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Research Department

Recent Developments and Outlook  
for Primary Commodity Markets

Prepared by the Commodities Division

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This paper analyzes recent market developments and the short-term outlook for the major non-oil primary commodities. <sup>1/</sup> The discussion focuses on major commodity groups and individual commodities and, as such, is meant to be complementary to the analysis of overall commodity prices contained in the World Economic Outlook. <sup>2/</sup> The paper consists of five sections and a statistical annex. Section I provides an overview of commodity price movements, with emphasis on the recovery beginning in 1983; the major factors influencing these price movements are analyzed along with their consequences for exporters of primary commodities. Sections II through V examine recent market developments and the short-term outlook for the four major commodity groups (food, beverages, agricultural raw materials, and metals, respectively) and the 30 individual commodities included in these groups. Three Annex tables provide historical data on commodity price movements from 1977-83.

### I. Overview of Commodity Market Developments and Prospects

During 1983 non-oil primary commodity prices (in nominal U.S. dollar terms) began to recover after experiencing their largest and most prolonged decline in the last three decades (Table 1 and Chart 1). During 1981-82, prices fell by 27 percent, comprising price declines for all the major categories: food, -34 percent; beverages, -20 percent; agricultural raw materials, -23 percent; and metals, -23 percent. Commodity prices recovered by almost 7 percent in 1983, with all commodity groups except metals contributing to the recovery.

On a quarterly basis, commodity prices recovered by 16 percent from the trough reached in the fourth quarter of 1982 to the fourth quarter of 1983. The largest recoveries were in the prices of food and agricultural raw materials, each of which rose by 22 percent, followed by beverage prices, which rose by 16 percent. Metals prices rose somewhat during the first half of 1983, but then receded to previously low levels by year-end. The recovery continued into the first quarter of 1984, as prices attained their highest level in three years, but were still 11 percent below the previous quarterly peak reached in the second quarter of 1980.

In the first quarter of 1983, overall commodity prices rose by 2.9 percent after eight consecutive quarterly declines. The pace of the recovery accelerated to 6.7 percent in the second quarter before slowing to 4.2 percent and 1.3 percent in the last two quarters; it picked up somewhat in the first quarter of 1984, reaching 2.8 percent. In the first half of 1983, the recovery in demand contributed to price increases for agricultural raw

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<sup>1/</sup> The major non-oil primary commodities are defined as 30 commodities, excluding gold and petroleum, exported by developing countries that together comprise the IMF index of market prices for primary commodities (see Annex tables).

<sup>2/</sup> International Monetary Fund, World Economic Outlook, Occasional Paper No. 27 (Washington: International Monetary Fund, 1984).

Table 1. Indices of Non-oil Primary Commodity Prices 1/  
(1975=100) 2/

Year	Nominal (U.S. Dollar Terms)					Deflated (By the Price of Manufactures) 3/				
	All	Food	Agricultural			All	Food	Agricultural		
			Beverages	Raw Materials	Metals			Beverages	Raw Materials	Metals
(Annual)										
1970	58	45	70	55	78	108	84	130	103	145
1971	56	46	65	55	67	97	80	113	96	118
1972	63	53	71	72	68	101	85	113	116	109
1973	97	82	87	129	99	134	113	121	178	136
1974	124	131	104	125	124	140	148	118	143	142
1975	100	100	100	100	100	100	100	100	100	100
1976	115	84	192	124	106	114	84	189	123	105
1977	139	83	332	128	114	127	76	304	117	104
1978	133	96	241	138	120	106	76	192	109	95
1979	155	109	255	168	156	108	76	178	117	109
1980	169	141	224	175	172	106	89	141	110	108
1981	144	122	174	158	148	95	81	115	105	98
1982	127	97	178	136	135	86	66	222	93	92
1983	135	105	192	149	135	95	74	134	105	94
(Quarterly)										
1980										
Q1	171	126	253	180	186	110	81	163	116	120
Q2	167	134	253	166	169	107	86	161	106	108
Q3	168	147	206	176	171	102	90	125	107	104
Q4	168	159	184	179	164	105	99	114	111	102
1981										
Q1	157	141	184	172	152	101	90	118	110	98
Q2	145	126	168	162	147	97	84	113	109	98
Q3	138	115	164	154	147	95	79	112	106	101
Q4	136	107	180	144	148	89	70	118	94	96
1982										
Q1	134	105	189	139	145	89	70	125	92	97
Q2	127	100	173	140	133	85	67	116	94	89
Q3	122	92	169	137	131	84	63	116	94	90
Q4	122	90	184	130	130	86	63	130	92	92
1983										
Q1	125	93	182	137	133	86	64	125	94	91
Q2	134	105	184	147	138	94	73	129	103	97
Q3	139	113	189	156	136	100	81	135	111	98
Q4	141	110	213	158	131	99	77	149	111	92
1984										
Q1	145	110	226	166	132	102	77	159	116	93
(Annual)										
1970	3.4	5.3	13.1	-8.8	5.4	-2.3	-0.5	6.8	-13.9	-0.4
1971	-4.8	2.0	-7.6	-0.5	-13.6	-10.6	-4.2	-13.3	-6.5	-18.9
1972	13.3	15.5	9.3	30.8	0.2	4.6	5.6	0.9	20.7	-7.5
1973	53.4	54.8	23.5	79.2	46.8	31.8	33.2	6.2	54.2	26.3
1974	28.0	59.7	19.3	-3.5	25.0	4.6	30.5	-2.5	-21.2	2.1
1975	-19.2	-23.5	-3.8	-19.8	-19.4	-28.5	-32.3	-14.9	-29.0	-28.6
1976	14.8	-15.6	91.8	24.3	6.0	13.9	-16.2	90.3	23.3	5.2
1977	21.2	-1.8	73.2	3.2	7.5	11.4	-9.7	59.3	-5.1	-1.2
1978	-4.1	15.8	-27.4	7.6	5.4	-16.8	0.4	-37.0	-6.6	-8.5
1979	16.3	13.4	5.8	21.9	29.8	2.4	-0.2	-6.8	7.4	14.4
1980	8.7	30.0	-12.2	4.1	10.6	-2.2	17.0	-21.0	-6.3	-0.4
1981	-14.6	-13.6	-22.3	-9.7	-14.0	-9.9	-8.8	-18.0	-4.8	-9.3
1982	-12.1	-20.8	2.5	-13.7	-9.2	-10.0	-18.9	4.9	-11.9	-7.4
1983	6.7	8.7	7.6	9.5	-0.1	8.6	11.3	8.6	11.1	2.5
(Quarterly)										
1980										
Q1	4.5	9.4	-8.0	6.1	11.9	1.0	5.7	-11.0	2.5	8.2
Q2	-1.9	6.6	-0.1	-7.9	-9.1	-2.9	5.6	-1.1	-8.8	-10.0
Q3	0.2	9.5	-18.7	5.9	1.4	-4.2	4.7	-22.3	1.2	-3.1
Q4	0.3	7.9	-10.4	1.8	-4.0	2.3	10.0	08.7	3.7	-2.2
1981										
Q1	-6.9	-11.4	-0.3	-4.1	-7.5	-3.9	-8.4	3.0	-0.9	-4.4
Q2	-7.5	-10.5	-8.3	-5.6	-3.5	-3.3	-6.5	-4.2	-1.3	0.9
Q3	-4.6	-8.5	-2.7	-4.7	0.2	-2.6	-6.5	-0.6	-2.6	2.4
Q4	-1.8	-6.7	10.1	-6.4	0.4	-6.5	-11.1	4.9	-10.9	-4.3
1982										
Q1	-0.9	-2.1	4.6	-3.6	-1.6	0.8	-0.4	6.4	-2.0	0.1
Q2	-5.3	-4.8	-8.6	0.7	-8.6	-4.3	-3.8	-7.6	1.8	-7.7
Q3	-3.9	-7.9	-2.2	-2.3	-1.6	-1.9	-5.9	-0.1	-0.3	0.5
Q4	-0.4	-2.9	8.8	-5.3	-0.4	2.9	0.3	12.4	-2.2	2.8
1983										
Q1	2.9	4.3	-0.9	5.5	2.4	-0.4	1.0	-4.1	2.1	-0.9
Q2	6.7	12.3	1.2	7.8	3.7	9.0	14.7	3.4	10.2	5.9
Q3	4.2	7.9	2.7	5.6	-1.2	6.5	10.3	5.0	7.9	1.0
Q4	1.3	-2.8	12.5	1.4	-4.1	-1.0	-5.0	10.0	-0.8	-6.1
1984										
Q1	2.8	-0.4	6.4	4.7	1.1	2.8	-0.4	6.4	4.7	1.1

1/ Peaks and troughs in deflated prices for the sample period are indicated by rectangles and circles.

2/ Weights are based on 1968-70 average export earnings of primary producing countries; the indices are rebased on 1975.

3/ Based on the U.N. index of the prices of manufactures exported by developed countries.

CHART 1  
NON-OIL PRIMARY COMMODITY PRICES, 1970 TO 1983  
(1980=100)

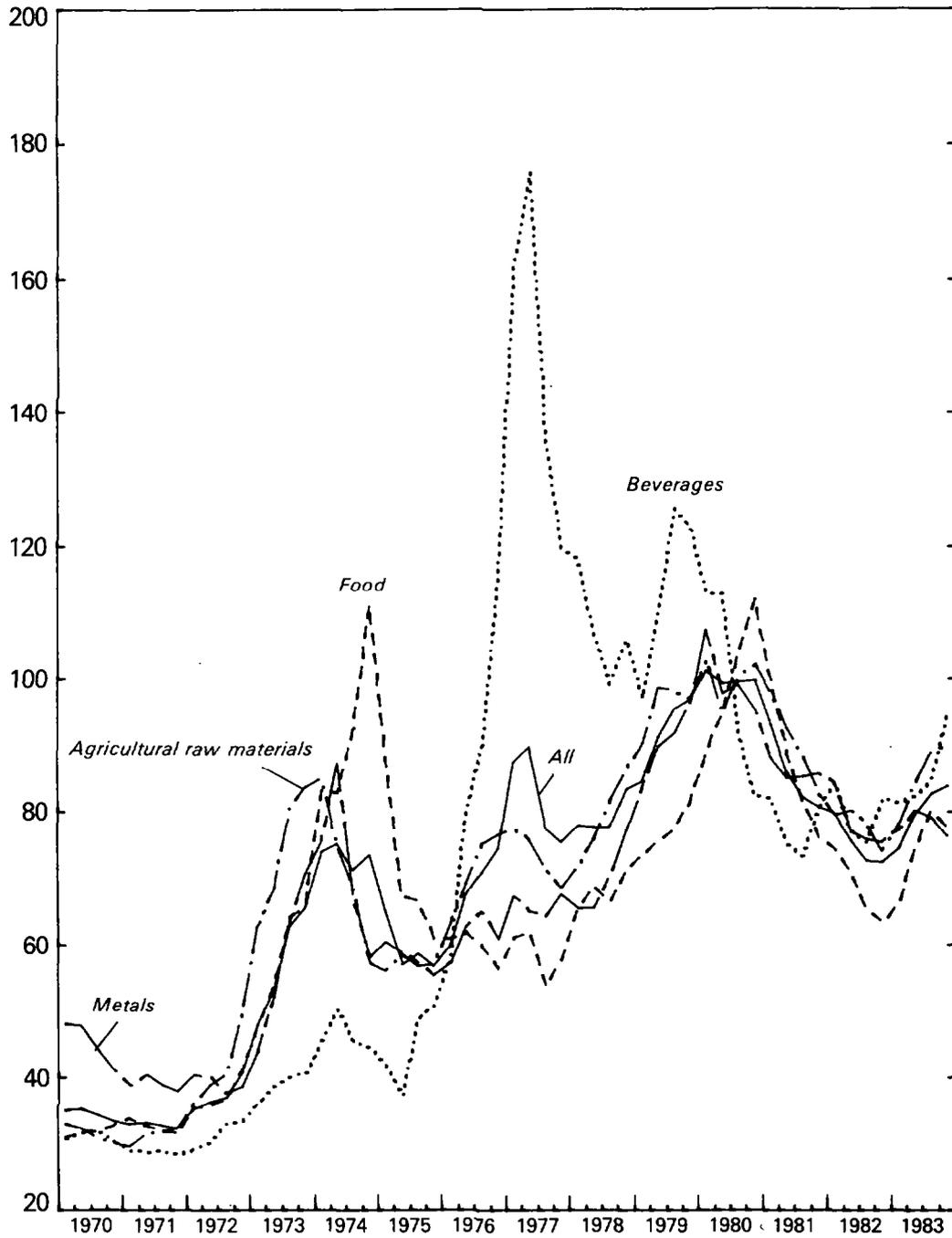


Table 2. Non-Oil Commodity Prices and Underlying Factors  
(Percentage change)

	1972-77 Price Cycle			1978-83 Price Cycle		
	Increase	Decrease	Recovery	Increase	Decrease	Recovery
1. Periods <u>1/</u>	1972-74	1974-75	1976-77	1978-80	1981-82	1983
2. Lengths in quarters	10	6	6	9	8	4
3. Commodity prices:						
3.1. Nominal (in U.S. dollar terms)	131	-23	56	30	-28	16
a. "Explained" by the four listed variables <u>2/</u>	68	-28	28	39	-44	9
Industrial production	(30)	(-25)	(29)	(23)	(-19)	(19)
Inflation	(48)	(12)	(14)	(36)	(17)	(4)
Exchange rate	(12)	(-2)	(-2)	(0)	(-24)	(-5)
Trend factor	(-22)	(-13)	(-13)	(-20)	(-18)	(-9)
b. Other factors	63	5	28	-9	16	7
"Large" supply shocks indicated by changes in the prices affected by the shocks						
Food	(161)	--	--	--	--	(23)
Beverages	(78)	--	(246)	--	--	--
3.2. Nominal (in SDR terms)	93	-22	60	26	-14	20
3.3. Real terms <u>3/</u>	57	-30	40	4	-20	13

1/ The periods are defined as follows:

The 1972-77 cycle

Price increase: 1972Q1-74Q2; Decrease: 1974Q3-75Q4; Recovery: 1976Q1-77Q2

The 1978-80 cycle

Price increase: 1978Q4-80Q4; Decrease: 1981Q1-82Q4; Recovery: 1983Q1-83Q4.

2/ The sum of the percentage changes in the explanatory variables multiplied by their respective coefficients. Some of the phases pertaining to industrial production and exchange rate variables are slightly different from those pertaining to commodity prices.

3/ Deflated by the UN price index of manufactures exported by developed countries.

materials (e.g., rubber, cotton, and jute) and metals (e.g., copper, tin, and aluminum), while declines in exportable surpluses of some commodities (e.g., edible oils and oilseeds, maize, and bananas) because of adverse weather and acreage reduction were largely responsible for the sharp rise in food prices. The deceleration in the recovery of commodity prices in the last half of 1983 was largely a consequence of developments on the supply side, and occurred even though the recovery in world demand was well maintained during that period. The rise in food prices slowed during the second half of the year as the price response to supply disturbances had already been taken into account in previous quarters and because of seasonal supply pressures from prospective harvests. The increase in metal prices in the first half of 1983, on the other hand, proved to be unsustainable because of a growing supply imbalance, manifested in an overhang of large stocks and excess capacity.

In order to analyze more closely the factors underlying the recovery in commodity prices that began in 1983, the influence of several of the most important factors on commodity price movements over the two previous cycles is examined in Table 2. The analysis is based on a recent econometric study which confirms that nominal commodity prices expressed in U.S. dollars are positively related to economic activity and inflation in the industrial countries, and inversely related to the changes in the U.S. dollar exchange rate against other major currencies. <sup>1/</sup> The pace of the 1983 recovery in commodity prices is shown to be slower than the 1976-77 recovery, with an annualized rate of increase since the beginning of the recovery of 19 percent compared with 34 percent in 1976-77. The year-on-year growth in industrial production was only 3 percent in 1983 compared with 9 percent in 1976-77; also, the 1983 recovery was less uniform among countries, reflecting mainly a stronger recovery in the United States than in Europe and Japan, which depend more than the United States on imports of primary commodities. Domestic inflation in the industrial countries was significantly lower during 1983, with an annualized rate of less than 3 percent, compared with about 7 percent during 1976-77. In addition, an already strong U.S. dollar appreciated further in 1983 and real interest rates remained at historically high levels. Finally, supply shocks are shown to have contributed to the rise in food prices in 1983, but to a far lesser degree than the price response generated by the supply disturbances affecting beverages in 1976-77.

Econometric tests were also performed to examine the possible relationship between the prices of petroleum and other commodities. On the supply side, petroleum price movements could positively influence the prices of other primary commodities because petroleum is a factor of production for most commodities and because many synthetic substitutes for primary commodities are petrol-based. In addition, to the extent that changes in petroleum prices have an impact on world economic activity, a demand-side effect is possible through the effects of changes in petroleum prices on

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<sup>1/</sup> Ke-young Chu and Thomas K. Morrison, "The 1981-82 Recession and Non-Oil Primary Commodity Prices," Staff Papers, International Monetary Fund (Washington), Vol. 31 (March 1984).

the aggregate output of industrial countries. In a regression analysis based on data for the 1970-82 period, tentative findings suggest that the movement of petroleum prices is a significant explanatory variable of the fluctuation in commodity prices for the industrial raw materials, i.e., agricultural raw materials and metals. For both of these commodity groups, the supply effects of changes in petroleum prices are shown to be prompt. These supply effects are followed by negative demand effects with a lag. In the end, the demand side effects of changes in petroleum prices on other commodity prices was shown to be dominant, and the entire process of market adjustment is completed in about a year. The impact of petroleum prices on world economic activity is a complex topic that has yielded mixed results in previous studies and should still be considered a subject for future research. <sup>1/</sup> The implications of this analysis regarding the influence of declining petroleum prices since early 1983 are that the increases in non-oil commodity prices were probably restrained to some extent by the initial supply effects, but that eventually prices were sustained by the force of the continued recovery in world demand.

The recovery in commodity prices which began in 1983 has brought some relief to the non-oil developing countries from their depressed conditions during the 1981-82 recession. After declining by 20 percent in 1981-82 to their lowest level in the postwar period, commodity prices in real terms, estimated by deflating nominal prices by the UN price index of manufactured exports of developed countries, increased by 9 percent in 1983. Commodity prices rose even more sharply when deflated by oil prices, since the decline in oil prices was more pronounced than that of manufactured exports. As a consequence, the terms of trade of the non-oil developing countries improved slightly in 1983 after five consecutive years of deterioration. This improvement, along with a decline in import volume, contributed to a reduction in the current account deficit of these countries from \$87 billion in 1982 to \$68 billion in 1983.

The recovery in commodity prices has not, however, been uniform or sufficiently strong to cause a relaxation of market support operations of any of the four international commodity agreements currently in force. Although most commodity prices have recovered from troughs reached during the past two years, only the price of rubber approached, but is still below, the ceiling level stipulated in the Agreement; the prices of cocoa and tin remain close to their respective floor levels, and sugar remains significantly below its floor price.

As a consequence of the 1981-82 recession, conditions were established for greater use of special facilities by Fund members. The Fund, under its buffer stock financing facility, continued in 1983 to assist member countries

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<sup>1/</sup> See M. Darby, "The Price of Oil and World Inflation and Recession," American Economic Review, Vol. 72 (September 1982), pp. 738-751; and "The Importance of Oil Price Changes in the 1970s World Inflation," in The International Transmission of Inflation, edited by M. Darby and J. Lothian (Chicago: University of Chicago Press, 1983).

in connection with their contributions to the buffer stock operations under three commodity agreements: sugar, tin, and rubber. All the major exporting members of the tin and rubber agreements have drawn the maximum amounts for which they qualify under the facility. The total amount outstanding under the facility was SDR 375 million at the end of March 1984. The compensatory financing facility was also heavily used in 1983, with drawings of SDR 2.8 billion, following drawings totalling SDR 3.9 billion during 1981-82; outstanding compensatory financing drawings rose from SDR 2.8 billion at the beginning of 1981 to SDR 7.3 billion at the end of March 1984.

Over the period 1984-85, relatively low growth and mild inflation in the industrial countries are expected to result in a rather slow pace of recovery in non-oil primary commodity prices. Increases of 8 percent and 3 percent in overall non-oil commodity prices are projected for 1984 and 1985, respectively; these increases are substantially lower than the average rate of 18 percent obtained during the 1976-77 recovery. These projections do not assume any change in the U.S. dollar exchange rate or in interest rate levels, and declines in either of these would, other things being equal, have the effect of raising the rates of price increases for 1984-85. Assuming inflation in manufactures prices of 4-5 percent during 1984-85, the real price of non-oil commodities is expected to rise in 1984, but to decline somewhat in 1985.

The above overall projections take into account a number of supply-side factors that are expected to influence commodity prices in 1984-85. First, the recent low prices of some metals (e.g., copper and tin) and agricultural commodities (e.g., sugar) have reduced the profitability of producing these commodities, and downward adjustments in production during 1984-85 can be expected. Second, high levels of stocks of metals and some agricultural commodities (e.g., coffee, cocoa, and sugar) are expected to limit the extent of price increases. Third, production of some agricultural commodities (e.g., soybeans, maize, and cotton) is expected to increase in 1984, and possibly in 1985, in response to the high prices prevailing in 1983.

## II. Food

Although supply factors generally exert a predominant influence on world food prices, Chart 2 and Table 3 show that variations in food prices have followed movements in world economic activity rather closely during the two most recent major price cycles. Since the early 1970s, changes in world food supplies have coincided with movements in the business cycle, so that their effects on food prices were mutually reinforcing. World food shortages in 1973-74 contributed to sharp food price increases in the initial upswing phase of the 1972-77 price cycle, while a strong recovery in supplies served to depress prices during the 1975 recession. Supplies generally remained ample in the 1976-77 recovery phase, which had a dampening effect on the recovery of food prices during that phase. During the 1978-83 price cycle, record world supplies again contributed to sharply lower food prices during the 1981-82 recession, following a period of rather tight supplies during 1978-80, the initial upswing phase of the cycle.

