	Free	4.8 (1)	0.1	9.0 (2)	0.1	0.1
<u>Total imports</u>			511.7 (100)	277.2	585.3 (100)	341.5	341.5

¹ Statistics include wire and cable of aluminium.

TABLE 10 - TARIFF AND IMPORT STRUCTURE OF THE UNITED KINGDOM

	Post-Kennedy Round m.f.n. duty	Common-wealth and EFTA	Imports in 1965 from		Imports in 1968 from	
			World (%)	Developing countries	World (%)	Developing countries
<u>Stage 1 - Primary products</u>						
ex 2601 Ores and concentrates of copper	Free	Free	-	-	-	-
7401 Copper matte	Free	Free	0.2 (-)	0.2	0.5 (-)	-
Unalloyed copper, refined and unrefined	Free	Free	487.2 (95)	276.1	544.9 (93)	339.9
Copper alloys	5%	Free				
Waste and scrap	Free	Free	3.9 (1)	0.5	6.5 (1)	1.1
<u>Stage 2 - Semi-manufactures</u>						
7403, 7404, 7405						
Bars, rods, shapes, wires, plates, sheets and foil	8%	Free	10.6 (2)	0.1	18.6 (3)	0.1
7407 Tubes and pipes	10%	Free				
<u>Stage 3 - Manufactures</u>						
ex 7408, 7410, 7411, ex 7415, 7417, 7418, 7419 (see Table 4 for description of these items)	10%	Free	5.0 (1)	0.2	5.8 (1)	0.3
ex 7415 Screws for wood	6%	Free				
ex 8523 Insulated wire and cable, of copper ¹	8%	Free	4.8 (1)	0.1	9.0 (2)	0.1
<u>Total imports</u>			511.7 (100)	277.2	585.3 (100)	341.5

¹ Statistics include wire and cable of aluminium.

D. UNITED STATES

Since approximately two thirds of United States copper requirements are supplied from domestic mines (see Table 13), duties of 2-3 per cent (ad valorem incidence) are maintained on the primary products ranging from ores to refined copper with the exception of ores within a tariff quota (see Table 12). Imports of primary products are exempt from these duties when smelted or refined in the United States for export. In 1964, 98 per cent of the imports of dutiable ores and cement copper and 71 per cent of the imports of unrefined copper benefited from this exemption. These duties were suspended beginning February 1966 on account of the prevailing high copper price. As Table 13 shows, United States imports of ores and cement copper have diminished to 4 per cent of its total copper imports in recent years and refined copper replaced unrefined copper as the most important form of import between 1965 and 1968. The United States, which had been a net exporting country of refined copper until 1966, became a net-importing country thereafter. In 1968, 23 per cent of its imports of copper metal came from Chile, followed by the EEC - 21 per cent, and Peru - 15 per cent.

All United States duties on copper semi-manufactures are specific or mixed duties. A larger number of duties are mixed duties in which specific rates equivalent to 1-3 per cent apply in addition to ad valorem rates. The comments below are expressed in terms of the ad valorem incidence of these duties based on import prices of 1967. In 1968, in consequence of a continual rise in prices, this ad valorem incidence was further reduced. In respect of certain copper and copper products, the United States maintain two rates, one applying when the market price of copper is 24 cents or more per pound, and the other, generally 20 per cent higher than the first one, when the price falls below 24 cents. The United States market price of copper having been well over 24 cents per pound in the 1960's, only the former rate is indicated in Tables 4 and 12.

Copper wire, subject to a duty of 7 per cent, and some other items, subject to duties of 2-4 per cent, account for more than 90 per cent of the imports of copper semi-manufactures into the United States (see footnote 1 to Table 12). Items other than these are generally subject to duties ranging between 8 and 13 per cent. With duties on metal in suspension, positive differentials exist and the effective incidence of duties on semi-manufactures thus considerably exceeds their nominal levels.

The United States has been a net-importing country of copper semi-manufactures in recent years. Its imports accounted for 4 per cent and 6 per cent of its apparent consumption in 1965 and 1968 respectively and recorded an increase of 61 per cent in weight and 95 per cent in value between these years, though imports from developing countries decreased (see Tables 12 and 13). Among the suppliers of semi-manufactures to the United States are Yugoslavia and Chile.

Insulated electric conductors, one of the most important copper manufactures, are subject to a duty of 8.5 per cent; a tariff differential of 1.5 per cent in comparison with the 7 per cent duty on copper wire. Imports of insulated electric

conductors into the United States from developing countries increased significantly between 1965 and 1968 (see Table 12). Major suppliers were Yugoslavia, Mexico, the Republic of China and Hong Kong. Duties on other copper manufactures range generally between 2 per cent and 13 per cent. Hence, tariff differentials between relatively unprocessed semi-manufactures which are subject to duties of 2-4 per cent and these copper manufactures range between 0 and 11 per cent. Flat goods are subject to higher duties of 17.5 and 22 per cent; in comparison with the 2-4 per cent duties on semi-manufactures, the tariff differentials thus amount to 13.5-20 per cent.

