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Production and international trade of manufactures



6.1 Production of manufactures

6.2 International trade in manufactures

6.1 Production of manufactures

OVERVIEW

Global **industrial activity** is heavily concentrated in a few countries. Developed countries account for about three-fourths of global value added.

Developing countries' share of world **manufacturing value added** has risen substantially in the past two decades. Measured in terms of current prices, this rise largely corresponds to the declining share of countries in Central and Eastern Europe. However, the rise in developing countries' share is heavily concentrated in Asian countries, which now account for about two-thirds of developing-country value added. Moreover, the increase in developing countries' share of world manufacturing value added is much lower than the increase in their share of world manufactured exports.

If one looks at industrial sectors, for petroleum products, developing countries' share of world value added almost matches that of developed countries. By contrast, the share is only about half in other natural-resource- or labour-intensive sectors (such as tobacco, textiles and wearing apparel), and particularly low in capital- or technology-intensive sectors (such as paper, printing and publishing, and electrical and non-electrical machinery). While developing countries have succeeded in increasing their **share in world manufacturing value added** in several industrial sectors, these increases have been concentrated in a few sectors that, apart from textiles and transport equipment, include the natural-resource-intensive sectors of petroleum products, basic metals, tobacco and non-metallic mineral products.

The structure of manufacturing value added within the group of developing countries has remained largely unchanged over the past decade, except for a major increase in the shares of electrical machinery and transport equipment and a large decline in the shares of textiles and wearing apparel.

DEFINITIONS

The classification of **industrial activities** follows the United Nations International Standard Industrial Classification (ISIC) revision 2. There the definition of manufactures also includes a number of processed primary commodities, such as food products and beverages, tobacco, petroleum products, non-metallic mineral products and basic metals, and thus is broader than for trade statistics, which are based on the Standard International Trade Classification (SITC).

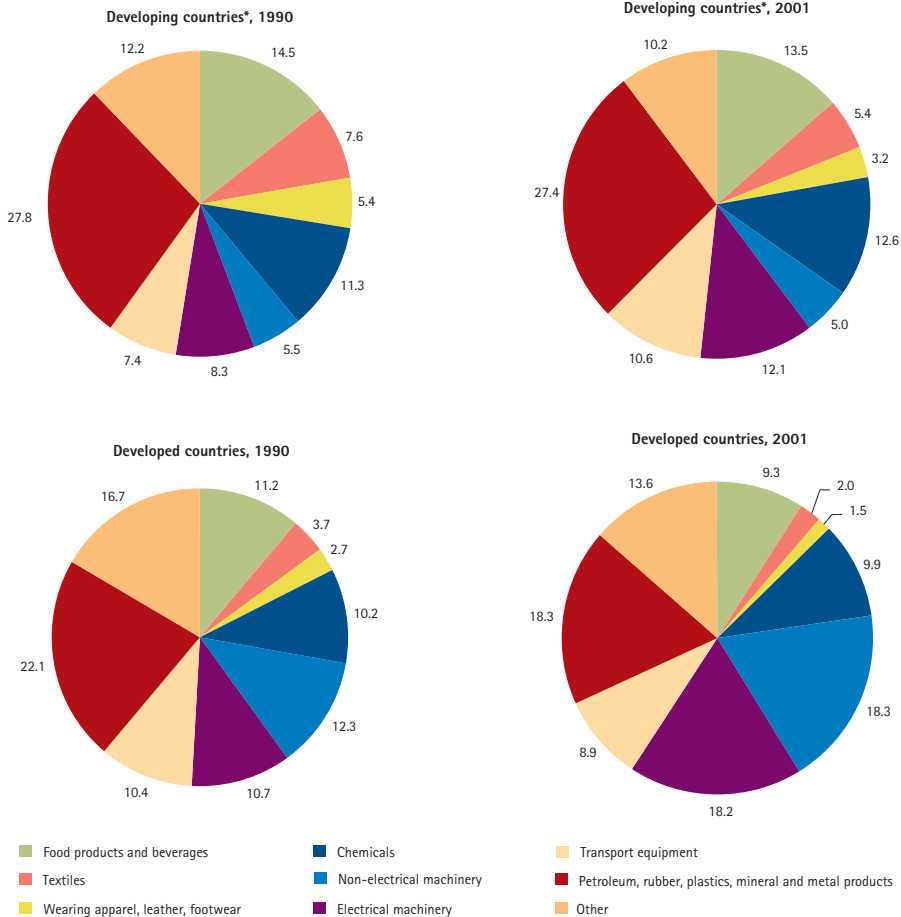
- **Manufacturing value added** is the sum of gross output less the value of intermediate inputs used in production.
- Different regions' **share in world manufacturing value added** can be measured in terms of current prices or constant prices referenced to a selected base year. Because of variations in official exchange rates, the world distribution, particularly the share of countries in Central and Eastern Europe, may change considerably depending on the base year used.