### CHART 2 FOOD: RECENT PRICE MOVEMENTS

(1980=100)

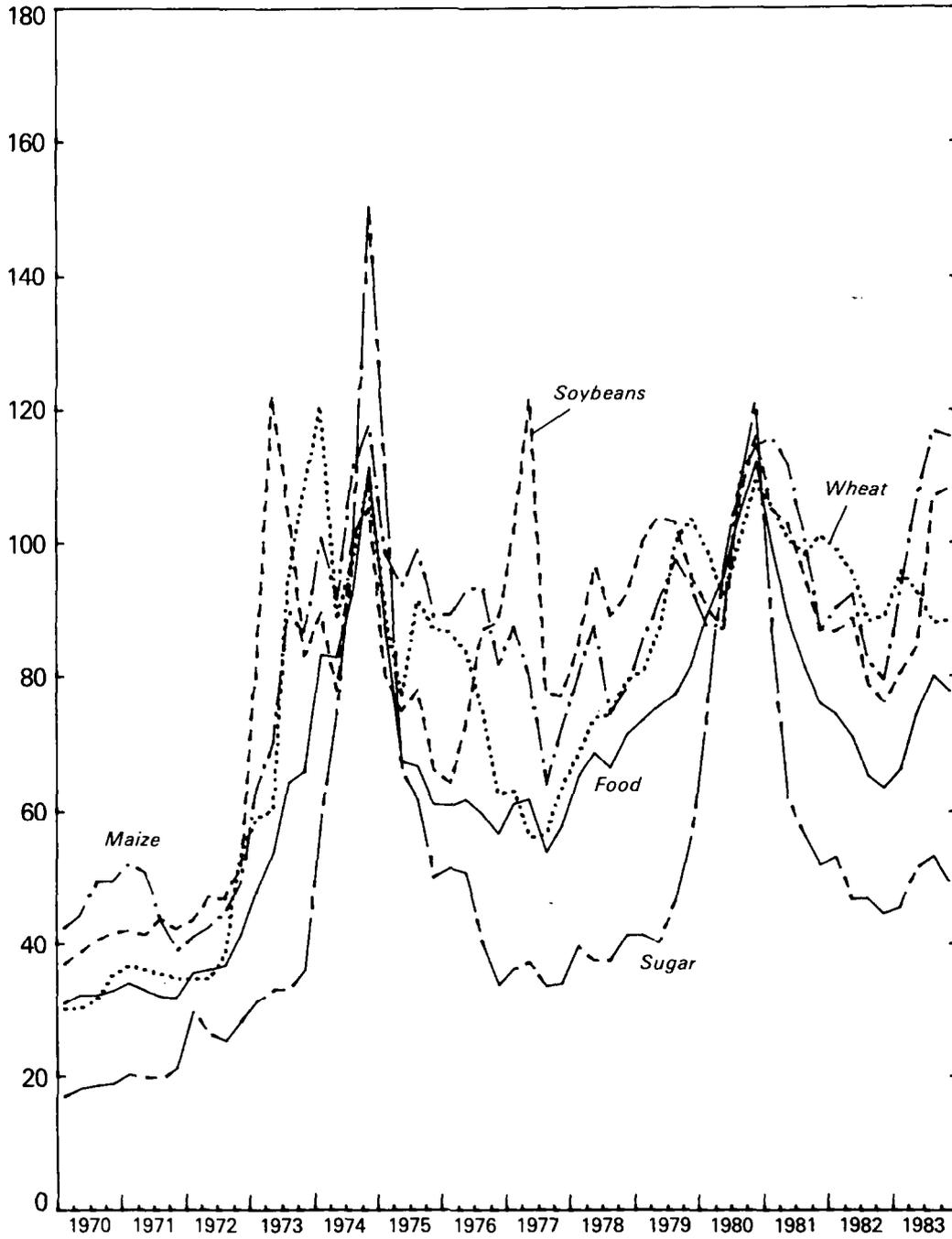


Table 3. Food Price Movements and the Business Cycle

(Percentage change)

Periods <u>1/</u>	1972-77 Cycle			1978-83 Cycle		
	Increase 1972-74	Decrease 1974-75	Recovery 1976-77	Increase 1978-80	Decrease 1981-82	Recovery 1983
Cumulative						
Food	161	-26	1	69	-44	23
Of which:						
Oils and oilseeds	171	-41	65	8	-41	68
Cereals	193	-18	-23	42	-30	19
Sugar	253	-33	-26	224	-63	11
Annualized						
Food	47	-12	1	23	-20	9
Of which:						
Oils and oilseeds	49	-19	22	3	-19	23
Cereals	54	-8	-10	15	-13	7
Sugar	66	-15	-11	60	-33	4

1/ The periods are defined as follows:

The 1972-77 cycle

Price increase: 1972Q1-74Q2; Decrease: 1974Q3-75Q4; Recovery: 1976Q1-77Q2

The 1978-80 cycle

Price increase: 1978Q4-80Q4; Decrease: 1981Q1-82Q4; Recovery: 1983Q1-83Q4.

With the world economic recovery under way, food prices in 1983 recovered by about 9 percent, but this outcome was perhaps more the result of production shortfalls experienced by several commodities, such as oils and oilseeds, cereals, and sugar. Lower production was caused by adverse weather and/or by government-sponsored acreage reduction programs. In the first quarter of 1984, food prices remained at the same level as in the first quarter of 1983, but were 5 percent above their average 1983 level. Prices may recede in the last part of 1984, assuming output recovers from its depressed level of last year.

1. Oils and oilseeds

a. Soybeans and products

As supplies were abundant and demand was relatively weak due to the 1975 recession, soybean prices in that year reached a trough at \$222 per metric ton, having fallen from a peak of \$290 per metric ton in 1973. Prices then rose during the following four years as demand increased, except in 1978, when prices declined slightly, and by 1979 a new peak was reached at \$298 per ton. In 1980, fueled by high inflation, prices remained virtually at their peak despite sharply higher production, and declined only slightly, to \$288 per ton, in 1981. Prices fell to \$245 per ton in 1982 because of a record world production, but then recovered to \$282 in 1983 as a drought in the United States contributed to an 18 percent reduction in world output. The price recovery in 1983 occurred in the second half of the year; prices averaged \$224 in the first half, but jumped to \$319 in the second half. As the summer drought continued in the United States and its severity increased and became widely known, prices increased by 29 percent in one month, rising from \$263 in July to \$339 in August. Following a further increase to \$350 in September, prices eased during the last quarter of 1983 to \$321 and continued to slip during the first two months of 1984 to average \$299 before recovering in March to an average of \$313. The weakening of prices during the September 1983-March 1984 period was largely due to declining import demand for soybean meal (which is used as a protein source in animal feed), particularly in European countries, because of large-scale substitution of alternative products, such as imported corn gluten and domestically produced milk powder and wheat. 1/

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1/ The price of soybeans is inherently linked to the prices of its products, soybean oil and soybean meal, which are, in turn, linked to the two larger complex markets of fats and oils, and protein meals. During the 1975-83 period, soybean prices followed soybean meal prices more closely than those of soybean oil, because demand for protein meals has been stronger than that for fats and oils and also because soybeans have a relatively high meal content. Before the 1970s, there was a tendency for soybean prices to rise during the first half of the calendar year when supplies from the leading producer (United States) were largely depleted. The seasonality in soybean prices has largely disappeared in more recent years, with increasing supplies coming from the Southern Hemisphere (i.e., Brazil and Argentina) during February-April of each year.

World production of soybeans increased at an annual rate of 4.5 percent during the last decade, from an average of 60.6 million tons per year during 1973/74-1975/76 to 86.0 million tons per year during 1981/82-1983/84 (Table 4). Growth has not been uniform, however, as sharp production declines occurred in 1974/75, 1976/77, 1980/81, and 1983/84. The United States accounted for roughly 60 percent of world production throughout the period, followed by Brazil (17 percent), China (10 percent), and Argentina (about 5 percent).

As a result of record world production of 93.8 million tons in 1979, carryover stocks nearly doubled, reaching the record high level of 19.1 million tons by the end of the season; the ratio of stocks to consumption, at 27 percent, was also a record high. Although production declined in the succeeding two years, averaging only about 83.8 million tons, consumption, which leveled off at about 86 million tons, was only moderately lower (averaging about 16 million tons). In 1982/83, production rose again to the 1979/80 level of 93.8 million tons and stocks increased to a near record level of 18.9 million tons, as consumption rose only to 90.6 million tons. Because of a sharp decline in production to 77.4 million tons in the 1983/84 season, and despite an estimated decline in consumption to 85.9 million tons, stocks are expected to decline to 10.3 million tons by the beginning of the 1984/85 season.

Production of soybean meal and oil is determined by the size and yield rate of soybean crushings. <sup>1/</sup> Consumption of meal and oil is determined by the demand for each product, which is influenced by relative prices and the availability of substitute meals and oils. Consequently, both the production and consumption of soybean meal and oil follow historical patterns which may not always correspond to the movements in production. Likewise, changes in carryover stocks of soybean oil and meal are not necessarily related to stock changes in soybeans. Production of soybean oil increased sharply during 1976/77-1979/80 (12 percent per year), stagnated during the following two years, increased by 6 percent in 1982/83, and is expected to decline by about 7 percent in 1983/84 (Table 5). Consumption has increased steadily during 1976/77-1982/83, but is expected to decline by 3 percent in 1983/84 in response to higher prices and lower availabilities. Stocks, which peaked at the beginning of 1981/82 at about 2 million tons, subsequently declined and are projected at 1.2 million tons at the beginning of the 1984/85 season. Soybean meal production, on the other hand, declined by 2 percent in 1980/81 following a 12 percent average annual growth in the preceding three years (Table 6); growth resumed in the following two years (at 4-5 percent) but a decline is expected for 1983/84 (by 7 percent). Annual movements in the consumption of soybean meal closely follow the movements in its production, reflecting the fact that soybean crushings are more closely linked to demand for soybean meal than for soybean oil.

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<sup>1/</sup> Unlike other oilseeds, the oil content of soybeans is relatively small, about 17-18 percent.

Table 4. Soybeans: World Commodity Balance, 1973/74-1984/85

(In millions of metric tons)

	October/September Years											
	1973/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84 <sup>1/</sup>	84/85 <sup>2/</sup>
Beginning stocks												
Total	<u>3.8</u>	<u>9.1</u>	<u>10.4</u>	<u>13.0</u>	<u>10.7</u>	<u>10.8</u>	<u>10.3</u>	<u>19.1</u>	<u>16.5</u>	<u>15.6</u>	<u>18.9</u>	<u>10.3</u>
United States	<u>1.6</u>	<u>4.7</u>	<u>5.1</u>	<u>6.7</u>	<u>2.8</u>	<u>4.4</u>	<u>4.7</u>	<u>9.8</u>	<u>8.7</u>	<u>7.2</u>	<u>10.5</u>	<u>3.0</u>
Argentina	0.1	0.3	0.4	0.5	0.7	1.0	0.9	1.4	1.0	1.7	1.9	1.6
Brazil	1.6	3.4	4.2	5.0	6.4	4.4	3.4	6.5	6.0	5.7	5.4	4.9
World production	<u>61.3</u>	<u>54.6</u>	<u>66.0</u>	<u>59.5</u>	<u>72.8</u>	<u>77.5</u>	<u>93.8</u>	<u>80.9</u>	<u>86.8</u>	<u>93.8</u>	<u>77.4</u>	
Of which:												
United States	42.1	33.1	42.1	35.0	48.0	50.9	61.7	48.8	54.4	61.3	41.0	
Brazil	7.9	9.9	11.2	12.5	10.2	10.2	15.2	15.0	12.8	14.6	15.6	
China	n.a.	n.a.	7.4	7.2	7.3	7.6	7.5	7.9	9.3	9.0	9.2	
Argentina	0.5	0.5	0.7	1.4	2.7	3.7	3.6	3.6	4.1	3.2	4.8	
Total supply	<u>65.1</u>	<u>63.7</u>	<u>76.5</u>	<u>72.5</u>	<u>83.5</u>	<u>88.3</u>	<u>104.1</u>	<u>100.0</u>	<u>103.3</u>	<u>109.4</u>	<u>96.3</u>	
Consumption	<u>56.1</u>	<u>53.2</u>	<u>63.4</u>	<u>61.8</u>	<u>72.7</u>	<u>78.0</u>	<u>85.0</u>	<u>83.5</u>	<u>87.7</u>	<u>90.6</u>	<u>85.9</u>	
Noncrush uses (including stock changes in other countries)	<u>8.4</u> <sup>2/</sup>	<u>8.2</u> <sup>2/</sup>	<u>9.2</u> <sup>2/</sup>	<u>10.8</u>	<u>11.3</u>	<u>12.4</u>	<u>12.2</u>	<u>12.1</u>	<u>13.7</u>	<u>12.6</u>	<u>13.2</u>	
World trade (exports)	<u>17.6</u>	<u>15.2</u>	<u>19.5</u>	<u>18.9</u>	<u>23.2</u>	<u>24.9</u>	<u>28.3</u>	<u>25.5</u>	<u>28.7</u>	<u>28.5</u>	<u>24.2</u>	
Crushings	<u>47.7</u> <sup>2/</sup>	<u>45.0</u> <sup>2/</sup>	<u>54.2</u> <sup>2/</sup>	<u>51.0</u>	<u>61.4</u>	<u>65.6</u>	<u>72.8</u>	<u>71.4</u>	<u>74.0</u>	<u>78.0</u>	<u>72.7</u>	

Source: Oil World (Hamburg, Germany), various issues.<sup>1/</sup> Estimated.<sup>2/</sup> Estimated by using the ratio of crushings to consumption in Oil World (Hamburg, Germany), Vol. 27 (July 8, 1977), p. 675.

Table 5. Soybean Oil: World Commodity Balance, 1976/77-1983/84

(In millions of metric tons)

	October/September Years							
	1976/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84 <u>1/</u>
Beginning stocks								
Total	<u>1.2</u>	<u>1.0</u>	<u>1.2</u>	<u>1.3</u>	<u>1.9</u>	<u>2.0</u>	<u>1.6</u>	<u>1.6</u>
Of which:								
United States	0.6	0.3	0.2	0.3	0.5	0.8	0.5	0.5
Brazil	0.1	0.1	0.2	0.2	0.4	0.3	0.3	0.3
EEC	0.2	0.1	0.1	0.2	0.3	0.1	0.1	0.1
Production								
Total	<u>9.3</u>	<u>11.0</u>	<u>11.9</u>	<u>13.0</u>	<u>13.0</u>	<u>13.1</u>	<u>13.9</u>	<u>12.9</u>
Of which:								
United States	3.9	4.7	5.1	5.5	5.1	5.0	5.5	4.7
Brazil	1.4	1.8	1.8	2.0	2.6	2.3	2.4	2.5
EEC	1.6	1.8	2.0	2.1	1.8	2.0	2.0	1.7
Consumption								
Total	<u>9.5</u>	<u>10.8</u>	<u>11.8</u>	<u>12.4</u>	<u>13.0</u>	<u>13.5</u>	<u>13.9</u>	<u>13.4</u>
Of which:								
United States	3.4	3.8	4.1	4.1	4.1	4.3	4.5	4.3
EEC	1.2	1.6	1.5	1.6	1.6	1.6	1.5	1.5
Brazil	0.9	1.1	1.2	1.4	1.4	1.4	1.5	1.6
Trade (exports)	<u>2.0</u>	<u>2.7</u>	<u>2.9</u>	<u>3.3</u>	<u>3.4</u>	<u>3.5</u>	<u>3.7</u>	<u>3.2</u>

Source: Oil World (Hamburg, Germany), various issues.

1/ Estimated.

Table 6. Soybean Meal: World Commodity Balance, 1976/77-1983/84

(In millions of metric tons)

	October/September Years							
	1976/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84 <sup>1/</sup>
<b>Beginning stocks</b>								
Total	<u>2.1</u>	<u>2.0</u>	<u>2.4</u>	<u>2.7</u>	<u>3.1</u>	<u>2.9</u>	<u>3.0</u>	<u>2.7</u>
Of which:								
EEC	0.7	0.6	0.7	0.7	1.0	0.6	1.0	0.7
United States	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.3
Brazil	0.2	0.5	0.3	0.5	0.8	1.1	0.6	0.6
<b>Production</b>								
Total	<u>40.1</u>	<u>48.0</u>	<u>51.6</u>	<u>57.5</u>	<u>56.2</u>	<u>58.3</u>	<u>61.4</u>	<u>57.0</u>
Of which:								
United States	16.8	20.3	22.1	24.6	22.1	22.3	24.2	21.1
Brazil	5.9	7.6	7.4	8.1	10.6	9.6	10.0	10.5
EEC	6.9	8.3	9.0	9.7	8.2	9.3	9.1	8.0
<b>Consumption</b>								
Total	<u>40.9</u>	<u>46.9</u>	<u>51.6</u>	<u>57.3</u>	<u>55.4</u>	<u>59.0</u>	<u>61.5</u>	<u>57.7</u>
Of which:								
United States	12.8	14.7	16.1	17.4	16.0	16.1	17.6	16.6
EEC	11.0	13.0	14.5	15.3	14.2	16.5	15.7	14.0
U.S.S.R.	1.6	0.8	1.3	1.5	2.3	2.5	3.9	4.1
Eastern Europe	3.5	4.3	4.3	5.1	5.2	4.3	4.4	4.1
Trade (exports)	<u>11.1</u>	<u>15.1</u>	<u>15.3</u>	<u>17.2</u>	<u>19.7</u>	<u>20.3</u>	<u>23.1</u>	<u>21.1</u>

Source: Oil World (Hamburg, Germany), various issues.

<sup>1/</sup> Estimated.

Most world trade in soybeans takes place among industrial countries. By far the largest exporter of soybeans is the United States, accounting for more than 80 percent of world exports during the last eight years. Argentina, Brazil, and Paraguay are the next largest exporters, together accounting for 10-15 percent of the total. The EC accounted for almost half of world imports of 25-28 million tons in the last three years. The largest single importer of soybeans is Japan, taking about 4.5 million tons annually; the Federal Republic of Germany is the next largest with about 3.5 million tons.

The largest exporter of soybean oil in the last three to four years has been either the United States or Brazil, each one accounting for a little less than one third of world exports. The third largest is Spain (which is an importer of soybeans), followed by the Federal Republic of Germany, Argentina, and the Netherlands. Soybean oil is imported by a large number of countries ranging from low-income countries (i.e., India averages about 0.4 million tons annually and Pakistan 0.3 million tons) to the industrial countries (the Federal Republic of Germany and the Netherlands at 0.1 million tons each).

Brazil is the largest exporter of soybean meal, accounting for about 8.5 million tons annually of the average world total of 21.5 million tons in the last three years; the United States accounts for about 5.8 million tons. Although the EC exports 4.9 million tons of soybean meal annually, it is a large net importer; in fact, the EC is the largest importer of soybean meal, taking an average of 11.5 million tons annually of the world average of 21.8 million tons over the last three years. The next largest importer is the U.S.S.R. (2.5 million tons on average), followed by the German Democratic Republic (1.1 million tons).

World trade in soybeans increased from 19 million tons in 1976/77 to 28 million tons in 1979/80, decreased to 26 million tons in 1980/81, increased again in 1981/82 to 28.7 million tons, remained roughly the same in 1982/83 and is expected to decline sharply to 24.2 million tons in 1983/84. World trade in soybean oil and meal increased throughout 1976/77-1982/83, but is expected to decline in 1983/84 as a result of lower supplies.

Supply disturbances, inflation, exchange rate changes, and the level of economic activity, as well as the prices and availability of competing products in the rest of the oils and meals markets are important price determining factors for the soybean complex. The direct impact of interest rates and petroleum price changes is considered to be minimal. The decline by one third in U.S. production of soybeans harvested in the fall of 1983 (the 1983/84 crop), which was caused by acreage reductions under the PIK (payment-in-kind) program, as well as a severe drought during the growing season, were the major factors causing the sharp price increase in the second half of 1983. The relatively low prices which prevailed during the second half of 1982 and the first half of 1983 were due largely to a sharp increase in supplies caused by a near record production in the 1982/83 season. On the other hand, high inflation and high levels of economic activity were probably the most important underlying factors in the sharp

increase in prices in 1979. The strength of the U.S. dollar is considered to be a factor in the slight decline in prices (in U.S. dollar terms) in the last quarter of 1983 and early 1984; other factors include the slowness of economic recovery in Western Europe and the scarcity of foreign exchange in many Eastern European and developing countries. In addition, the availability of a relatively large range of domestic substitutes (e.g., rapeseed and sunflowerseed oils in Europe, wheat and milk powder in the EC countries as a protein feed source, groundnut oil and other domestic oils in India), as well as large imports of a relatively cheap protein source, corn gluten, have had a depressing effect on prices in the latter part of 1983 and early 1984.

Prices are expected to be relatively stable in the second quarter of 1984 as the tightness of available supplies from the United States will become more obvious, but other factors will restrain prices, such as the strength of the U.S. dollar and the expected increases in the South American soybean crop (assuming normal weather conditions), which will be harvested beginning in the spring of 1984. In the United States, no acreage reduction program is planned for the 1984/85 season; therefore, it is reasonable to assume a large increase in the U.S. production of soybeans, which will start to dampen prices by the summer of 1984. On balance, prices during the 1984/85 season are expected to decline, mainly because supply factors will continue to exert the major market influence on the soybean complex in 1984/85.

b. Other oils and oilseeds

Although the world's largest producer of groundnuts is India followed by China, both of these countries are also the largest consumers, and thus are only marginal exporters. The third largest producer, the United States, is the largest exporter, followed in recent years by China; other major exporters include Sudan, Argentina, and The Gambia. Part of the trade in groundnuts takes place in the handpicked select variety which is for direct human consumption in confectionery products. Most of world groundnut production, however, is crushed to produce groundnut oil and cake. By far the largest exporter of groundnut oil is Senegal; Brazil, Argentina, and China are smaller exporters.