TABLE 12 - TARIFF AND IMPORT STRUCTURE OF THE UNITED STATES

	Post-Kennedy Round duty	Temporary duty	Imports in 1965 from		Imports in 1968 from	
			World (%)	Developing countries (%)	World (%)	Developing countries (%)
Stage 1 - Primary products						
Ores: A quota of 15,000 tons in copper content	Free ²		24.5	18.7	26.3	19.8
Outside the quota	(3%) ²					(5)
Copper matte	(2%) ²	Free				
Unrefined and refined copper	(3%) ²	Free	326.4	239.6	663.2	320.2
Waste and scrap	(3%) ²	Free	12.7	6.6	14.0	2.8
Stage 2 - Semi-manufactures						
Rods, bars, plates and sheets relatively unprocessed and seamless pipes and tubes ¹	(2-4%) ³					
Wire, other than of nickel silver ¹	(7%) ³					
Other items (excluding nickel silver products)	(8-13%) ³		97.3	14.4	189.8	10.0
Stage 3 - Manufactures						
Tubes and pipe fittings ⁴	(8-11%) ³		1.0	0.9	2.0	1.5
Insulated electric conductors	(8-11%) ³		23.1	2.2	62.9	9.7
Flat goods	22% ³		1.4	-	0.7	-
Other manufactures listed in Table 4 except ex 8461	17.5% ³		19.0	3.6	36.7	6.0
Total imports	(2-13%) ³		505.4	286.0	995.6	370.0

¹TSUS 610.60, -62, -64, 612.31, -39, -44, -72, -73, 613.02, -10. These ten items accounted for more than 90 per cent of the total imports of some forty TSUS items regarded as semi-manufactures.

²Ad valorem incidence of specific duties based on 1964 import price.

³Ad valorem incidence of specific and mixed duties based on 1967 import price.

⁴Statistics include wire and cable of aluminium.

TABLE 13 - PRODUCTION, TRADE AND CONSUMPTION OF THE UNITED STATES

	1965		1968	
	'000 short tons	(%)	'000 short tons	(%)
<u>Copper</u>				
Production: Ores and concentrates (recoverable)	1,352	(67)	1,205	(64)
Blister and anodes; Total	1,528		1,351	
of which: from ores	1,434		1,266	
from scrap	94		85	
Refined copper; Total	2,157	(108)	1,854	(99)
of which: from blister	1,712		1,437	
from scrap	445		417	
Brass and bronze ingots	333		316	
Imports: Ores and concentrates	37		28	
Blister	333		271	
Refined copper	137	(7)	400	(21)
Scrap	19		14	
Exports: Ores and concentrates	16		81	
Refined copper	325	(16)	251	(13)
Scrap	97		123	
Consumption: Refined copper	2,005	(100)	1,878	(100)
<u>Copper semi-manufactures</u>				
Production: Total	2,575	(97)	2,560	(95)
of which: copper semi's	1,720		1,671	
alloy semi's	855		889	
Imports: Total	95	(4)	153	(6)
of which: copper semi's	53		87	
alloy semi's	42		66	
Exports: Total	20	(1)	13	(1)
of which: copper semi's	12		8	
alloy semi's	8		5	
Apparent consumption: Total	2,650	(100)	2,700	(100)
of which: copper semi's	1,761		1,750	
alloy semi's	889		950	

E. DENMARK, FINLAND, NORWAY AND SWEDEN

All four Nordic countries admit imports of primary products ranging from copper ore to refined copper (including copper alloys) duty free (see Tables 14-17). Among the four countries, Denmark has no mining or smelting production and imports refined copper from neighbouring countries. The other three countries have sizable mining, smelting and refining industries. In 1968, domestic output of ores, in terms of copper content, in Finland, Norway and Sweden accounted for 91 per cent, 120 per cent and 21 per cent respectively of domestic consumption of refined copper, and domestic production of refined copper in these countries for 108 per cent, 132 per cent and 54 per cent, respectively, of their consumption (see Table 18). Finland and Norway are thus net exporters of copper. In 1968, 90 per cent of Swedish imports of copper (ore and metal) in value consisted of refined metal. Forty-three per cent of these copper imports came from Chile, and 26 per cent from Zambia.

