



# **ICSG**

## **Information Circular**

### **Trends on the Most Dynamic Traded Products in World Exports UNCTAD 2002 Report**

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Notice: The information contained in this document is intended to provide an overview of the Most Dynamic Products in World Exports, particularly with regards copper. This paper is provided for reference purposes only. References to sites, companies, and agencies are for information purposes only.

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## Information Circular

### Trends on the Most Dynamic Products in World Exports UNCTAD 2002 Report

#### Issue

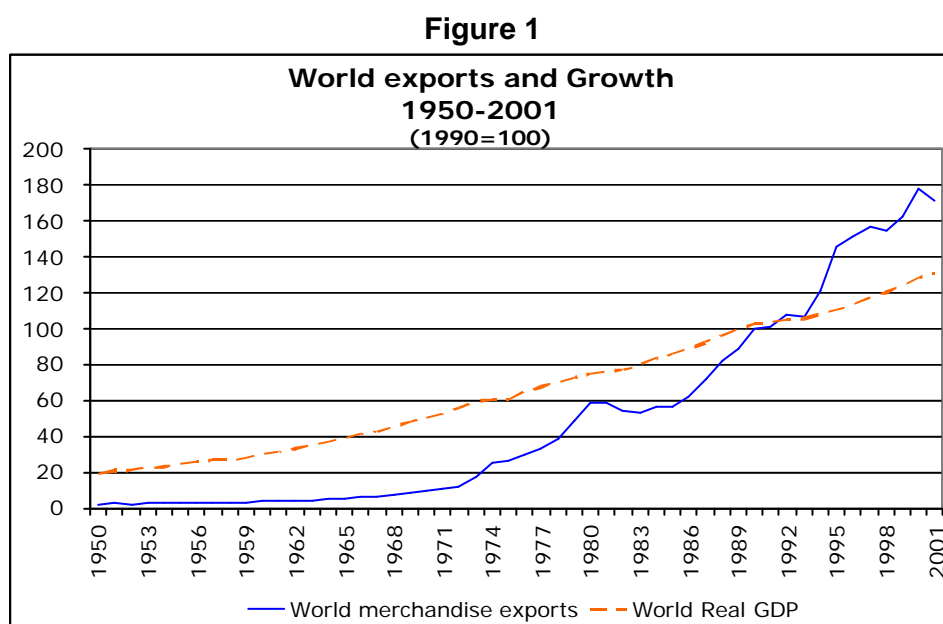
The latest Report of the United Nations Conference on Trade and Development (UNCTAD) "Trade and Development Report, 2002" –hereafter "The Study"–, highlights trends in world exports dynamism over the last 20 years.

The objective of this circular is to highlight the most important information about exports dynamism and looking at the most relevant linkages with copper specific issues.

#### I.- Background

##### Trade and Growth

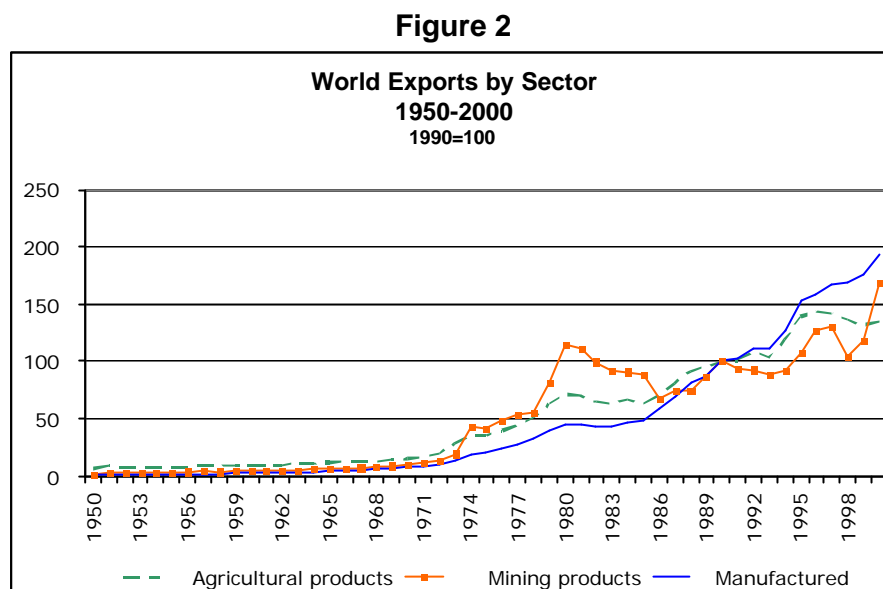
Trade (world exports) and economic growth (Gross Domestic Product), have increased exponentially during the last years.