DATA SOURCES

[1] UNIDO, *International Yearbook of Industrial Statistics*, various issues. Country groupings presented there differ slightly from those used in this publication.

Distribution of manufacturing value added, at 1990 prices, in developing and developed countries, by ISIC division [1]

(in %)



* China is excluded, but China, Hong Kong SAR and Taiwan Province of China are not.

Distribution of world manufacturing value added, at current prices, by region [1]

In %

| Region | 1980 | 1990 | 2001 |
|--|--------------|--------------|--------------|
| World | 100.0 | 100.0 | 100.0 |
| Developing countries | 13.7 | 14.4 | 23.7 |
| Africa | 0.9 | 0.9 | 0.8 |
| America | 7.1 | 5.6 | 5.7 |
| South and East Asia | 4.1 | 6.1 | 16.0 |
| West Asia and Europe | 1.6 | 1.8 | 1.2 |
| Countries in Central and Eastern Europe | 19.3 | 8.9 | 2.7 |
| Developed countries | 67.0 | 76.7 | 73.6 |
| North America | 22.1 | 23.3 | 30.1 |
| Western Europe | 32.1 | 34.0 | 26.2 |
| Others | 12.8 | 19.4 | 17.3 |
| <i>Memorandum</i> | | | |
| China** | 3.9 | 2.6 | 7.2 |
| Least developed countries | .. | 0.3 | 1.0 |

** The data shown for the year 1980 corresponds to 1981 data at constant 1980 prices.

6.2 International trade in manufactures

OVERVIEW

The structure of world trade in **manufactures** has changed substantially in the past two decades, with the share of electronics doubling to reach almost one-fourth of world trade in manufactures.

Between 1980 and 2001, average annual growth in developing-country exports of all main categories of manufactures was much faster than that in either developed countries or Central and Eastern European countries. As in these latter two groups, in developing countries export growth was particularly rapid for **electronics**. South, East and South-East Asian countries saw growth rates more than twice the world rates in their exports of chemicals and of machinery and transport equipment less electronics. Among developing countries, this group had the most balanced increase in the structure of its manufactured exports.

One factor in the strong growth of developing-country electronics exports was their relatively low absolute level in 1980. But the main reason for this surge is probably the increasing participation of developing countries in international production networks, where developing-country exports typically have a strong import content. This is reflected in the fact that developing countries' trade balance for electronics has remained slightly negative and that even the regions most involved in international production sharing in the electronics sector (South, East and South-East Asia and Central America) have only slight positive balances.