Tables 14-17 show Denmark maintaining duties of 0-5 per cent on copper semi-manufactures; in Finland these range from 2 to 7.5 per cent, in Norway from 0 to 5 per cent, while Sweden has a uniform duty of 3 per cent. The four Nordic countries are net importers of copper semi-manufactures as a whole (data for individual countries are not available, see Table 18). In 1968, imports including mutual trade, of copper semi-manufactures into the four countries amounted to \$93 million¹ and accounted for 30 per cent of their apparent consumption. This was the largest proportion among the developed countries covered by this study.

On insulated wire and cable, one of the most important copper manufactures, Denmark maintains a duty of 10 per cent, Finland 7.5 per cent, Norway 0.1-4 per cent and Sweden 8 per cent. Thus, the tariff differentials of these countries between this item and copper wire used as a raw material amount to 5-10 per cent, 4.5-5.5 per cent, 0-4 per cent and 5 per cent, respectively. In 1968 imports of this item into the four countries amounted to \$28 million, accounting for 10 per cent of the total imports of copper and copper products into these countries. On other selected copper manufactures, Denmark, Finland, Norway and Sweden maintain duties of 0-9 per cent, 0-7.5 per cent, 0-7.5 per cent and 3-5 per cent, respectively.

¹Of which the EEC supplied 31 per cent and Sweden 22 per cent. Chile and Yugoslavia were among other smaller suppliers.

TABLE 14 - TARIFF AND IMPORT STRUCTURE OF DENMARK

(\$ million)

	Post-Kennedy Round duty	Imports in 1965 from		Imports in 1968 from	
		World (%)	Developing countries	World (%)	Developing countries
<u>Stage I - Primary products</u>					
ex 2601 Ores and concentrates	Free	-	-	-	-
7401 Copper matte	Free	-	-	-	-
Unrefined and refined copper	Free	3.5 (8)	0.1	5.2 (11)	0.1
Waste and scrap	Free	0.2 (-)	0.2	0.1 (-)	-
<u>Stage II - Semi-manufactures</u>					
7403 Bars, rods, shapes, wire	Free; 5%; 4%	((((
7404 Plates and sheets	5%	(29.8 (69)	0.3	32.9 (71)	0.1
7407 Tubes and pipes	5%	((((
7405 Foil	1.5%	((((
<u>Stage III - Manufactures</u>					
7408 Tubes and pipe fittings	3%	0.8 (2)	-	..	..
7417 Domestic stoves, space heaters, cookers etc.	Free	-	-	..	..
ex 8523 Insulated wire and cable ¹	10%	6.7 (15)	-	8.2 (18)	-
7410, 7411, 7415, 7418, 7419	5-9%	2.6 (6)	-	..	..
<u>Total imports</u>	-	43.6 (100)	0.6	46.4 (100)	0.2

¹Statistics include wire and cable of aluminium.

TABLE 15 - TARIFF AND IMPORT STRUCTURE OF FINLAND

(\$ million)

	Post-Kennedy Round duty	Imports in 1965 from		Imports in 1968 from	
		World (%)	Developing countries (%)	World (%)	Developing countries (%)
<u>Stage I - Primary products</u>					
ex 2601 Ores and concentrates	(	-	-	0.7 (3)	-
7401 Copper matte	Free (-	-	-	-
Unrefined and refined copper	Free	10.3 (46)	6.2 (83)	9.8 (43)	8.9 (97)
Waste and scrap	Free	0.8 (4)	-	-	-
<u>Stage II - Semi-manufactures</u>					
7403 Bars, rods, shapes, wire	2%; 3% (-	-	-	-
7404 Plates and sheets	4.5% (	4.8 (21)	1.3 (17)	5.2 (25)	0.3 (3)
7407 Tubes and pipes	5% (-	-	-	-
7405 Foil	7.5% (-	-	-	-
<u>Stage III - Manufactures</u>					
7408 Tube and pipe fittings	6%	0.3 (1)	-	0.3 (1)	-
ex 8523 Insulated wire and cable ¹	7.5%	1.2 (5)	-	1.4 (6)	-
7410, 7411, 7415, 7417,)	Free;	5.4 (23)	-	5.1 (22)	-
7418, 7419)	7.5%	-	-	-	-
<u>Total imports</u>		22.8 (100)	7.5 (100)	22.5 (100)	9.2 (100)

¹Statistics include wire and cable of aluminium.