Source: World Trade Organization (WTO)

### Structural differences among sectors

However, there have been differences in the growth rates of exports among productive sectors. Trade in agricultural and mining products has increased less than manufactured goods during this period<sup>1</sup>.



Why do these differences occur? According to UNCTAD, there are three main reasons:

a) Income Elasticity differences

Since a few decades ago it is recognized that some products have different sensitivities in relation to changes in income. Households tend to spend less money on “basic” products such as food compared with manufactured goods, as a percentage of overall expenditure. From a macroeconomic point of view, shifts in economic structure toward sectors requiring less raw material inputs, could be triggered by the development of synthetic substitutes (plastics, chemical industries, etc...), and a decline in the intensity of use of some raw materials (mainly due to the different intensity in technological development). Nevertheless, this general trend is not applicable for all “basic” products as some of them show a high dynamism in trade during the last few years.

b) Market Access Conditions during the study's period

In spite of wide liberalization processes occurring in the years after the Tokyo (1979) and Uruguay (1994) Rounds, differences on scope, degrees and speed of liberalization among countries explain part of the structural differences in growth trade. In addition, part of the changes on trade patterns since the 80's is explained by non-tariff measures applied selectively to different products and/or suppliers and a shift of anti-dumping practices replacing previous protection actions ruled by Trade Rounds.

<sup>1</sup> Mining trend indicated in Figure 2 includes oil. This explains the shift seen during the 70's and 80's. Nevertheless, there is a clear increase trend in manufactured exports.

### c) International Production Networks

International production networks involve large trans-national companies which produce a standardized set of goods in several locations, or groups of small and medium sized enterprises located in different countries and linked through international subcontracting. Lower transport and communication costs, and reduced trade and regulatory barriers have facilitated production sharing, which is generally concentrated in labour-intensive activities. International production networks promote a new pattern of trade, in that goods travel across several locations before reaching final consumers, and the total value of trade recorded in such products exceeds their value added by a considerable margin. Consequently, trade in such products can grow without a commensurate increase in their final consumption as production networks are extended across the globe.

## II.- Most Dynamics Products

Once differences in world export growth among productive sectors are established, further information within these sectors is needed to better understand the differences among particular group of products. In this context, UNCTAD undertook research to identify which group of products had led exports growth during 1980-1998.

### The Study

Based on United Nations Department of Economic and Social Affairs (DESA), Commodity Trade Statistics Database, the study ranked 225 product groups following the Standard International Trade Classification (SITC) rev.2 at 3digit level, according to the average annual growth rate of their export value during the period 1980-1998 which is considered an indication of "market dynamism"<sup>2</sup>.

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<sup>2</sup> The study focuses on Non-Fuel Merchandise trade only. It excludes important SITC 3-digit groups particularly materials, one of them copper ores and concentrates (283).

Results

**Table 1**  
**Ranking of SITC Product Groups**  
**Average Annual Growth of Export Value, 1980-1998**  
 (Per cent)

| Rank | SITC Code | Product Group                          | Average Annual Export Value Growth | Share in Total World Exports |      |
|------|-----------|--|------------------------------------|------------------------------|------|
|      |           |  | 1980-1998                          | 1980                         | 1998 |
| 1    | 776       | Transistors and semiconductors         | 16.3                               | 1.0                          | 4.0  |
| 2    | 752       | Computers                              | 15.0                               | 0.9                          | 3.4  |
| 3    | 759       | Parts of computers and office machines | 14.6                               | 0.7                          | 2.3  |
| 4    | 871       | Optical instruments                    | 14.1                               | 0.1                          | 0.3  |
| 5    | 553       | Perfumery and cosmetics                | 13.3                               | 0.2                          | 0.5  |
| 6    | 261       | Silk                                   | 13.2                               | 0.0                          | 0.0  |
| 7    | 846       | Knitted undergarments                  | 13.1                               | 0.3                          | 0.6  |
| 8    | 893       | Plastic articles                       | 13.1                               | 0.6                          | 1.2  |
| 9    | 771       | Electric power machinery               | 12.9                               | 0.3                          | 0.6  |
| 10   | 898       | Musical instruments and records        | 12.6                               | 0.3                          | 0.7  |
| 11   | 612       | Leather manufactures                   | 12.4                               | 0.1                          | 0.1  |
| 12   | 111       | Non-alcoholic beverages                | 12.2                               | 0.1                          | 0.1  |
| 13   | 872       | Medical instruments                    | 12.1                               | 0.2                          | 0.4  |
| 14   | 773       | Electricity distribution equipment     | 12.0                               | 0.4                          | 0.7  |
| 15   | 764       | Telecommunication equipment, and parts | 11.9                               | 1.5                          | 3.0  |
| 16   | 844       | Textile undergarments                  | 11.9                               | 0.2                          | 0.3  |
| 17   | 048       | Cereal preparations                    | 11.9                               | 0.2                          | 0.4  |
| 18   | 655       | Knitted fabrics                        | 11.7                               | 0.2                          | 0.3  |
| 19   | 541       | Pharmaceutical products                | 11.6                               | 1.1                          | 2.0  |
| 20   | 778       | Electrical machinery                   | 11.5                               | 1.1                          | 1.7  |
| -    | -         | 20 most dynamic products               | 12.9                               | 9.5                          | 22.6 |
| -    | -         | World exports                          | 8.4                                | -                            | -    |

