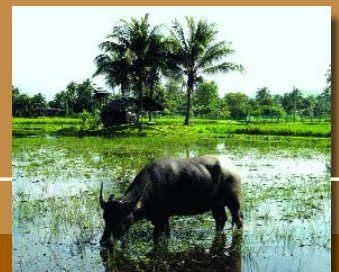


5

Production and international trade of commodities



5.1 Production and processing of commodities

5.2 International trade in commodities

5.3 Commodity prices

5.1 Production and processing of commodities

OVERVIEW

In developing countries, the most important trend since 1961 with regard to production and processing of **agricultural commodities** has been the growth in developing Asia's share. For cotton lint, **grains** and **sugar**, the share of developed countries has remained constant or decreased somewhat, while the shares of Latin America and countries in Central and Eastern Europe have declined. Least developed countries have been able to maintain their shares of world production. Growth in global production of agricultural commodities in general has been relatively slow, owing to the fact that demand is not very sensitive to increases in income. At the same time, the composition of total demand has changed, with the share of basic foods declining and that of higher value products rising.

With respect to **metals**, the rapid industrialization of Asian developing countries, particularly China, and their consequent emergence as major producers (in terms of value) are striking. This expansion of production has occurred largely in response to domestic and regional demand. Countries in Latin America have also increased their share of global metals production, mainly for export of developed countries has fallen dramatically - partly owing to reduced competitiveness in natural-resource-based industries, partly because the most dynamic markets are now in developing countries. Significantly, the **market share** of developed countries has fallen much more for metals, where there are few barriers to trade, than for agricultural commodities, where tariffs are high (especially for processed items) and where developed countries' subsidies to domestic producers make it difficult for developing countries to compete.

DEFINITIONS

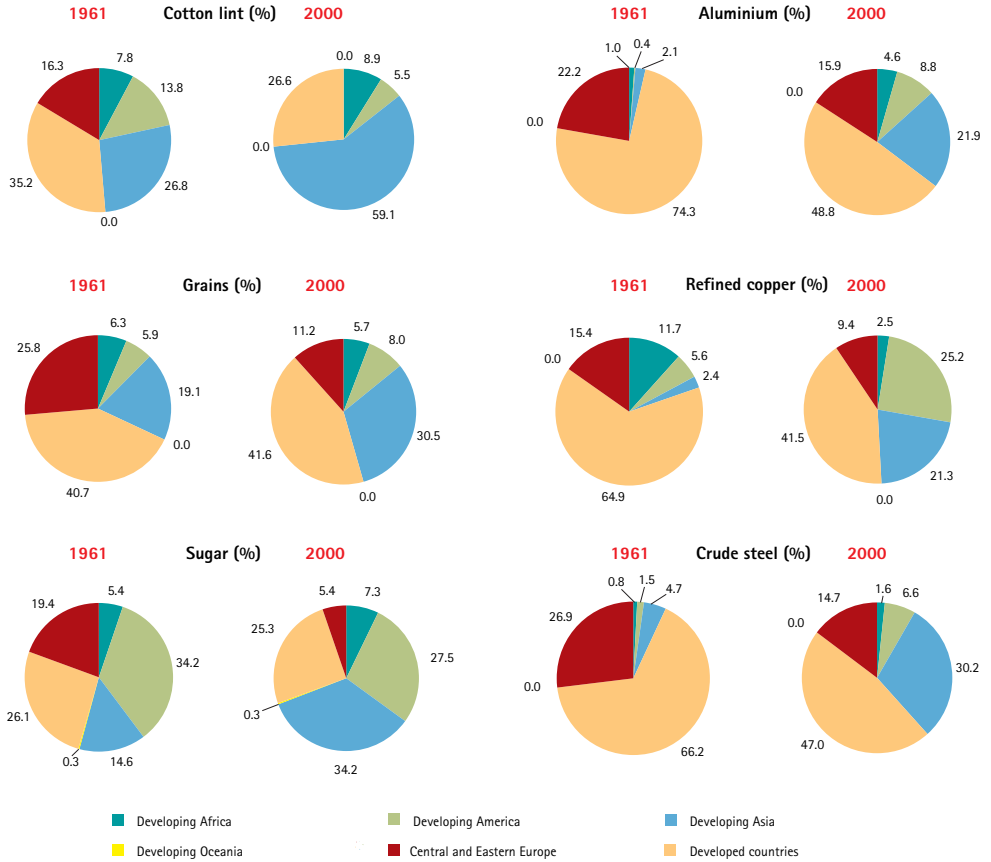
- **Agricultural commodities** include food items and agricultural raw materials.
- **Grains** incorporate: wheat, maize, barley, rye, oats, millet, sorghum, buckwheat, canary seed, cereals n.e.s., mixed grains, quinau.
- **Sugar** covers: sugar, raw centrifugal production: sum of cane sugar and beet sugar processed further to obtain refined sugar.
- **Metals** include minerals, ores and metals.
- **Market share**, in this context, refers to the share of a particular country grouping (for example, developing countries) in total world production of a specific commodity.

DATA SOURCES

- [1] UNCTAD, *Commodity Yearbook* (various issues).
UNCTAD, *Handbook of World Mineral Trade Statistics* (various issues).