TABLE 16 - TARIFF AND IMPORT STRUCTURE OF NORWAY

(\$ million)

	Post-Kennedy Round duty	Imports in 1965 from		Imports in 1968 from	
		World (%)	Developing countries	World (%)	Developing countries
<u>Stage I - Primary products</u>					
ex 2601 Ores and concentrates	Free	-	-	-	-
7401 Copper matte	Free	-	-	-	-
Unrefined and refined copper	Free	4.2 (13)	-	4.4 (11)	0.1
Waste and scrap	Free	0.1 (-)	-	0.1 (-)	-
<u>Stage II - Semi-manufactures</u>					
7403 Bars, rods, shapes, wire	Free-(0.1%)	(
7404 Plates and sheets	(0.1-0.3%)	(	0.3	26.2 (66)	1.1
7407 Tubes and pipes	5%	(
7405 Foil	Free	(
<u>Stage III - Manufactures</u>					
7408 Tubes and pipe fittings ¹	7.5%	0.7 (2)	-	0.9 (2)	-
ex 8523 Insulated wire and cable ¹	(0.1-4.0%)	2.4 (7)	-	3.3 (9)	-
7410, 7411, 7415, 7417, 7418, 7419	Free-7.5%	3.8 (11)	-	4.6 (12)	-
<u>Total imports</u>		33.0 (100)	0.3	39.5 (100)	-

¹Statistics include wire and cable of aluminium.

TABLE 17 - TARIFF AND IMPORT STRUCTURE OF SWEDEN

(\$ million)

	Post-Kennedy Round duty	Imports in 1965 from		Imports in 1968 from	
		World (%)	Developing countries (%)	World (%)	Developing countries (%)
<u>Stage I - Primary products</u>					
ex 2601 Ores and concentrates	Free	19.0 (12)	5.3 (9)	12.9 (8)	4.3 (6)
7401 Copper matte	Free	71.1 (46)	41.7 (74)	94.7 (60)	67.5 (90)
Unrefined and refined copper	Free	6.0 (4)	-	4.6 (3)	-
Waste and scrap	Free	40.5 (26)	9.4 (17)	24.6 (15)	1.5 (2)
<u>Stage II - Semi-manufactures</u>	3%				
7403, 7404, 7405, 7407					
<u>Stage III - Manufactures</u>					
7408 Tube and pipe fittings	40%	1.8 (2)	-	2.6 (2)	-
7410 Non-insulated wire and cable	3%	0.6 (7)	-	0.5 (9)	-
ex 8523 Insulated wire and cable ¹	8%	11.3 (3)	-	14.7 (3)	1.2 (2)
7411, 7415, 7417, 7418, 7419	4%; 5%	5.2 (100)	56.4 (100)	4.8 (100)	0.1 (-)
<u>Total imports</u>		155.5 (100)		159.4 (100)	74.6 (100)

¹Statistics include wire and cable of aluminium.

TABLE 18 - PRODUCTION, TRADE AND CONSUMPTION OF
DENMARK, FINLAND, NORWAY AND SWEDEN

		1965		1968	
		'000 metric tons	(%)	'000 metric tons	(%)
<u>COPPER</u>					
<u>Denmark</u>					
Imports:	Refined copper	3.6		4.0	
Exports:	Scrap	4.5		4.9	
	Brass and bronze ingots	0.4		1.3	
Consumption:	Refined copper	4.4		2.9	
<u>Finland</u>					
Production:	Concentrates (copper content)	29.3	(77)	30.1	(91)
	Blister (copper content)	32.5		44.4	
	Refined copper	30.5	(79)	35.9	(108)
Imports:	Refined copper (including alloys)	11.4		8.2	
Exports:	Refined copper (including alloys)	5.1		10.8	
Consumption:	Refined copper	38.8	(100)	33.2	(100)
<u>Norway</u>					
Production:	Concentrates and cuprecous pirites (copper content)	15.0	(147)	16.6	(120)
	Blister and anodes (copper content)	20.2		23.5	
	Refined copper	14.8	(145)	18.2	(132)
Imports:	Refined copper	4.6		3.1	
Exports:	Concentrates (gross weight)	10.7		20.0	
	Blister (gross weight)	4.9		5.4	
	Refined copper	12.1		17.0	
Consumption:	Refined copper	10.2	(100)	13.8	(100)
<u>Sweden</u>					
Production:	Concentrates (copper content)	14.1	(15)	18.2	(21)
	Blister and anodes: Total	49.1		46.7	
	of which:				
	from ore	31.1		28.2	
	from scrap	18.0		18.5	
	Refined copper	50.5	(53)	46.7	(54)

TABLE 18 (cont'd)