Source: UNCTAD Report 2002

Several observations are possible to conclude from this table:

- High presence of Electric, electronic and telecommunication products within the 20 most dynamic products between 1980 and 1998.
- Top 4 product groups have higher differences in the average annual rate than any other product group.
- Share of top 4 dynamic groups in total world exports has more that doubled in this period.

Copper

Copper ranks 113 with 7.6% average annual export value growth. This is exactly the medium position although its rate growth is slightly under the world export growth (8.4%) and significantly less than the average rate for the 20 most dynamic products (12.9%). Description of the code 682 is in the attached Annex.

Other metals

Nevertheless, to better understand copper's position it is important to take into consideration its relative position with regard to similar products such as other metals.

**Table 2**  
**Ranking of Metals according to SITC Classification**  
**Average Annual growth of Export Value, 1980-1998**

| Rank among all products | SITC Code | Product Group   | %    |
|-------------------------|-----------|---|------|
| 48                      | 672       | Ingots and other primary forms, of iron or steel        | 9.8  |
| 83                      | 684       | Aluminium   | 8.6  |
| 113                     | 682       | Copper  | 7.6  |
| 138                     | 686       | Zinc  | 6.8  |
| 140                     | 683       | Nickel  | 6.6  |
| 201                     | 685       | Lead  | 2.4  |
| 203                     | 281       | Iron Ores and Concentrates                              | 2.4  |
| 206                     | 681       | Silver, platinum and other metals of the platinum group | 1.9  |
| 224                     | 687       | Tin   | -3.9 |

Source: Based on UNCTAD Report 2002

As shown, copper is the 3rd most dynamic metal in the world after iron-steel and aluminium.

### Waste & Scrap

Trade in metallic waste and scrap has increased strongly as well during the period, although with lower rates compared with metals.

**Table 3**  
**Ranking of Metal Waste & Scrap according to SITC Classification**  
**Average Annual growth of Export Value, 1980-1998**  
(Per cent)

| Rank among all products | SITC Code | Product Group                                  | %   |
|-------------------------|-----------|--|-----|
| 120                     | 282       | Waste and Scrap metal of iron or steel         | 7.3 |
| 141                     | 288       | Non-ferrous base metal waste and scrap, n.e.s. | 6.7 |

Source: Based on UNCTAD Report 2002

### Most dynamic product groups by geographic regions

**Table 4**  
**Ranking of leading dynamic products by exporting region**  
**Average Annual growth of Export Value, 1980-1998**

| Rank | Developed                     | Developing                           | First-tier NIE <sup>3</sup> s | ASEAN-4                              | South Asia                                  | South America                |
|------|-------------------------------|--------------------------------------|-------------------------------|--------------------------------------|---|------------------------------|
| 1    | Transistor and Semiconductors | Computers                            | Computers                     | Computers                            | Television receivers                        | Fuel wood and charcoal       |
| 2    | Textile undergarments         | Optical instruments                  | Natural abrasives             | Parts of computers & office machines | Computers                                   | Copper                       |
| 3    | Perfumery and cosmetics       | Parts of computers & office machines | Road motors vehicles          | Optical instruments                  | Condensation products                       | Crude vegetable materials    |
| 4    | Optical instruments           | Condensation products                | War firearms and ammunition   | Sound recorders                      | Iron or steel universals, plates and sheets | Edible products preparations |
| 5    | Computers                     | Heating and cooling equipments       | Optical instruments           | Iron or steel ingots and forms       | Organo-inorganic compounds                  | Meat prepared or preserved   |

Source: Based on UNCTAD Report 2002

<sup>3</sup> Newly industrialised economies (NIE's) of East Asia

Copper has lead growth in exports in South America and it has been also important for some industrialized countries of East Asia (copper was the 12<sup>th</sup> most traded product for First-tier NIE's).