UNCTAD provides detailed and comprehensive data on commodities production and trade. The UNCTAD e-portal **INFOCOMM** at www.unctad.org/infocomm gives information in English, French and Spanish on a large number of commodities, as well as documents on commodity-related issues and links to other sites with commodity information. The **World Commodity Survey** analyses main trends in commodities and examines global factors affecting commodity markets. The **Commodity Yearbook** offers detailed statistical data on production and trade of a wide range of commodities. The **Handbook of World Mineral Trade Statistics** provides detailed statistics on international trade in all economically important minerals and metals.

Production of selected commodities by region [1]



Production of selected commodities [1]

Annual average growth rate 1961 - 2000 in % and 2000 production in thousand tons

Regions	Cotton lint		Grains		Sugar	
World	1.8	18 836	2.0	1 440 879	2.3	127 200
Developing countries	2.9	13 831	2.9	636 812	2.9	88 175
Africa	2.1	1 671	1.7	81 723	3.1	9 313
America	-0.6	1 031	2.8	115 623	1.7	35 034
Asia	3.9	11 128	3.2	439 451	4.5	43 505
Oceania	..	..	4.7	14	2.0	322
Countries in Central and Eastern Europe	-14.6	3	-0.1	161 142	2.2	6 833
Developed countries	1.0	5 002	2.1	599 094	1.7	32 193
<i>Memorandum</i>						
Developing countries less China	2.4	9 481	2.6	420 049	2.8	80 374
Least developed countries	2.6	1 032	2.3	44 112	3.0	2 392

Regions	Aluminium		Refined copper		Steel	
World	4.4	24 488	2.8	14 826	2.3	849 579
Developing countries	10.7	8 645	5.2	7 270	6.9	325 854
Africa	8.4	1 122	-1.2	376	4.2	13 767
America	13.0	2 167	6.8	3 732	6.2	55 896
Asia	10.8	5 356	8.6	3 161	7.3	256 191
Oceania	..	..	..	..	..	..
Countries in Central and Eastern Europe	3.5	3 905	1.5	1 400	0.7	124 535
Developed countries	3.3	11 938	1.6	6 156	1.4	399 190
<i>Memorandum</i>						
Developing countries less China	11.1	5 656	4.8	5 898	7.1	198 618
Least developed countries	..	..	-1.8	283	5.9	94

5.1 Production and processing of commodities

OVERVIEW

Developing countries as a group have made progress towards one of their main economic development goals: to increase the degree of processing of their commodities. However, these efforts have not been equally successful for all commodities and countries.

To take a positive example, Asian developing countries have increased their share of world production and world exports of processed metal products. An important reason for this success is that domestic demand for metal products has grown rapidly in these countries, providing producers with a nearby customer base from which to launch export efforts. Another reason is that, although tariffs are higher for more processed metal products than for less processed forms, these tariffs are not prohibitive, and there are few other obstacles to trade.

Developing countries have been much less successful in increasing the degree of processing of many key agricultural products. This is true even for products that are produced exclusively in developing countries, such as **cocoa** and **coffee**. One reason is tariff escalation, whereby tariffs increase with the degree of processing. Another reason is that developing-country producers find it difficult to compete with the marketing efforts of large food companies in developed countries and to meet the requirements of customers from developed economies. Furthermore, because of issues such as transport costs and the need to respond quickly to changing consumer demand, it may be more cost-effective to process agricultural commodities closer to their final market. For cocoa, developing countries were relatively successful in acquiring larger market shares for more processed products until the 1980s, when their shares started falling. Since the 1990s, the shares have been roughly constant. In the case of coffee, developing countries' share of world exports of processed products increased until the 1990s and has stagnated since then.

DEFINITIONS

According to the United Nations Standard International Trade Classification (SITC) Revision 2:

- **Cocoa:** Cocoa beans SITC 072.1, cocoa powder SITC 072.2, cocoa cake and paste SITC 072.31, cocoa butter SITC 072.32, chocolate and chocolate products SITC 073.
- **Coffee:** Coffee beans SITC 071.1, Extract, essence or concentrate of coffee SITC 071.2.

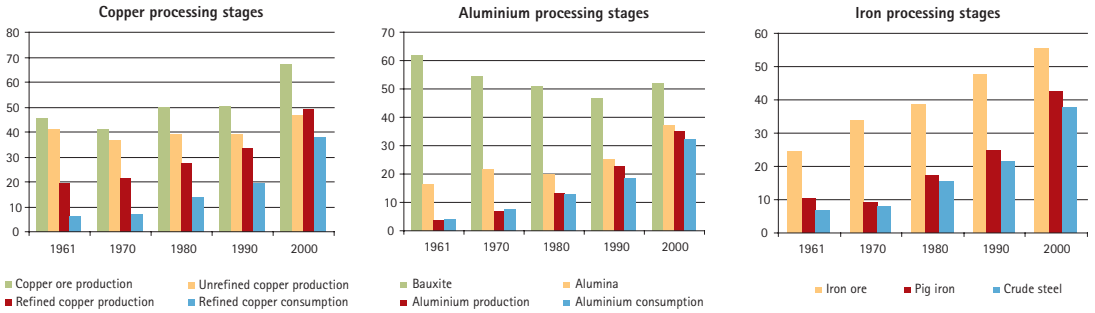
DATA SOURCES

[1] UNCTAD, *Commodity Yearbook* (various issues).

UNCTAD, *Handbook of World Mineral Trade Statistics* (various issues).