Groundnut oil prices, which had almost doubled (to \$1,058 per ton) during the 1974 commodity boom, declined by one fourth in 1975 and a further 11 percent in 1976 as a result of increasing supplies. Prices strengthened afterwards, as groundnut production fell in the 1976/77 season and did not recover in 1977/78. Prices reached a record high of \$1,079 per ton in 1978 as Senegal's crop was cut in half because of drought and the Chinese crop fell sharply. Supply tightness was relieved in the following two seasons (1978/79 and 1979/80) as the Chinese crop recovered and the U.S. crop was at a relatively high level in both years; the Senegalese crop recovered in 1978/79 but fell by half the following season. Groundnut oil prices averaged \$875 during 1979-80. In 1980/81, world supplies were reduced drastically, as the Senegalese crop declined by a further 50 percent while the U.S. crop fell by 42 percent and the Indian crop fell

by 13 percent. This resulted in another major surge in prices, which exceeded the one thousand dollar level again during the first nine months of 1981; this was in sharp contrast to the price behavior of most other primary commodities. With production recoveries in the United States, India, and Senegal in the 1981/82 season, coupled with the effects of the world recession on primary commodity prices, groundnut oil prices plummeted to \$585 per ton in 1982 and declined further to about \$500 in the first half of 1983. Decreasing supplies were again responsible for a price recovery in the second half of 1983. In addition to the reduced South American crops harvested in the spring of 1983, it became apparent by August that the Senegalese crop would be small, and that the U.S. crop (together with the U.S. soybean crop which declined by one third) was adversely affected by drought; there were also reports that India's crop was adversely affected by an irregular monsoon. Consequently, the price of groundnut oil nearly doubled within a span of three months (from \$593 in June to \$1,052 in September). By November, prices began to weaken as the Indian crop turned out to be record high. Primarily on account of the large Indian crop, world production in 1983/84 is estimated to be 7 percent higher than in 1982/83.

Prices increased again in early 1984 as domestic oil supplies ran out in Europe and the lower production of several oils, in particular palm and coconut, became more apparent. Prices are expected to decline during the remainder of the year as a result of larger prospective supplies of both groundnut and other oils later in the year. Two factors likely to limit the price decline are: (a) the sharply lower (by over 50 percent) availabilities from the 1983/84 crop in Senegal (usually the largest exporter of oil) and lower supplies from South America until the new crop is harvested in the spring of 1984, and (b) the uncertainties surrounding the size of China's exports and the Indian government's trade policy decisions regarding fats and oils (the timing and amount of groundnut exports as well as imports of cheaper substitutes are determined by government regulations). Assuming that the 1984/85 crop of groundnuts, particularly in Senegal and the United States, is not subject to adverse weather conditions, supplies will be at a relatively high level in 1985 and prices are expected to continue to decline in that year.

Groundnut cakes represent a relatively insignificant part of the oilmeals and cakes market. Unlike its high-quality oil counterpart, groundnut cake has no premium qualities; therefore, its price moves broadly in line with the movements in feed prices, notably soybean meal.

Copra and its major product, coconut oil, have parallel price movements, as the weight of the secondary product, copra meal, is relatively insignificant. Following peak levels in 1974, prices fell in 1975 by 61 percent as a result of a recovery in production and increased by only 6 percent in 1976 when a record output of over 3 million tons of coconut oil was realized. Since then, copra and coconut oil production has stagnated at about 4.5-4.8 million tons for copra and 2.6-2.9 million tons for coconut oil, and prices have moved broadly in line with soybean oil prices, although coconut oil prices command a premium whose size varies depending on the

relative supply position of coconut oil. For example, the premium in 1979 was \$323 per ton when output of coconut oil was only 2.6 million tons, but the premium was only \$20 per ton in 1982 when coconut oil output was 2.9 million tons. In 1983, the premium increased to \$199 per ton as copra production declined sharply to 4.2 million tons, despite a concurrent decline in soybean output. Faced with reduced supplies caused by drought and typhoon damage, the Philippines, the largest producer and exporter of copra, suspended copra exports as of September 1982 in an effort to conserve supplies for domestic crushing. As a result, copra trade virtually ceased, and prices of copra and coconut oil increased at an accelerating rate through August 1983 when they peaked; they increased again in late 1983 and in early 1984. The tight supply situation is expected to maintain prices at relatively high levels throughout the first half of 1984, but as Philippine production recovers, prices are expected to ease in the second half of the year and into 1985.

Historically, palm oil prices also broadly followed the movements in soybean oil prices, with the premium of soybean oil over palm oil changing from year to year largely in response to their relative supply positions. As a result of a sharp rise in production of palm oil in recent years, its relative importance in the overall fats and oils market has increased; in terms of production it is now the third largest among the edible oils, and it has exceeded soybean oil since 1979/80 as the largest oil entering world trade.

Production of palm oil increased by 18 percent in 1981/82 as a result of the introduction of a weevil in Malaysia (the largest producer and exporter), which increases pollination. Despite a 9 percent increase in harvested acreage in Malaysia, production in 1982/83 fell by 2 percent because of drought and possible aftereffects of the use of the weevil. The decline in production became more severe in the second half of 1983, and prices increased sharply from \$394 in the first half to \$609 in the second half, and then to \$866 during January-March 1984.

An increase of 8 percent in world output is projected for 1983/84, most of which will be realized during the July-September period by Malaysia, and to a lesser extent by Indonesia, where the weevil was introduced in 1983. Therefore, prices are projected to decline beginning in the summer of 1984, and to decline further in 1985; gains in production in Indonesia may taper off, but the Malaysian output is expected to continue to increase.

After reaching their peak at \$542 per ton in 1973, fishmeal prices reached that level again only briefly in 1980. After increasing in the first half of the 1970s, fishmeal production stagnated during the last decade at about 4.5 million tons per year; annual fluctuations have continued, however, with production ranging from 4.3 to 4.9 million tons per year. Major producers of fishmeal include Japan, Peru, Chile, the U.S.S.R., the United States, Denmark, Norway, South Africa, Mexico, and Iceland; major exporters are fewer in number, namely, Peru, Chile, Denmark, Norway, and Iceland.

Fishmeal prices generally follow those of soybean meal, which is the dominant protein meal traded internationally, although fishmeal prices are also influenced by relative supplies. Fishmeal prices reached cyclical peaks, as soybean prices did, in 1977 and 1980, following years of relatively low production. The cyclical troughs of fishmeal and soybean prices also coincided in 1975 and 1982, but not in 1978 when soybean meal prices reached their low, whereas fishmeal continued to decline and reached a trough in 1979 when production was at a record high level (4.9 million tons).

The recovery in fishmeal prices in 1983 has been faster than that for soybean meal because of a depletion of fishmeal stocks in the trading countries following a very low 1982/83 fishcatch. Although the 1983/84 production is expected to increase, overall supply will be at the same level as the 1982/83 season because of lower carryover stocks. Fishmeal prices are expected to increase slightly in 1984, although the supply situation will be relatively tight, and demand is not expected to be strong; for 1985, prices are expected to increase considerably in 1985 as a result of better demand for protein meals, especially from the European pig and poultry industries.

## 2. Cereals

### a. Wheat

Following a severe production shortfall in 1972/73 (year ending June) and speculative activity in 1973/74, wheat prices reached a record high level in 1974. Export prices <sup>1/</sup> averaged \$4.87 per bushel in 1973/74 compared with \$1.65 per bushel in 1971/72. Speculative activity then subsided, and although world wheat production declined by 4 percent in 1974/75 as unfavorable weather reduced crop yields in the United States and Canada, prices declined to an average of \$4.40. Adverse weather conditions affected production in Europe and the Soviet Union in 1975/76, and world output fell by a further 1 percent despite record harvests in the United States and China. Although world stocks fell to a new low by end-season and the volume of trade in wheat increased by 4 percent, an initial upswing in prices was dampened by expectations of a record crop in 1976/77, and average prices for 1975/76 declined to \$4.10 per bushel.

Boosted by a recovery of output in the Soviet Union and a favorable harvest in other importing countries, particularly in India and Brazil, world wheat production rose by 18 percent in 1976/77 (Table 7). This was sufficient to allow for both a sharp increase in consumption and the rebuilding of stocks. The volume of world trade in wheat fell by 5 percent and prices continued to decline (Table 8), reaching their lowest level since 1972 at \$2.53 per bushel in mid-1977. In response to low prices, the farmer-owned reserve stocks program was introduced in the United States, resulting in a substantial reduction in U.S. acreage sown for 1977/78.

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<sup>1/</sup> Price quotations refer to U.S. No. 2 hard red winter wheat, f.o.b. Gulf ports.

Table 7. Wheat: World Commodity Balance, 1974/75-1983/84 1/

(In millions of metric tons)

July/June Years	Production	Consumption	End-Period Stocks	Trade <u>2/</u>
1974/75	360.2	366.4	64.0	64.3
1975/76	356.0	356.2	63.8	66.7
1976/77	421.3	385.8	99.3	63.3
1977/78	384.1	399.3	84.3	72.8
1978/79	446.7	430.1	100.9	72.0
1979/80	423.7	443.8	80.8	86.0
1980/81	442.4	442.6	80.6	94.1
1981/82	450.4	445.5	85.5	101.2
1982/83	480.9	469.8	96.7	98.2
1983/84 <u>3/</u>	487.8	480.4	104.1	101.0

Sources: U.S. Department of Agriculture, Foreign Agriculture Circular: Grains (Washington), various issues; and staff estimates.

1/ Including wheat flour and products.

2/ Excluding inter-EC trade.

3/ Estimate.

Table 8. Wheat: International Trade, 1980/81-1983/84

(In millions of metric tons)

	Years Ending June							
	1980/81		1981/82		1982/83		1983/84 1/	
	Production	Exports	Production	Exports	Production	Exports	Production	Exports
<b>Major exporters</b>								
United States	64.6	41.9	76.2	48.8	76.5	39.9	66.0	38.1
Canada	19.2	17.0	24.8	17.6	26.9	21.2	26.9	21.5
Australia	10.9	10.6	16.4	11.0	8.9	8.1	20.5	11.0
Argentina	7.8	3.9	8.3	4.3	14.5	7.4	11.7	8.3
EC	55.1	14.7	54.4	15.5	59.8	15.5	59.3	16.0
Other exporters		6.0		4.5		6.1		5.1
Total		94.1		101.2		98.2		100.0
<b>Major importers</b>								
U.S.S.R. 2/	98.2	16.0	80.0	19.5	86.0	20.2	80.0	19.0
EC	55.1	4.5	54.5	4.7	59.8	3.7	59.3	4.3
Japan	0.6	5.8	0.6	5.6	0.7	5.8	0.7	5.6
Eastern Europe	34.5	5.9	30.5	6.3	34.8	4.3	34.4	3.9
China	55.2	13.8	59.6	13.2	68.4	13.0	80.0	12.0
India	31.8	--	36.3	2.3	37.5	3.6	42.5	4.3
Egypt	1.8	5.6	1.9	5.8	2.0	6.0	2.0	6.1
Brazil	2.6	3.9	2.2	4.5	1.8	3.9	2.0	3.8
Other importers/residual		38.6		39.3		37.9		41.0
Total		94.1		101.2		98.2		100.0
World production	442.4		450.4		480.9		487.8	

Sources: U.S. Department of Agriculture, Foreign Agriculture Circular: Grains (Washington), various issues; and staff estimates.

1/ Forecast.

2/ Estimate.

The effect on world supply was reinforced by drought in China and poor growing conditions in Australia and Argentina. With consumption continuing to increase, prices rose throughout 1977/78, and for the year as a whole, averaged \$3.05 per bushel.

In 1978/79, world output rose by 16 percent to a record level as production increased in all countries other than the United States, where a 20 percent acreage set-aside was introduced in conjunction with the farmer-owned reserve stocks program. The volume of world trade remained unchanged, and total carryover stocks increased to a record level in excess of 11 million tons. Nonetheless, prices rose to \$3.75 per bushel on average under the influence of the U.S. price support programs; the support price was increased slightly and heavy participation in the farmer-owned reserve left a lower level of free carryover stocks available to the market. In 1979/80, adverse weather conditions in the Soviet Union, Eastern Europe, and Australia further tightened market conditions, and in 1980/81 poor harvests in the Soviet Union, Argentina, and Brazil likewise affected the market. With U.S. support prices being further increased, market prices continued to rise during these years, peaking at \$5.13 per bushel in the final quarter of 1980. For 1980/81 as a whole, prices averaged \$4.85 per bushel compared with \$4.65 per bushel in 1979/80.

The high prices of 1980/81 induced a record winter wheat planting in the United States and Canada for the 1981/82 crop. Aided also by favorable weather in Australia and Argentina, world output in 1981/82 rose by 2 percent, despite a poor harvest in the Soviet Union for the third successive year. Strong import demand from the Soviet Union and Eastern European countries led to a record volume of world trade of over 100 million tons, and provided some support to market prices, which averaged \$4.75 per bushel in the final quarter of 1981. Prices then declined to \$4.15 per bushel in the third quarter of 1982 in response to an increase in stocks, particularly in the United States.

In 1982/83, prices strengthened in the December and March quarters to \$4.19 and \$4.49 per bushel, respectively. Contributing factors were the U.S. price support program 1/ under which 5.8 million acres were taken out of production, and the severe drought in Australia which halved output. Prices weakened in the June quarter to \$4.35 per bushel as an improvement in U.S. yields resulted in a record harvest. Record crops also occurred in the EC, China, Argentina, and Canada, production in the Soviet Union and Eastern Europe rose significantly, and world output increased by 7 percent. World consumption of wheat increased more slowly, by 5.5 percent, held back by the world recession and by foreign exchange shortages in many developing countries. With an excess supply situation prevailing, stocks rose by nearly 12 million tons and contributed to a further weakening of prices in the September quarter of 1983/84 to \$4.14 per bushel. Prices in succeeding months through the first quarter of 1984 have remained fairly stable at about \$4.14.

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1/ The provisions of this program are outlined in more detail below.

World production in 1983/84 is expected to increase by about 1.5 percent and to set another record at over 487 million tons. Record crops in Australia, India, and China are expected to outweigh reduced production in the United States, Canada, the EC, and the Soviet Union. The U.S. area harvested fell by 23 percent, mainly on account of the price support program which included payment-in-kind (PIK) for the first time. Drought also affected yields, although by much less than those of maize and soybeans, and the U.S. harvest declined by 14 percent. Despite a 2 percent rise in world consumption, world carryover stocks at end-June 1984 are expected to rise by 7.5 million tons, mostly outside the United States. Lower expected imports by the Soviet Union and China in conjunction with keen competition among exporters is expected to maintain downward pressure on prices in the immediate future. World trade is projected to rise by 3 percent to 101 million tons. There is, however, the potential for a higher volume of trade and some price support stemming from high feed grain prices, which is encouraging the use of wheat for feed.

For 1984/85, assuming normal weather, little market tightening is foreseen. An increase in U.S. production in response to the less attractive price support measures already announced should approximately balance lower production in other countries.

Price support arrangements in the United States have had a major influence on world market prices in recent years. Participation by farmers in the acreage-reduction program (ARP), when it is in effect, is required for access to short-term government loans at a subsidized loan rate equivalent to the support price. Depending upon the extent of participation, the loan rate may set a floor to market prices. Increases in the loan rate (per bushel) from \$3.00 in 1980/81 to \$3.20 in 1981/82, \$3.55 in 1982/83, and \$3.65 in 1983/84 have helped underpin U.S. farm incomes, but have also induced higher production in other countries which, in turn, has had a dampening effect on export prices. To counter this effect, the loan rate has been reduced to \$3.30 for 1984/85. Longer-term government loans (three to five years) against crops placed in farmer-owned reserve storage may also be made available to farmers agreeing to acreage reduction. The 1983/84 crop is immediately eligible for entry into reserve; a decision on the 1984/85 crop will be made over the course of the year. In addition, participating farmers are eligible for deficiency payments on a specified quantity of production, with the rate of payment equal to the difference between the target price and the market price. Target prices were raised from (per bushel) \$4.05 for 1982/83 to \$4.30 for 1983/84, and, if approved by Congress, will be \$4.45 for 1984/85.

Another element of the program is paid land diversion (PLD) by which farmers may contract with the government to divert some land from production of certain crops for a cash payment. The diverted land may be put to any other use except for crops where an acreage reduction or diversion program is in effect. For 1982/83 there was no PLD; for 1983/84, a PLD for 5 percent of base acreage (related to previous production) is in effect; for 1984/85, the PLD will not be in effect. By contrast, land required to be set aside under the ARP was 15 percent of base acreage in both 1982/83 and 1983/84, and will rise to 30 percent in 1984/85.

The final element of the price support program is payment-in-kind (PIK), which in essence is an ARP paid for by government-owned commodities. Announced in January 1983, PIK gave farmers participating in the ARP the option to idle up to an additional 15 to 30 percent of base acreage for 1983/84, or to idle their entire farm with a rate of payment equivalent to 95 percent of normal yield. The main source of payment is government-owned reserves. Farmers' receipts consist initially of the liquidation of previous loans, with interest written off, and grain. If grain stocks are insufficient, the current crop may be compulsorily placed under loan, which is then liquidated. For 1984/85 the PIK diversion for wheat will be lower at 10 to 20 percent of base acreage and the rate of payment will also be reduced to 75 percent of normal yield.

b. Maize

About one half of all maize is produced in the United States, with other significant producers being China (14 percent), the Soviet Union (8 percent), and the EC and Brazil (4 percent each). The distribution of world exports is even more concentrated, as the United States accounts for about three fourths of total exports. Other exporters include Argentina (10 percent), and South Africa and Thailand (4 percent each). The major importers are Japan (about 20 percent of world imports), the Soviet Union (10-20 percent), and the EC, Mexico, and the Republic of Korea (6-8 percent each). 1/

Given the predominance of the United States in world production and trade, international market conditions are determined largely by developments in the United States. In addition to climatic conditions, prices are influenced by the U.S. Government's price support programs; these include the price support loan rate (which in effect can set a price floor with widespread farmer participation), the farmer-owned reserve loan program, and the payment-in-kind (PIK) program introduced in 1983.

Since 1978, the export price of maize has moved within a range of about \$2.50 to \$3.80 per bushel. Market conditions tightened in the first half of 1979 as a result of drought in South Africa and substantial purchases by China for an upgraded livestock feeding program. Export prices 2/ rose from \$2.50 per bushel at end-1978 to \$3.33 in July 1979, but with the emergence of a record crop in the United States, which contributed to a 9 percent increase in world production between 1978/79 and 1979/80 (Table 9), prices moderated to \$2.68 per bushel by the beginning of 1980. Poor prospects for the 1980/81 crop due to drought in Argentina led to a firming of prices in the first half of 1980; this trend was reinforced in the second half of the year by drought in the United States, and prices reached \$3.86 per bushel by the beginning of 1981. World maize production in 1980/81 declined by 4 percent.

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1/ Corn is primarily consumed as food in the developing countries and as feed in the developed countries, U.S.S.R., and Argentina. The latter countries account for 50-60 percent of world consumption.

2/ Price quotations refer to U.S. No. 2 yellow corn, f.o.b. Gulf ports.

Table 9. Maize: World Commodity Balance, 1978/79-1983/84

(In millions of metric tons)

October/September Years	Production	Consumption	End-of-Period Stocks <u>1/</u>	Trade
1978/79	390.8	389.2	48.4	65.6
1979/80	424.1	414.0	58.5	73.9
1980/81	407.2	415.2	50.5	78.2
1981/82	441.2	412.6	79.1	67.4
1982/83	439.7	422.5	96.3	64.6
1983/84 <u>2/</u>	345.2	408.2	33.3	60.6

Sources: U.S. Department of Agriculture, Foreign Agriculture Circular: Grains (Washington), various issues; and staff estimates.

1/ Based on an aggregate of different local marketing years and does not reflect the situation at a given time. Also, excludes countries for which estimates are unavailable, e.g., China and parts of Eastern Europe.

2/ Estimated.

With more favorable prospects for the 1981/82 crop in the Southern Hemisphere, prices fell somewhat in the first half of 1981, but the rate of decline accelerated in the second half of the year as the likelihood of a record U.S. crop increased. In the event, U.S. production rose by 23 percent and world production rose by 8 percent in the 1981/82 crop year. Prices declined to \$2.68 per bushel by end-1981, or by 31 percent over eleven months. There was some firming of prices in the first half of 1982 in response to increased imports by the Soviet Union and the withdrawal of U.S. supplies from the market into farmer-owned reserves. But by end-1982, it became apparent that there would be a record U.S. crop for the second successive year, accompanied by weakened import demand due to good crop prospects in the Soviet Union and shortages of hard currency in Eastern Europe. Prices fell to \$2.31 per bushel in October 1982, their lowest level since 1977. U.S. production in 1982/83 rose by 2 percent, and world production reached a record 439.7 million tons.

Expectations of a smaller crop in 1983/84 caused by poor weather conditions in Mexico and Thailand were reflected in a turnaround in prices in November 1982, and this tendency was reinforced by the announcement of the PIK program in January 1983 and the strong movement of U.S. maize into farmer-owned reserves. PIK was expected to reduce 1983/84 U.S. output by 30 million tons. Crop failure in South Africa (normally a maize exporter) led to an import requirement in the first quarter of 1983, and drought-induced import demand from Algeria and Morocco boosted prices further in the second quarter. 1/ Finally, it became apparent in the third quarter that drought had severely reduced the U.S. harvest, and prices rose to \$3.88 per bushel in August 1983. 2/ Prices remained high through the remainder of 1983, given the very low level of free stocks available to the market, but some moderation occurred toward year-end in response to good prospects for Southern Hemisphere crops in 1984. Prices stabilized in the first quarter of 1984 at about \$3.6 per bushel.

With the likelihood of sharply increased plantings for the 1984/85 crop in the United States following the announcement of a more modest acreage reduction program by comparison with 1983/84 (suspension of the 10 percent paid land diversion), and the suspension of the PIK program for feedgrains, a considerable easing of market conditions is expected by the third quarter of 1984.

c. Rice

Rice is the staple food of about two billion people, largely concentrated in Asia. World production (unmilled) has increased from 350 million tons in 1977 to 420 million tons in 1983 (Table 10). The 3 percent average

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1/ The African drought led to a precarious food supply situation in many low-income countries unable to afford commercial imports. Exacerbating factors were an unchanged level of food aid commitments and internal difficulties in food distribution.

