Appendix 6
Global Commodity Price Prospects

PETROLEUM PRICES ROSE TO A 16-YEAR HIGH of $28.20 per barrel in 2000 from an average of $13.10 per barrel in 1998. The low level reached in 1998 partly reflected the reduced demand following the Asian crisis in 1997, and the subsequent price rise occurred following economic recovery and tightening in OPEC production levels. In contrast, non-oil commodity prices never fully recovered from the declines that began in 1996 and 1997 (see figure A6.1). Agricultural prices continued to fall in 2000, as demand growth was not adequate to offset large supply increases. Beverage prices were especially weak, with cocoa and coffee prices each down 20 percent largely because of increased supplies. Metals prices made a modest recovery following their 1999 lows. However, the recovery stalled in 2000 as the U.S. economy slowed and demand weakened.

The divergence between oil and non-oil commodity prices has proved difficult for many developing countries that rely on non-oil commodities for a significant part of their export earnings. In Sub-Saharan Africa, non-oil primary commodities account for about 46 percent of total export earnings (excluding Nigeria), and the share of non-oil commodities in the exports of individual countries often exceeds 60 percent. In Ghana, for example, non-oil exports account for 74 percent of total merchandise exports. The divergence between oil and non-oil commodity prices is expected to narrow over the next several years, largely because oil prices are expected to decline, while non-oil commodity prices are expected to recover moderately from current depressed levels (see figure A6.1).

The slow recovery in non-oil commodity prices is not unprecedented. Figure A6.2 shows the decline and subsequent recovery of non-oil commodity prices from the cyclical peaks in 1980 and 1988 in comparison with the current cyclical decline, which began in May 1996. There is a striking similarity in the behavior of non-oil commodity prices in all three periods. The downturn in the current cycle, however, was longer and deeper than the previous declines, and the strength of the recovery has been midway between the 1980 and 1988 episodes.

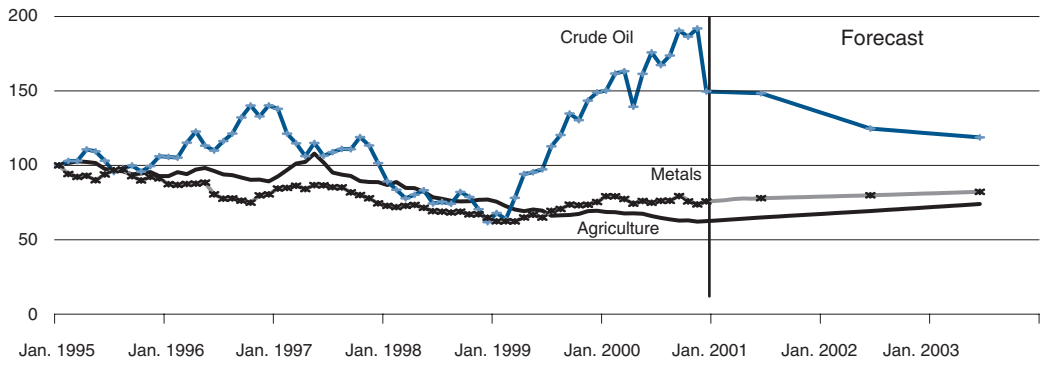
The rapid recovery of prices following the 1980–82 decline was partly due to global GDP growth of more than 3 percent. During 1991–93, global GDP grew less than 2 percent per year and commodity prices were slow to recover. In the current cycle, metals prices increased in response to rapid GDP growth, but agricultural prices continued to fall because of excess supply.

Over the next three years, crude oil prices are expected to decline from an average of $28.20 per barrel in 2000 to $20 per barrel by 2003 as non-OPEC supplies increase. The near-term outlook remains uncertain partly because of low inventories of crude oil and products in major consuming countries. Non-oil commodity prices are expected to remain unchanged in 2001 and then to rise about 10 percent through 2003. The remainder of this appendix looks at the outlook for oil and non-oil commodity prices during the period 2001–03.

The appendix tables A6.2 and A6.4 present nominal price forecasts for individual commodities and indices, while tables A6.3 and A6.4 present real price forecasts for individual commodities and indexes to 2010.

Figure A6.1 Commodity price indexes, 1995–2003

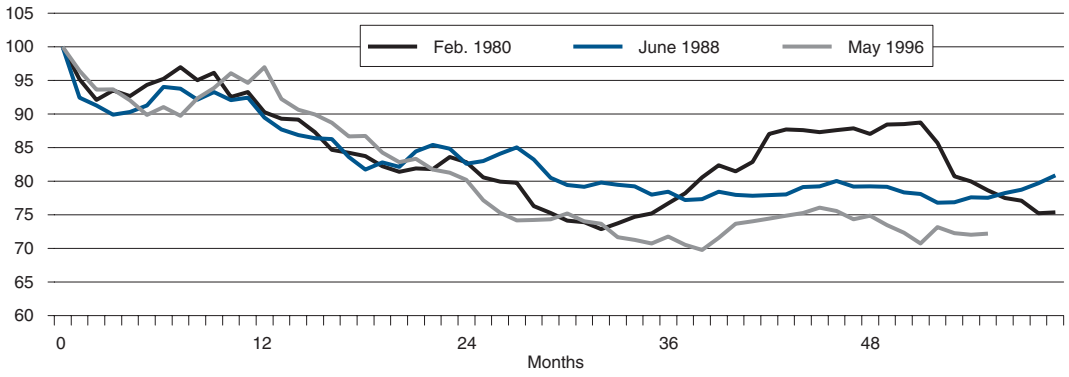
Index January 1995 = 100



Source: World Bank.

Figure A6.2 Non-oil commodity prices slow to recover

Index with price peak = 100



Source: World Bank.

Agriculture

Food

Food prices declined 3.5 percent in 2000 because of lower fats and oils and grains prices. This was the fourth consecutive annual decline of food prices since the high in 1996, bringing the total decline since 1996 to 32 percent. The largest decline was in grains—down 43 percent since 1996. However, the declines were widespread, with fats and oils prices down 35 percent and other food crop prices down 18 percent. Large supplies, relatively weak import demand, and the strength of the U.S. dollar all contributed to the fall in prices.

Grain prices are expected to increase over the next three years following the steady declines since the recent highs of 1995 and 1996. Global area planted to grains has declined 5 percent since 1996 in response to falling prices, and ending stocks have declined for the past two years. While these declines normally would have led to higher prices, the strong U.S. dollar and weak import demand offset the fall in stocks, and grains prices continued to fall. World ending stocks of grains are projected

to fall to 16 percent of total use by the end of the current crop year compared to a recent high of 20 percent at the end of the 1998–99 crop year.