		1965		1968	
		'000 metric tons	(%)	'000 metric tons	(%)
<u>COPPER (cont'd)</u>					
<u>Sweden (cont'd)</u>					
Imports:	Ores and concentrates	76.9		46.3	
	Copper matte	8.4		18.9	
	Blister	0.3		8.2	
	Refined copper	63.3		69.4	
	Brass and bronze ingots	5.8		2.8	
	Scrap	10.4		9.6	
Exports:	Refined copper	18.2		27.4	
	Brass and bronze ingots etc.	1.9		4.0	
	Scrap	1.4		0.9	
Consumption:	Refined copper	95.3	(100)	86.3	(100)
<u>COPPER SEMI-MANUFACTURES</u>					
Production:	Total of the four countries	244.5	(87)	216.5	(96)
	of which: copper semi's	165.8		151.0	
	alloy semi's	78.7		65.5	
Imports:	Total of the four countries	89.3	(32)	66.7	(30)
	of which: Denmark: copper semi's	22.6		18.8	
	alloy semi's	6.6		6.0	
	Finland: copper semi's	2.9		2.2	
	alloy semi's	0.9		1.3	
	Norway: copper semi's	18.0		16.6	
	alloy semi's	3.6		3.8	
	Sweden: copper semi's	23.3		9.2	
	alloy's semi's	11.4		8.8	
Exports:	Total of the four countries	53.5	(19)	58.1	(26)
	of which: Denmark: copper semi's	0.2		0.5	
	alloy semi's	1.4		2.0	
	Finland: copper semi's	12.0		13.1	
	alloy semi's	0.5		3.4	
	Norway: copper semi's	1.1		1.0	
	alloy semi's	1.8		1.2	
	Sweden: copper semi's	26.6		30.3	
	alloy semi's	9.9		6.6	
Apparent consumption:	Total of the four countries	280.3	(100)	225.1	(100)
	of which: copper semi's	192.7		152.9	
	alloy semi's	87.6		72.2	

F. SWITZERLAND

Having no mining production, Switzerland imports refined copper to meet its requirements. In 1968, its imports of copper metal amounted to \$45 million, out of which 55 per cent came from the EEC, 21 per cent from Chile and 7 per cent from Zambia. Swiss duties on copper ore and concentrates are zero, and on copper metal specific duties equivalent to 0.1 per cent are levied (see Table 19). The whole Swiss tariff consists of specific duties; their ad valorem incidences given here are based on 1968 import prices. It may be noted that as a result of the sharp increase in the copper price in recent years, the ad valorem incidence of the Swiss duties has been considerably reduced.

Swiss duties on semi-manufactures range generally from 1 per cent to 4 per cent; higher duties of 5-6 per cent are exceptionally maintained on a few sub-items. In 1965 and 1968, Swiss imports corresponded to 25-26 per cent of domestic consumption of copper semi-manufactures (see Table 20).

On insulated wire and cable, duties of 4-7 per cent are maintained, thus retaining tariff differentials of 0-6 per cent in comparison with its duties on copper wire. On other copper manufactures, duties ranging between 1 per cent and 6 per cent are maintained.

TABLE 19 - TARIFF AND IMPORT STRUCTURES OF SWITZERLAND

(\$ million)

	Post-Kennedy Round duty	Imports in 1965 from		Imports in 1968 from	
		World (%)	Developing countries (%)	World (%)	Developing countries (%)
<u>Stage I - Primary products</u>					
ex 2601 Ore and concentrates	Free (0.1%)	0.1 (-)	-	-	-
7401 Copper matte					
Unrefined and refined copper	(0.1%)	38.7 (52)	8.2 (80)	45.3 (52)	13.5 (92)
Waste and scrap	(0.1%)	0.3 (0.4)	0.2 (2)	0.5 (0.6)	0.3 (2)
<u>Stage II - Semi-manufactures</u>					
7403, 7404, 7405, 7407	(1-4%) ¹ (5-6%)	26.7 (35)	1.8 (17)	30.0 (34)	0.3 (6)
<u>Stage III - Manufactures</u>					
7408 Tube and pipe fittings	(3-5%)	1.2 (1.6)	-	1.3 (1.4)	-
ex 8523 Insulated wire and cable ²	(4-7%)	4.3 (6)	-	6.7 (8)	-
7410, 7411, 7415, 7417, 7418, 7419	(1-6%)	3.6 (5)	0.1 (1)	3.9 (4)	-
<u>Total imports</u>		74.9 (100)	10.3 (100)	87.7 (100)	14.6 (100)

¹A few sub-items among a large number of sub-items.

²Statistics include wire and cable of aluminium.