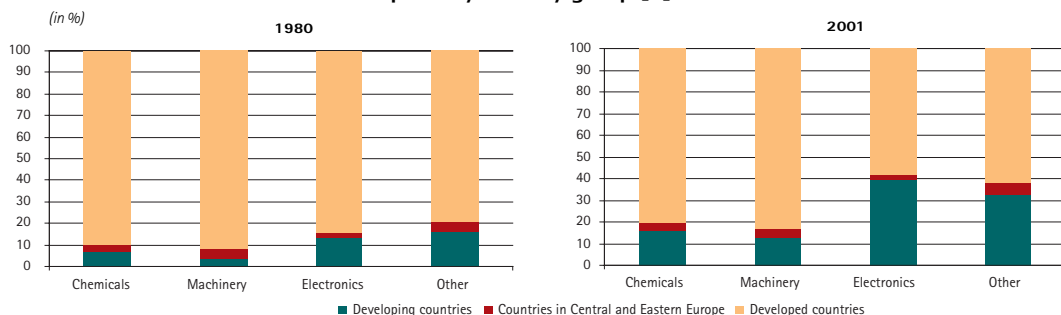
Unlike two decades ago, when developing countries were net importers of manufactures, they are now net exporters of the category "other manufactured goods", while developed countries have become net importers of both electronics and other manufactured goods.

DEFINITIONS

- **Manufactures** are classified in accordance with the *United Nations Standard International Trade Classification (SITC) revision 2*:
 - *Chemicals and related products: SITC 5*
 - *Machinery and transport equipment less electronics: SITC 7 less 75 –77*
 - *Electronics: SITC 75 –77*
 - *Other manufactured goods: SITC 6 less 68, plus SITC 8*
- **Electronics** include office machines and automatic data processing equipment, telecommunications and sound recording and reproducing apparatus and equipment, and electrical machinery, apparatus and appliances such as semi-conductors – in short, goods that have been closely associated with the revolution in information technology.

DATA SOURCES

- [1] United Nations Commodity Trade Statistics Database (COMTRADE) and estimates by the United Nations Statistics Division.

Distribution of manufactured exports by country group [1]

Manufactured exports by main category [1]

Average annual growth rates 1980 - 2001 in % and 2001 exports in million US\$

| Regions | 1980 - 2001 | | | | 2001 | | | |
|--|-------------|--|-------------|--------------------------|----------------|--|------------------|--------------------------|
| | Chemicals | Machinery and transport equipment less electronics | Electronics | Other manufactured goods | Chemicals | Machinery and transport equipment less electronics | Electronics | Other manufactured goods |
| World | 8.5 | 7.8 | 12.4 | 7.9 | 566 590 | 1 282 746 | 1 073 847 | 1 417 002 |
| Developing countries | 13.0 | 14.3 | 19.3 | 11.1 | 91 847 | 167 297 | 422 722 | 459 777 |
| Africa | 6.8 | 12.6 | 16.4 | 9.1 | 5 242 | 4 446 | 2 355 | 27 474 |
| North Africa | 6.2 | 7.9 | 21.7 | 12.0 | 2 351 | 432 | 1 478 | 7 851 |
| Sub-Saharan Africa | 7.4 | 13.3 | 12.7 | 8.0 | 2 891 | 4 014 | 877 | 19 623 |
| America | 9.0 | 15.0 | 18.4 | 11.3 | 16 535 | 59 080 | 60 608 | 65 928 |
| Central America and the Caribbean | 8.7 | 20.0 | 21.1 | 15.7 | 7 477 | 42 140 | 56 472 | 42 152 |
| South America | 9.3 | 10.0 | 7.2 | 7.9 | 9 059 | 16 940 | 4 136 | 23 776 |
| Asia | 15.8 | 14.1 | 19.6 | 11.2 | 70 057 | 103 666 | 359 740 | 364 844 |
| West Asia | 14.1 | 10.1 | 17.5 | 11.6 | 9 559 | 7 373 | 3 622 | 25 824 |
| Central Asia | 1.2 | 19.2 | 18.7 | 12.3 | 458 | 520 | 96 | 1 794 |
| South, East and South-East Asia | 16.1 | 14.4 | 19.6 | 11.1 | 60 040 | 95 773 | 356 022 | 337 226 |
| South, East and South-East Asia less China | 16.9 | 13.6 | 18.6 | 8.7 | 46 894 | 74 316 | 282 705 | 209 276 |
| Oceania | 10.4 | 15.7 | 18.5 | 13.3 | 13 | 105 | 19 | 1 531 |
| Countries in Central and Eastern Europe | 7.6 | 3.8 | 9.6 | 9.1 | 17 991 | 44 635 | 26 791 | 77 635 |
| Developed countries | 8.0 | 7.4 | 10.3 | 6.7 | 456 752 | 1 070 814 | 624 334 | 879 591 |
| North America | 7.9 | 7.5 | 10.8 | 9.1 | 92 482 | 277 627 | 152 786 | 180 321 |
| Europe | 7.8 | 7.7 | 10.9 | 6.5 | 326 863 | 628 764 | 347 995 | 604 439 |
| Others | 9.5 | 6.4 | 8.7 | 4.6 | 37 407 | 164 424 | 123 553 | 94 831 |
| <i>Memorandum</i> | | | | | | | | |
| Developing countries less China | 13.0 | 13.8 | 18.4 | 9.3 | 78 701 | 145 840 | 349 405 | 331 827 |
| Least developed countries | 5.0 | 7.3 | 5.7 | 11.1 | 530 | 289 | 101 | 9 663 |