Maize prices fell to the lowest level since 1987 despite declining world stocks (see figure A6.3). The weakness was due mostly to the record crop in the United States, which accounts for nearly three-quarters of world exports. Argentina, the second largest exporter, also had a large crop, which further pressured prices. Current low prices are expected to lead to market adjustments during the next several years. World production is expected to fall, demand to increase, stock levels to decline further, and prices to increase 30 percent by 2003 as the market adjusts.

Rice prices have declined steadily since Thailand, the largest rice exporter, devalued its currency in mid-1997. Thai rice prices fell to $202 per ton in 2000, the lowest level since 1986. Rice prices are well below their historical relationship to wheat, a close substitute. However, rice prices are not expected to recover in 2001 because the largest importer, Indonesia, is expected to reduce imports in response to improved domestic production. Consequently, prices are expected to remain nearly unchanged in 2001 and then gradually increase as demand and supply adjust to low prices.

Wheat prices have been slow to respond to the improved market balance of the past three years. Stocks have declined (see figure A6.4), world trade has increased, and area planted has declined. Nonetheless, prices have continued to decline, due in part to the strength of the U.S. dollar. Wheat prices are expected to increase from $114.10 per ton in 2000 to $145 per ton by 2003. This increase would return prices to their 1990–2000 average and align prices with current market fundamentals.

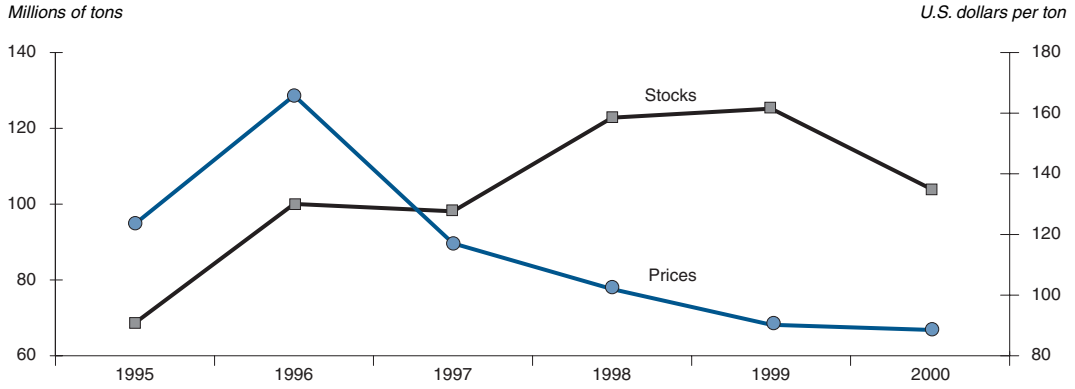
The fats and oils price index fell to the lowest level since 1973 in nominal terms, and to the lowest level since at least 1948 in real terms. The decline was due to an unprecedented surge in fats and oils production—up nearly 5 percent per year during the past three years. In contrast, the trend growth rate of production has been roughly 3.5 percent over the past two decades. During the 2000–01 season, production of the 17 most important fats and oils is expected to reach another record high (see table A6.1).

Prices of palm and soybean oil have fallen by nearly half over the past two years in response to the record production. Similar price declines have characterized, to varying degrees, the entire fats and oils group.

Palm oil production has been increasing at an annual rate of more than 7 percent for the last 10 years, and it appears that this rate will be sustained for some time as the dominant producers, Malaysia and Indonesia, continue to replace old plantations and bring new land into production.

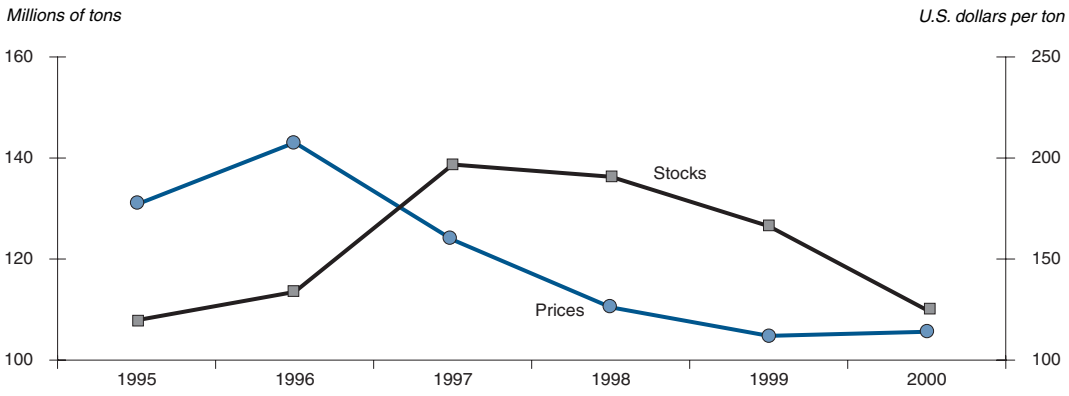
Vegetable oil prices (such as palm oil and soybean oil) are not expected to increase significantly over the next several years. However, vegetable meal prices, especially soybean meal, are expected to increase, which will lead to a modest increase in

Figure A6.3 Maize stocks vs. prices



Source: World Bank.

Figure A6.4 Wheat stocks vs. prices



Source: World Bank.

the overall index of fats and oils prices. The different outlooks for vegetable meal and oil prices is due to strong demand for meal for livestock and poultry feed compared to weaker demand for vegetable oils, which are used primarily for human consumption. Supplies of vegetable meals are also more limited than supplies of vegetable oils.

Soybean demand has been growing very rapidly (4.8 percent per year) over the past five years, and production has kept pace mainly because yields have exceeded the long-run trend for four consecutive years. Consequently, stocks have remained high, which has kept prices low (see figure A6.5) If yields were to return to, or fall below, the long-run trend, soybean stocks would likely fall and prices would rise. The recent ban on the use of bone meal and meat in cattle feed in the European Union (because of the spread of bovine spongiform encephalopathy[1]) is expected to add an additional three million tons (9 percent of total demand) per year to soybean meal demand. Soybean prices increased 5 percent in 2000 to $212 per ton and are expected to increase to $240 per ton by 2003. Most of the increase will come from soybean meal prices, which are expected to increase 19 percent from 2000 to 2003 while soybean oil prices are expected to increase only 6 percent.