TABLE 20 - PRODUCTION, TRADE AND CONSUMPTION OF SWITZERLAND

		1965		1968	
		'000 metric tons	(%)	'000 metric tons	(%)
<u>Copper</u>					
Imports:	Refined copper	41.2		37.4	
	Alloy ingots	1.1		1.1	
	Scrap and old	0.6		0.8	
Exports:	Refined copper	0.7		2.2	
	Alloy ingots	3.1		4.2	
	Scrap and old	12.4		12.8	
Consumption:	Refined copper	40.5		35.2	
<u>Copper semi-manufactures</u>					
Production:	Total	82.3	(84)	75.1	(87)
	of which: copper semi's	41.9		36.5	
	alloy semi's	40.4		38.6	
Imports:	Total	24.0	(25)	22.0	(26)
	of which: copper semi's	24.0		21.8	
	alloy semi's	-		0.2	
Exports:	Total	8.8	(9)	11.0	(13)
	of which: copper semi's	8.0		9.6	
	alloy semi's	0.8		1.4	
Apparent consumption:	Total	97.5	(100)	86.1	(100)
	of which: copper semi's	57.9		48.7	
	alloy semi's	39.6		37.4	

G. AUSTRIA

Austria has some mining, smelting and refining production (see Table 22) but imports primary products, ranging from ore to refined copper, duty free. The bulk of Austria's 1968 imports of copper metal originated in the EEC, South Africa and Zambia.

Austria maintains duties of 8-12 per cent on unworked semi-manufactures and 9-15 per cent on worked ones but certain products not manufactured or manufactured in insufficient quantity in Austria are partially or totally exempted from these duties (see Table 21). Imports of copper semi-manufactures account for 13-14 per cent of domestic consumption (see Table 22). Most of these imports originate in neighbouring developed countries. On insulated wire and cable, Austria's duties range between 15 and 22 per cent; tariff differentials of 7-14 per cent in comparison with a duty of 8 per cent on unworked wire are thus maintained. Duties of 12-22 per cent apply to non-household copper manufactures and duties of 15-35 per cent to household copper manufactures (see Table 21).

TABLE 21 - TARIFF AND IMPORT STRUCTURE OF AUSTRIA

(\$ million)

	Post-Kennedy Round duty	Imports in 1965 from		Imports in 1968 from	
		World (%)	Developing countries	World (%)	Developing countries
<u>Stage I - Primary products</u>					
ex 2601 Ores and concentrates	Free	{ 0.1 (-)	-	-	-
7401 Copper matte	Free		-	-	-
Unrefined and refined copper	Free	21.8 (59)	1.7	26.9 (60)	5.4
Waste and scrap	Free	2.5 (7)	0.6	3.3 (7)	-
<u>Stage II - Semi-manufactures¹</u>					
7403 Bars, rods, wire	8% 9%; 10% 12% 15% 10%; 11%	{ 5.9 (16)	0.2	6.6 (15)	0.1
7404 plates, sheets:					
Unworked					
Worked					
7407 Tubes and pipes:					
Unworked					
Worked					
7405 Foil					
<u>Stage III - Manufactures¹</u>					
7408, 7410, 7411, 7415, ex 7419	12-22%	{ 3.5 (9)	-	4.1 (9)	-
Non-household manufactures					
7417, 7418, ex 7419 Household manufactures	15-35%	{			
ex 8523 Insulated wire and cable ²	15-22%	3.1 (10)	-	3.5 (8)	-
<u>Total imports</u>		36.9 (100)	2.5	44.4 (100)	5.5

¹Certain products not manufactured or insufficiently manufactured in Austria are partially or totally exempted from duty.

²Statistics include wire and cable of aluminium.

TABLE 22 - PRODUCTION, TRADE AND CONSUMPTION OF AUSTRIA

		1965		1968	
		'000 metric tons	(%)	'000 metric tons	(%)
<u>Copper</u>					
Production:	Concentrates (copper content)	1.5	(5)	2.1	(6)
	Refined copper	18.1	(59)	18.1	(52)
Imports:	Blister copper	5.4		5.3	
	Refined copper	17.5		16.5	
	Scrap	5.3		6.7	
Exports:	Blister copper	0.1		-	
	Refined copper	4.3		4.3	
Consumption:	Refined copper	30.7	(100)	35.0	(100)
<u>Copper semi-manufactures</u>					
Production:	Total	37.7	(110)	35.6	(107)
	of which: copper semi's	23.8		23.0	
	alloy semi's	13.9		12.6	
Imports:	Total	4.6	(13)	4.6	(14)
	of which: copper semi's	1.9		2.3	
	alloy semi's	2.7		2.3	
Exports:	Total	8.1	(23)	6.9	(21)
	of which: copper semi's	1.7		1.7	
	alloy semi's	6.4		5.2	
Apparent consumption:	Total	34.2	(100)	33.3	(100)
	of which: copper semi's	24.0		23.6	
	alloy semi's	10.2		9.7	

H. CANADA

Canada is an important exporter of copper. More than half of its mining production is exported in the form of refined metal and concentrates. Imports of primary products ranging from ores to unalloyed copper are admitted free of duty. But as in the case of the United Kingdom, a duty of 5 per cent is maintained on brass ingots.