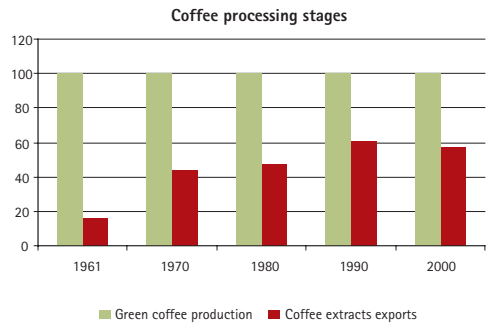
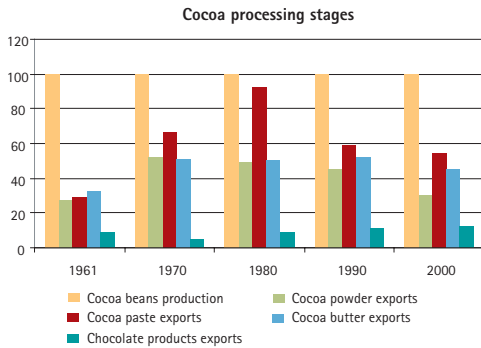
Owing to data availability, the figures in the table and the graphs for later processing stages of cocoa and coffee refer to shares of world exports rather than world production.

Raw material output processed in developing countries as % of world output [1]



Average annual growth rate in % and 2000 quantity in thousand tonnes

Commodity	Regions	1961-1970	1971-1980	1981-1990	1991-2000	1961-2000	2000
Copper ore (Cu content): primary production	World	4.3	2.1	0.8	4.3	2.9	13 256
	Developing countries	3.1	4.2	1.1	7.4	3.9	8 938
Unrefined copper: 1st processing stage	World	4.3	2.1	1.3	3.1	2.6	11 862
	Developing countries	3.0	2.9	1.7	5.2	2.9	5 537
Refined copper: 2nd processing stage	World	4.5	2.6	1.4	3.7	2.8	14 841
	Developing countries	5.4	5.0	4.3	7.9	5.2	7 276
Refined copper consumption: 3rd processing stage	World	4.3	2.9	1.1	4.0	2.9	15 149
	Developing countries	4.9	9.2	5.6	9.9	7.6	5 752
Bauxite (Al content): primary production	World	8.4	3.8	2.7	1.8	4.0	28 710
	Developing countries	6.9	3.6	1.9	2.2	3.5	14 929
Alumina (Al content): 1st processing stage	World	9.6	4.8	2.5	2.3	4.6	26 408
	Developing countries	13.1	3.7	5.3	6.4	6.8	9 773
Aluminium: 2nd processing stage	World	9.4	4.3	2.3	2.4	4.4	24 488
	Developing countries	17.9	10.8	8.1	6.7	10.7	8 645
Aluminium consumption: 3rd processing stage	World	9.4	4.1	3.0	3.2	4.5	24 932
	Developing countries	17.1	9.4	6.6	8.7	10.2	8 057
Iron ore (Fe content): primary production	World	6.5	2.2	1.0	1.5	2.5	615 421
	Developing countries	10.4	3.8	2.8	2.9	4.6	340 961
Pig iron: 1st processing stage	World	5.9	2.0	2.0	0.4	2.2	575 929
	Developing countries	4.8	8.2	6.0	5.0	5.9	245 041
Crude steel production: 2nd processing stage	World	5.8	2.3	2.9	-0.2	2.3	841 098
	Developing countries	7.2	8.9	6.3	4.5	6.8	317 373



Average annual growth rate in % and 2000 quantity in thousand tonnes

Commodity	Regions	1961-1970	1971-1980	1981-1990	1991-2000	1961-2000	2000
Cocoa beans: primary production	World	3.0	0.2	4.3	3.3	2.7	3 384
	Developing countries	3.0	0.2	4.3	3.3	2.7	3 384
Cocoa powder and cake exports: 1st processing stage	World	5.4	3.3	6.2	5.7	5.0	547
	Developing countries	13.0	2.4	5.8	0.6	5.2	163
Cocoa paste exports: 2nd processing stage	World	17.8	25.2	0.3	6.1	10.8	269
	Developing countries	29.1	29.9	-4.1	6.0	12.6	146
Cocoa butter exports: 3rd processing stage	World	6.5	2.6	7.9	3.6	5.1	499
	Developing countries	12.1	2.4	8.2	2.2	6.0	228
Chocolate product exports: 4th processing stage	World	10.7	5.8	8.1	7.5	8.0	2 589
	Developing countries	3.9	12.7	11.5	8.4	8.9	319
Green coffee: primary production	World	-1.8	0.4	0.0	2.0	1.2	7 259
	Developing countries	-1.8	0.4	0.0	2.0	1.2	7 256
Coffee extracts and substances containing coffee exports: 1st processing stage	World	14.9	6.5	2.7	10.4	8.4	390
	Developing countries	28.5	7.7	4.8	10.9	11.9	221

5.2 International trade in commodities

OVERVIEW

In recent decades, developed countries' share of the world market for commodities has increased, mainly at the expense of the formerly socialist countries of Eastern Europe, but also at developing countries' expense. Of developing regions, only Asia has consistently increased its share of the world market for all commodity groups. Latin America has lost market share in all groups, while Africa has increased its market share for **fuels** but experienced severe losses for agricultural and non-fuel mineral commodities. The least developed countries have lost market share for all commodity groups except fuel, and their participation in international commodity trade, which was already low, has become almost insignificant.