Table A6.1 Fats and oils production

(millions of tons)

	Soybean	Palm	Rapeseed	Total
1996–1997	20.86	17.08	11.48	99.39
1997–1998	23.15	17.10	12.20	102.03
1998–1999	24.56	19.32	12.52	107.21
1999–2000	25.26	21.11	14.28	113.06
2000–2001	26.63	23.04	14.27	117.02

Note: Total refers to the sum of the 17 most important fats and oils (including soybean, palm, and rapeseed oils).
Source: Oil World.

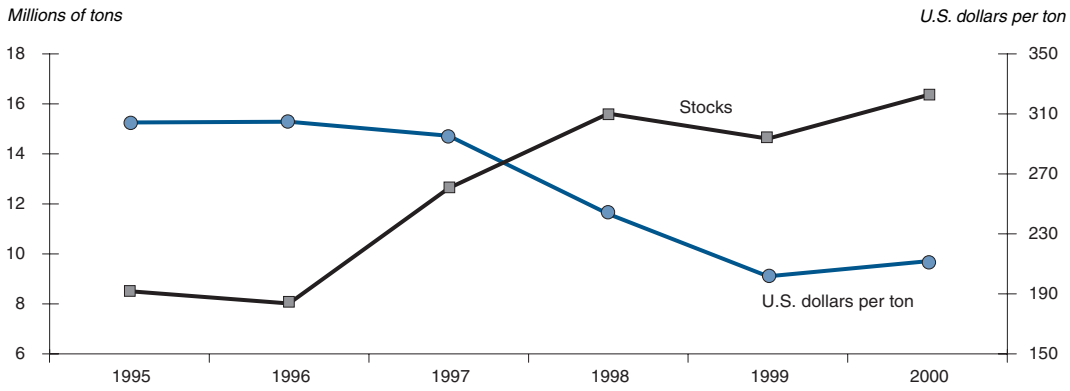
World sugar stocks rose to record levels in 1999 and prices fell to 14-year lows. Since then, prices have recovered, but stocks remain high (figure A6.6). The recovery in sugar prices in 2000 was due partly to drought-reduced production in Brazil, the largest exporter of raw sugar. Higher sugar demand for ethanol production in Brazil also cut production and aided the price recovery. Further recovery will be difficult until stocks decline significantly, and thus prices are expected to remain near 2000 levels for several years.

Beverages

Despite the sharp three-year decline in coffee prices, production has continued to increase, averaging nearly 109 million bags in the last three seasons (see figure A6.7), while consumption remained at 102 million bags.

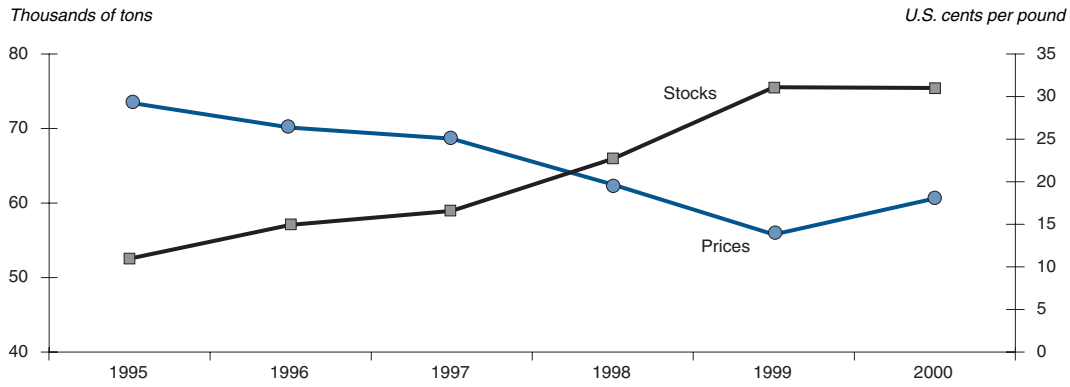
The annual surplus of six million bags per year has gone into stocks. Vietnam has emerged as the dominant robusta exporter in the last few years and is the third largest coffee exporter following Brazil and Colombia. Responding to the need to contain supplies, the Association of Coffee Producing Countries (ACPC), with leadership from Brazil, has pressed the main exporters (both ACPC mem-

Figure A6.5 Soybean stocks vs. prices



Source: World Bank.

Figure A6.6 Sugar stocks vs. prices



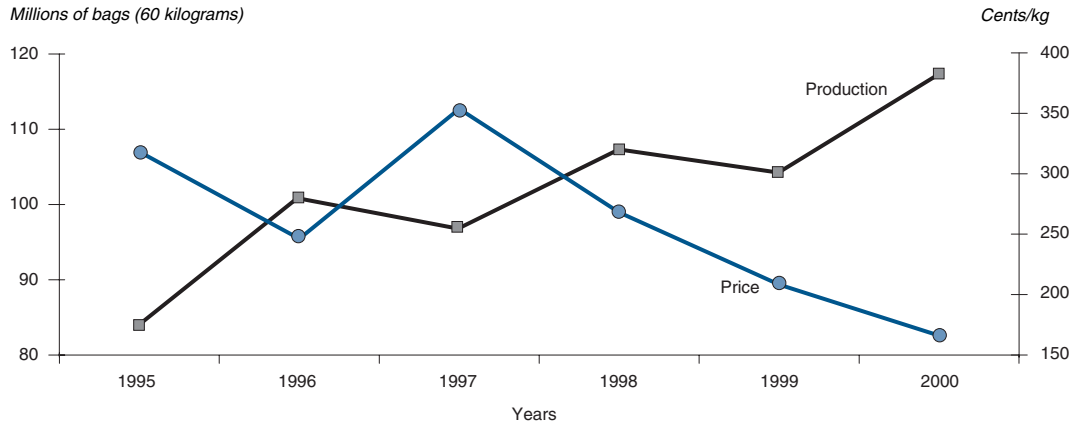
Source: World Bank.

bers and nonmembers) to finance domestic stockpiling in an effort to raise prices. The outlook, however, does not support higher prices. Even if the retention plan were implemented (which is doubtful), the stocks would eventually find their way onto the market. Both arabica and robusta prices are expected to remain under downward pressure in 2001 and possibly in 2002 before production is curtailed and stocks begin to fall.