2/ For 1983/84 as a whole, U.S. production was halved to 107 million tons and world output fell by 22 percent to 345 million tons. World carry-over stocks declined by 65 percent to 33 million tons.

Table 10. Rice: World Commodity Balance, 1977-1984

(In millions of metric tons)

Crop Years <u>1/</u>	Production <u>2/</u>	Consumption	End-Period Stocks <u>3/</u>	Trade <u>4/</u>
1977	350.0	237.5	16.4	10.6
1978	371.4	242.0	22.3	9.4
1979	385.4	255.3	26.3	11.7
1980	376.9	258.5	23.4	12.7
1981	397.2	268.3	22.2	12.9
1982	412.3	281.4	21.2	11.9
1983	420.6	290.7	16.8	12.1
1984 <u>5/</u>	435.0	296.8	15.8	11.6

Sources: U.S. Department of Agriculture, Foreign Agriculture Circular: Grains (Washington), various issues; and staff estimates.

1/ Rice is mostly harvested over the months September-March. Thus, crop year 1982 represents crops harvested in late 1981 and early 1982 in the Northern Hemisphere, and in early 1982 in the Southern Hemisphere.

2/ Rough basis; consumption, stocks and trade data are on milled basis.

3/ Based on an aggregate of different local marketing years and does not reflect the situation at a given time. Also, excludes countries for which estimates are unavailable, e.g., North Korea and China.

4/ Calendar year.

5/ Estimate.

annual rate of growth of output is, however, slower than the 3.75 percent growth recorded for wheat and maize. This is due in part to the small amount of unused land suitable for rice production and the slower application of improved inputs--fertilizers and high-yielding varieties. On a milled basis, rice's share of world grain production is about 25 percent.

The market for rice is rather unstable. Since 90 percent of world production is in Asia and is highly dependent on monsoon conditions, periods of strong import demand coincide with periods of reduced export availability. Moreover, most of the Asian crop is consumed very close to where it is produced, and only 4-5 percent of world output enters international trade. Thus, market conditions are highly susceptible to fluctuations in production in only a few countries.

Production shortfalls in the Republic of Korea and Brazil in 1979 and India in 1980 led to market tightening from the beginning of 1979 through mid-1981. Export prices 1/ rose by 72 percent between the first quarter of 1979 and the second quarter of 1981, peaking at \$535 per ton in June 1981. Following a 2 percent decline in world output in 1980, favorable weather contributed to a 5 percent rise in production in 1981 and a further 4 percent increase in 1982. Market conditions eased considerably, and by the final quarter of 1982, prices had fallen to an average of \$259 per ton, which represented a decline of over 50 percent from their peak in mid-1981. At this level, prices were roughly equivalent to those in 1976. The market tightened again in 1983 in response to increased import demand from Indonesia, India, Iraq, Iran, and Brazil. Output in these countries was affected by adverse weather conditions, and, despite substantial increases in production in other countries, particularly in China, Taiwan, Bangladesh, and Pakistan, prices averaged almost \$280 per ton in the second half of the year. The volume of world trade in rice increased by 4 percent to 12.1 million tons.

Prices weakened somewhat in the first quarter of 1984, as the outlook for 1984 is for record world production of 435 million tons, with the largest gains (about 20 percent) expected in India and Brazil. Significant gains are also forecast for Thailand, Indonesia, and the Republic of Korea. Even after restocking, import demand from Indonesia and Korea is expected to decrease, and the volume of world trade may decline by about 4 percent. Market conditions are expected to ease somewhat in 1984, as evidenced by a decline in prices to \$273 per ton in December 1983 and to \$253 by March 1984.

### 3. Sugar

Approximately 27 percent of world sugar production enters international trade, and about 80 percent of world sugar trade is channelled through the free market. The remainder takes place under special arrangements, including exports by Cuba to the U.S.S.R. and Eastern Europe and exports by the African,

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1/ Price quotations refer to Thai milled white rice, 5 percent broken, f.o.b. Bangkok.

Caribbean, and Pacific (ACP) countries to the EC at fixed annual quotas and prices determined annually in relation to domestic price support levels. The United States is part of the free market, although U.S. imports are subject to quotas introduced in May 1982; U.S. import prices, which are linked to domestic support prices, are significantly higher than the free market quotations. From 1975 to 1982, the quantity of sugar traded expanded by 48 percent to 27.3 million tons, with the free market accounting for almost all of the increase. In developed countries, the demand for sugar in recent years has been discouraged largely by domestic price support policies and the displacement of sugar by alternative sweeteners, particularly high fructose corn syrup. In developing countries, where per capita consumption is relatively low, demand for sugar continued to expand and, although much of the increased demand was in countries with rising domestic supplies, an increase in net imports of the developing countries to satisfy consumption growth was encouraged by the low sugar prices prevailing in recent years. The share of developing countries in net imports from the free market increased from an average of 41.6 percent in 1975 to 56.4 percent in 1982, with the share of the petroleum exporting countries rising from 13.6 percent to 24.8 percent during this period.

The most significant structural change in world sugar exports has been the emergence of the European Community as the second largest exporter in the world after Cuba, and the largest exporter to the free market. Whereas the EC was a net importer of sugar up to 1975, it became a net exporter in 1976, and in 1982 its net exports amounted to 5.5 million tons, or 25 percent of total exports to the free market; EC sugar exports consist mainly of refined white, rather than raw sugar, the type mostly originating from developing countries. Net exports of the developing countries to the free market showed little absolute growth during this period, averaging about 11.4 million tons annually from 1976-81 and 12.1 million tons in 1982. As a result, their share of total exports of sugar to the free market declined from an average of about 63 percent during 1976-80 to 54 percent in 1981, but rose slightly to 56 percent in 1982. A substantial share of these exports has been channelled to the U.S. market; however, U.S. imports of sugar from the free market have declined in absolute and relative terms from 4.2 million tons in 1976 (or 28 percent of total imports from the free market) to 2.3 million tons in 1982 (11.3 percent), partly reflecting the introduction of an import quota system in May 1982.

Sugar prices are quoted in three major markets: (1) the free market, (2) the U.S. market, and (3) the market of the EC for sugar imports from ACP countries. <sup>1/</sup> The free market price has, in recent years, been significantly lower than the U.S. and EC import prices because of the glut of

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<sup>1/</sup> The free market price is the arithmetic average of the New York Contract No. 11 spot price and the London daily price, after converting the latter into U.S. cents per pound f.o.b. and stowed Caribbean port in bulk or, if the difference between these two f.o.b. prices is more than ten points, the lower of the two prices plus five points. The EC guaranteed price, expressed in ECU per 100 kilograms, refers to unpacked sugar of standard quality and c.i.f. European ports of the Community, converted into U.S. cents per pound. The U.S. import price is the New York Contract No. 12 spot price, which calls for delivery of cane sugar in bulk, c.i.f. duty paid at named Atlantic and Gulf ports.

sugar available in that market; the U.S. and EC prices are set in relation to domestic price support programs administered through various instruments, including import quotas and import duties and fees.

Since 1974-75, the free market price of sugar has gone through two cycles. Record high prices were realized in 1974-75 as a result of a prolonged imbalance between the growth of world consumption and production. After rising to 29.9 cents per pound in 1974, the highest annual level in over 25 years, the free market price declined continuously from 1975 to 1978, when it reached 7.8 cents per pound. Thereafter, the price rose again in 1979 and 1980 to 28.7 cents per pound, but subsequently fell to 16.9 and 8.4 cents per pound in 1981 and 1982, respectively; it remained at about that level in 1983.

From its most recent peak of 35.7 cents per pound in the fourth quarter of 1980, the price declined throughout 1981 and 1982, reaching 6.3 cents in the fourth quarter of 1982. The price then increased markedly in the second and third quarter of 1983 by 44 percent and 15 percent, respectively, to 10.2 cents per pound, which is well below the floor price of 13 cents per pound of the 1977 International Sugar Agreement (ISA). The improvement was short-lived, however, as the price fell to 8.6 cents per pound in the final quarter of 1983, and further to under 7 cents in the first quarter of 1984.

The free market price of sugar has been primarily influenced by supply factors, as growth in demand for sugar (like other food commodities) is relatively stable. A succession of poor crops in major producing countries in the early 1970s caused world stocks to decline from 29 percent of consumption in 1969/70 (crop years ending August) to 21 percent in 1973/74 (Table 11), a level which is generally regarded as inadequate. After the high prices in 1974 and 1975, world production expanded rapidly from 79 million tons in 1974/75 to 93 million tons in 1977/78 and to 91 million tons in 1978/79. World consumption also increased during this period from 77 million tons in 1974/75 to 90 million tons in 1978/79, but fell short of world production in each of these years. As a result, the level of world stocks rose to about 35 percent of world consumption in both 1977/78 and 1978/79. This exerted significant downward pressure on the price, which fell to an average of 7.9 cents per pound during those crop years. Reflecting lower crops in 1979 in both the U.S.S.R. and Cuba as a result of unfavorable weather and disease, world production declined significantly in 1979/80. With consumption virtually stagnating, the stock/consumption ratio declined to 27 percent in 1979/80, but then rose sharply after 1980/81. With world production in 1981/82 and 1982/83 exceeding 100 million tons annually and consumption growing modestly, stocks at the end of 1982/83 rose to 49.3 percent of consumption, the highest level in over 25 years.

The EC's substantial export surpluses reflect the marked increase in production generated by the high level of support prices accompanied by the virtual stagnation of domestic consumption. U.S. import quotas, introduced in May 1982 to support domestic production, and the longer-term development of sugar substitutes, sharply reduced net U.S. imports from the free

Table 11. Sugar: World Commodity Balance, 1973-84

(In millions of tons)

Years Ending August	Production			Consump- tion	Ending Stocks	Normal Stock Level <u>1/</u>	Stocks/ Consumption Ratio
	Beet	Cane	Total				
							( <u>In percent</u> )
1973	30.1	44.8	75.1	77.7	17.2	18.6	22.1
1974	32.0	48.0	80.0	80.0	17.3	19.2	21.6
1975	28.5	50.0	78.5	77.1	18.9	18.5	24.5
1976	31.7	49.9	81.7	79.2	21.0	19.0	26.5
1977	32.8	53.5	86.3	81.9	24.8	19.6	30.3
1978	35.0	57.7	92.7	86.2	30.0	20.7	34.8
1979	34.6	56.7	91.3	89.6	31.0	21.5	34.6
1980	33.5	51.1	84.6	89.5	24.2	21.5	27.0
1981	32.9	55.6	88.5	88.5	25.2	21.2	28.5
1982	37.0	63.6	100.6	89.4	36.4	21.5	40.7
1983	37.4	63.6	101.0	92.0	45.4	22.1	49.3
1984E	34.3	60.3	94.6	93.9	46.1	22.5	49.1

Source: U.S. Department of Agriculture, Foreign Agricultural Service.

E = Estimate.

1/ Calculated as 24 percent of current consumption.

market and, hence, increased the amount of sugar available for export to other free markets. Meanwhile, the growth of world demand for sugar has been sluggish, partly reflecting the significant growth in the market share of sugar substitutes, particularly in the United States, where their share in total sweetener consumption has risen from 4 percent in 1975 to 22 percent in 1982, and is expected to increase further.

The free market price of sugar has also been affected by the operation of the 1977 International Sugar Agreement (ISA). The main objective of the Agreement has been to stabilize prices within an agreed range (13 to 23 cents per pound) through the imposition of export quotas 1/ as well as the accumulation of special stocks 2/. Upon entry into force of the Agreement in January 1978, all of its economic provisions were activated, as the free market price was below the floor price of the Agreement at that time. This helped to stabilize prices during the first two years of operation, and in 1980 prices rose sharply, triggering the suspension of export quotas and the release of special stocks to the free market. Subsequently, prices began to decline again, and in May 1981, when the prevailing price fell below 16 cents per pound, export quotas were reintroduced and exporting members were required to accumulate special stocks.

These measures failed to stabilize the market price, and this failure is mainly attributable to the emergence of surplus world production on a scale that was not foreseen when the Agreement was negotiated and with which it was not designed to cope. The two factors mainly responsible for impeding the operation of the ISA have been (1) the nonparticipation of the EC, whose emergence as the largest sugar exporter to the free market in the six years since the Agreement came into force was not anticipated when it was negotiated, and (2) the formula used to calculate export quotas under the ISA, which is based upon retrospective trade averages and led to an inflation of export quotas in years when the demand for sugar from ISA members was declining. Efforts to negotiate a new, more effective ISA, with EC participation, to replace the present Agreement due to expire at the end of 1984, were initiated in 1982 and are still continuing. Two sessions of a negotiating conference were convened in Geneva under the auspices of UNCTAD in May and September 1983; a third session is expected to be convened in June 1984.

The high level of world stocks is expected to prevent any significant increase in free market prices in the near future; indeed, the oversupply situation could worsen in 1984/85, with a further decline in price, if production rebounds as a result of a return to more normal weather conditions.

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1/ Export quotas (set in terms of Basic Export Tonnages (BETs)) for individual countries are automatically imposed when the prevailing price remains below 16 cents per pound for five consecutive market days and are reduced (pro rata to their BETs) by tranches of 5 percent each as the prevailing price falls below 15, 14, and 13.5 cents per pound, respectively, to a maximum permissible export level of 85 percent of BETs.

2/ Accumulation of a total of 2.5 million tons of special stocks is provided for in the Agreement over a three-year period from the date on which quotas are imposed.

However, output in some important producing countries, such as India and Thailand, is likely to decline as the long period of depressed prices has induced shifts into more remunerative crops. In 1983/84, world sugar production is expected to be significantly lower than in the previous year, reflecting the effects of adverse weather conditions in major producing areas, including Australia, South Africa, Cuba, and the EC.

World consumption, on the other hand, may be expected to respond favorably in the short term to continued low prices, but in the long term, increasing competition from substitutes in the industrialized countries (mainly in the United States, Canada, and Japan) could reduce significantly the share of sugar in world consumption. However, with estimated consumption expected to be approximately in balance with production during 1984-85, the high level of world stocks is estimated to remain virtually unchanged, suggesting no relief to the downward pressure on free market prices.

#### 4. Other food

The years 1976-78 marked the second phase of the world cattle cycle, with livestock numbers declining from their 1975 peaks and production also falling (Table 12). Export prices of beef <sup>1/</sup> recovered from 60.2 cents per pound in 1975 to 97.0 cents per pound in 1978. But in early 1979, an excess demand situation developed in the U.S. market and prices rose sharply until domestic supplies (mainly of pigmeat and poultry) could be brought to market in mid-year. The higher beef prices contributed to an end to the destocking process in 1979, and the first phase of the new cattle cycle began. As stocks were built up, world beef production declined by about 1 per cent in 1980. Prices fell moderately, however, due to reduced demand in the United States and increased competition between the traditional U.S. suppliers (Australia and Argentina) and the EC. The decline in prices, from 130.8 cents per pound in 1979 to 125.2 cents per pound in 1980, combined with increasing feedgrain prices, slowed the pace of restocking in the United States in 1981, and adverse weather in Australia and Argentina induced increased slaughtering and a fall in livestock numbers. With large EC surpluses adding further to tradeable supply and continuing weak demand in the United States, prices fell more rapidly, averaging 112.1 cents per pound for the year as a whole. Total world cattle numbers, nevertheless, continued to rise due to the build up of herds in the Soviet Union.

In 1982 the expansionary phase of the cycle was reversed and world cattle numbers declined marginally, by about one half percent. <sup>2/</sup> Contributory factors were a loss of confidence by U.S. producers, partly reflecting both high financing costs and declining beef prices, and a severe drought in Australia. An increase in U.S. and Australian production resulted, but

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<sup>1/</sup> Price quotations refer to the average price for beef from all origins at U.S. ports.

<sup>2/</sup> Between 1945 and 1975, world cattle numbers had peaked at about ten year intervals. The six-year interval to 1981 represented a significant change in the length of the cattle cycle.

Table 12. Beef: Production and Trade, 1977-1983

	Livestock Numbers <u>1/</u>	Production	Trade
	( <u>Million head of cattle</u> )	( <u>In millions of metric tons</u> )	
1977	1,192.9	38.57	2.72
1978	1,190.3	38.35	2.80
1979	1,187.7	36.56	2.87
1980	1,190.7	36.19	2.88
1981	1,194.8	36.53	2.97
1982	1,187.6	36.38	2.97
1983	--	36.92	--

Sources: Commonwealth Secretariat, Meat and Dairy Products (London); Food and Agriculture Organization, Commodity Review and Outlook (Rome); and staff estimates.

1/ Sum of country census data taken at various months during the year.

this was more than offset by reduced output in the EC and the Soviet Union, and world output declined by one half percent. World prices for beef continued to decline, with the U.S. price falling to 108.4 cents per pound in 1982, despite measures to boost U.S. farm incomes, including voluntary restraints on exports by suppliers to the United States.

Prices strengthened considerably in the first half of 1983 due to a recovery of demand in the United States. Although the recovery was reversed in the second half of the year as the impact of drought on U.S. and EC feed supplies was reflected in the cost of production of beef, prices in 1983 averaged 110.7 cents per pound. In the first quarter of 1984, they declined somewhat to an average of 106 cents per pound. World output is estimated to have increased by 1.5 per cent for the year as a whole, due to increased production levels in the EC and the United States exceeding declines in output in Argentina and Australia.

The short-term outlook is for some improvement in the demand for beef in 1984 as the world economic recovery, particularly in the United States, proceeds. It is also expected that herd rebuilding will intensify in Australia and Argentina. Tradeable supply will be further reduced by restocking in the United States and the EC in the second half of the year if soybean and corn crops increase as expected. Thus, a sharp upturn in beef prices is likely to occur during 1984.

By contrast with the cyclical downturn in cattle numbers and beef production in 1982, the global inventory of sheep and lambs and production of processed lamb continued to increase. Factors underpinning the growth of this sector between 1979 and 1982 were the extension of the Common Agricultural Policy of the EC to sheepmeat in 1980, strong demand from Middle Eastern oil exporting countries, and a secular shift in consumer preferences in developing countries away from beef--mainly toward poultry, but partly toward lamb. However, lamb prices, 1/ which had risen continuously from 65 cents per pound in 1974, peaked in the first half of 1981 at 135 cents per pound and then declined to 88 cents per pound on average in 1983. In the first quarter of 1984, they averaged 87 cents per pound. Market weakness in 1981-82 was mainly the result of increased output within the EC, which was associated with voluntary restraint on exports to the EC by traditional suppliers in return for a reduction in EC import duties. This loss of markets induced these suppliers to subsidize exports to other markets in order to dispose of available supplies. An additional factor in 1982-83 was the slowing of demand for processed lamb by the Middle Eastern countries as a result of falling oil revenues, the rapid expansion of domestic poultry industries, and steady import demand for live sheep for both traditional and religious reasons. The volume of world trade in processed lamb fell by about 10 percent in 1982 and is estimated to have declined further in 1983. Global livestock numbers also fell in 1983 because of adverse weather conditions in Oceania.

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1/ Price quotations refer to the price of New Zealand lamb, grade PL, at the Smithfield market, London.

The short-term outlook is for a modest increase in the price of processed lamb, reflecting both an improvement in demand in line with the international economic recovery, and some slowing in the growth of marketable supplies as flocks are rebuilt in Oceania.

In 1983 the average price for bananas of Central American and Ecuadoran origin in the United States, which account for more than one third of total world imports, was \$7.80 per box of 40 pounds, 15 percent higher than in 1982 but only 7 percent above the 1981 average price. These annual averages, however, cover much wider fluctuations during the year, largely in response to changes in supply conditions. Prices rose from an average of \$6.13 in January 1983 to an average of \$10.06 in May, an increase more than three times the seasonal increase of approximately 20 percent that usually occurs during this part of the year. The main reasons for the large increase were the torrential rains and ensuing floods in Ecuador in January, causing considerable damage to production, and the hurricane damage to the crops in Honduras and Guatemala in March. High prices also led to some substitution of more plentiful varieties of fruit for bananas, and trade in bananas declined. Prices fell steadily in the second half of 1983 to a low monthly average of \$6.21 in November as modest adjustments in supply coupled with sluggish seasonal demand eased the tight supply situation.

Supply constraints in 1984 are expected to ease, particularly as some recovery in Ecuadoran output is anticipated. Prices, therefore, are projected to be lower on average than in 1983. They averaged \$7.11 in the first quarter of 1984, 9 percent below the 1983 average. However, prices will be subject to upward pressure should adverse weather conditions develop in any of the major exporting areas and may also move upwards should extended labor disputes affecting either production or shipping occur.

### III. Beverages

The beverages group consists of three commodities: coffee, cocoa, and tea. Coffee usually ranks second only to petroleum in terms of its value as a primary commodity in international trade and thus has a much greater weight in the group than do cocoa and tea. Despite the traditional association of cocoa with coffee and tea as a beverage, the beverage use of cocoa is secondary to its use in chocolate confectionery. While the greater part of the production of coffee and cocoa enters international trade, domestic consumption of tea in producing countries since the mid-1970s has exceeded the quantities entering international trade.