Developments for **agricultural commodities** reflect the importance of developed countries' financial support to domestic producers and the disappearance of extension services and government supported marketing and distribution systems in many developing countries, particularly in Africa. Asian countries that have maintained technical support to farmers have been successful both in improving domestic food security and in promoting exports.

For **minerals and metals**, the drop in Africa's share resulted from a lack of investor confidence and a subsequent fall in production, while investors preferred "safe havens" in developed countries. Asian countries were able to build on rapidly growing domestic demand, which provided a secure base for expanding exports of processed metal products. Unlike agricultural products, metal products can enter developed-country markets at very low tariffs. Latin American countries continued being able to attract foreign investment in mining.

DEFINITIONS

Commodities are classified in accordance with the United Nations Standard International Trade Classification (SITC) Revision 2.

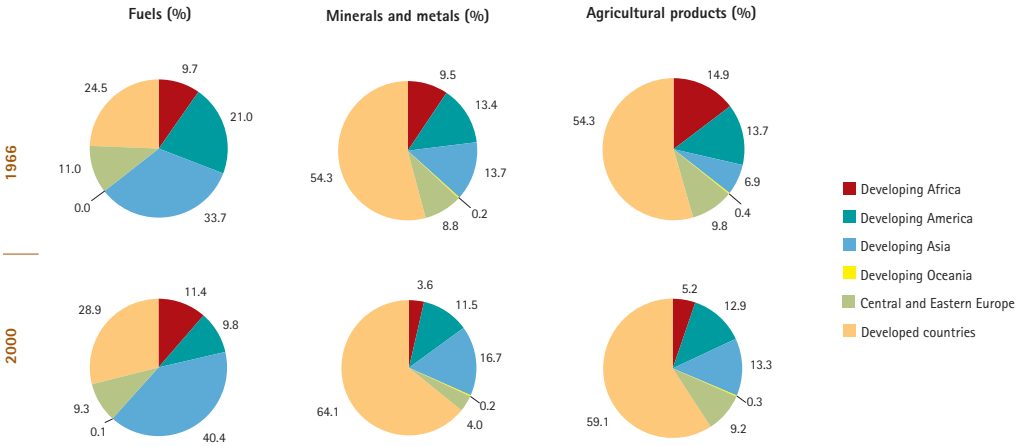
- **Fuels:** SITC section 3.
- **Agricultural commodities:** SITC sections 0, 1, 2 (less divisions 27 and 28 and groups 233, 244, 266 and 267) and 4.
- **Minerals and metals:** SITC divisions 27, 28 and 68 and item 522.56.

DATA SOURCES

- [1] UNCTAD, *World Commodity Survey* (various issues).
UNCTAD, *Handbook of World Mineral Trade Statistics* (various issues).
UNCTAD, *Commodity Yearbook* (various issues).

Share of commodity exports by region [1]

(In millions of DWT)



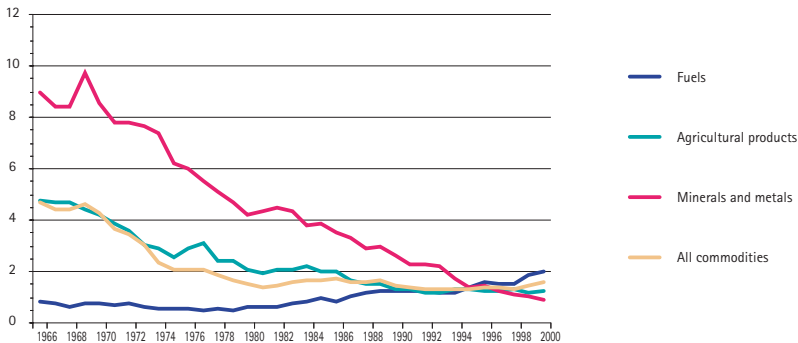
Evolution of market share of commodity aggregates [1]

Average annual growth rate 1966 - 2000 in % and 2000 exports in million US\$

Regions		Fuels		Agricultural products		Minerals and metals		All commodities	
Developing countries		-0.1	408 049	-0.4	166 858	-0.4	55 795	0.2	630 112
Africa		0.5	75 608	-2.9	18 599	-3.1	9 096	-1.0	103 298
North Africa		-0.8	38 387	-3.7	3 290	-2.7	975	-0.2	42 652
Sub-Saharan Africa		3.1	37 220	-2.6	15 309	-3.1	8 121	-1.4	60 646
Sub-Saharan Africa less South Africa		3.3	35 220	-2.8	12 303	-5.6	2 802	-1.5	50 321
America		-2.2	64 880	-0.5	59 920	-0.2	22 723	-1.0	147 520
Central America and the Caribbean		-1.2	24 752	-1.3	16 653	-0.2	4 014	-1.0	45 414
South America		-2.7	40 129	-0.1	43 268	-0.2	18 709	-1.0	102 106
Asia		0.5	266 828	0.6	87 205	2.0	23 370	1.5	376 826
West Asia		-0.1	190 830	0.1	9 783	2.1	3 087	2.0	203 124
Central Asia		19.1	8 939	-1.8	2 357	8.1	2 551	9.2	13 847
South, East and South-East Asia		2.9	67 059	0.5	75 064	1.5	17 732	0.8	159 855
South, East and South-East Asia less China		2.8	59 196	0.3	58 871	1.0	13 143	0.7	131 210
Oceania		5.6	733	-0.2	1 135	-0.7	606	-0.6	2 468
Countries in Central and Eastern Europe		-0.5	61 794	-2.3	20 840	-0.2	16 278	-0.8	98 912
Developed countries		0.5	191 272	0.5	335 611	0.2	104 240	-0.1	631 118
North America		-0.2	49 963	-0.3	100 796	-1.3	25 390	-1.1	176 149
Europe		0.6	125 585	1.3	207 625	0.4	57 533	0.5	390 738
Others		3.2	15 724	-1.0	27 190	4.0	21 317	-0.2	64 231
Memorandum									
Developing countries less China		-0.2	400 187	-0.6	150 665	-0.6	51 206	0.2	601 468
Least developed countries		2.7	13 387	-3.9	6 326	-6.5	1 593	-3.2	21 306