Canada is also a net-exporter of copper semi-manufactures. Its imports of copper semi-manufactures accounted for 8 per cent in 1965 and 4 per cent in 1968 of domestic consumption (see Table 24). A duty of 10 per cent is maintained on copper wire and a duty of 5 per cent on other semi-manufactures.

Canada maintains duties of 15-17.5 per cent on most copper manufactures, but duty-free entry is granted to certain products for special use or those not manufactured in Canada. This means that between copper wire and insulated wire and cable tariff differentials of 5-7.5 per cent exist but between other semi-manufactures and manufactures the tariff differentials rise to 10-12.5 per cent in most cases.

TABLE 23 - TARIFF AND IMPORT STRUCTURE OF CANADA

(\$ million)

	Post-KR duty	Imports in 1965 from		Imports in 1968 from	
		World (%)	Developing countries	World (%)	Developing countries
<u>Stage I - Primary products</u>					
Ores and concentrates	Free	{ 1.4 (3)	0.1	56.7 (61)	-
Scrap	Free; 5%				
Copper matte	Free	{ 4.2 (10)	-	5.2 (6)	-
Unalloyed copper, unwrought	Free				
Brass ingots, unwrought	5%	(
<u>Stage II - Semi-manufactures</u>					
Bars, rods, plates, sheets, tubes and pipes	5%	{ 17.3 (41)	-	12.0 (13)	0.2
Wire	10%				
<u>Stage III - Manufactures</u>					
Insulated wire and cable ¹	15-17.5%	6.3 (15)	-	10.1 (11)	0.1
Other manufactures listed in Table 4	mostly 15-17.5%	12.6 (30)	0.1	8.3 (9)	0.2
<u>Total imports</u>		41.8 (100)	0.2	92.3 (100)	0.5

¹Statistics include wire and cable of aluminium.

TABLE 24 - PRODUCTION, TRADE AND CONSUMPTION OF CANADA

		1965		1967	
		'000 short tons	(%)	'000 short tons	(%)
<u>Copper</u>					
Production:	Ores of concentrates (copper content)	508	(226)	592	(264)
	Blister and anodes (copper content)	424		468	
	Refined copper	434	(193)	500	(223)
Imports:	Refined copper	6		5	
	Scrap	2		35	
Exports:	Ores and concentrates (copper content)	87		129	
	Refined copper	200		276	
	Scrap	30		50	
Consumption:	Refined copper	225	(100)	224	(100)
<u>Semi-manufactures</u>					
Production:	Total	216	(121)	228	(122)
Imports:	Total	14	(8)	8	(4)
	of which: copper semi's	4		2	
	alloy semi's	10		6	
Exports:	Total	52	(29)	49	(26)
	of which: copper semi's	46		37	
	alloy semi's	6		12	
Apparent consumption:	Total	179	(100)	187	(100)

ANNEX

Illustrative Calculations of the Effective Incidence
of Duties on Copper Semi-Manufactures

A. Formula for the effective incidence of duties

The term "effective incidence," or "effective protection," refers to the protective effects of tariff rates graduated by the degree of manufacturing process. It is generally recognized that the effective rate of protection yielded by a tariff will exceed the nominal tariff rate if the materials worked on are taxed at lower rates than the final product. This effective incidence of the tariff rates is expressed in terms of the degree of protection afforded to the value added at a particular stage of processing. The formula used for calculating such effective incidence is explained below.

The value added at any given stage of processing equals the gross value of output at that stage minus the value of inputs purchased from other firms. In a simple processing of a given material P_1 the value added in processing would equal the product value at stage 2 minus the input, or

$$(1) \quad V = P_2 - P_1$$

The shares of the value added (v) and of the value of the material ($1-v$) in the gross value (V) of the processed product can be expressed respectively as

$$(2) \quad v = \frac{P_2 - P_1}{P_2} \quad \text{and} \quad 1-v = \frac{P_1}{P_2}$$