Manufactured trade balance by main category [1]

In % of imports

| Regions | 1980 - 1984 | | | | 1997-2001 | | | |
|--|--------------|--|--------------|--------------------------|--------------|--|--------------|--------------------------|
| | Chemicals | Machinery and transport equipment less electronics | Electronics | Other manufactured goods | Chemicals | Machinery and transport equipment less electronics | Electronics | Other manufactured goods |
| World | -1.0 | 11.7 | 0.4 | -0.3 | -8.4 | 1.1 | -9.0 | -8.9 |
| Developing countries | -71.5 | -81.9 | -46.2 | -25.9 | -53.2 | -50.8 | -3.8 | 4.7 |
| Africa | -76.4 | -97.5 | -97.5 | -74.8 | -62.5 | -84.2 | -83.6 | -27.8 |
| North Africa | -66.3 | -99.1 | -98.2 | -88.0 | -53.6 | -97.2 | -74.2 | -45.8 |
| Sub-Saharan Africa | -82.2 | -96.5 | -97.0 | -63.5 | -67.9 | -75.6 | -89.3 | -13.1 |
| America | -60.7 | -68.8 | -41.4 | -33.9 | -64.8 | -38.4 | -26.9 | -33.9 |
| Central America and the Caribbean | -47.5 | -66.0 | 29.2 | -53.1 | -63.9 | -19.1 | 5.0 | -37.5 |
| South America | -67.7 | -70.1 | -76.8 | -14.5 | -65.3 | -58.6 | -86.0 | -26.5 |
| Asia | -73.9 | -78.9 | -34.8 | -6.8 | -47.7 | -51.2 | 4.6 | 19.9 |
| West Asia | -87.9 | -95.0 | -97.9 | -87.7 | -52.1 | -85.3 | -81.7 | -40.0 |
| Central Asia | .. | .. | .. | .. | -62.1 | -84.8 | -90.8 | -46.4 |
| South, East and South-East Asia | -68.0 | -66.0 | -2.4 | 61.4 | -46.7 | -40.8 | 9.7 | 30.2 |
| South, East and South-East Asia less China | -78.5 | -68.4 | -5.1 | 53.3 | -43.7 | -38.0 | 8.8 | 2.9 |
| Oceania | -97.8 | -96.4 | -98.4 | -73.9 | -94.5 | -88.2 | -89.4 | -3.1 |
| Countries in Central and Eastern Europe | 11.4 | 104.4 | 73.5 | 142.2 | -37.4 | -26.8 | -35.5 | 9.8 |
| Developed countries | 27.8 | 48.0 | 16.8 | 5.6 | 14.8 | 20.8 | -10.7 | -15.3 |
| North America | 67.9 | 3.8 | -12.8 | -43.6 | 3.7 | -15.8 | -38.9 | -49.0 |
| Europe | 26.3 | 45.6 | -5.6 | 13.6 | 20.1 | 24.4 | -8.4 | 3.0 |
| Others | -16.7 | 332.5 | 345.8 | 118.4 | 4.6 | 204.9 | 72.9 | -8.9 |
| <i>Memorandum</i> | | | | | | | | |
| Developing countries less China | -75.5 | -82.6 | -47.5 | -28.6 | -52.8 | -50.8 | -6.0 | -13.6 |
| Least developed countries | -86.3 | -98.6 | -96.2 | -73.5 | -88.4 | -96.2 | -95.9 | -24.5 |