Share of least developed countries in commodity exports [1]

(in %)



5.2 International trade in commodities

OVERVIEW

Least developed countries have not kept up with the growth of the commodity sector in developing countries and industrialized economies. While commodity exports globally increased at an annual average rate of 7.2% from 1966 to 2000, the corresponding figure for developing countries was 6.8%. Least developed countries had an even lower figure of 2.2%.

During this period, developing countries' **market share** in commodity exports fell slightly, while the share of least developed countries suffered a decline of 5%. These countries are losing market share even in traditional commodities, mainly owing to situations with their physical and social infrastructures, lack of technical and institutional capacity (transfer of technology and know-how), and subsidies observed in some key sectors.

Attempts by developing countries as a group to shift away from **commodity dependence** have generally been frustrated by restrictive trade rules' bias against agricultural commodities (for example, via **tariff escalation**). Countries such as Brazil, China and India have been rather successful in diversifying away from commodities, but most developing countries still depend heavily on commodities. In today's world village, the benefits of globalization have not yet reached least developed countries. Initiatives such as the **Everything But Arms** arrangement between the European Union and the least developed countries group are supposed to facilitate market access and help the later states improve their performance.

DEFINITIONS

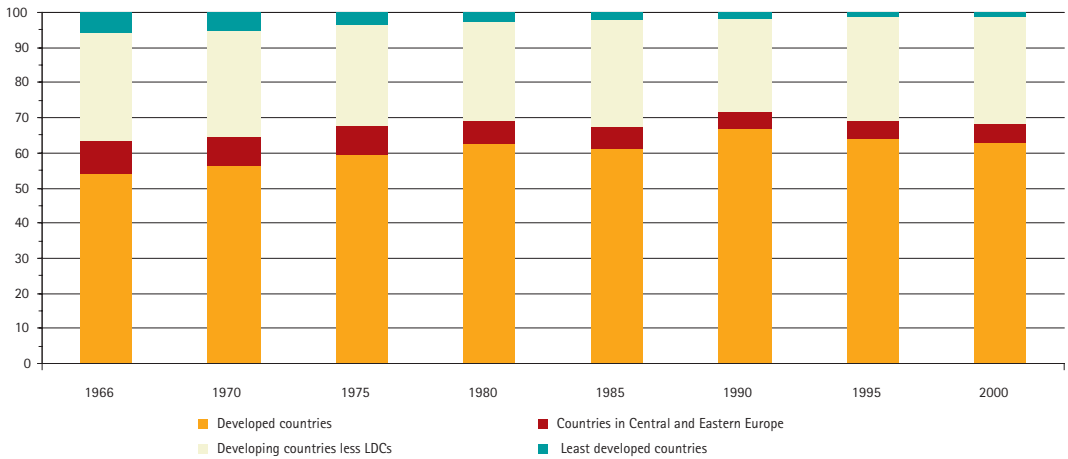
- **Market share** here refers to the share of a particular group (for example, developing countries, LDCs) in total world commodity exports.
- **Commodity dependence** is generally measured by the share of the three leading commodities in a given country's total exports. The bigger the share, the more dependent the country is.
- **Tariff** often rises significantly with the level of processing in many industrialized economies and high-income developing countries. **Tariff escalation** has the potential of reducing demand for processed imports from developing countries, hampering diversification into higher value-added exports.
- Under the **Everything But Arms** arrangement, least developed countries since 2000 have free access to the European Union market, with temporary exceptions for the following commodities: rice, sugar and bananas.

DATA SOURCES

- [1] UNCTAD, *Commodity Yearbook* (various issues).
UNCTAD, *Handbook of World Mineral Trade Statistics* (various issues).