The situation in the cocoa market is similar to that in the coffee market in many respects. Cocoa production has been increasing since the 1997–98 season (see figure A6.8), and in the 1999–2000 and 2000–01 seasons (October to September) it reached a record high of nearly 3 million tons against an average of 2.8 million tons the previous four seasons.

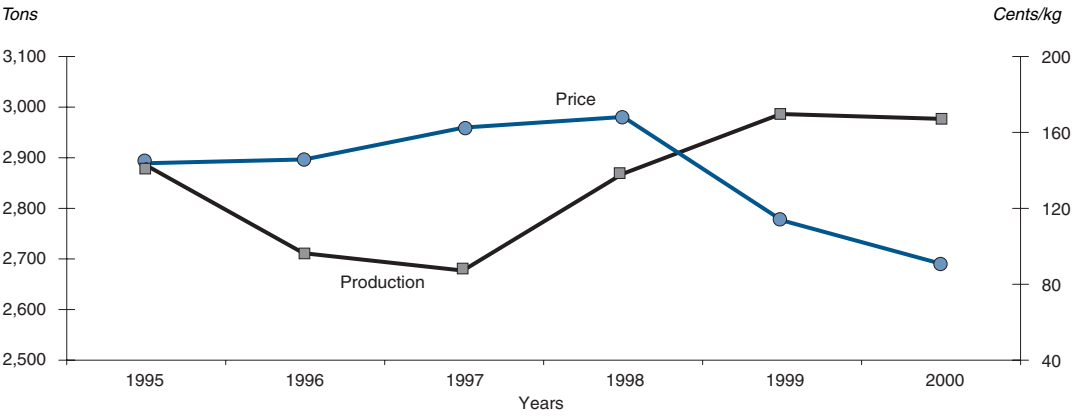
Grindings (consumption) have stagnated while prices have collapsed to 30-year lows. Some cocoa-producing countries went even further than the ACPC and contemplated destroying part of the 1999–2000 crop. However, the action did not materialize. The cocoa market has also been hit by the recent EU decision to harmonize policies regarding the use of non–cocoa butter in chocolate production. Under the new policy, chocolate manufactur-

Figure A6.7 Coffee price and production



Source: World Bank.

Figure A6.8 Cocoa price and production



Source: World Bank.

ers are allowed to use up to 5 percent of non–cocoa butter in chocolate. Although the impact of the policy on the cocoa market is still uncertain, it seems clear that the demand for cocoa beans is likely to decline. Cocoa prices are expected to be weak in 2001 and 2002, as is the case with coffee prices.

The tea market has thus far escaped the worst of the price declines experienced by cocoa and coffee, with prices declining only 10 percent since 1998. Tea supplies have not increased as rapidly as has been the case for other beverages, and demand has remained strong because many of the major importers in the Middle East and the former Soviet Union have benefited from high oil export earnings.

Given the current surplus in both coffee and cocoa markets and the apparent peak in per capita consumption in OECD countries, the long-term outlook for tropical beverages depends crucially on the demand in non-OECD countries, especially Eastern Europe and the former Soviet Union.

Agricultural raw materials

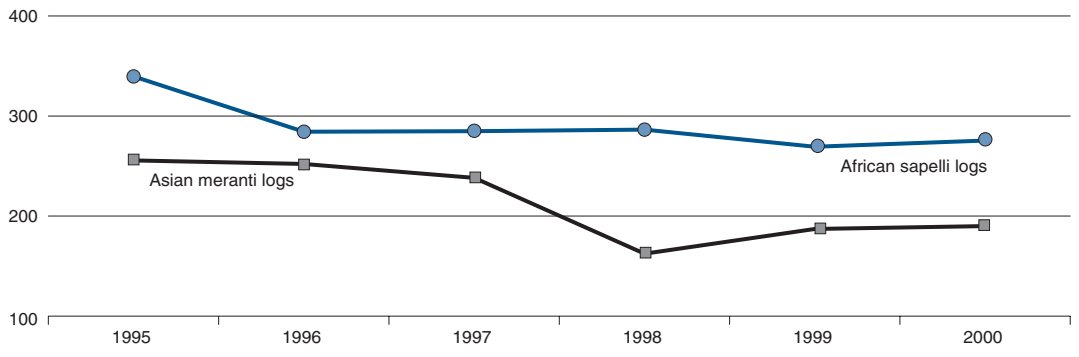
Cotton was one of the few agricultural commodities to recover in the past year, with prices increasing 11 percent in 2000. The latest International Cotton Advisory Committee projection is for global production to fall short of consumption by about 5 percent (900,000 tons) during the 2000–01 season. Part of the shortfall will be supplied from Chinese stocks, which are expected to fall to 2.3 million tons by the end of the 2000–01 season, down from 2.8 million tons at the beginning of the season. China has historically been a major cotton stockholder, but recent policy reforms are expected to reduce cotton stockholding. At the same time, reduced support to Chinese cotton producers is expected to reduce global supplies. One of the major surprises of the season was the remarkable increase in Brazilian cotton production, which is projected to reach 850 thousand tons in 2000–01 compared to 570 thousand tons in the previous season. Lower crops are, however, expected in India and Pakistan. Small price increases are expected for cotton in 2001 and 2002, and prices are expected to return to their 1998 levels by 2003.

Natural rubber prices rose about 10 percent in 2000 amid a number of developments. The dissolution of the International Natural Rubber Organization (INRO) in October 1999 left the organization with three years to dispose of its 132,000 tons of buffer stocks (about 2 percent of annual production). However, most of the stocks remain in INRO warehouses and are yet to be sold. The Firestone/Bridgestone tire recall in August 2000 was expected to increase the demand for rubber to replace the recalled tires, but it had little visible effect on prices. Slower economic growth in the United States and possibly other OECD countries would likely weaken the outlook for natural rubber prices, since two-thirds of rubber demand in OECD countries is for vehicles. Natural rubber prices are expected to fluctuate around 75 to 80 cents per kilogram for 2001 and 2002 and then exceed 80 cents per kilogram in 2003, up from 69 cents per kilogram in 2000.

Asian timber prices were strongly influenced by the Asian crisis (figure A6.9). Prices fell sharply in 1997 and 1998 and then recovered in 1999 in close concert with the Asian crisis. However, the timber price recovery slowed in 2000 as demand in both Asia and Europe weakened due to high transportation costs, weak currencies versus the U.S. dollar, and reduced economic growth. European demand for Asian timber fell because high fuel prices made transportation costs prohibitive and caused importers to shift to African timber. Asian timber imports remained relatively strong from China, but weakened from Japan.