Unlike food prices, beverage prices have not moved very consistently with the business cycle over the last ten years (Chart 3 and Table 13). Whereas supply factors tended to reinforce food price movements consistent with the two major business cycles in 1972-77 and 1978-83, supply factors offset demand factors in various phases of the cycles for beverages. This was especially true for coffee, which has the largest weight in the beverage group, as prices increased in all three phases of the 1972-77 business cycle, and then declined in the initial phase of the 1978-83 cycle as prices

CHART 3  
BEVERAGES: RECENT PRICE MOVEMENTS  
(1980=100)

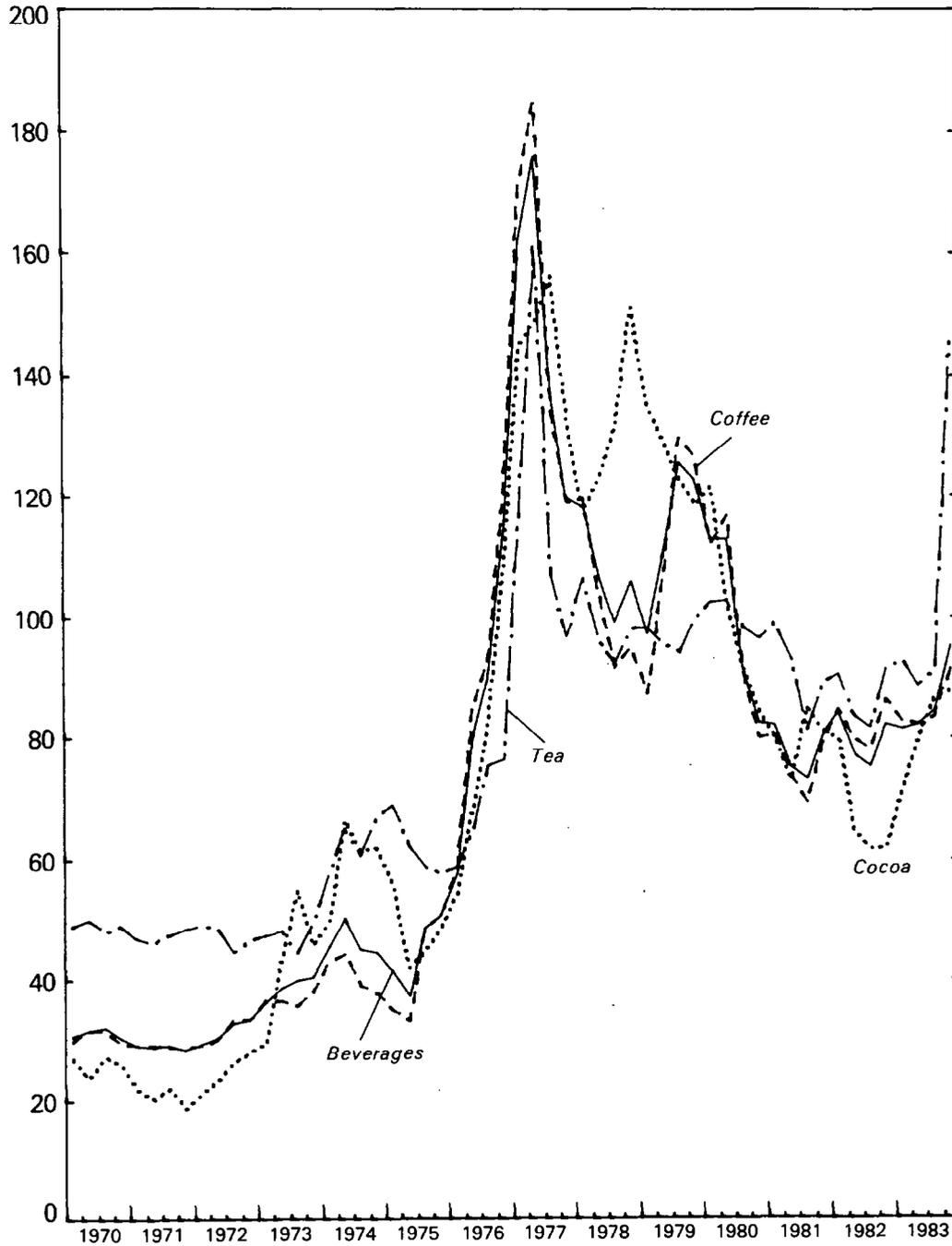


Table 13. Beverage Price Movements and the Business Cycle

(Percentage change)

Periods <u>1/</u>	1972-77 Cycle			1978-83 Cycle		
	Increase 1972-74	Decrease 1974-75	Recovery 1976-77	Increase 1978-80	Decrease 1981-82	Recovery 1983
Cumulative						
Beverages	78	1	246	-17	0	16
Of which:						
Coffee	55	14	264	-13	8	6
Cocoa	256	-27	206	-36	-27	42
Tea	34	-11	179	4	-5	59
Annualized						
Beverages	26	0	64	-7	0	6
Of which:						
Coffee	19	5	68	-5	3	2
Cocoa	66	-12	56	-16	-12	15
Tea	13	-5	51	2	-2	20

1/ The periods are defined as follows:

The 1972-77 cycle

Price increase: 1972Q1-74Q2; Decrease: 1974Q3-75Q4; Recovery: 1976Q1-77Q2

The 1978-80 cycle

Price increase: 1978Q4-80Q4; Decrease: 1981Q1-82Q4; Recovery: 1983Q1-83Q4.

receded from unusually high levels caused by frost in Brazil. Prices then strengthened marginally during the last two phases of the cycle, 1981-83, partly in response to export controls administered by the International Coffee Organization (ICO). Cocoa prices moved in line with the 1972-77 business cycle, but then, like coffee prices, declined in the initial phase of the 1978-83 cycle from the unsustainably high levels that had been reached due to severe supply shocks. Only tea prices moved coincidentally with the two business cycles, as supply factors reinforced this movement.

Beverage prices as a group rose by 8 percent in 1983, with the largest increases experienced by cocoa and tea, both of which were caused primarily by reduced supplies. A smaller increase in coffee prices was caused in part by continued export controls by ICO members. The higher prices attained at the end of 1983 were maintained through the first quarter of 1984.

#### 1. Coffee

The sharp downward trend in coffee prices from the record level attained in 1977 was checked by the effects of frosts in Brazil and by the export quotas established under the provisions of the 1976 and 1983 International Coffee Agreements. A moderate frost occurred in Brazil in August 1978, and more severe frosts in May 1979 and July 1981. The International Coffee Council reached an agreement in October 1980 on export quotas linked to trigger prices at levels close to those then prevailing in the market. With the "indicator price" of the International Coffee Organization (ICO) falling, quotas were introduced almost immediately and a number of quota cuts were made in coffee year 1980/81. <sup>1/</sup> The indicator price then fluctuated around 120 cents until it dipped below 100 cents in June 1981, only to recover again in July 1981 when frost hit Brazilian coffee plantations. Because of the size of world stocks overhanging the market, the recovery was modest, and prices did not rise above 120 cents until October 1981. However, with the effects of the frost on Brazil's 1982/83 crop and the continuation of export controls, the ICO indicator price in 1982 and in the first three quarters of 1983 was maintained between 115 and 135 cents. In the final quarter of 1983, the price rose above 135 cents, reflecting a relative tightness of supplies, largely as a result of the operation of the quotas in the last quarter of coffee year 1982/83 and in the first quarter of coffee year 1983/84. In mid-December the indicator price reached 140 cents, triggering an increase in export quotas of one million bags. A second quota increase of one million bags occurred in February 1984 when the indicator price once again rose to the 140 cent level. Although the indicator price remained above the 140 cent level for the remainder of the first quarter of 1984, it failed to reach 145 cents per pound, a level which would have led to a third quota increase.

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<sup>1/</sup> The "indicator price" is the International Coffee Organization (ICO) 1979 composite price, which is an average of the spot prices for "other mild arabicas" (Salvadoran, Guatemalan, and Mexican origins) and robustas (African origins) in the major import markets.

The behavior of coffee prices in recent years is largely explained in terms of the price inelasticity of demand for this commodity, the increase in production which was encouraged by the prices received in the late 1970s, the build-up of stocks in exporting countries--which in turn is related to the export quotas beginning in October 1980 established under the International Coffee Agreement--and the occurrence of frost in Brazil. Empirical studies have consistently obtained low price elasticities of demand for coffee in all the major consuming markets. Thus, when world supplies drop, as happened in the late 1970s, prices rise sharply to allocate available supply, and conversely, when supplies increase, prices can fall rapidly. A less uniform pattern emerges regarding income elasticity. In markets where coffee consumption per capita is low, income elasticity has been found to be high, in some cases well above unity, whereas in markets where consumption is already high, the income elasticity of demand tends to be low, or, as suggested from some studies of the United States, even negative. Thus, changes in the level of economic activity in industrial countries in recent years probably have had little effect upon coffee demand.

World production in 1982/83 of 82.3 million bags was 16 percent below the production of 1981/82, largely because of the Brazilian frost in 1981. However, world production in 1983/84 is expected to be approximately 92 million bags, second only to production in 1981/82 (Table 14).

During the late 1970s, year-end coffee stocks held in producing countries fell to about 25 million bags, equivalent to about four months' world consumption. By the end of 1982/83, coffee stocks were estimated to be nearly 43 million bags, lower than at the end of the previous year, but still equivalent to six months' world consumption. The increase occurred during the 1980/81 and 1981/82 coffee years as a result of the operation of the export quotas of the International Coffee Organization. As a result of the large crop forecast for 1983/84, stocks at the end of 1983/84 are expected to increase by about 4 million bags.

One of the important effects of the accumulation of stocks under the International Coffee Agreement has been the search for new markets in non-member countries. Coffee has been sold in 1983 to nonmember countries, mainly the U.S.S.R., countries in Eastern Europe, and developing countries not producing coffee, at discounts of about 50 percent of the market prices in member countries where export quotas apply. Exports to nonquota markets have been estimated for 1982/83 to be over 10 million bags out of total exports of over 65 million bags. The International Coffee Organization is attempting to monitor the exports to nonquota markets because of the fear of leakages back to quota markets.

There is little reason to expect major changes in coffee prices in 1984. Much of the new capacity planted under the stimulus of high prices in the 1970s is now reaching maximum yield, so that this factor could add to supply pressure. While the thrust of Brazil's coffee development program has been in areas less prone to frost damage, a large part of Brazil's production remains vulnerable to frost damage. However, given the large stocks being held throughout the world, a frost in Brazil in the period of

Table 14. Coffee: World Commodity Balance, 1970-84

(In million bags)

Year Ending in July/September <u>1/</u>	Production	Consumption <u>2/</u>			End-of-Year Stocks in Producing Countries
		Producing Countries	Net Exports of Producing Countries	Total	
1974	65.7	19.0	60.1	79.1	36.1
1975	82.8	19.2	55.0	74.2	44.7
1976	73.2	19.2	59.3	78.5	39.4
1977	60.9	18.4	56.2	74.6	25.7
1978	70.8	18.8	48.2	67.0	29.5
1979	78.9	19.5	63.9	83.3	25.1
1980	81.9	20.0	61.0	81.0	26.1
1981	86.2	20.6	59.2	79.8	32.5
1982	98.2	21.3	63.6	84.9	45.8
1983	82.3	20.9	64.4	85.3	42.8
1984 <u>3/</u>	91.7	21.6	66.1	87.7	46.8

Source: U.S. Department of Agriculture, Foreign Agriculture Circular: Coffee, (Washington), January 1984, Table 3.

1/ Coffee year for most countries is October to September. For Brazil, coffee year is July to June.

2/ Consumption is defined as consumption in producing countries plus net exports of producing countries. Comprehensive series of stocks data in importing countries are not readily available.

3/ USDA forecast.

May to August is less likely to be as important a factor in the market as it has sometimes been in the past. It would, nevertheless, strengthen prices somewhat by making the stockholding situation more manageable, and the increase in prices might be sufficient to trigger quota increases. Over the longer run, export controls plus periodic adverse weather conditions are likely to check production increases, although stock levels are likely to remain high for a number of years.

## 2. Cocoa

Cocoa prices fell steadily in 1980 and the first half of 1981 from the record high levels of the late 1970s. The International Cocoa Organization (ICCO) daily price, which is an average of futures market prices for cocoa beans in London and New York, in June 1981 averaged only 75 cents per pound, less than 45 percent of the average price for 1977. The entry into operation of the 1980 International Cocoa Agreement, enabling purchases of some 100,000 tons of beans by the buffer stock manager of the ICCO, helped bring about some recovery in prices in the latter part of 1981 and in the first quarter of 1982. The price objectives of the Agreement were not met, however, and with the failure of the Organization to agree on measures to finance further purchases and on the modalities of these purchases, prices in the second quarter dipped to nearly 70 cents per pound. As the effects of the dry weather in West Africa on the 1982/83 crop became evident late in 1982 and early in 1983, prices again rose above 100 cents per pound in June 1983. The increasing probability of a second successive low crop in 1983/84 led to a further increase in prices late in 1983, with prices in December averaging 115 cents per pound; average prices remained near that level during the first quarter of 1984.

An important underlying factor which helps explain the behavior of cocoa prices is the low price elasticity of demand. Despite the evident competition of chocolate with other confectionery and snack foods in many countries and the observed behavior of manufacturers in reducing the chocolate content in their products when prices are high and increasing it when prices are low, econometric studies have consistently yielded very low estimates of price elasticity of world demand. These estimates have been around -0.15 to -0.20 for the short run, when using lagged prices of up to one year, and about -0.30 when various longer lagged responses are taken into consideration. The estimates for countries and regions where chocolate consumption is long established and relatively high are lower than the world estimates, whereas the estimates for countries and regions with low levels of consumption tend to be considerably higher. As a result, relatively small changes in supplies, such as with the reduced crops in the late 1970s and the larger crops of the 1980s, lead to very marked price changes. Income elasticities also tend to be low, ranging between 0.3 and 0.4, except for low consumption markets and new markets, where much higher values can be obtained, at least initially. Because of this situation, the changes in supply have been much more important in explaining year-to-year price movements than changes in demand.

Cocoa prices and production have been subject to cyclical movements not dissimilar to those observed for coffee. The neglect of cocoa production with the disruption of trade in the Second World War meant that when effective demand recovered in Europe in the 1950s, cocoa prices rose sharply. The high prices in turn stimulated production, especially in Ghana, with the result that prices fell to very low levels in the 1960s. The lower prices forced many producing countries, particularly Ghana and Nigeria, to cut back their production programs, with the result that the failure of world production to meet rising demand contributed to the high prices of the mid- and late 1970s. The improved prospects in the 1970s and higher prices encouraged expansion programs in a number of countries and led to large increases in production capacity, particularly in Brazil, Ivory Coast, and Malaysia. This increased capacity has provided the increased production which set the scene for sharp price declines after 1977.

Production in 1979/80 climbed to 1.6 million tons from the level of about 1.5 million tons which had prevailed for a number of years. (Table 15). Production increased further, reaching nearly 1.7 million tons in 1980/81 and exceeding 1.7 million tons in 1981/82. However, because of less favorable weather, production declined to slightly more than 1.5 million tons in 1982/83 and only a small increase is forecast for 1983/84. Stocks of cocoa beans increased every year from 1977/78 to 1981/82 as evidenced by the consistent surplus of production over grindings, the first stage in the processing of cocoa. A decline finally occurred in 1982/83 and a further reduction is likely in 1983/84.

Price movements from year to year are also influenced by expectations regarding the size of the current and the coming crop. The timing, frequency, and quantity of rainfall are the most relevant factors both in terms of providing for tree sustenance and growth and creating conditions favorable and unfavorable for disease and pest damage (the most important being black pod disease and capsid damage). Dry conditions in West Africa in the early 1970s and again in the early 1980s adversely affected the crop, and excessive rainfall and humidity have periodically caused serious pod damage in a number of countries. Buyers pay great attention to the development of the crop in the months immediately preceding harvesting and in the early harvesting period, particularly to the temporao crop in Brazil and to the main crop in West Africa.

Uncertainty regarding the size of the 1983/84 crop was a dominant feature of the cocoa market during the latter months of 1983. In the absence of an active role for the buffer stock manager of the ICCO, the immediate supply prospects will continue to dominate prices throughout 1984. Should the 1983/84 crop be higher than the 1982/83 crop but well below that of the preceding two years as expected, a price averaging about 115 cents per pound should be maintained well into the year, until the market becomes dominated by the prospects concerning the size of the Brazilian temporao crop and the West African main 1984/85 crop. Discussions began late in 1983 toward the drafting of a new international cocoa agreement to replace the 1980 Agreement, but even if they are successful, it is unlikely that a new agreement could come into operation until late in 1985.

Table 15. Cocoa Beans: World Commodity Balance, 1970-84

(In thousands of tons)

Cocoa Year Ending in September	Production <u>1/</u>	Consumption (Grindings)			End-of-Cocoa- Year Stocks
		Producing Countries <u>2/</u>	Importing Countries	Total	
1974	1,450	350	1,140	1,490	330
1975	1,550	380	1,100	1,480	380
1976	1,500	410	1,100	1,510	360
1977	1,340	400	1,030	1,430	260
1978	1,520	440	950	1,390	370
1979	1,510	500	980	1,480	390
1980	1,620	520	970	1,490	500
1981	1,680	510	1,060	1,570	600
1982	1,720	470	1,100	1,570	730
1983	1,520	480	1,140	1,620	610
1984 <u>3/</u>	1,540	480	1,160	1,640	500

Source: International Cocoa Organization, Quarterly Bulletin of Cocoa Statistics (London), various issues.

1/ Gross production. For comparison with consumption (grindings), deduct approximately 1 percent.

2/ Approximately 60 percent of the cocoa products obtained from grinding cocoa beans in producing countries are subsequently exported.

3/ Forecast.

### 3. Tea

In real terms there has been a persistent downward trend in tea prices from the comparatively high levels of the 1950s. This downward trend, however, has been interrupted by sharp price increases twice in recent years--in 1977 and in 1983. In the first four months of 1977 the average prices on the weekly London tea auctions rose rapidly to over \$4.00 per kg. in April, a price which was more than three times the price for the same period in the previous year. The high prices were maintained only for a brief period. By August 1977 the average prices had fallen to \$2.15 per kg. and remained below that level until 1983. Prices in the first three quarters of 1983 averaged \$2.02 per kg., 5 percent above the average for 1982. In October and November 1983 prices increased rapidly, with the result that prices in the final quarter of 1983 averaged \$3.23 per kg; prices surged to \$4.29 in January 1984, but declined in the subsequent two months, averaging \$3.72 for the first quarter of 1984.

The major reason for the price volatility in certain periods is the price inelasticity of demand in the major import markets in industrial countries. Fears of small decreases in supplies to these markets or a modest shift in demand--in 1977 the high tea prices coincided with record high coffee prices--can result at least for a short period in rapidly increasing prices.

The important longer term development in the tea market, nevertheless, has been the decline in the relative importance of consumption in the import markets of industrial countries. In those countries where tea consumption per capita has traditionally been high, in particular the United Kingdom, income elasticities tend to be very low or even negative, whereas income elasticities are high in producing countries such as India and in importing countries such as Pakistan. Increases in population and incomes in Asian countries have tended to account for much of the increased demand for tea and this has been by far the more dynamic part of the market. Consumption of tea in producing countries surpassed exports in the mid-1970s and continues to grow at a more rapid rate (Table 16).

From 1961 to 1979 world production grew at a fairly steady annual rate of approximately 3 percent, with 2 percent attributed to increases in land area and 1 percent attributed to yield increases. The pressure of supply over this period tended to reduce real prices. Since 1980, however, production has tended to increase at about 2 percent per annum, and this lower rate of expansion, coupled with the persistent growth of consumption in producing countries, appears to have altered somewhat the demand and supply situation.

For 1984 the question arises as to how much of the sharp increase in prices in the last quarter of 1983, which was augmented in the early months of 1984, will be maintained. With low levels of stocks in importing countries, markets will react to any news that will suggest reduced or delayed supplies. However, the large increases in prices are unlikely to be sustained for long because of the incentives they give to increase yields on

Table 16. Tea: World Commodity Balance, 1970-84

(In thousand of tons)

Calendar Year	Production <u>1/</u>	Consumption		Total	End-of-Year Stocks in U.K.
		Producing <u>2/</u> Countries	Imports for Consumption <u>3/</u>		
1974	1,490	750	780	1,530	66
1975	1,540	790	760	1,540	68
1976	1,590	790	790	1,590	65
1977	1,710	900	820	1,720	88
1978	1,770	960	760	1,730	70
1979	1,790	940	830	1,760	60
1980	1,830	970	860	1,830	60
1981	1,840	990	840	1,830	43
1982	1,880	1,030	870	1,900	49
1983 <u>4/</u>	1,920	1,070	870	1,940	40
1984 <u>5/</u>	1,960	1,090	870	1,960	40

Source: Commodities Division; based on data published by FAO (Rome) and International Tea Committee (London).

1/ Includes green tea, which accounted for approximately 25 percent of total in 1982.

2/ Production minus exports.

3/ As reported by the International Tea Committee, adjusted by addition of 4 percent to make data comparable with exports over the period covered.

4/ Estimated.

5/ Forecast.

tea farms and plantations. In the longer run, the outcome of the continuing discussion toward the conclusion of an international tea agreement under UNCTAD auspices with the involvement of the Food and Agriculture Organization of the United Nations (FAO) could have an influence on tea prices. Even more important will be the production policies pursued by major producers, particularly China and India where demand for domestic consumption is strong.

#### IV. Agricultural Raw Materials

Prices of agricultural raw materials are influenced primarily by demand factors because the main use of these commodities is as industrial inputs and their supply tends to be more stable than that of agricultural food commodities. Accordingly, movements in these prices have consistently followed developments in world economic activity (Chart 4 and Table 17). Movements in petroleum prices also influence price formation for agricultural raw materials, partly through their impact on the prices of substitutes. As many of the substitutes for agricultural raw materials are petrol-based, the first oil shock in 1972-73 may be partly responsible for the sharp increase in agricultural raw material prices in 1972-74.

The prices of agricultural raw materials fell by 10 percent in 1981 and by 14 percent in 1982, primarily as a result of weak demand during the 1981-82 world recession. Rubber and cotton experienced the largest declines. Agricultural raw material prices recovered by 8 percent in 1983, led by rubber (24 percent) and cotton (15 percent). Apart from the effects of improved demand for both commodities in 1983, the recovery in rubber prices was assisted by the operations of a commodity agreement and the recovery in cotton prices by a world production shortfall. The prices of agricultural raw materials are expected to continue to increase in 1984, but will be limited by factors such as large stocks in the case of rubber and by a probable recovery in world production in the case of cotton. They rose by 4 percent in the first quarter of 1984 over the fourth quarter of 1983 to an average level 11 percent higher than their 1983 average.

##### 1. Cotton

Cotton prices rose sharply in the mid-1970s in the wake of the 1974 oil shock which raised substantially the prices of synthetic petroleum-based fibers, cotton's principal market competitor. Prices for medium-staple cotton through the end of the decade fluctuated between an annual average of 77 cents per pound (1976 and 1979) and 72 cents per pound (1977 and 1978). Production rose from the pre-1974 average of 12 million tons to 14 million tons in 1977/78 and prices moderated. Production fell slightly to 13 million tons the following year, but recovered thereafter. At the same time, however, consumption rebounded, reflecting a shift in demand toward natural fibers.