Distribution of non-fuel commodity exports by country group [1]

(in % of world total)



Non-fuel commodity exports [1]

Average annual growth rate in % and 2000 exports in million US\$

	1966 – 1970	1971 – 1980	1981 – 1990	1991 – 2000	1966 – 2000	2000
World	7.1	17.6	4.6	3.2	7.2	699 047
Developing countries	5.9	16.6	3.5	4.3	6.8	222 077
of which least developed countries	5.5	10.0	0.1	0.0	2.2	7 919

Market share average in %

	1966 – 1970	1971 – 1980	1981 – 1990	1991 – 2000	1966 – 2000	2000
Developing countries	36.0	32.7	30.9	30.6	32.1	31.8
of which least developed countries	5.6	3.6	2.2	1.3	2.9	1.1

Share of three leading commodities in total exports of selected countries and country groups [1]

In %

Country or group	1965	1970	1975	1980	1985	1990	1995	2000
Developing countries	11.9	37.1	60.3	61.2	44.6	29.1	17.7	21.8
Of which:								
Brazil	56.7	47.6	33.0	27.6	22.1	17.8	14.1	12.5
China	5.7	15.4	27.9	28.8	29.2	12.2	6.8	5.2
India	23.9	21.5	25.3	14.5	17.9	9.5	10.4	6.0
Least developed countries	29.1	35.5	34.7	42.0	44.1	39.6	34.1	45.7
Of which:								
Angola								
<i>Fuels, diamonds, fishery commodities*</i>	56.4	57.0	82.8	87.1	94.5	93.7	94.3	99.8
Burundi								
<i>Green & roasted coffee, tea & mate, hides & skins*</i>	97.5	92.5	91.0	94.3	91.0	89.6	87.8	73.6
Gambia								
<i>Sugar, fishery commodities, groundnuts*</i>	75.2	97.1	95.2	89.2	53.3	49.8	70.0	79.1
Mauritania								
<i>Iron ore & concentrates, live animals, fishery commodities*</i>	95.2	92.6	90.4	89.8	82.8	85.6	58.5	59.3
Somalia								
<i>Live animals, bananas, fishery commodities*</i>	65.1	90.1	88.8	89.9	91.8	55.9	63.8	56.8
Developed countries	4.9	5.7	8.5	9.5	9.7	5.8	4.7	6.0

* Three leading commodities in 2000.

5.3 Commodity prices

OVERVIEW

Today the **Prebisch–Singer thesis** about the deterioration of terms of trade and the long-term decline of commodity prices is more valid than ever. For instance, in 2002 the price index of agricultural commodities deflated by the price index of manufactured exports of industrial economies in US dollars (74) was one half of the same index in 1980 (145).

For tropical beverages and food, the decline was even steeper, with corresponding indices decreasing by 63% (from 102 to 37) and 56% (from 204 to 90) between 1980 and 2002. Despite an upswing since 2003, the long-term real decline in commodity prices has led to severe deterioration in terms of trade for many commodity-dependent developing countries. This in turn has influenced balance-of-payments sustainability, impeded development and affected social welfare, while increasing impoverishment and environmental degradation.

For example, between 1999 and 2002, coffee-producing countries and West African cotton-producing countries suffered opportunity costs of \$19 billion and \$1 billion respectively compared to the situation that would have prevailed had prices remained at 1998 levels.

DEFINITIONS

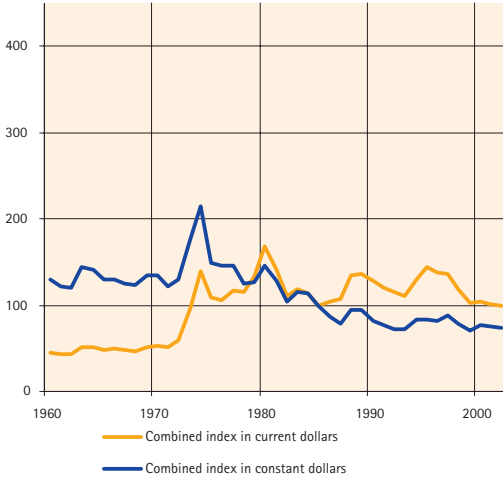
- **The Prebisch–Singer thesis**, proposed in 1950, suggests that, in the long-term, prices for primary commodity exports fall in relation to prices of manufactured imports. According to the hypothesis, this drop results from a number of factors, including divergence between the income elasticity of demand for primary products and the income elasticity of demand for manufactured products. Thus, the net barter terms of trade for commodity-producing developing countries are declining.

DATA SOURCES

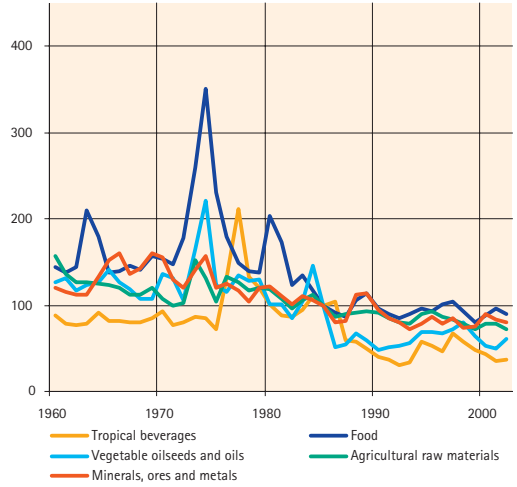
[1] UNCTAD, *Commodity Price Bulletin*.