6.2 International trade in manufactures

OVERVIEW

Trade growth rates have varied greatly from product to product over the past two decades. For some products, rates grew twice as fast as the average annual growth in world trade, whereas for others export values declined in absolute terms. The majority of the 20 most **market-dynamic manufactures** in world trade for the period 1980–2001 fall into three categories: electronic and electrical goods, textiles and labour-intensive products (particularly clothing), and finished products from industries that require high research and development spending.

Trade in all four categories of **supply-dynamic manufactures** (as determined by **factor intensity**) has expanded considerably since the mid-1980s. Trade in manufactures with high **technology intensity** grew particularly fast, increasing about sixfold between 1980 and 2001. Developing-country exports of all four categories of manufactures have grown more rapidly than world exports in the same product categories, and the difference has been proportionate to the technology intensity of the products.

Several goods in all four categories of manufactures have experienced rapid growth in world as well as developing-country exports in the past two decades; in this sense, dynamism is broad based. However, the products with a high share in developing-country manufactured exports have also experienced the highest growth. Thus, the manufactured exports of developing countries are concentrated in computers and office equipment, telecommunications, audio and video equipment and semiconductors, and clothing. All these products involve labour-intensive processes, which suggests that the increased importance of global production sharing has been a crucial factor in the growth of their exports.

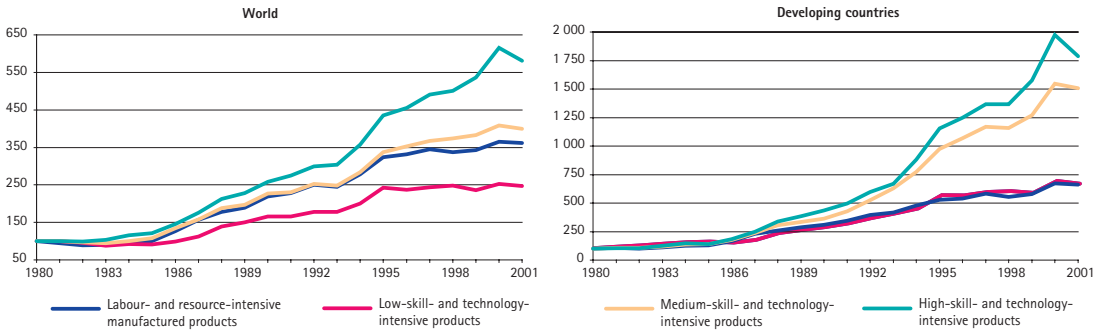
DEFINITIONS

- *Manufactures are classified in accordance with the Standard International Trade Classification (SITC, Rev. 2).*
- ***Market-dynamic manufactures** are defined with respect to their global demand potential (export value growth). The most dynamic three categories of manufactures are electronic and electrical goods (SITC 75, 76 and 77), textiles and labour-intensive products, particularly clothing (SITC 61, 65, 84), and finished products from industries that require high research and development spending (SITC 5 and 87).*
- ***Supply-dynamic manufactures** are defined with respect to their productivity potential. This definition results in four categories of manufactures based on **factor intensity**: labour- and resource-intensive manufactures; low-skill-intensive and low-technology-intensive manufactures; medium-skill-intensive and medium-technology-intensive manufactures; and high-skill-intensive and high-technology-intensive manufactures.*
- *Although the **technology intensity** of a product does not necessarily indicate the productivity growth potential of the sector producing it, the relationship is close enough to focus the analysis on product categories based on their technology intensity. This analysis of the market dynamism of products is concerned with export earnings rather than export volumes, since for most products separate volume and price data are not available. However, readily available evidence suggests that product rankings would remain largely unchanged if the growth rates of products in world exports could be calculated on the basis of constant rather than current prices.*

DATA SOURCES

- [1] United Nations Commodity Trade Statistics Database (COMTRADE) and estimates by the United Nations Statistics Division.