### **III.- Indirect effects for copper**

While the analysis of copper's position, as a material, is important, equally important is to consider that most of the most important dynamic products contain high levels of copper.

The study classified the 20 most dynamic product groups within four categories:

1. Electronic and electrical goods (SITC 75, 76, 77)
2. Textiles and labour-intensive products, particularly clothing (SITC 61, 65, 84)
3. Finished Products from Industries that require high research and development (R&D) expenditures and are characterized by high technological complexity and/or economies of scale (SITC 5, 87)
4. Primary Commodities including silk, non-alcoholic beverages and cereals (SITC 261, 111, 048)

The fastest growing category of products, electronic and electrical goods, also accounts for a sizeable share in world exports. The three fastest growing products (transistors and semi conductors; computers; and part of computer and office machines) increased their share in world exports almost fourfold from 2.6 per cent in 1980 to 9.7 percent in 1998. Taken together, the share in world exports of the seven groups of electronic, electrical and telecommunication (SITC code 7XX), products listed in Table 1 almost tripled to reach about 16 per cent in 1998.

Further information for electronic and electrical most dynamic products is in the Annex which expands the description to 3-digit level for SITC 75, 76 and 77 codes, confirming that most dynamic products are within categories where copper should be an important component (input).

## Geographic trade flows and copper

While export growth does not necessarily mean an increase in production (as is shown at the end of section ), is interesting to see which are the main countries that export the most electrical and electronic dynamic products, and link them with copper usage evolution over the same period.

**Table 5**  
**Main exporting countries of most dynamic products and their share of world exports**

| Rank | SITC Code | Product Group                          | Main exporting countries (% of world Share)                                     | Total Share of Main exporting countries |
|------|-----------|--|---|---|
| 1    | 776       | Transistors and semiconductors         | USA (17), Japan (15), Singapore (10), Republic of Korea (10), Malaysia (7)      | 59                                      |
| 2    | 752       | Computers                              | USA (13), Singapore (13), Japan (10), Netherlands (9)                           | 45                                      |
| 3    | 759       | Parts of computers and office machines | USA (17), Japan (14), Singapore (9), Taiwan Province of China (7), Malaysia (6) | 53                                      |
| 4    | 871       | Optical instruments                    |   |   |
| 5    | 553       | Perfumery and cosmetics                |   |   |
| 6    | 261       | Silk                                   |   |   |
| 7    | 846       | Knitted undergarments                  |   |   |
| 8    | 893       | Plastic articles                       |   |   |
| 9    | 771       | Electric power machinery               | USA (11), Germany (10), China (9), Japan (9)                                    | 39                                      |
| 10   | 898       | Musical instruments and records        |   |   |
| 11   | 612       | Leather manufactures                   |   |   |
| 12   | 111       | Non-alcoholic beverages                |   |   |
| 13   | 872       | Medical instruments                    |   |   |
| 14   | 773       | Electricity distribution equipment     | Mexico (16), USA (14), Germany (9), Japan (6), France (4)                       | 49                                      |
| 15   | 764       | Telecommunication equipment, and parts | USA (15), UK (9), Japan (9), Sweden (7)   | 40                                      |
| 16   | 844       | Textile undergarments                  |   |   |
| 17   | 048       | Cereal preparations                    |   |   |
| 18   | 655       | Knitted fabrics                        |   |   |
| 19   | 541       | Pharmaceutical products                |   |   |
| 20   | 778       | Electrical machinery                   | Japan (17), USA (13), Germany (13), UK (7), Mexico (6)                          | 56                                      |