Commodity price indices [1]

Combined price indices in current and constant dollars (1985 = 100)

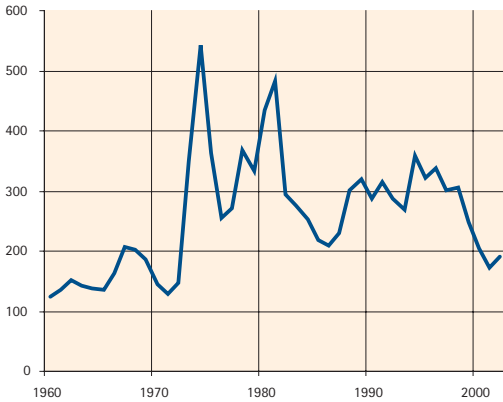


Price indices of product groups in constant dollars (1985 = 100)

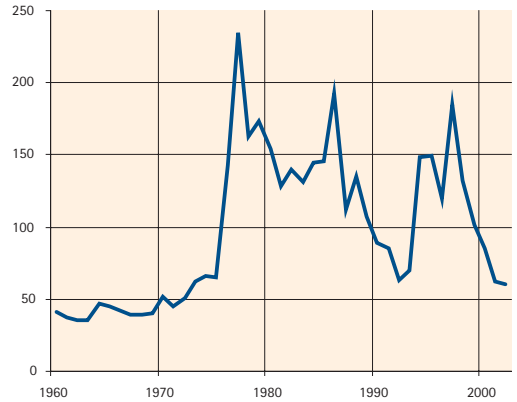


Selected commodity prices [1]

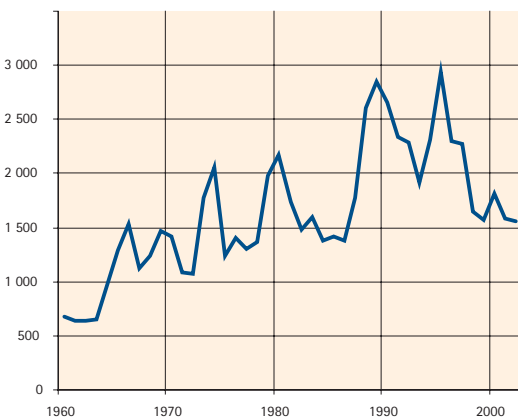
Rice (US\$/metric ton)



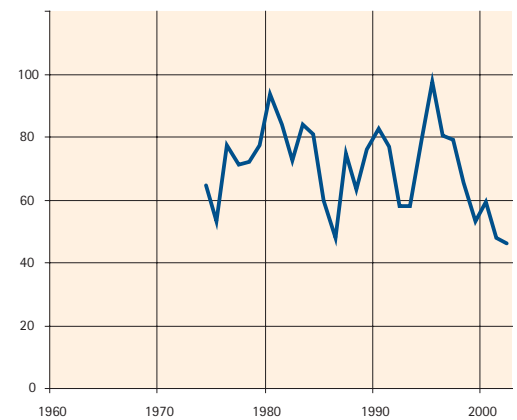
Coffee (US¢/lb.)



Copper (US\$/metric ton)



Cotton (US¢/lb.)



5.3 Commodity prices

OVERVIEW

The removal of international and domestic commodity price stabilization schemes, combined with the recent dismantling of compensatory mechanisms, has completely reshaped the systems governing commodity sectors. Today, commodity producers in developing countries are no longer protected against price volatility.

There is no clear evidence about the long-term impact of globalization on commodity price fluctuation. However, **price instability indices** in monthly market prices for all commodities increased slightly in the past decade, from 1.8 in 1990–1992 to 2.5 in 2000–2002. Significantly, this instability is passed on to producing countries and is a major impediment for trade in some commodities such as cocoa, banana, pepper, coconut oil, nickel and crude petroleum. Instability indices for these products in 2000–2002 were 10.4, 15.0, 20.3, 18.1, 12.5 and 9.5.

Past attempts to smooth the negative effects of instability – including **Keynes's plan** in 1943, the **Compensatory Financing Facility** in 1963, **STABEX** in 1975, and measures stipulated in UNCTAD's **Integrated Programme for Commodities** in 1976 – have either been discontinued or never been implemented. Price instability strongly affects both the macro-economic vulnerability of developing-country economies, including debt, and the micro-economic and social stability of those who depend on commodities.

DEFINITIONS

- The **price instability index** is the measure of price instability $\frac{1}{n} \sum_{t=1}^n [(|Y(t)-y(t)|)/y(t)] * 100$, where $Y(t)$ is the observed magnitude of the variable, $y(t)$ is the magnitude estimated by fitting an exponential trend to the observed value, and n is the number of observations. Instability is measured as the percentage deviation of the variables concerned from their exponential trend levels for a given period.
- In 1943, John Maynard **Keynes** proposed a world currency based on a price index of the 30 most-traded commodities. The idea was to link currencies to the index in order to automatically stabilize commodity prices.
- In 1963, the International Monetary Fund began offering a **Compensatory Financing Facility** that later became the **Compensatory and Contingency Financing Facility**. In 1988 it introduced a **Buffer Stock Financing Facility**; this was discontinued in the early 2000s.
- The first **Lomé Convention** in 1975 gave birth to the **STABEX** system, which was designed to alleviate the effect of non-structural problems such as fluctuation in world commodity prices and unforeseen events such as natural disasters. **STABEX** was discontinued in 2000 with the signature of the **Cotonou Agreement**, and was replaced by the more narrowly focused **Flex programme**.
- The **Integrated Programme for Commodities** set up an approach for an international policy framework that included the negotiation of a series of price-stabilizing agreements for commodities with very unstable prices.