### CHART 4 AGRICULTURAL RAW MATERIALS: RECENT PRICE MOVEMENTS

(1980=100)

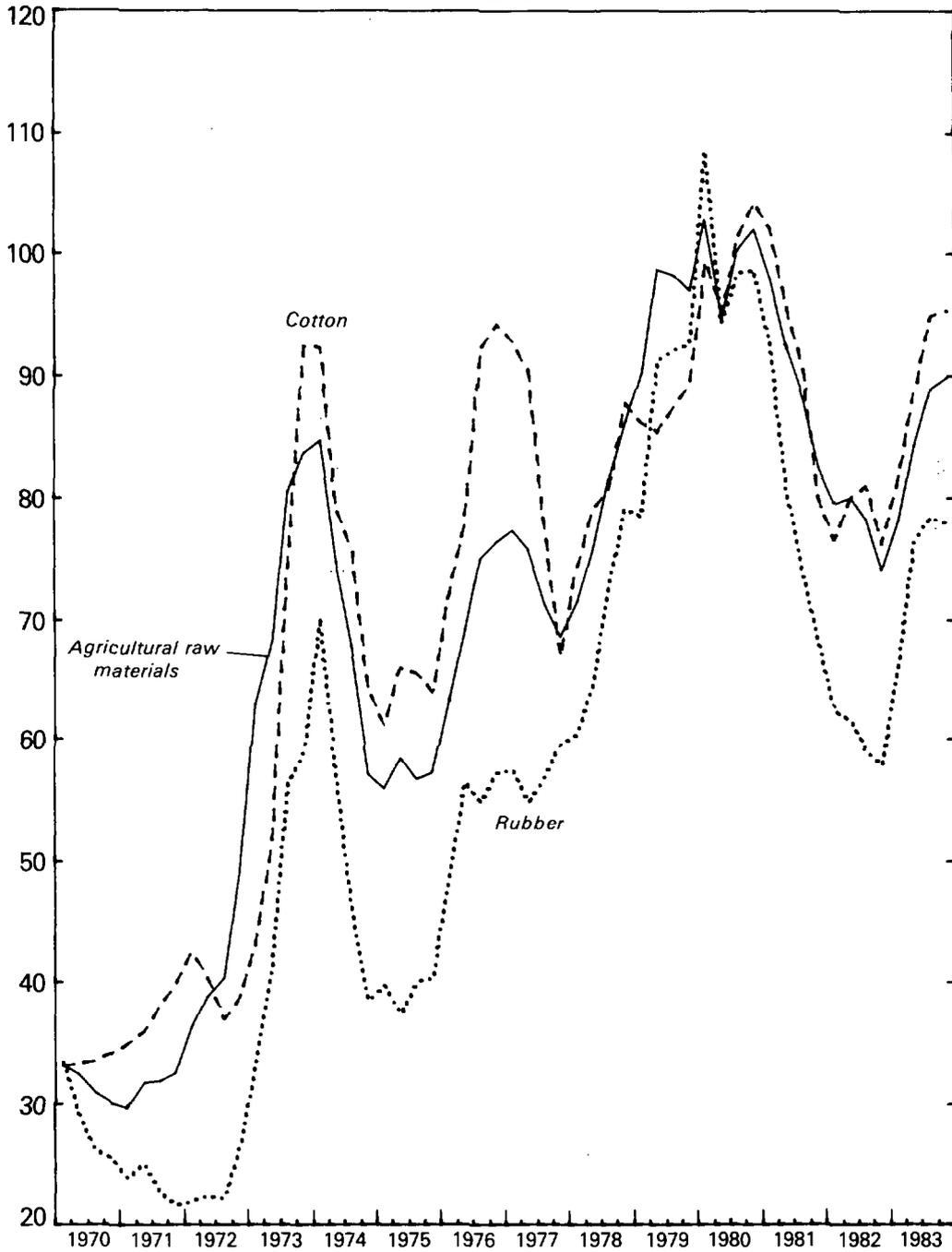




Table 17. Agricultural Raw Material  
Price Movements and the Business Cycle

(Percentage change)

Periods <u>1/</u>	1972-77 Cycle			1978-83 Cycle		
	Increase 1972-74	Decrease 1974-75	Recovery 1976-77	Increase 1978-80	Decrease 1981-82	Recovery 1983
Cumulative						
Agricultural raw materials	130	-24	32	25	-28	22
Of which:						
Cotton	98	-19	41	29	-27	25
Rubber	164	-29	36	36	-41	35
Annualized						
Agricultural raw materials	40	-10	12	9	-12	8
Of which:						
Cotton	31	-8	15	11	-12	9
Rubber	47	-13	13	13	-19	13

1/ The periods are defined as follows:

The 1972-77 cycle

Price increase: 1972Q1-74Q2; Decrease: 1974Q3-75Q4; Recovery: 1976Q1-77Q2

The 1978-80 cycle

Price increase: 1978Q4-80Q4; Decrease: 1981Q1-82Q4; Recovery: 1983Q1-83Q4.

By the end of the decade, demand for cotton exceeded supply, and stocks were reduced from their mid-1975 record level of 7 million tons to 5 million tons by July 1980. During 1980, the supply/demand imbalance increased as reflected in a further decline in stocks. Consequently, prices continued to strengthen, peaking at 99 cents per pound in December 1980. The sustained recovery in prices since early 1979, however, stimulated production, and the 1981/82 crop was a record 15.4 million tons. At the same time, the downturn in economic activity in industrial countries and high interest rates, which caused mill owners to minimize their holdings of cotton inventory, resulted in a drop in demand, and stocks were again accumulated, and cotton prices plummeted to a low of 68 cents per pound in December 1981. Although production declined the following year, demand recovered only marginally and prices remained weak throughout 1982 and early 1983. Prices began to recover by the second quarter of 1983, peaking at 91 cents per pound in August 1983. Despite the large stock overhang, price expectations were buoyed by the world economic recovery and by the implementation of a payment-in-kind program by the United States--the leading world cotton producer--by which government-held stocks would be used as compensation to farmers for withholding land from cotton production. Price expectations were further reinforced as poor weather conditions severely damaged the 1983/84 U.S. crop and as Pakistan's projected crop outturn had to be lowered because of adverse weather. Cotton production in the United States is estimated to have fallen to 1.7 million tons, only two thirds the level of the previous year. Prices, however, began to moderate toward the end of 1983 and through the first quarter of 1984, in part because the shortfall in U.S. production is projected to be partially offset by increased output in the Southern Hemisphere and because the mill demand has failed to rebound as strongly as previously anticipated. The recent weakening of world oil prices has increased the competitiveness of synthetic fibers, and mill owners have maintained low inventory levels because of the prevailing high interest rates. Nonetheless, stocks are expected to decline slightly to 5.5 million tons by July 1984 (Table 18).

Of the three main world cotton producers--the United States, the U.S.S.R., and China--the United States and the U.S.S.R. are also the dominant world suppliers, accounting for about one half of global exports, followed by Pakistan. China, although doubling output in the last ten years, continues to be a net importer, reflecting its rapidly expanding textile manufacturing sector. Egypt and the Sudan, although producing less than five percent of world cotton, are the principal suppliers of extra-long staple fibers which, highly valued for spinning into strong thread and fine yarns, command a price premium. During the mid-1970s extra-long fiber prices were more than double those of medium fiber, but production responses in the United States and the U.S.S.R. narrowed the differential by half in the early 1980s. During the recession, however, demand for medium staple weakened more than that for long staple and the premium for long-staple cottons increased again. The sharp decline in U.S. production of all cotton varieties in the 1983/84 crop year has further strengthened prices for extra-long staple. The recently announced 1983/84 Egyptian crop prices are 25-30 cents above those set for the 1982/83 crop, an increase of about one fifth.

Table 18. Cotton: World Commodity Balance, 1979/80-1983/84

(In millions of tons)

July/June Years	Production	Consumption	End-of-Period Stocks	Trade <u>2/</u>
1975/76	11.7	13.3	5.6	4.2
1976/77	12.5	13.2	4.9	3.9
1977/78	14.0	13.2	5.7	4.1
1978/79	13.0	13.6	5.1	4.3
1979/80	14.1	14.2	5.0	5.1
1980/81	14.0	14.4	4.6	4.3
1981/82	15.4	14.2	5.8	4.5
1982/83	14.9	14.6	6.1	4.0
1983/84 <u>1/</u>	14.3	14.9	5.5	4.0

Sources: International Cotton Advisory Committee, Cotton-World Statistics (Washington, D.C.), Vol. 37 (October 1983), pp. 57, 68, 77, and 81; Liverpool Cotton Services, Ltd., Cotton Outlook (Merseyside, England), Vol. 62 (January 22, 1984), p. 9.

1/ Projected.

World trade in cotton has declined from its 1979/80 level of 5 million tons, reflecting mainly the downturn in world industrial activity and the increase in protectionist measures with respect to trade in textiles. Moreover, China has gradually reduced its reliance on imported cotton to meet its domestic requirements. Trade in 1983 has remained stagnant, adversely affected by the sharp reduction in supplies available for export in the United States. Import demand from developing countries is expected to remain depressed in 1983/84, reflecting the sustained weakness of the balance of payments positions of these countries.

Cotton prices are projected to weaken over the next year and a half as increased supplies exceed rising demand, but to recover somewhat thereafter. Production is projected to rebound in 1984/85 but subsequently to stabilize at a lower level. Land planted to cotton is projected to increase, and the 1984/85 crop may approach the record level of 1981/82, partly in response to the high prices now prevailing and partly because the U.S. payment-in-kind program has been terminated and farmer participation in the U.S. reduced-acreage program (RAP) is expected to be low. Demand for cotton is projected to increase, and increased consumer spending in evidence at the end of 1983 and early 1984 is projected to spur growth in textile production and set the stage for a sustained recovery in cotton demand.

## 2. Rubber

Natural rubber prices fluctuate widely in response to relatively small shifts in demand because, in the short run, natural rubber supply is insensitive to price changes. The sharp rise in oil prices, growth in the world economy, and inflation caused natural rubber prices to double between 1972 and 1973 and to peak at a level of 34.1 cents per pound in 1974. The subsequent economic recession in industrial countries and a sharp reduction in motor vehicle production caused natural rubber prices to decline by 26 percent in 1975. Prices recovered by 38 percent in 1976 and continued to rise until 1980 when they reached a level of 64.6 cents per pound. However, as the effects of the 1981-82 recession began to be reflected in lower industrial demand for rubber, prices began to decline in 1981, and by 1982 the annual average price had declined to 38.9 cents per pound--a level some 40 percent lower than the average price of 64.6 cents per pound in 1980. The upturn in economic activity in 1983 in the industrial countries resulted in increased demand for rubber, which caused rubber prices to recover by 24 percent.

Though the recovery in rubber prices after the 1974-75 recession was more rapid than after the 1981-82 recession, the pattern of both price recoveries was quite similar. Almost all of the recovery took place in the first half of the first post-recession year, while prices remained relatively stable in the second half. Prices recovered by 40 percent between the fourth quarter of 1975 and the second quarter of 1976, compared with a recovery of 42 percent for the period between the fourth quarter of 1975 and the fourth quarter of 1976. Similarly, prices recovered by 33 percent between the fourth quarter of 1982 and the second quarter of 1983, while

they recovered by 32 percent in the four quarters ended in December 1983. They continued to increase in the first quarter of 1984, reaching an average level 6 percent higher than the 1983 average.

World natural rubber production, which had increased steadily from 3.32 million tons in 1975 to 3.86 million tons in 1979, declined to 3.69 million tons in 1979 before recovering to 3.78 million tons in 1982 and 3.80 million tons in 1983 (Table 19). The rate of increase in natural rubber production between 1975 and 1982 varied considerably among the five main rubber producing countries, Malaysia, Indonesia, Thailand, India, and Sri Lanka, which together account for more than 85 percent of total world natural rubber production. Production between 1975 and 1982 increased by 4 percent in Malaysia, 7 percent in Indonesia, 22 percent in Thailand, and 56 percent in India, but declined by 16 percent in Sri Lanka. World natural rubber consumption increased from 3.37 million tons in 1975 to 3.87 million tons in 1979 before declining to 3.60 million tons in 1982. In 1983 world consumption is estimated to have recovered to 3.75 million tons. Reflecting these movements in production and consumption, total year-end stocks of natural rubber increased from 1.55 million tons in 1979 to 1.91 million tons in 1983, and the ratio of total year-end stocks to consumption increased from 0.40 in 1979 to 0.51 in both 1982 and 1983. Purchases by the buffer stock of the International Natural Rubber Organization are estimated to have amounted to 50,000 tons in 1981, 210,000 tons in 1982, and 10,000 tons in 1983.

Very little natural rubber is consumed in most of the major natural rubber producing countries; domestic consumption accounted for less than 7 percent of total production in Malaysia, Indonesia, Thailand, and Sri Lanka. India, which is a net importer of natural rubber, is an exception in this regard. In line with movements in world natural rubber production, exports of natural rubber increased from 2.92 million tons in 1975 to 3.33 million tons in 1979 before declining to 3.06 million tons in 1982. In 1983, the level of exports is estimated to have recovered to 3.13 million tons. Aggregate earnings from natural rubber exports by the four major exporting countries--Malaysia, Indonesia, Thailand, and Sri Lanka--declined by 28 percent, from SDR 2.8 million in 1979 to SDR 2.1 billion in 1982.

Tires and nontire use in automotive products account for more than two thirds of world natural rubber consumption, and cyclical fluctuations in world motor vehicle production cause short-run shifts in rubber demand. There is a close relationship between cyclical swings in motor vehicle production and industrial production, but the former tend to be much wider than the latter. Oil price changes affect both the supply and the demand for natural rubber through their immediate effects on the relative cost structures of the synthetic and natural rubber industries as well as their lagged effects on the level of world economic activity and, in particular, on the motor vehicle and tire industries. About 70 percent of the total cost of producing synthetic rubber consists of the costs of petrochemical feedstocks and energy inputs. On the other hand, energy-related inputs account for only about 15 percent of the total cost of producing natural rubber.

Table 19. Rubber: World Commodity Balance, 1975-83

('000 tons)

	Opening Commercial Stocks	Production	Deliveries from Government Stockpiles	Current Supply	Consumption	Closing Commercial Stocks	INRO <u>1/</u> Stocks	Total Year-End Stocks	Exports
1975	1,590	3,315	15	4,920	3,368	1,552	--	1,552	2,920
1976	1,552	3,585	3	5,140	3,505	1,635	--	1,635	3,165
1977	1,635	3,615	--	5,250	3,715	1,535	--	1,535	3,210
1978	1,535	3,745	--	5,280	3,725	1,555	--	1,555	3,250
1979	1,555	3,860	--	5,415	3,870	1,545	--	1,545	3,325
1980	1,545	3,845	--	5,390	3,760	1,630	--	1,630	3,265
1981	1,630	3,690	1	5,321	3,650	1,621	50	1,671	3,100
1982	1,621	3,780	--	5,401	3,600	1,591	260	1,851	3,060
1983 <u>2/</u>	1,591	3,800	--	5,391	3,750	1,641	270	1,911	3,125

Sources: International Rubber Study Group, Rubber Statistical Bulletin (London), various issues; and Fund staff estimates.

1/ International Natural Rubber Organization.

2/ Estimated.

The second oil price shock of 1979-80, the weakening of economic activity, and the rise in interest rates during 1981-82 adversely affected rubber demand and caused a drop in rubber prices. Purchases of 270,000 tons by the buffer stock of the International Natural Rubber Agreement between 1981 and January 1983 succeeded in arresting the price decline and in stabilizing prices within the range of the Agreement.

If the recovery in economic activity in the industrial countries is sustained and becomes more widespread, oil prices remain stable, and interest rates do not rise significantly, world demand for rubber should increase in both 1984 and 1985. World natural rubber consumption is likely to exceed world production and prices are likely to increase further in both years. To the extent that buffer stock sales are likely to be made during the next year or two, they would exercise a stabilizing influence on price movements.

### 3. Other agricultural raw materials

The cyclical downturn in economic activity in early 1981 and high international interest rates were reflected in both a drop in wool textile demand and reduced raw wool inventories held by mill owners. The decline in demand initially affected only the prices of coarse wool, which in 1981 averaged 9 percent lower than in 1980. Prices for fine wool, on the other hand, strengthened slightly in 1981, reflecting drought-reduced supplies from Australia, the main world producer of fine wools, and only a moderate weakening of demand. During 1982, demand for all varieties of wool weakened further, and prices for both fine and coarse wools fell sharply, despite continued supply constraints. By the first quarter of 1983, prices for coarse wool had fallen to an average of \$3.07 per kilogram, compared with the peak of \$4.45 per kilogram averaged in the first quarter of 1980, while prices for fine wool reached their lowest level in April 1983. While global wool consumption declined throughout the recession, world trade in wool increased slightly, averaging around 720 thousand tons in 1981/82-1982/83 (years ending July) compared with 713 thousand tons averaged in the three previous years. Export sales were facilitated by currency devaluations of major Southern Hemisphere producers.

Wool prices have strengthened somewhat since early 1983 in response to the recovery in economic activity in industrial countries and to a projected reduction in the 1983/84 wool clip. By the first quarter of 1984, they were 14 percent higher than the average for 1983 as a whole. The aftermath of the effects of the Australian drought on the wool clip has been compounded by reduced flocks in southern Africa, also as a result of drought conditions. Wool prices in the near term are projected to increase moderately, dampened in part by the existence of a large stock overhang. Moreover, although mill activity is projected to strengthen gradually, wool is expected to continue losing its market share to other fibers.

After rising from \$300 per ton in 1976 to \$404 in 1978, jute prices <sup>1/</sup> declined to \$283 by 1981 before recovering to \$288 in 1982 and \$303 in 1983. The high prices in 1978 encouraged world production to increase to about 4.0 million tons in 1978/79 and 1979/80. With world consumption declining from its peak of 3.8 million tons in 1978 to 3.5 million tons in 1983, by the end of the 1979/80 season, world carryover stocks had reached an unusually high level of 1.6 million tons.

The low prices of 1981 and 1982 discouraged production, and world consumption has exceeded production in each of the last three seasons. By the end of the 1982/83 season, the level of carryover stocks had been reduced to 0.5 million tons. As a result, jute prices recovered sharply in the fourth quarter of 1983 to about \$355 per ton and further to \$410 in the final quarter of 1984. An improvement in producer prices prior to the sowing of the 1983/84 crop is expected to result in a larger crop. Jute prices are expected to remain high during the rest of the 1983/84 season, but to decline during the second half of 1984 as the supply situation eases.

The supply of hides and skins varies with cyclical fluctuations in the world cattle cycle. The expansionary phase of the cattle cycle, which was expected to begin in 1981, was delayed by reduced demand and lower prices for beef and veal due to the adverse effects of the world economic recession and drought conditions in Australia and South Africa. The overall level of cattle and calf slaughterings is estimated to have increased in 1981 and to have declined slightly in 1982. However, in the United States, the country with the world's largest exportable surplus of hides and skins, slaughterings increased by about 3 percent in 1982. In 1983, the overall level of world slaughterings is estimated to have increased marginally, because the decline in slaughterings in the Southern Hemisphere was probably outweighed by an increase in slaughterings in the United States and the EEC.

Between 1980 and 1982, demand for hides and skins declined because of the world recession and high interest rates, which forced importers to reduce their stocks of raw hides and skins. The combination of weak world demand and continuing large supplies caused hide prices to decline by 47 percent from their cyclical peak of 73.1 cents per pound in 1979 to 38.6 cents per pound in 1982. Prices are estimated to have recovered to 45.1 cents per pound in 1983. With a projected recovery in beef prices in 1984 and 1985, heifer retentions to build up the breeding herd are expected to increase, and this should result in reduced slaughterings and a gradual tightening of supplies of hides and skins. The prospects of continued recovery in the world economy suggest that consumer demand for leather products may be expected to increase. In addition, the present low level of stocks of raw hides and skins in importing countries should contribute to a rise in world import demand. This is likely to result in price increases for hides and skins during 1984 and 1985.

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<sup>1/</sup> Annual average price per long ton of Bangladesh white "D" grade jute.

After a sharp surge to \$835 per metric ton in the second half of 1979, sisal prices declined steadily over the following three years, reaching a level of \$565 in 1983. Responding to the high prices of 1979, world production of sisal and henequen increased by 11 percent in 1980 to a level of 509 thousand tons. Production declined to 485 thousand tons in 1981 and remained at that level in 1982. In 1983, production is estimated to have declined to 477 thousand tons.

Agricultural baler and binder twine are the principal end uses for sisal, and variations in the size of the hay crop in Western Europe and the United States are the main cause of short-term fluctuations in sisal demand. Over the long term, demand for sisal has been declining because of the development of nontwine haymaking techniques and competition from synthetic polypropylene twine. Exports of sisal and henequen fibers and manufactures have declined steadily from 403 thousand tons in 1979 to 388 thousand tons in 1980, 337 thousand tons in 1981, and 267 thousand tons in 1982.

In 1983 exports are expected to recover to a level of about 325 thousand tons, largely on account of increased exports from Brazil, the largest producer, due to a sharply devalued cruzeiro and the introduction of export tax compensation measures. Polypropylene resin prices are expected to strengthen as the economic recovery gains momentum and the demand for polypropylene increases. This should improve sisal's competitive position. In addition to weather conditions in the main producing countries, pricing policy in Brazil is likely to be a major factor affecting supplies over the near term. The large level of fiber stocks in Brazil and the stock of twine carried over from the 1982/83 season are likely to exert a depressing effect on the market. Consequently, only a very modest recovery in prices is in prospect for the next two seasons.

#### V. Metals

As in the case of agricultural raw materials, metal prices tend to move in concert with the business cycle because of metals' primary use as an industrial input. During the 1972-77 and 1978-83 business cycles, metal prices as a group responded predictably to movements in world industrial activity, except in 1983, when large stocks and excess production capacity prevented prices from recovering (Table 20 and Chart 5).