Export growth of different categories of manufactures, by factor intensity, 1980–2001 [1] (1980=100)



Export growth and share in total manufactured exports of the 20 most market-dynamic manufactures, 1980–2001 [1] Average annual growth rates and share in total exports in %

| SITC code | Product group | Average annual export value growth | Share in total world exports | | Share in total exports from developing countries | |
|-------------------|--|------------------------------------|------------------------------|-------|--|-------|
| | | 1980 – 2001 | 1980 | 2001 | 1980 | 2001 |
| 776 | Thermionic, cold and photo-cathode valves, tubes and parts | 16.7 | 1.5 | 5.1 | 3.9 | 9.1 |
| 871 | Optical instruments and apparatus | 15.9 | 0.1 | 0.4 | 0.0 | 0.4 |
| 759 | Parts of and accessories suitable for 751, 752 | 14.6 | 0.9 | 3.1 | 0.6 | 5.4 |
| 752 | Automatic data processing machines and units thereof | 14.6 | 1.3 | 4.1 | 0.3 | 6.7 |
| 771 | Electric power machinery and parts thereof | 12.8 | 0.4 | 0.7 | 0.4 | 1.1 |
| 553 | Perfumery, cosmetics and toilet preparations | 12.8 | 0.3 | 0.6 | 0.2 | 0.3 |
| 846 | Undergarments, knitted or crocheted | 12.6 | 0.4 | 0.7 | 1.5 | 1.6 |
| 764 | Telecommunications equipment and parts | 12.6 | 2.0 | 4.5 | 3.5 | 5.6 |
| 893 | Articles of materials described in division 58 | 12.5 | 0.9 | 1.5 | 1.2 | 1.4 |
| 541 | Medicinal and pharmaceutical products | 12.1 | 1.5 | 3.1 | 0.7 | 0.8 |
| 872 | Medical instruments and appliances | 12.0 | 0.3 | 0.6 | 0.1 | 0.4 |
| 773 | Equipment for distributing electricity | 11.8 | 0.6 | 0.8 | 0.4 | 1.2 |
| 655 | Knitted or crocheted fabrics | 11.2 | 0.3 | 0.3 | 0.3 | 0.7 |
| 778 | Electrical machinery and apparatus, n.e.s. | 11.1 | 1.5 | 2.0 | 1.4 | 2.1 |
| 612 | Manufactures of leather or of composition leather, n.e.s. | 11.1 | 0.1 | 0.2 | 0.3 | 0.3 |
| 772 | Electrical apparatus such as switches, relays, fuses and plugs | 11.0 | 1.4 | 1.9 | 1.3 | 2.1 |
| 821 | Furniture and parts thereof | 10.7 | 1.1 | 1.5 | 0.8 | 1.5 |
| 844 | Undergarments of textile fabrics | 10.6 | 0.3 | 0.3 | 1.5 | 0.8 |
| 514 | Nitrogen-function compounds | 10.5 | 0.6 | 0.8 | 0.3 | 0.3 |
| 783 | Road motor vehicles n.e.s. | 10.4 | 0.4 | 0.3 | 0.2 | 0.2 |
| | 20 most dynamic manufactures | 12.4 | 15.6 | 32.7 | 19.0 | 41.8 |
| Memorandum | | | | | | |
| | World manufactured exports | 8.8 | 100.0 | 100.0 | – | – |
| | Developing country manufactured exports | 13.8 | 10.3 | 26.4 | 100.0 | 100.0 |

Dynamism of developing country exports, by factor intensity, 1980–2001 [1]

Average annual growth rates and share in total exports in %