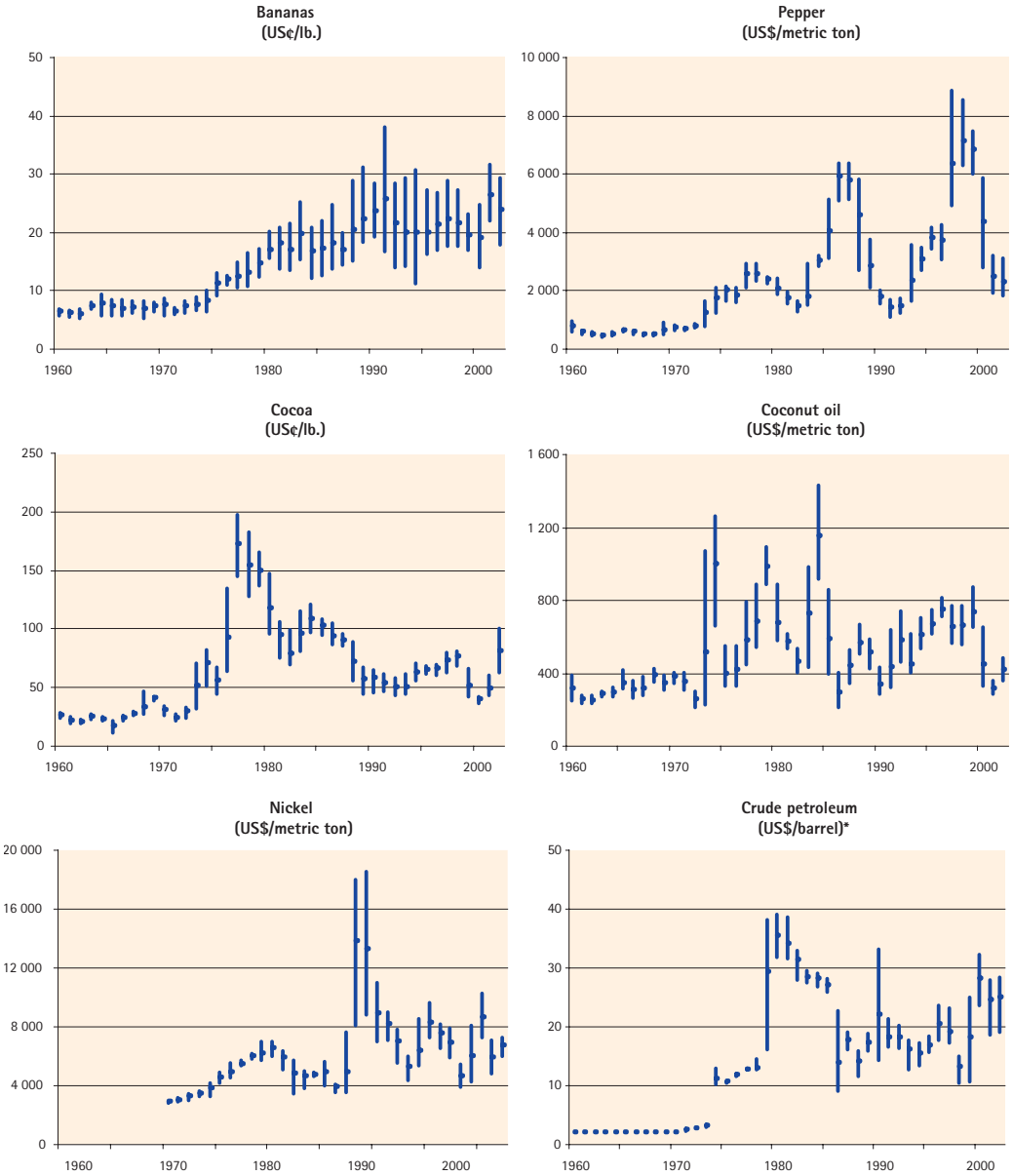
DATA SOURCES

- [1] UNCTAD, *Commodity Price Bulletin*.
UNCTAD, *Commodity Yearbook 2003*, volumes I and II.

UNCTAD assists developing-country governments and other institutions in reducing the effects of price instability, including by creating relevant publications and providing training in risk management techniques. It also carries out research on international instruments for smoothing commodity export revenue fluctuations. The **INFOCOMM** site at www.unctad.org/infocomm presents several studies on commodity price instability and potential strategies for dealing with this issue. See, for instance, **Report of the Meeting of Eminent Persons on Commodity Issues** and **Integrated Approach to the Management of Production and Marketing in the Primary Sector of the Developing Countries**.

Commodity price volatility [1]

(minimum, maximum and average based on monthly data)



* Memo item: not included in the calculation of price indices.

Instability indices in monthly market prices [1]

	1960 - 1962	1970 - 1972	1980 - 1982	1990 - 1992	2000 - 2002
All commodities in current dollars	..	4.33	4.88	1.79	2.48
All food	2.15	5.14	7.21	2.43	2.58
Food and tropical beverages	2.70	6.03	7.65	2.52	3.05
Tropical beverages	2.39	6.47	5.10	5.41	8.95
Food	3.16	6.37	10.10	3.65	3.86
Vegetable oilseeds and oils	4.35	4.81	6.01	3.30	10.18
Agricultural raw materials	2.24	3.91	3.11	3.06	4.53
Minerals, ores and metals	..	4.34	1.92	3.65	2.87