Data on value derived from the actual value of products in individual countries (for example, by the means of simple surveys or manufacturing censuses) are in general already affected by the tariff structure, i.e. reflect already the discrepancies between the duty rates on materials and manufactured products. In applying the formula discussed here, the symbols P'_2 and P'_1 should refer to the world market values of the respective products. The value of internationally traded products in individual countries (at places of entry before internal taxation) would then correspond to their world market values plus import duties. Using t_1 and t_2 for the tariff rates on the raw material and the processed product, respectively, the effective protection (X) afforded to the particular processing operation can be measured by the excess, which it makes possible, of internal value added over the corresponding external value, according to the following formula:

$$(3) \quad X = \frac{P'_2(1+t_2) - P'_1(1+t_1)}{P'_2 - P'_1} - 1.00$$

It is easy to see that if $t_2 = t_1$, X , the implied rate of protection of the value added must be equal to each of the two nominal tariff rates. Assume the world market value of the processed product to be 100, the value of the raw material 80 and the import duty applicable to both at 10 per cent ad valorem, then:

$$(4) \quad X = \frac{110 - 88}{20} - 1.00 = 0.10$$

On the other hand, if t_2 exceeds t_1 , the effective protection will exceed t_2 , the nominal rate on the processed product. If the value added at stage 2 is only a small fraction of the gross value, the margin of effective protection may easily reach 100 per cent and even more, as will be shown on the examples below.

In the reverse case, should t_1 exceed t_2 , the tariff structure would be penalizing the domestic producers of the commodity in question to the advantage of foreign exporters. Such cases are rare, however, as most tariffs are graduated upwards with the degree of processing.

B. Application of the formula to selected copper semi-manufactures¹

An attempt has been made to provide, in addition to the factual information in the previous sections, the effective incidence of duties on semi-manufactures. The value added by the processing of copper metal into copper semi-manufactures varies within a wide margin by different forms (rod, wire, sheets, tubes, etc.), sizes and qualities of products as well as by different raw materials (electrolytic copper, fire-refined copper, brass, bronze, etc.). Consequently, variations in the degree of protection enjoyed by different types of products are considerable. In this study the effective incidences have been calculated, as illustrative indications, for selected forms of semi-manufactures produced from unalloyed copper (see Table 25). The range of the share of added value in the value of products shown in the table is only indicative of the most common operations and does not represent the full range of products in all their sizes and qualities produced in different countries. The share of added value used in this study is considerably lower than that used in the previous study (COM.TD/W/74), since the price of the material, i.e. copper metal has gone up in the meantime at a rate far exceeding the rate of increase in the processing cost. The data in the table are based on the average London Metal Exchange (LME) settlement price of copper in recent years, whereas the data in the previous study are based on the much lower price in 1962-63.

¹ Much of the information in this section was provided by the CIPEC and the CIDEAC.

TABLE 25 - ILLUSTRATIVE CALCULATIONS OF THE EFFECTIVE
INCIDENCE OF DUTIES ON SELECTED SEMI-MANUFACTURES¹

A: Duty rates

B: Effective incidence of duties (% ad valorem)

Selected copper semi-manufactures and indications of the share of added value in the gross value	EEC		Japan		United Kingdom (m.f.n.)		United States		Austria	
	A	B	A	B	A	B	A	B	A	B
Wire rod 5%	8	160	15	300 (139)	8	160	2.6	52 (-1)	8	160
Wire 10-20%	8	40-80	15	75-150 (41-74)	8	40-80	7	35-70 (24-45)	8-9	40-90
Sheets 15-30%	8	27-53	15	50-100 (30-52)	8	27-53	2.4 12-13 ^{1/2}	8-16 (0-1)	8-10	27-67
Tubes 15-40%	8	20-53	15	38-100 (25-52)	10	25-67	4 ^{2/3} ; 11 ^{3/4}	10-73 (6-58)	12-15	30-100

^{1/} Sheets, clad or shaped.^{2/} Seamless tubes.^{3/} Tubes other than seamless and brazed.

	Denmark		Finland		Norway		Sweden		Switzerland		Canada	
	A	B	A	B	A	B	A	B	A	B	A	B
Wire rod 5%	0-5	0-100	2-3	40-60	0-0.1	0-2	3	60	1-4	20-80	5	100
Wire 10-20%	0-4	0-40	2-3	10-30	0-0.1	0-1	3	15-30	1-4	5-40	10	50-100
Sheets 15-30%	5	17-33	4-5	15-30	0.1-0.3	0.3-2	3	10-20	2-3	7-20	5	17-33
Tubes 15-40%	5	13-33	5	13-33	5	13-33	3	8-20	3	8-20	5	13-33

¹ On the basis of zero duty on unalloyed copper metal as material input. In the cases of Japan and the United States, effective incidences based on the bound duties on unalloyed copper metal (8.5 per cent for Japan and 2.8 per cent for the United States) are indicated in parentheses.

**WE REGRET THAT SOME OF THE PAGES IN THE MICROFICHE COPY
OF THIS REPORT MAY NOT BE UP TO THE PROPER LEGIBILITY STANDARDS:
EVEN THOUGH THE BEST POSSIBLE COPY WAS USED FOR PREPARING
THE MASTER MICROFICHE.**