Abundant supplies of logs from Indonesia continued because of both legal and illegal logging and exports. Sawnwood prices in Asia weakened relative to log prices because importers preferred domestic processing to imported products, while sawnwood prices increased relative to log prices for African timber. Asian log prices are expected to

Figure A6.9 Tropical timber prices



Source: World Bank.

remain weak in 2001 as the economic slowdown continues and then to begin to increase in 2002 and 2003.

Energy

Petroleum

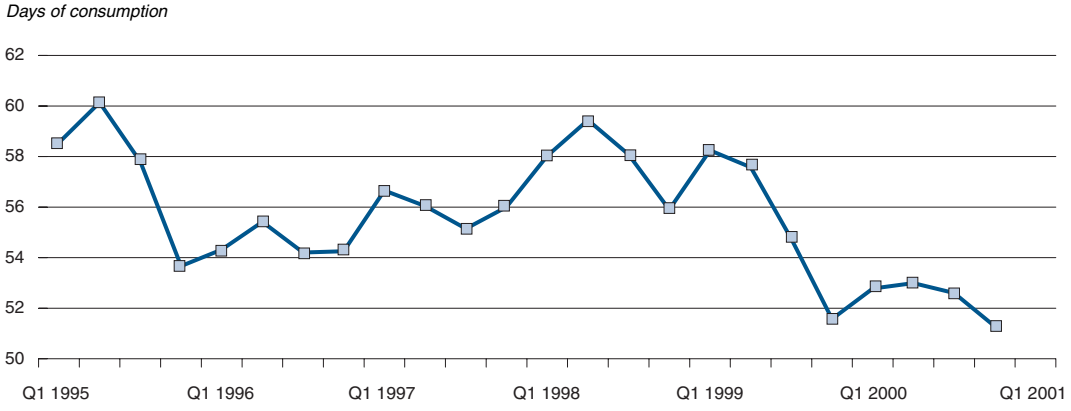
Oil prices rose 56 percent in 2000, to average $28.20 per barrel. This level is more than $10 above average prices over the previous 14 years, but real prices are less than half of their 1980 peak. The market began to tighten in 1999 following a series of production cuts by OPEC producers and the recovery of demand in Asia. Extremely low inventories (see figure A6.10), strong global demand, and an industry near capacity kept prices high in 2000. Given its success in raising prices, OPEC selected a new target range for its basket of crudes of $22 to $28 per barrel. It also established a mechanism whereby if prices move above this range for 20 consecutive days (or below for 10 days) they will automatically raise (or lower) production by 0.5 million barrels per day on a pro-rata basis.

During 2000, oil prices were often well above OPEC's upper limit, which pressed the organization to raise production quotas four times (see figure A6.11) in order to bring prices under $28 per barrel. In doing so, most OPEC producers outside of Saudi Arabia reached, or were near, production capacity. Tanker markets were also extremely tight and the U.S. refining industry was strained to supply sufficient products for both the summer (gasoline and diesel) and winter (heating oil) markets. Late in the year, higher OPEC production plus weakening demand began tilting the market into surplus. In December—despite cold weather and low stocks—prices fell $10 per barrel on expectations that the market was beginning to rebalance, ending the year just above $23 per barrel. OPEC moved quickly to prevent a further drop in prices by reducing production 5 percent or 1.5 million barrels per day effective February 1, 2001, and a further 1 million barrels per day on April 1, 2001.

The organization signaled intentions to lower production further, if necessary, to keep prices within its selected band. On the other hand, if demand remains buoyant or if there is an unexpected disruption to supply (for example, from Iraq) OPEC also appears prepared to increase output, and they have sufficient spare capacity to do so. While adjustments to production will clearly affect the *level* of prices, it will do little to reduce the short-term volatility of prices. Adjustments every few months are too infrequent to have much effect on the uncertainties and expectations that drive day-to-day movements in prices.

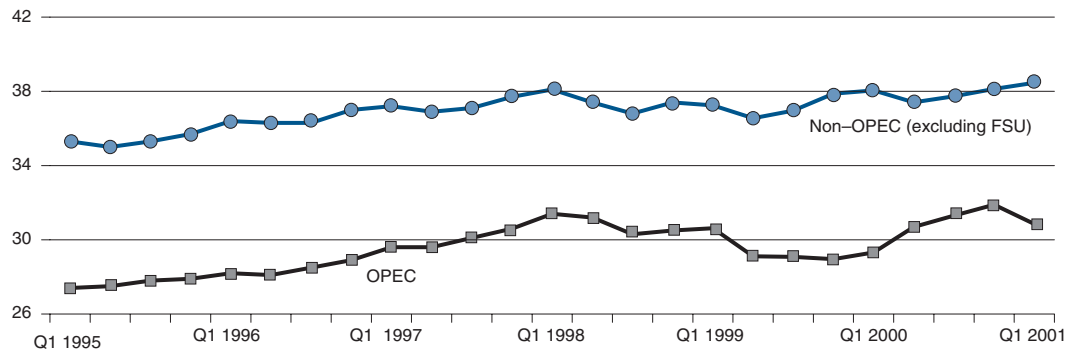
Oil prices are projected to decline to $20 per barrel by 2003 and to fall below this level over the longer term. Higher oil prices are probably not sustainable for a lengthy period because of the impact on demand and especially on competing sup-

Figure A6.10 OECD oil stocks



Source: World Bank.

Figure A6.11 World oil supplies



Source: World Bank.

plies. The short-term price elasticity of oil demand is very low. Thus, to the extent that high prices are felt to be temporary, there will be limited structural change to demand. However if high prices continue, consumers will adjust to more fuel efficient vehicles and change commuting patterns.

The biggest impact of high prices is expected to be on supply. Low prices in 1998–99 significantly reduced expenditures in the oil industry, and companies have been cautious about raising upstream investment, partly because of the uncertainty of future price levels. In addition, there have been large mergers in the oil industry, and companies have been reducing debt and repurchasing their own shares. However, upstream investments are expected to rise significantly this year following large profits in 2000, which will lead to higher production in the coming years.

Development costs continue to fall as a result of new technologies and better management practices, and companies are moving into new frontiers, such as deepwater production in the United States and West Africa. Production is expected to rise measurably from these areas over the next several years. In addition, costs of nonconventional oil, such as oil sands in Canada, have fallen significantly, and new developments are under way that were begun when prices were much lower. Over time, large increases in production are expected from the Caspian area once transit and other legal and regulatory issues are resolved.