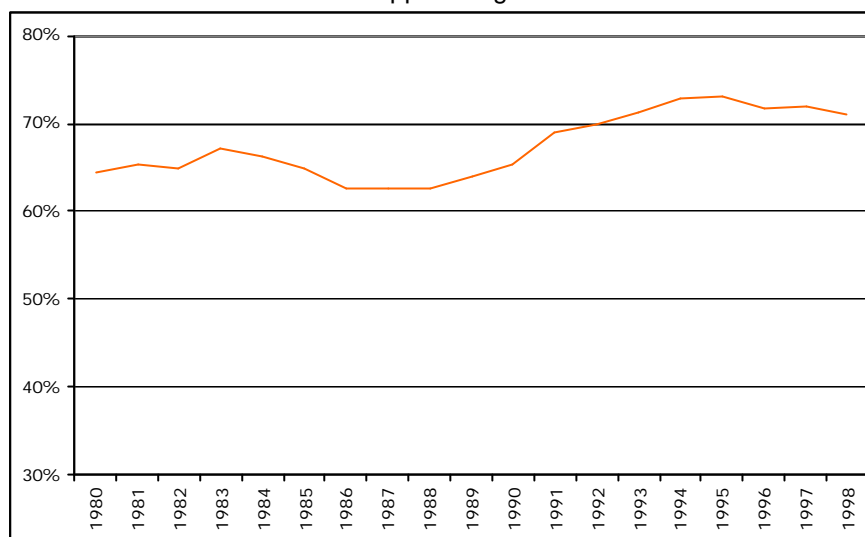
Source: UNCTAD Report 2002

Within most dynamic exporters for relevant product groups, are traditional copper producer countries such as the United States, Germany and France. In addition, there are some new ones (Singapore, Malaysia, Taiwan, and Mexico).

In almost all product groups, 5 countries accounts for around 50% of world exports, indicating a high level of production concentration on these products.

How much is this coincident with copper usage data? The share of these countries on world total copper usage has increased during this period despite a flattening trend at the end.

**Figure 3**  
Most dynamic electric and electronic exporter countries  
Share of its copper usage within world



Source: ICSG

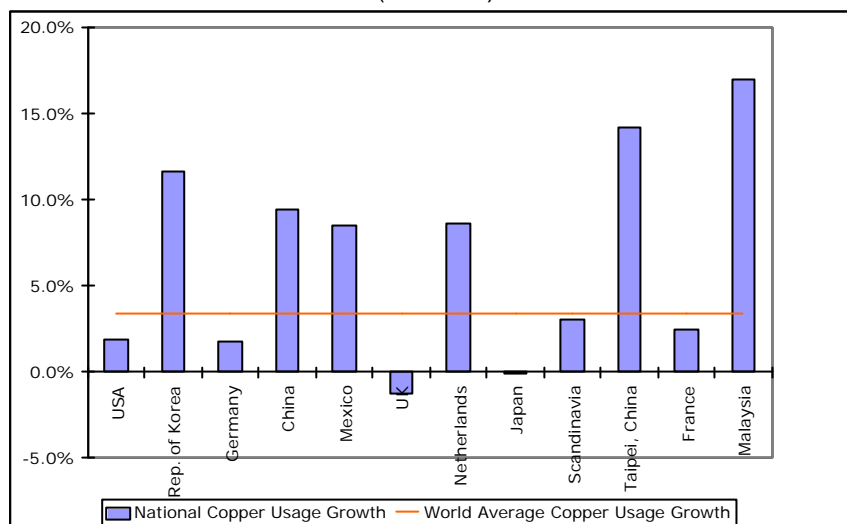
This trend is in line with UNCTAD general findings: “There is also evidence to suggest that a structural break occurred during the period 1986-1988 in the longer-term trend of export values of both non-fuel primary commodities and manufactures, possibly reflecting the shift in some major developing countries towards export-oriented strategies as well as the growing importance of international production networks, discussed below”<sup>4</sup>.

<sup>4</sup> UNCTAD Report 2002, Page 56.

The copper usage, however, is quite different among countries<sup>5</sup>.

**Figure 4**

Refined Copper Usage Growth by country (and world average) for the exporters of the most dynamic products  
1980-1998  
(Per cent)



Source: ICSG

Some countries are noticeably above the world annual average growth of copper usage (3.4%) between 1980 and 1998. Most industrialized countries are below the average. This situation could support the view of the relocation of copper-related industries from industrialized to emerging economies.