After recovering from the effects of the 1975 recession, metal prices rose steadily and peaked in 1980, but then fell in 1981 and 1982. For many metals, real prices in 1982 were the lowest in the last three decades and, for a large number of producers, prices were below the cost of production. In 1983 metal prices recovered somewhat in the first half of the year from their low levels of 1982, but then weakened in the latter part of the year and remained relatively low in the first quarter of 1984. The pattern, however, has been uneven among the various products; aluminum prices have already recaptured much of their previously lost ground, and zinc has also achieved substantial short-term gains. In contrast, copper prices, which rose from a low of 59 cents per pound in June 1982 to 80 cents per pound

Table 20. Metals Price Movements and the Business Cycle

(Percentage change)

Periods <u>1/</u>	1972-77 Cycle			1978-83 Cycle		
	Increase 1972-74	Decrease 1974-75	Recovery 1976-77	Increase 1978-80	Decrease 1981-82	Recovery 1983
Cumulative						
Metals	129	-36	17	35	-21	1
Of which:						
Copper	168	-58	17	41	-26	-3
Iron ore	63	12	-6	38	-4	-9
Tin	158	-32	55	20	-22	4
Aluminum	17	9	32	45	-31	15
Annualized						
Metals	39	-17	7	13	-9	0
Of which:						
Copper	48	-29	6	15	-11	-1
Iron ore	22	4	-2	14	-2	-4
Tin	46	-14	19	7	-10	2
Aluminum	6	3	12	16	-14	6

1/ The periods are defined as follows:

The 1972-77 cycle

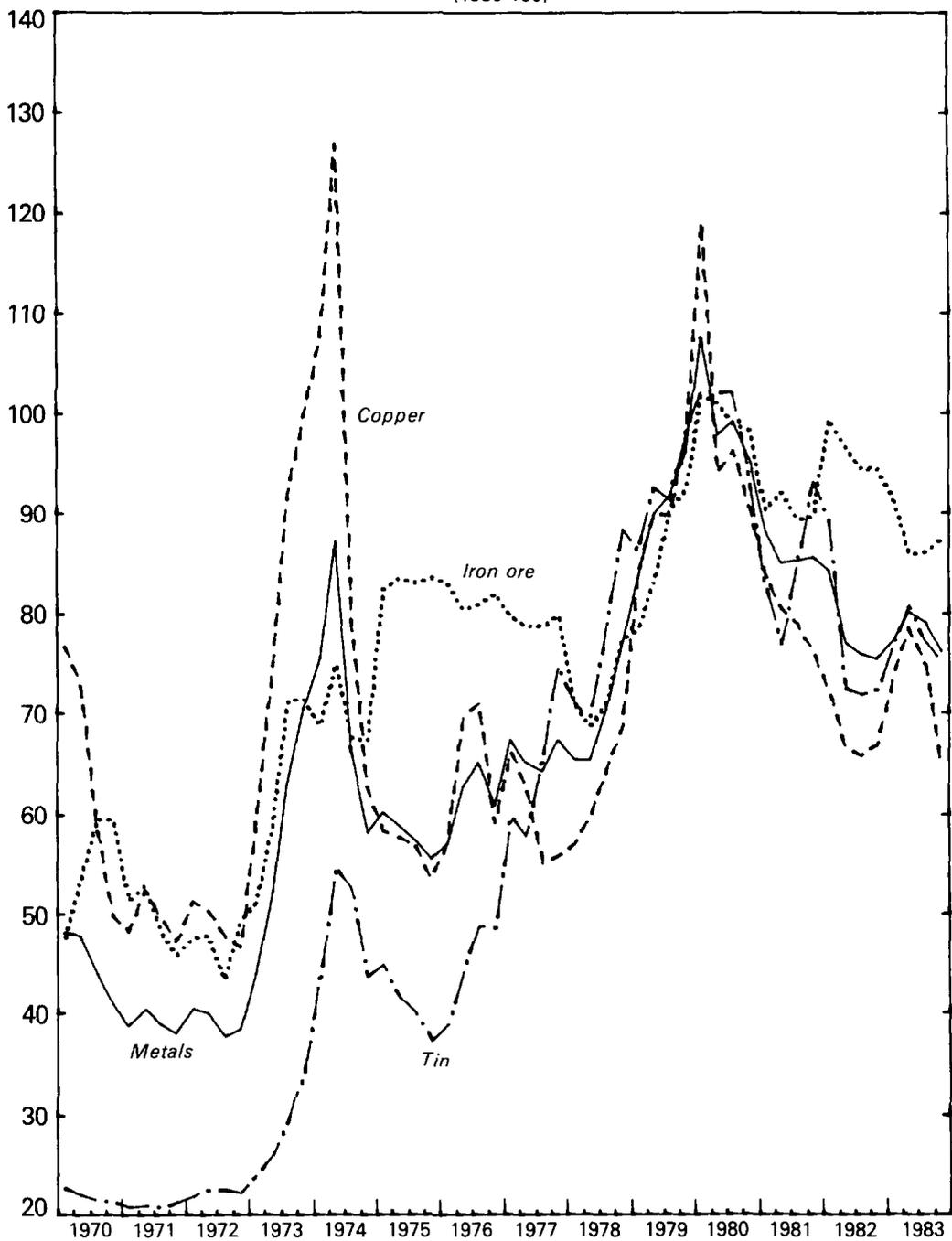
Price increase: 1972Q1-74Q2; Decrease: 1974Q3-75Q4; Recovery: 1976Q1-77Q2

The 1978-80 cycle

Price increase: 1978Q4-80Q4; Decrease: 1981Q1-82Q4; Recovery: 1983Q1-83Q4.

### CHART 5 METALS: RECENT PRICE MOVEMENTS

(1980=100)





in May 1983, subsequently lost nearly all the gains and have averaged about 65 cents per pound in the first quarter of 1984. Tin prices have shown virtually no movement for some time; nickel has also stagnated; and lead remains only slightly above its real 30-year low. The price outlook for metals in 1984-85 hinges on developments in the world economy. Apart from world economic developments, special factors affecting demand, such as civil disturbances and government stockpiling, and factors affecting supply, such as strikes and major mine disasters, would have only a temporary influence on prices. The Sixth International Tin Agreement is the only international commodity agreement in the area of metals.

### 1. Copper

The major end use for copper is in the electronics industry, followed by the construction and transportation industries. Because these industries are extremely sensitive to changes in economic activity, copper prices are particularly sensitive to the business cycle; estimates of the elasticity of economic activity with respect to demand for copper often exceed unity.

After rising rapidly in 1979 and 1980 to reach 99 cents per pound in the latter year, the London Metal Exchange (LME) spot price of high-grade copper cathodes fell to 79 cents per pound in 1981 and 67 cents per pound in 1982. In 1983 the price averaged 72 cents per pound. The average price for the first half of 1983 was 75 cents per pound compared with 69 cents for the first half of 1982. The second half of 1983 showed an average price of 69 cents compared with 66 cents for the second half of 1982. In the first two quarters of 1983, the LME price rose (from 71 cents per pound in January to 80 cents per pound in May), but then declined to 74 cents per pound in the third quarter and 64 cents per pound in the fourth quarter before rising slightly to 65 cents per pound in the first quarter of 1984.

Notwithstanding large production cutbacks and mine closures in North America in 1982, world mine production of copper fell by only one percent (Table 21). This small decline was due to the fact that Chile, Zaire, and Zambia increased their production. World smelter production declined even less, because activity in the secondary sector did not slow down as it had in previous sharp market recessions because of the easy availability of cheap, good quality scrap that would normally have gone to brass mills. Refined production declined by only 1.7 percent. Refined consumption, however, fell by 4.5 percent to 9.1 million tons, its lowest level since 1976. As a result of this widening supply-demand imbalance, total stocks of refined copper (i.e., commercial stocks) increased to 1.5 million tons, equivalent to about two months of consumption; stocks at the end of 1982 stood at their highest level since 1978. According to preliminary statistics, mine production in the first nine months of 1983 fell by approximately 5 percent compared with the same period in 1982. Regarding refined production, however, preliminary figures for the first nine months of 1983 point to an increase of 2.5 percent compared with the corresponding period in 1982. But again as in 1982, refined consumption fell by roughly 2 percent in the first nine months of 1983 compared with the same period in 1982. Consequently, world commercial stocks of copper rose to 1.56 million tons at the end of August 1983.

Table 21. Copper: World Commodity Balance, 1974-83

(In millions of metric tons)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983 <u>1/</u>
Mine production	7.67	7.34	7.86	7.8	7.85	7.93	7.86	8.30	8.22	5.89
Smelter production <u>2/</u>	7.88	7.53	7.97	8.14	8.08	8.12	7.94	8.35	8.30	6.23
Refined production	8.90	8.34	8.79	9.10	9.23	9.37	9.39	9.69	9.53	7.32
Refined consumption	8.34	7.46	8.55	9.05	9.53	9.83	9.39	9.50	9.07	6.66
Total exports	4.85	4.31	4.63	4.87	4.65	4.64	5.05	4.85	5.10	3.56
Of which:										
Refined	(2.80)	(2.51)	(2.63)	(2.69)	(2.71)	(2.67)	(3.00)	(2.66)	(2.72)	(2.23)
Total imports	4.63	4.02	4.40	4.60	4.79	4.67	4.95	4.64	4.96	3.52
Of which:										
Refined	(2.71)	(2.33)	(2.73)	(2.83)	(3.09)	(3.00)	(3.22)	(2.68)	(2.85)	(2.09)
Total stocks	1.41	2.10	2.17	2.34	1.88	1.45	1.36	1.44	1.85	1.84
Of which:										
Refined	(1.05)	(1.74)	(1.83)	(1.96)	(1.53)	(1.09)	(1.03)	(1.09)	(1.50)	(1.56)

Source: World Metal Statistics (London), various issues.

1/ Preliminary January-September data, except for stocks, which are end-August figures.

2/ Metal produced in the form blister and anodes from ores, concentrates, other primary materials and secondary blister produced from scrap.

In contrast to consumption, world trade in copper increased in 1982 by more than 5 percent to 5.1 million tons. Approximately 70 percent of world trade is in the form of refined copper. Major exporters include Canada, Chile, Papua New Guinea, Peru, the Philippines, Zaire, and Zambia, while major importers are the EC, Japan, and the United States.

Prospects for a significant recovery in the price of copper over the short term is not considered good. Stocks remain very large, and global production continues at a high level, a situation which has been exacerbated by reactivation of previously idle mines. Growth in world consumption has not kept pace with the growth of world supply, and it may take a considerable period of time before the supply imbalance is rectified. On present expectations, only a minor reduction in world stocks is expected by the end of 1984, although the reduction could be greater if China remains a substantial buyer in 1984. The forecast rise in overall consumption in 1984, however, may, in itself, cause some strengthening of the market, but such a development does not assume a return to normal capacity utilization; if that occurs, the global oversupply situation will continue to dampen any positive effects stemming from growth in consumption during 1984 and 1985.

## 2. Iron ore

Iron ore is used to produce primary iron (pig iron and sponge iron), which in turn is converted into steel. Demand for iron ore, therefore, is a derived demand, depending not only on the demand for steel but also on the input-output coefficient for converting iron to steel.

The price of iron ore increased by 6.5 percent in 1982 to 26.2 per ton after having declined by 10 percent in 1981. This increase in the negotiated contract price partly reflected the concern of consumers about the financial viability of producers and continuity of supplies. Preliminary data indicate that in 1983, however, the price declined to less than \$24 per ton. The price in the first half of 1982 averaged \$26.7 per ton, but it declined to \$25.7 per ton in the second half of the year as demand began to decline sharply, compared with \$24.4 in the second half of 1981. The decline that started in the second half of 1982 has continued, resulting in a price of \$24.2 in the first half of 1983. Preliminary data show a price of \$23.4 per ton for the second half of 1983 and \$23.2 for the first quarter of 1984.

Production of iron ore increased in 1979, but has declined since then by about 2 percent in 1980, by about 3 percent in 1981, and by about 10 percent in 1982. <sup>1/</sup> The same trend could be observed in the exports of iron ore, production of pig iron, and steel (Table 22). In 1980, industrial countries accounted for 34 percent of world production of iron ore,

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<sup>1/</sup> No statistics of iron ore consumption are published, and iron ore consumption can be estimated by either (1) estimation on the basis of apparent consumption, i.e., production minus exports plus imports, or (2) estimation on the basis of pig iron production by using appropriate input-output coefficients. The second method is probably preferable to the first.

Table 22. Iron Ore: Production and Trade; and Pig Iron and Steel Production, 1974-83

(In millions of tons)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983 <u>1/</u>
Iron ore										
Production	901	902	893	840	841	880	876	852	759	762
Exports	410	379	379	357	350	390	386	362	316	...
Imports	408	372	380	364	350	399	383	336	317	...
Pig iron										
Production	504	469	489	488	507	529	507	499	453	455
Crude steel										
Production	708	647	678	676	717	747	714	710	645	650

Sources: The Iron Ore Industry (Geneva), various issues; World Steel in Figures (Brussels), various issues.

1/ Estimates.

developing countries for 29 percent, and centrally planned economies for 37 percent. The largest producers were: the U.S.S.R., Australia, Brazil, China, the United States, Canada, India, France, South Africa, Sweden, Liberia, and Venezuela. The growth rate of world consumption of iron ore in the 1970s was less than that of steel production because of greater efficiency in converting iron into steel. The rapid increase in steel production in the 1960s was facilitated by a corresponding high rate of increase in iron ore production; large investments in new mining capacity followed in the late 1960s and early 1970s. The deceleration in growth of steel demand in the 1970s caused significant excess capacity to develop in the industry and many mining projects to be cancelled. In addition, the input-output coefficient for converting iron ore to crude steel declined from 1.37 in 1960 to 1.25 in 1980.

Most of world trade in iron ore is priced under long-term contracts or between steel companies and wholly owned or controlled mines, leaving a small residual that is traded in the free market through spot or short-term delivery sales. Most long-term contracts are negotiated every year or every other year, and they generally follow with some lag changes in spot prices. World trade in iron ore declined by 6 percent in 1981 and by 13 percent in 1982 as a result of the recession.

Because of the depressed demand for steel, prices in contracts negotiated in 1983 for delivery in 1984 are about 8 percent below contract prices on shipments for 1983. With the world economic recovery gaining momentum, particularly in Europe and Japan, which are large importers of iron ore, a recovery is expected in contrast with prices negotiated in 1984 for 1985 shipment.

### 3. Tin

The major end use of tin, which is produced in the form of tin-in-concentrates and primary tin metal, is in tinsplate, which is used primarily in the canning industry. Tin is the only metal for which an international commodity agreement exists, first negotiated in July 1956. The agreement currently in operation, the Sixth International Tin Agreement (ITA), came into force on July 1, 1982.

After the 1975 recession, tin prices rose steadily to a peak of 761 cents per pound in 1980. Subsequently, they fell by 16 percent in 1981 and by 9 percent (to 582 cents per pound) in 1982 as demand declined during the 1981-82 recession. The price averaged 549 cents per pound in the second half of 1982 compared with 678 cents per pound in the corresponding period of 1981. In the first half of 1983, the price rose somewhat (to 599 cents per pound) from the previous six-month period, but it was still below the price for the first half of 1982 (615 cents per pound). In the second half of 1983, however, the price averaged 579 cents per pound, and in the first quarter of 1984, it averaged only 557 cents per pound.

Non-Socialist world production of tin-in-concentrates reached a high of 204.7 thousand tons in 1981, but then fell to 190.4 thousand tons in 1982 (Table 23). Production of tin metal, however, reached its peak (201.2 thousand tons) in 1979 and declined to 180 thousand tons in 1982; estimates for 1983 show a further decline in production of both tin-in-concentrates and tin metal. Consumption of tin metal declined even faster, from 185.6 thousand tons in 1979, to 157.0 thousand tons in 1982; estimates for 1983 indicate that consumption of tin metal stabilized at its low 1982 level. The decline in consumption since 1979 has been mainly the result of the recession in industrial countries, which account for 85 percent of total world consumption of tin. Also, a long-term downward trend in the demand for tin has existed since the early 1970s because of increasing substitution of other materials, such as aluminum, plastic, and glass, in the canning industry. As world demand for tin in recent years has fallen more than world supply, world commercial stocks of tin metal (excluding those held under the ITA) have risen from the equivalent of 15 percent of world consumption at the end of 1979 to 43 percent at the end of 1982. Commercial stocks at the end of March 1983 (the latest date for which data are available) are provisionally estimated at about 72 thousand tons or about 45 percent of the world annual consumption of primary tin metal.

More than 80 percent of trade of tin is in the form of metal. Major tin exporters are Australia, Bolivia, China, Indonesia, Malaysia, Nigeria, Thailand, and Zaire; their combined exports of tin metal declined more than 10 percent from 1980 to 1982.

Market intervention operations under the ITA take the form of purchases and sales of tin by the Buffer Stock Manager of the International Tin Council (ITC); since April 27, 1982, however, such operations have also included the imposition of export controls. Through these interventions, the ITA has been able to support the tin price and prevent it from falling below the floor of the ITC price intervention range. Since the price of tin in the last two years has remained in the lower sector of the ITC's intervention range, the buffer stock of the Sixth ITA has been a net buyer and its tin holdings have increased from 27,766 tons on July 1, 1982, to 33,723 tons on September 30, 1983. In addition, some 23,707 tons continue to be held under the authority of the Fifth ITA, which expired at the end of June 1982. Export controls currently in effect call for about a 40 percent cutback from the 1981 average quarterly exports.

Although it is expected that the recovery in the world economy will improve the demand for tin in the short term, the existence of a large volume of stocks is likely to dampen the extent of a price recovery in the short term.

#### 4. Aluminum

Aluminum, whose primary uses are in the construction, transportation, and packaging industries, is obtained from two basic sources: (1) bauxite ores, which are refined into alumina and then processed into aluminum; and (2) aluminum from scrap. Aluminum metal has relatively low density, high

Table 23. Tin: World Commodity Balance, 1974-83

(In thousands of tons)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Production of tin-in-concentrates <u>1/</u>	183.6	181.2	180.0	188.4	196.8	200.4	200.9	204.7	190.5	174.1 <u>2/</u>
Production of primary tin metal <u>1/</u>	181.7	178.4	181.5	180.3	192.2	201.2	198.0	196.6	180.0	160.8 <u>2/</u>
Consumption of primary tin metal <u>1/</u>	200.1	172.6	193.7	184.7	185.0	185.7	174.2	162.7	157.1	159.4 <u>2/</u>
Exports	223.0	201.1	193.1	202.1	217.1	218.1	221.9	223.6	193.6	84.9 <u>3/</u>
Of which:										
Tin metal	(174.9)	(154.4)	(154.9)	(159.5)	(177.9)	(184.6)	(189.0)	(198.1)	(169.5)	(66.8) <u>3/</u>
Imports	214.6	201.5	206.9	210.4	211.6	219.0	199.4	185.7	151.7	86.6 <u>3/</u>
Of which:										
Tin metal	(167.2)	(148.7)	(169.6)	(166.7)	(170.4)	(176.9)	(165.8)	(156.9)	(123.9)	(68.7) <u>3/</u>
Stocks	50.3	59.2	46.5	44.3	43.6	39.2	43.0	53.2	86.8	90.9 <u>4/</u>
Of which:										
Tin metal	(40.0)	(43.5)	(38.7)	(35.9)	(33.7)	(28.0)	(32.8)	(43.2)	(67.4)	(71.7) <u>4/</u>

Source: International Tin Council, Monthly Statistical Bulletin (London), various issues.1/ Excluding CMEA countries and the People's Republic of China.2/ Estimates.3/ January-June data.4/ End-of-March data.

electrical and thermal conductivity, good resistance to corrosion, and may be alloyed and treated to yield a high strength-to-weight ratio. Aluminum is available commercially as ingots with a minimum content of 99.5 percent aluminum. Higher prices are paid for purer grades. Ingots, molten aluminum, and aluminum scrap with alloying materials are transformed into mill products such as bars, rods, and wire.

Aluminum prices peaked at 85 cents per pound in 1980, but then fell to 74 cents in 1981 and to 64 cents in 1982. In 1983, although the average price for the year did not change much from the previous year, it rose considerably in the second half of the year to 69 cents per pound as a result of increased demand and reduced production; for the first time in history, the aluminum price has surpassed that of copper in recent months, averaging 72 cents per pound in the first quarter of 1984.

World production of primary aluminum rose from 14.8 million tons in 1978 to 16 million tons in 1980, but then fell to 15.7 million tons in 1981 and 14 million tons in 1982. Consumption of primary aluminum, however, rose from 15.3 million tons in 1978 to 16 million tons in 1979, but has since fallen (to 15.3 million tons in 1980, 14.5 million tons in 1981, and 14.2 million tons in 1982). The cutback in production in 1981 and 1982 was mainly due to weak demand resulting from recession in industrial countries. Concurrent with the trends in production and consumption, world stocks of primary aluminum, which had averaged about 2 million tons in 1978-80, climbed to an average of more than 3 million tons in 1981-82. In 1983, however, as the economic recovery got underway in industrial countries, demand for aluminum increased somewhat, and as production cutbacks continued for the most part, stocks were reduced (to 2.3 million tons at the end of October 1983) (Table 24).

Major net exporters of primary aluminum are Canada, Norway, Venezuela, Australia, New Zealand, and Ghana. Major net importers include the United States, Japan, the Federal Republic of Germany, France, Belgium, Italy, the United Kingdom, and China. Trade in primary aluminum has risen gradually in recent years, from an average of 3.5 million tons in 1978-79 to more than 4 million tons in 1982.

The short-term outlook for aluminum is good. Demand in 1984-85 is forecast to rise at an average rate of about 7 to 10 percent, and with supply also increasing somewhat, prices are expected to continue their upward trend or at least remain firm during this period.