In addition to higher production from non-OPEC countries, all OPEC countries have plans to increase capacity. When sanctions against Iraq are lifted, it is likely that large foreign investment will rapidly expand production capacity.

Other energy

Other energy prices have also risen since 1999, partly because of the lack of investment in new capacity—similar to oil. Natural gas prices have risen significantly, particularly in North America and in countries where contracted natural gas prices are linked to oil (for example, gas imported into Europe). European gas prices are more than double 1999 average levels, while U.S. gas prices increased five-fold this past winter due to strong demand and stagnant supplies, the latter due to underinvestment following low prices in 1998–99. In addition, the electricity crisis in California has resulted in substantially higher prices and rolling blackouts, which have contributed to the slowdown in the local economy. International coal prices have also been rising again due to underinvestment brought on by prolonged low prices. Markets are expected to adjust, because higher prices will encourage new supplies, causing prices to return to previous levels. However, the timing and path of price changes are difficult to predict. Price volatility is likely to increase as more energy sectors are deregulated and greater volumes are traded in spot and futures markets.

Fertilizers

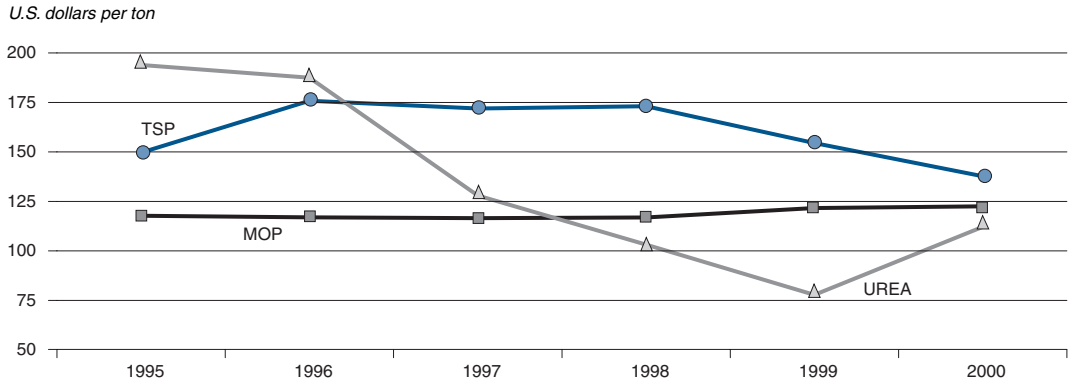
Fertilizer markets have been buffeted by a number of events during the past several years, including changing import policies of China, the sharp fall in agricultural commodity prices, large exports from the Russian Federation and Ukraine, and the recent large increases in natural gas prices in the United States and Europe which have increased the cost of nitrogen fertilizer production. The main result was to drive nitrogen fertilizer (urea) prices sharply lower and then higher, to moderately weaken phosphate (TSP) prices, and to leave potash (MOP) prices largely unchanged (see figure A6.12).[2]

Nitrogen fertilizer prices fell sharply when the Chinese government banned imports in early 1997 in an effort to encourage domestic production. China had been the world's largest importer with nearly 20 percent of world imports. The demand for fertilizer was further weakened by the sharp fall in agricultural commodity prices in 1997 and 1998. Further price weakness followed when the Russian Federation and Ukraine, which together accounted for about 20 percent of world exports, increased exports significantly. The downtrend in prices was recently reversed as the natural gas prices, which is a main component of nitrogen fertilizer production, rose sharply in Europe and the United States. This price increase made production unprofitable in some plants and caused plant closings. Nitrogen fertilizer prices are expected to remain firm, at least until natural gas prices fall. But the industry has surplus capacity and prices are likely to weaken in the medium term.

Phosphate fertilizer markets faced much less uncertainty than nitrogen fertilizer markets, but prices still declined about 20 percent in the past two years because of weak import demand by major importers, such as China and India, and large capacity in major exporters, such as the United States and the Russian Federation. In response to lower prices, U.S. producers have cut production and halted the price declines. However, the industry is facing excess capacity and probably price weakness for the next several years.

Potash fertilizer prices have been relatively unaffected by events that led to price declines in nitrogen and phosphate because of the strong concentration of production in a few countries and the relatively strong import demand. Canada is the largest exporter of potash fertilizer, with a 40 percent market share, followed by Belarus, Germany, and the Russian Federation with a combined 40 percent market share. Canadian production fell 10 percent in 1999 in an effort to support prices, while production in Belarus and the Russian Federation increased more than enough to offset this decline. Strong import demand by the three largest importers—Brazil, China and the United States—helped support prices. Prices are expected to remain steady at current levels for the next several years while this export competition continues.

Figure A6.12 Fertilizer prices, 1995–2000



Source: World Bank.

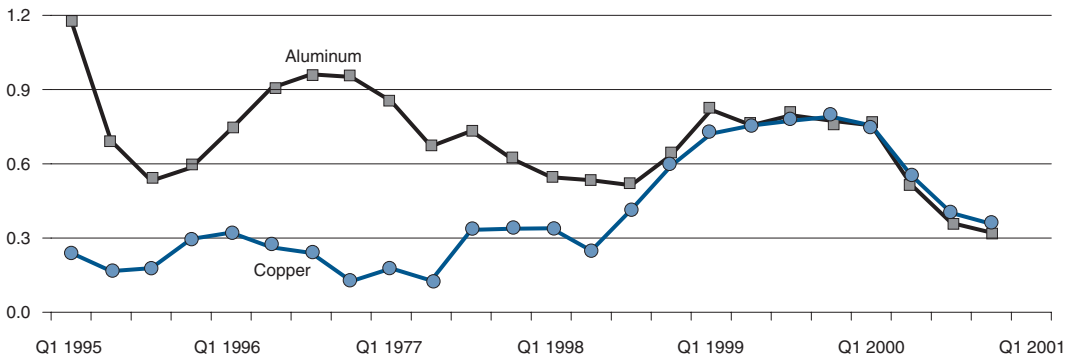
Metals and minerals

The World Bank's index of metals and minerals prices rose 13 percent in 2000, with the primary gains in aluminum, copper, and nickel. Strong global demand, production cuts, and falling inventories[3] (see figures A6.13 and A6.14) contributed to the increases. Most other metals prices were fairly flat or declined (for example, lead and silver) because of ample production and inventories to meet aggregate demand.