#### Final Remarks:

- Copper is in a medium position within world trade of merchandise and 3rd compared with other metals, following steel and aluminium.
- Most dynamic product group is electronic and electrical where copper is an important input.
- It would be important to identify copper performance by quantifying structural differences in world trade. In particular by reviewing income elasticity, market access conditions and international production networks.
- From a demand side, one of the issues to take into consideration would be to measure the recent evolution on the average copper-content for the leading SITC codes in relation to competing materials. Is copper really a participant in dynamic exports? What's the trend of copper content in these areas?

<sup>5</sup> Germany figure before 1988 is the sum of Western and East Germany. Singapore is not included.

## Annex

### Description of the most important SITC Rev 3. Codes

Based on United Nations Statistics Division the content and breakdowns for the most relevant SITC Rev 3 codes used in this information circular are the follows<sup>6</sup>:

#### SITC Rev.3 code 682

##### Hierarchy

- Section: 6 - Manufactured goods classified chiefly by material
- Division: 68 - Non-ferrous metals
- Group: 682 – Copper

##### Breakdown:

##### Group

Group: 682 - Copper

##### Subgroups

- 682.1 - Copper, refined and unrefined; copper anodes for electrolytic refining; copper alloys, unwrought
- 682.3 - Copper bars, rods and profiles
- 682.4 - Copper wire
- 682.5 - Copper plates, sheets and strip, of a thickness exceeding 0.15 mm
- 682.6 - Copper foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials), of a thickness (excluding any backing) not exceeding 0.15 mm; copper powders and flakes
- 682.7 - Copper tubes, pipes and tube or pipe fittings (e.g., couplings, elbows, sleeves)

#### SITC Rev.3 code 7

##### Section

Section: 7 - Machinery and transport equipment

##### Division

- 71 - Power-generating machinery and equipment
- 72 - Machinery specialized for particular industries
- 73 - Metalworking machinery
- 74 - General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.
- √ 75 - *Office machines and automatic data-processing machines*
- √ 76 - *Telecommunications and sound-recording and reproducing apparatus and equipment*
- √ 77 - *Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)*
- 78 - Road vehicles (including air-cushion vehicles)
- 79 - Other transport equipment

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<sup>6</sup> Description is based on SITC Rev 3 instead Rev 2 due to Rev 3 is further available than Rev 2. In general, description of SITC codes on this information circular is based on Rev 3 because is concordant with Rev 2. for relevant product groups.

**SITC Rev.3 code 75**DivisionGroups

Division: 75 - Office machines and automatic data-processing machines

751 - Office machines

752 - Automatic data-processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, n.e.s.

759 - Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines falling within groups 751 and 752

**SITC Rev.3 code 76**DivisionGroups

Division: 76 - Telecommunications and sound-recording and reproducing apparatus and equipment

761 - Television receivers (including video monitors and video projectors), whether or not incorporating radio-broadcast receivers or sound- or video-recording or reproducing apparatus

762 - Radio-broadcast receivers, whether or not incorporating sound-recording or reproducing apparatus or a clock

763 - Sound recorders or reproducers; television image and sound recorders or reproducers; prepared unrecorded media

764 - Telecommunications equipment, n.e.s., and parts, n.e.s., and accessories of apparatus falling within division 76

**SITC Rev.3 code 77**DivisionGroups

Division: 77 - Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)

771 - Electric power machinery (other than rotating electric plant of group 716), and parts thereof

772 - Electrical apparatus for switching or protecting electrical circuits or for making connections to or in electrical circuits (e.g., switches, relays, fuses, lightning arresters, voltage limiters, surge suppressors, plugs and sockets, lamp-holders and junction boxes); electrical resistors (including rheostats and potentiometers), other than heating resistors; printed circuits; boards, panels (including numerical control panels), consoles, desks, cabinets and other bases, equipped with two or more apparatus for switching, protecting or for making connections to or in electrical circuits, for electric control or the distribution of electricity (excluding switching apparatus of subgroup 764.1)

773 - Equipment for distributing electricity, n.e.s.

774 - Electrodiagnostic apparatus for medical, surgical, dental or veterinary purposes, and radiological apparatus

775 - Household-type electrical and non-electrical equipment, n.e.s.

776 - Thermionic, cold cathode or photo-cathode valves and tubes (e.g., vacuum or vapour or gas-filled valves and tubes, mercury arc rectifying valves and tubes, cathode-ray tubes, television camera tubes); diodes, transistors and similar semiconductor devices; photosensitive semiconductor devices; light-emitting diodes; mounted piezoelectric crystals; electronic integrated circuits and microassemblies; parts thereof

778 - Electrical machinery and apparatus, n.e.s.