## 5. Other metals

Zinc, whose main use is for galvanizing iron to prevent corrosion, and whose use in diecasting is declining, achieved quite high prices in 1981 (38 cents per pound compared with about 34 cents in 1979-80 and 27 cents in 1978), largely owing to a rather tight supply situation brought about by lengthy strikes in certain major producing countries. Prices fell in 1982 (to 34 cents per pound) as the recession in industrial countries deepened. In the second half of 1983, prices rose to about 38 cents

Table 24. Bauxite, Alumina, and Aluminum: Production, Consumption, Stocks, and Trade, 1974-83

(In millions of metric tons)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
<b>Bauxite</b>										
Mine production	84.3	76.5	79.5	84.8	83.9	89.1	93.3	88.7	78.2	16.8 <u>1/</u>
<b>Alumina</b>										
Production	24.3	22.1	22.7	25.2	25.1	26.0	28.1	26.6	22.2	17.0
<b>Aluminum</b>										
Primary production	13.8	12.7	13.1	14.2	14.8	15.2	16.0	15.7	14.0	16.2 <u>2/</u>
Primary consumption	13.9	11.3	14.0	14.4	15.3	16.0	15.3	14.5	14.2	7.1 <u>3/</u>
Secondary (scrap) production	2.8	2.5	3.0	3.2	3.2	3.5	3.5	3.7	3.7	1.9 <u>3/</u>
Primary stocks	2.0	3.1	2.3	2.5	2.1	1.5	2.1	3.3	3.2	2.3 <u>4/</u>
Exports	3.6	3.2	3.1	3.2	3.6	3.4	4.1	4.1	4.5	...
Imports	3.1	2.2	2.9	3.2	3.7	3.6	4.1	4.0	...	...

Source: World Bureau of Metal Statistics, World Metal Statistics (London), various issues.

1/ January-March data.

2/ January-September data.

3/ January-June data.

4/ End-October data.

per pound as the upturn in the world economy increased the demand for zinc. They continued to increase in the first quarter of 1984, attaining an average level of 45 cents per pound. Apart from aluminum, zinc has been the only other metal with a solid recovery in prices in recent months. A continuous recovery in zinc prices is expected in 1984 and 1985.

The quoted producer price for nickel was reduced from \$3.45 to \$3.20 per pound early in 1982 and has remained stationary ever since. Free market prices (e.g., LME price), however, were much lower and averaged \$2.20 in 1982 and \$2.10 in 1983. The reason for this stagnation is that nickel, which is used for alloys, especially with chromium for the purpose of producing stainless steel, has been in oversupply for more than two years. With production cutbacks by major producers, however, nickel prices may rise, although by a modest amount, in 1984 and 1985.

Lead's main use is for storage batteries and, to a declining extent, as a gasoline additive. Due to a severe winter in 1979, when frequent replacement of batteries was needed, lead prices rose to 55 cents per pound (from 30 cents in 1978), but has since declined rapidly (to 41 cents in 1980, 33 cents in 1981, 25 cents in 1982, and 19 cents in 1983 and in the first quarter of 1984). This has been due to the persistence of excess supply over demand. Prices could rise, albeit moderately, with an improvement in the economic climate, and in sympathy with increases in the prices of other nonferrous metals.

Table 25. Actual Prices: Index of Market Prices, in Terms of U.S. Dollars, for Primary Commodities Exported by Primary Producing Countries

(Base year 1968-1970)

COMMODITIES	WEIGHTS	1977	1978	1979	1980	1981	1982	1983	1982		1983	
									SEMIANNUAL			
ALL EXPORTS	100.0	249.2	238.9	277.8	301.9	257.2	226.7	241.9	234.5	218.8	232.3	251.5
FOOD AND BEVERAGES		314.2	281.1	308.2	338.7	281.5	246.4	266.9	256.4	236.3	252.5	281.2
FOOD	31.4	194.2	224.8	254.8	331.4	286.4	226.9	247.0	240.7	213.1	232.4	261.5
OILS AND OILSEEDS		27.1	235.6	259.0	270.8	255.3	256.5	183.8	230.6	198.1	169.5	186.3
GROUNDNUT OIL	7.2	258.7	330.1	271.9	262.7	319.0	179.0	217.5	200.9	157.1	152.7	282.3
COPRA	7.1	183.7	214.9	307.2	206.8	173.0	143.4	226.5	154.8	132.0	171.6	281.1
GROUNDNUT CAKE	4.7	226.8	213.5	219.9	251.0	249.0	197.0	204.3	202.4	191.7	180.9	227.6
FISH MEAL	4.5	273.5	247.0	237.9	303.9	281.7	213.1	272.6	219.2	207.1	258.2	287.1
PALM OIL	2.7	259.6	294.0	320.2	285.6	279.5	218.0	245.6	249.0	186.9	192.7	298.4
SOYBEAN MEAL	0.5	233.2	216.5	246.6	262.4	256.4	221.2	241.3	234.9	207.5	217.1	265.5
SOYBEANS	0.4	258.0	247.1	274.1	272.8	265.5	225.1	259.3	239.1	211.2	224.7	294.0
CEREALS	25.7	171.7	204.5	228.1	258.4	271.1	216.0	232.5	228.4	203.5	227.0	238.1
MAIZE	16.1	181.4	191.6	219.8	239.1	248.4	205.6	258.6	218.0	193.2	238.7	278.5
WHEAT	8.3	175.9	217.7	273.1	294.3	298.1	273.2	268.2	285.6	260.9	276.7	259.7
RICE	7.3	153.4	207.5	188.3	244.2	271.9	165.2	155.9	177.9	152.5	154.2	157.6
SUGAR	21.1	213.5	236.0	278.8	606.3	390.1	289.7	302.7	302.6	276.9	293.7	311.7
U.S. FREE MARKET	10.1	153.0	194.3	215.9	417.6	274.3	277.0	306.5	258.5	295.6	306.9	306.0
REC	7.5	266.2	256.5	316.8	940.8	554.4	275.9	277.8	337.8	213.9	248.0	307.5
REC	3.5	275.3	312.6	379.0	433.9	371.9	356.0	345.1	354.1	357.9	353.4	376.8
MEAT	18.5	152.1	208.5	261.8	270.1	247.3	230.0	218.3	239.1	221.4	218.8	217.8
BEEF	14.1	125.1	177.6	239.5	229.2	205.3	198.5	202.6	198.5	198.4	203.6	201.7
LAMB	4.4	238.6	307.7	333.2	400.9	382.0	332.1	268.6	369.3	294.9	267.7	269.5
BANANAS	7.6	171.2	179.8	204.3	235.2	251.2	234.9	269.1	265.8	204.0	278.2	260.0
BEVERAGES	18.2	100.0	521.3	378.2	400.2	351.4	273.2	279.9	301.3	283.4	276.4	287.2
COFFEE	67.1	579.6	391.0	428.6	381.1	288.8	313.3	323.2	313.2	313.3	313.8	332.7
ROBUSTA	34.8	619.3	408.2	458.0	407.3	284.8	307.3	343.5	298.4	316.2	337.0	350.1
OTHER MILDS	32.3	536.9	372.5	397.0	352.8	293.1	319.7	301.3	329.0	310.2	288.7	313.9
COCOA	19.7	494.9	444.4	429.9	339.9	271.1	227.4	276.6	244.9	209.9	252.3	295.9
TEA	13.2	259.5	211.2	208.1	214.9	194.8	186.3	224.2	186.8	185.9	194.8	253.7
AGRICULTURE												
RAW MATERIALS	22.5	100.0	221.8	238.6	290.9	302.9	273.4	236.0	258.5	241.6	230.5	245.8
COTTON	34.2	243.9	239.8	259.5	298.1	274.6	233.8	268.6	233.3	234.3	253.6	283.6
MEDIUM	23.1	244.5	246.7	264.4	321.3	287.8	248.6	288.3	247.9	249.2	270.5	306.1
LONG	11.1	242.6	225.4	249.2	249.6	247.2	203.1	227.6	203.0	203.1	218.2	237.0
WOOL	28.7	213.2	219.5	267.3	288.1	285.4	262.0	246.5	275.5	248.6	243.5	249.4
FINE	21.3	193.9	200.0	237.0	269.7	276.6	258.5	243.7	271.9	245.2	239.5	248.0
COARSE	7.4	268.8	275.8	335.3	341.2	310.8	272.1	254.3	285.9	258.4	255.0	253.5
RUBBER	23.1	189.2	228.9	293.2	330.9	260.8	199.2	247.2	204.9	193.6	235.8	258.6
HIDES	8.0	286.2	368.2	566.4	355.6	323.1	298.7	349.6	301.0	296.4	303.0	396.2
JUTE	4.0	117.2	146.1	141.3	115.1	102.2	104.0	109.5	108.4	99.5	100.8	118.3
Sisal	2.0	292.1	271.3	407.4	437.0	368.7	339.9	322.6	349.5	330.3	371.4	323.8
METALS	27.9	100.0	155.7	164.1	213.1	235.8	202.8	184.2	184.0	190.1	178.3	185.4
COPPER	48.6	95.5	99.5	143.9	159.3	127.1	108.0	116.1	110.4	105.7	121.1	111.1
IRON ORE	20.8	164.6	149.7	178.8	207.8	187.8	199.9	181.4	203.7	196.2	184.5	178.4
TIN	11.0	316.9	377.7	453.1	492.1	415.6	376.3	381.0	397.6	355.0	387.4	374.5
ALUMINUM	10.2	195.5	226.4	267.0	328.7	280.6	242.3	244.1	251.1	233.6	226.9	261.3
ZINC	3.7	209.3	210.7	263.0	270.1	300.3	264.4	271.4	273.3	255.5	249.1	293.6
NICKEL	3.0	216.3	193.4	250.6	315.8	316.7	295.9	295.9	295.9	295.9	295.9	295.9
LEAD	2.7	222.2	237.5	432.6	325.6	261.1	196.3	153.0	212.6	180.0	160.3	145.6

Table 26. Percent Change: Index of Market Prices, in Terms of U.S. Dollars,  
for Primary Commodities Exported by Primary Producing Countries

(Base year 1968-1970)

COMMODITIES	WEIGHTS	1977	1978	1979	1980	1981	1982	1983	1982 SEMIANNUAL				
									I	II	I	II	
ALL EXPORTS	100.0	21.2	-4.1	16.3	8.7	-14.6	-12.1	6.7	-4.4	-6.7	6.2	8.3	
FOOD AND BEVERAGES		33.4	-10.5	9.6	9.9	-16.9	-12.5	8.3	-3.0	-7.8	6.9	11.4	
FOOD	31.4	100.0	15.8	13.4	30.0	-13.6	-20.8	8.8	-7.7	-11.5	9.1	12.5	
OILS AND OILSEEDS		27.1	27.6	9.9	4.6	-5.7	0.5	-28.3	25.4	-15.9	-14.4	9.9	47.5
GROUNDNUT OIL		7.2	22.5	27.6	-17.7	-3.4	21.4	-43.9	21.5	-31.0	-21.8	-2.8	84.9
COFFEE		7.1	46.3	17.0	42.9	-32.7	-16.4	-17.1	58.0	-5.6	-14.7	30.7	63.6
GROUNDNUT CAKE		4.7	23.8	-5.9	3.0	14.2	-0.8	-20.9	3.7	-9.9	-5.5	-5.6	25.8
FISH MEAL		4.5	20.7	-9.7	-3.7	27.7	-7.3	-24.3	27.9	-14.5	-5.5	24.7	11.2
PALM OIL		2.7	33.4	13.3	8.9	-10.8	-2.1	-22.0	12.7	-2.7	-24.9	3.1	54.6
SOYBEAN MEAL		0.5	15.9	-7.2	13.9	6.4	-2.3	-13.7	9.1	-2.3	-11.7	4.6	22.3
SOYBEANS		0.4	21.2	-4.2	11.0	-0.5	-2.6	-15.2	15.2	-3.5	-11.7	6.4	30.9
CEREALS		25.7	-13.2	19.2	11.5	13.3	4.9	-20.3	7.7	-11.0	10.9	11.5	4.9
MAIZE		10.1	-15.0	5.6	14.7	8.8	3.9	-17.2	25.8	-2.9	-11.4	23.6	16.7
WHEAT		8.3	-22.3	23.8	25.5	7.8	1.3	-8.3	-1.8	-2.6	-8.7	6.1	-6.1
RICE		7.3	7.2	35.3	-9.3	29.7	11.3	-39.2	-5.6	-31.6	-14.3	1.1	2.2
SUGAR		21.1	-20.0	10.5	18.1	117.4	-35.7	-25.7	4.5	-7.8	-8.5	6.1	6.1
U.S.		10.1	-17.3	27.0	17.7	93.4	-34.3	7.0	10.6	10.4	14.3	3.8	-0.3
FREE MARKET		7.5	-29.8	-3.6	23.5	196.9	-41.1	-50.2	0.7	-22.5	-36.7	16.0	24.0
EEC		3.5	4.4	13.6	21.2	14.5	-14.3	-4.3	-3.1	-3.8	1.1	-1.2	-4.7
MEAT		18.5	-0.1	37.1	25.6	3.1	-8.4	-6.9	-5.2	1.3	-7.4	-1.1	-0.5
BEEF		14.1	-4.7	41.9	34.9	-4.3	-10.4	-3.3	2.1	-0.8	--	2.6	-0.9
LAMB		4.4	8.7	28.9	8.3	20.3	-4.7	-13.1	-19.1	5.1	-20.2	-9.2	0.7
BANANAS		7.6	5.5	5.0	13.6	15.1	7.0	-6.6	14.5	12.0	-23.3	36.3	-6.5
BEVERAGES	18.2	100.0	73.2	-27.4	5.8	-12.2	-22.3	2.5	7.6	4.9	-2.4	3.9	9.8
COFFEE		67.1	70.3	-32.5	9.6	-11.1	-24.2	8.5	3.2	10.5	--	0.1	6.0
ROBUSTA		34.8	75.3	-34.1	12.2	-11.1	-30.1	7.9	11.8	12.1	6.0	6.6	3.9
OTHER MILDS		32.3	64.4	-30.6	6.6	-11.1	-16.9	9.1	-5.7	9.0	-5.8	-6.9	8.7
COCOA		19.7	85.3	-10.2	-3.3	-20.9	-20.2	-16.1	21.6	-13.2	-14.3	22.6	15.0
TEA		13.2	75.1	-18.6	-1.4	3.3	-9.4	-4.3	20.3	2.2	-0.5	4.8	30.2
AGRICULTURE													
RAW MATERIALS	22.5	100.0	3.2	7.6	21.9	4.1	-9.7	-13.7	9.5	-6.5	-4.6	6.6	10.4
COTTON		34.2	-2.7	-1.7	8.2	14.9	-7.9	-14.9	14.9	-8.3	0.4	8.2	11.9
MEDIUM		23.1	-7.7	0.9	7.2	21.5	-10.4	-13.6	16.0	-5.3	0.5	8.6	13.1
LONG		11.1	9.5	-7.1	10.5	0.2	-1.0	-17.8	12.1	-15.1	--	7.4	8.6
WOOL		28.7	7.1	2.9	19.5	9.8	-0.9	-8.2	-6.0	-2.6	-9.7	-2.1	2.4
FINE		21.3	7.7	3.1	18.5	13.8	2.6	-6.5	-5.7	-1.5	-9.8	-2.3	3.5
COARSE		7.4	5.6	2.6	21.6	1.8	-8.9	-17.4	-6.6	-5.3	-9.6	-1.3	-0.6
RUBBER		23.1	5.3	21.0	28.1	12.9	-21.2	-23.6	24.1	-12.8	-5.5	21.8	7.7
HIDES		8.0	10.1	28.7	53.8	-37.2	-9.1	-7.6	17.0	-3.1	-1.5	2.2	30.8
JUTE		4.0	8.2	24.7	-3.2	-18.5	-11.2	1.7	5.4	8.8	-8.2	1.3	17.3
SISAL		2.0	9.4	-7.1	50.1	7.3	-15.6	-7.8	-5.1	-2.4	-5.5	-2.7	0.7
METALS	27.9	100.0	7.5	5.4	29.8	10.6	-14.0	-9.2	-0.1	-5.7	-6.2	4.0	-1.5
COPPER		48.6	-6.7	4.2	44.5	10.8	-20.2	-15.0	7.5	-10.5	-4.2	14.6	-8.7
IRON ORE		20.8	-2.9	-9.1	19.5	16.2	-9.6	6.5	-9.3	9.5	-3.7	-6.0	-3.3
TIN		11.0	42.4	19.2	20.0	8.6	-15.5	-9.5	1.2	-9.4	-10.7	9.1	-3.3
ALUMINIUM		10.2	28.5	15.8	17.9	20.1	-12.5	-13.6	0.7	-2.4	-6.9	-2.9	15.2
ZINC		3.7	-17.3	0.7	24.8	2.7	11.2	-11.9	2.6	-14.0	-6.5	-2.5	17.9
NICKEL		3.0	4.8	-11.4	29.6	26.0	0.3	-6.5	--	-5.8	--	--	--
LEAD		2.7	38.4	6.9	82.2	-24.7	-19.8	-24.8	-22.1	-19.8	-15.4	-10.9	-9.2

Table 27. Actual Market Prices for Primary Commodities  
Exported by Primary Producing Countries

(In terms of U.S. dollars)

COMMODITIES	WEIGHTS	1977	1978	1979	1980	1981	1982	1983	1980		1983	
									SEPTENNIAL			
ALL EXPORTS												
FOOD AND BEVERAGES												
FOOD												
OILS AND OILSEEDS												
GROUNDNUT OIL	\$/MT	845.75	1079.17	888.67	858.75	1042.75	585.17	710.92	656.83	513.50	499.06	322.82
COPRA	\$/MT	402.33	470.58	672.67	453.00	378.92	314.00	496.00	339.00	289.00	376.33	619.67
GROUNDNUT CAKE	\$/MT	212.75	204.92	211.08	241.00	239.08	189.17	196.08	194.33	184.00	173.67	218.50
FISH MEAL	\$/MT	453.92	409.92	394.92	504.42	467.50	353.75	452.50	363.83	343.67	428.50	476.50
FISH OIL	\$/MT	530.08	600.33	653.83	583.08	570.67	445.08	501.42	508.50	381.67	393.50	602.33
SOYBEAN MEAL	\$/MT	276.83	213.33	243.00	256.56	252.67	218.00	237.83	231.50	204.50	214.80	261.67
SOYBEANS	\$/MT	280.17	268.33	292.75	296.25	288.42	244.50	281.67	259.67	229.33	244.00	312.33
CEREALS												
MATZE	\$/56LB	2.42	2.56	2.94	3.19	3.32	2.75	3.45	2.91	2.58	3.12	3.22
WHEAT	\$/60LB	2.81	3.48	4.36	4.70	4.76	4.36	4.28	4.56	4.17	4.42	4.15
RICE	\$/MT	272.42	368.50	334.33	433.67	482.83	293.38	276.83	315.92	270.83	235.83	329.63
SUGAR												
U.S.	CTS/LB	11.00	13.97	15.53	30.03	19.73	19.92	22.04	18.59	21.26	22.07	22.01
FREE MARKET	CTS/LB	8.11	7.82	9.66	28.67	16.89	8.41	8.42	10.30	6.92	7.56	9.37
FEC	CTS/LB	14.01	15.91	19.29	22.09	18.93	18.12	12.52	18.02	18.22	12.99	12.14
MEAT												
BEEF	CTS/LB	68.33	96.99	130.82	125.19	112.12	108.39	110.67	108.42	108.37	111.18	110.16
LAMB	CTS/LB	78.08	100.65	109.02	131.17	124.98	108.65	87.88	120.82	96.48	87.60	82.17
BANANAS	\$/40LB	4.95	5.20	5.91	6.80	7.28	6.80	7.79	7.69	5.92	8.05	7.52
BEVERAGES												
COFFEE												
ROBUSTA	CTS/LB	223.75	147.47	165.47	147.15	102.91	111.04	124.32	102.83	114.22	121.24	128.42
OTHER MILDS	CTS/LB	234.67	162.82	173.53	154.20	128.09	139.72	131.69	143.86	135.58	126.20	132.18
COCOA	CTS/LB	171.96	154.43	149.36	118.09	94.12	29.01	96.10	85.09	72.93	89.40	122.80
TEA	CTS/LB	122.02	92.29	92.87	101.06	91.59	87.62	105.44	87.84	82.39	91.60	112.29
AGRICULTURE												
RAW MATERIALS												
COTTON												
MEDIUM	CTS/LB	21.33	21.95	27.14	93.23	83.97	72.51	84.10	72.31	72.26	78.92	87.28
LONG	CTS/LB	149.20	138.60	153.21	153.49	151.92	124.82	139.96	124.85	124.89	134.19	142.22
WOOL												
FINE	CTS/KG	429.53	442.92	524.87	592.25	612.58	572.64	539.86	602.11	543.17	530.47	549.25
COARSE	CTS/KG	338.57	347.34	422.30	429.28	391.43	342.76	320.74	360.10	325.42	321.18	319.32
RUBBER	CTS/LB	36.95	44.71	52.25	64.62	50.93	38.90	48.27	40.01	32.80	46.04	50.52
HIDES	CTS/LB	36.95	47.54	73.13	45.92	41.22	38.56	45.13	36.66	38.22	39.12	51.15
JUTE	\$/LT	324.25	404.25	391.17	318.67	282.83	287.75	303.17	300.00	275.50	229.00	322.33
SISAL	\$/MT	511.25	474.83	712.92	764.83	645.25	594.83	564.56	611.67	578.00	562.50	566.82
METALS												
COPPER	CTS/LB	59.41	61.92	89.49	99.12	29.05	62.21	72.23	68.67	65.75	25.33	62.13
IRON ORE	\$/MT	21.56	19.62	23.44	27.24	24.62	26.21	23.78	26.70	25.22	24.18	23.16
TIN	CTS/LB	490.08	584.01	700.68	761.03	642.69	581.95	589.11	614.85	542.25	529.05	529.17
ALUMINIUM	CTS/LB	51.88	60.10	70.88	95.13	74.49	64.33	64.72	66.64	62.02	60.22	62.22
ZINC	CTS/LB	26.74	26.92	33.60	34.52	38.32	33.78	34.68	34.92	32.65	31.83	32.52
NICKEL	CTS/LB	236.00	209.17	271.00	341.50	342.42	320.00	320.00	320.00	320.00	320.00	320.00
LEAD	CTS/LB	28.02	29.95	54.56	41.02	32.93	24.76	19.29	26.82	22.70	22.22	18.32