Metals prices have generally been increasing since early 1999 as a result of the recovery in Asia, strong growth in other regions (notably the United States), a number of supply problems, and voluntary production cutbacks that have helped to tighten markets. Nickel prices led the increases, up two-and-a-half times at their peak, because of strong demand for steel, several supply problems, and very low stocks. Zinc prices were also pulled higher, but to a much lesser degree, by the rise in steel production. Copper and aluminum stocks declined in 2000 as a result of supply cutbacks and robust demand.

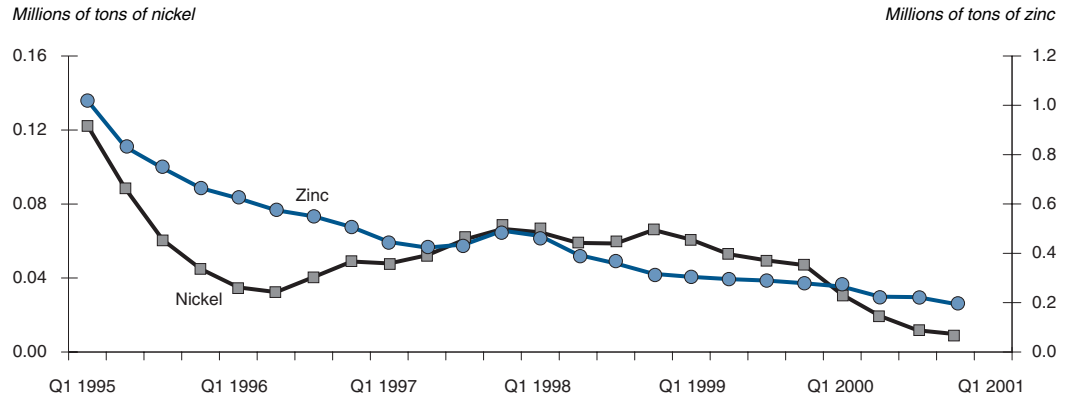
The expected slowdown in the global economy will likely weaken most metals markets in

Figure A6.13 LME stocks



Source: World Bank.

Figure A6.14 LME stocks



Source: World Bank.

2001, although modest price gains are possible in copper and aluminum prices if stocks continue to fall. While moderate demand growth is expected to contribute to higher prices after 2001, increases in capacity and declining costs from new technology will limit average price gains over the longer term. However, price movements are expected to remain volatile and highly cyclical, and in the near term, much will depend on the extent of the economic slowdown and timing of the subsequent recovery.

Aluminum prices increased 14 percent in 2000 as stocks fell sharply. Strong growth in demand and moderate increases in supply resulted in a steep drop in inventories on the London Metal Exchange. As the year progressed, demand weakened in Asia and the United States (particularly in the auto sector). Partly offsetting the slowdown in demand were production cuts in the Pacific Northwest United States, where it became more profitable for producers to resell contracted electricity than use it to manufacture aluminum. The situation is likely to continue until October 2001 when new power agreements in the region will prevent the resale of purchased power. It is a reminder, however, that the loss of low-cost power *anywhere* could have a large impact on aluminum producers. Aluminum prices are expected to increase moderately in 2001 because of production curtailments and the market remaining in deficit. The extent of the global downturn creates some uncertainty for demand, but an eventual recovery should lead to moderately higher prices over the forecast period. New capacity is being developed that will limit much higher prices on a sustained basis, but prices could be subject to considerable volatility.

Copper prices rose 15 percent in 2000 as demand exceeded supply and stocks fell. Voluntary production cuts, beginning in 1999, and continued rationalization in the industry contributed to the tighter balance and higher prices. The market is expected to remain in deficit in 2001, and moderate price gains are expected. However, there is great uncertainty about the prospects for demand and the extent of the global downturn. Over the forecast period, prices are projected to rise moderately as a result of strong growth in demand. New capacity is also expected to be developed over the period—as well as in the longer term—because of declining costs and technological advances. This new capacity should prevent sustained high prices over time, although prices could be volatile over the decade, particularly during the next upturn in demand. However higher prices will provide large incentives to reactivate idle capacity and develop new sources of supply.

Nickel prices exceeded $10,000 per ton in 2000 because of strong global demand, numerous supply problems, and very low inventories. Global steel production rose 7 percent in 2000, resulting in strong demand for nickel. Delays bringing new capacity online in Australia and labor disputes in Canada contributed to the tight market and the large reduction in inventories. Steel demand weakened in the latter part of the year, and expectations of a large nickel deficit diminished, causing prices to decline to $7,200 per ton by year-end. Prices are expected to weaken further in 2001 because of weak demand and rising output. Over the forecast period, nickel prices are expected to slide even lower because of increasing production from new projects. However, nickel prices will continue to be highly volatile, affected by levels of inventories, cycles in stainless steel markets, scrap metal availability, and unexpected supply disruptions.

Other metals prices were generally unchanged in 2000, with only zinc and iron ore prices increasing because of the large growth in steel production. The sharp slowdown in steel demand will likely prevent any significant increase in prices for these metals in 2001. Rising stocks and relatively weak demand kept tin prices constant, and silver prices fell 5 percent to below $5 per troy ounce on ample supplies. Gold prices were flat year-on-year, mainly because of the speculative run-up in late 1999 and early 2000. Prices were generally well below $275 per troy ounce during the second half of the year. A series of central bank sales in 2000 (for example, in the Netherlands, Switzerland, and the United Kingdom) depressed prices and is expected to weigh heavily on prices this year and throughout the forecast period.

Notes

1. Bovine spongiform encephalopathy refers to the cattle disease known as mad cow disease, which is believed to have begun in Britain in the 1970s. The disease affects cattle and can be spread to humans. The disease is believed to be caused by feeding animal products to cattle.

2. MOP refers to muriate of potash and TSP refers to triple super phosphate.

3. London Metal Exchange stocks.

Table A6.2 Commodity prices and price projections in current dollars

		Actual					Projections				
Commodity	Unit	1970	1980	1990	1999	2000	2001	2002	2003	2005	2010
Energy											
Coal, U.S.	$/mt	n.a.	43.10	41.67	33.17	33.06	33.50	33.75	34.00	35.00	37.50
Crude oil, avg., spot	$/bbl	1.21	36.87	22.88	18.07	28.23	25.00	21.00	20.00	18.00	19.00
Natural gas, Europe	$/mmbtu	n.a.	3.40	2.55	2.13	3.86	4.25	3.25	3.00	2.75	2.75
Natural gas, U.S.	$/mmbtu	0.17	1.55	1.70	2.27	4.31	4.50	3.50	3.00	2.75	3.00
Non-energy commodities											
Agriculture											
Beverages											
Cocoa	c/kg	67.5	260.4	126.7	113.5	90.6	91.0	105.0	120.0	140.0	160.0
Coffee, other milds	c/kg	114.7	346.6	197.2	229.1	192.0	149.9	176.4	209.4	253.5	265.0
Coffee, robusta	c/kg	91.4	324.3	118.2	148.9	91.3	77.2	92.6	105.8	132.3	187.4
Tea, auctions (3) average	c/kg	83.5	165.9	205.8	183.9	187.5	192.0	192.0	193.0	195.0	210.0
Food											
Fats and oils											
Coconut oil	$/mt	397.2	673.8	336.5	737.1	450.0	370.0	450.0	520.0	600.0	650.0
Copra	$/mt	224.8	452.7	230.7	461.5	304.8	350.0	400.0	435.0	460.0	483.0
Groundnut oil	$/mt	378.6	858.8	963.7	787.7	713.7	740.0	775.0	800.0	820.0	850.0
Palm oil	$/mt	260.1	583.7	289.8	436.0	310.0	270.0	320.0	360.0	400.0	450.0
Soybean meal	$/mt	102.6	262.4	200.2	152.2	189.0	215.0	220.0	225.0	235.0	245.0
Soybean oil	$/mt	286.3	597.6	447.3	427.3	338.2	335.0	340.0	360.0	410.0	460.0
Soybeans	$/mt	116.9	296.2	246.8	201.7	211.83	225.0	230.0	240.0	255.0	270.0
Grains											
Maize	$/mt	58.4	125.3	109.3	90.2	88.5	108.0	112.0	116.0	125.0	130.0
Rice, Thai, 5%	$/mt	126.3	410.7	270.9	248.4	202.4	200.0	215.0	230.0	260.0	300.0
Sorghum	$/mt	51.8	128.9	103.9	84.4	88.0	106.0	110.0	114.0	120.0	125.0
Wheat, U.S., HRW	$/mt	54.9	172.7	135.5	112.0	114.1	130.0	138.0	145.0	160.0	170.0
Other food											
Bananas, U.S., new series	$/mt	166.1	377.3	540.9	373.8	424.0	465.2	490.5	507.1	529.1	567.7
Beef, U.S.	c/kg	130.4	276.0	256.3	184.3	193.5	199.0	202.8	205.2	209.4	225.0
Oranges	$/mt	168.0	400.2	531.1	438.2	363.5	380.0	480.0	500.0	565.0	600.0
Shrimp, Mexican	c/kg	n.a.	1,152.0	1,069.0	1,461.0	1,513.0	1,520.0	1,530.0	1,540.0	1,550.0	1,590.0
Sugar, world	c/kg	8.2	63.16	27.67	13.81	18.04	19.80	19.80	19.80	20.00	24.00
Agricultural raw materials											
Timber											
Logs, Cameroon	$/cum	43.0	251.7	343.5	269.3	275.4	270.0	275.0	295.0	330.0	385.0
Logs, Malaysia	$/cum	43.1	195.5	177.2	187.1	190.0	175.0	192.0	210.0	240.0	290.0
Sawnwood, Malaysia	$/cum	175.0	396.0	533.0	600.8	596.5	580.0	590.0	630.0	720.0	900.0
Other raw materials											
Cotton	c/kg	67.6	206.2	181.9	117.1	130.2	136.7	141.1	145.5	158.7	180.8
Rubber, RSS1, Malaysia	c/kg	40.7	142.5	86.5	62.9	69.1	75.0	79.4	80.5	88.2	99.2
Tobacco	$/mt	1,076.0	2,276.0	3,392.0	3,041.0	2,984.0	3,000.0	3,100.0	3,150.0	3,250.0	3,300.0
Fertilizers											
DAP	$/mt	54.0	222.2	171.4	177.8	154.2	165.0	175.0	182.0	195.0	205.0
Phosphate rock	$/mt	11.0	46.71	40.50	44.0	43.75	43.0	44.0	44.0	44.0	46.0
Potassium chloride	$/mt	32.0	115.7	98.1	121.6	122.5	123.0	124.0	124.0	125.0	127.0
TSP	$/mt	43.0	180.3	131.8	154.5	137.7	135.0	142.0	147.0	160.0	170.0
Urea, E. Europe, bagged	$/mt	48.0	222.1	130.7	77.8	112.1	120.0	130.0	134.0	140.0	150.0
Metals and minerals											
Aluminum	$/mt	556.0	1,456.0	1,639.0	1,361.0	1,549.0	1,600.0	1,650.0	1,700.0	1,800.0	1,900.0
Copper	$/mt	1,416.0	2,182.0	2,661.0	1,573.0	1,813.0	1,925.0	2,000.0	2,100.0	2,200.0	2,200.0
Gold	$/toz	36.0	607.9	383.5	278.8	279.0	275.0	275.0	275.0	275.0	300.0
Iron ore, Carajas	c/dmtu	9.84	28.09	32.50	27.59	28.79	29.50	30.25	31.0	32.0	33.0
Lead	c/kg	30.3	90.6	81.1	50.3	45.4	49.0	52.0	55.0	60.0	64.0
Nickel	$/mt	2,846.0	6,519.0	8,864.0	6,011.0	8,638.0	7,200.0	6,800.0	6,600.0	6,000.0	6,800.0
Silver	c/toz	177.0	2,064.0	482.0	525.0	499.9	500.0	510.0	515.0	525.0	550.0
Tin	c/kg	367.3	1,677.0	608.5	540.4	543.6	560.0	570.0	575.0	590.0	610.0
Zinc	c/kg	29.6	76.1	151.4	107.6	112.8	110.0	112.5	115.0	120.0	125.0

$/mt, dollars per metric ton; $/bbl, dollars per barrel; $/mmbtu, dollars per million British thermal units; c/kg, cents per kilogram; $/cum, dollars per cubic meter; $/toz, dollars per troy ounce; c/dmtu, cents per dry metric ton unit.
n.a. Not available.
Note: Projections as of January 30, 2001.
Source: World Bank, Development Economics, Development Prospects Group.

Table A6.3 Commodity prices and price projections in constant 1990 dollars

		Actual					Projections				
Commodity	Unit	1970	1980	1990	1999	2000	2001	2002	2003	2005	2010
Energy											
Coal, U.S.	$/mt	n.a.	59.86	41.67	32.10	32.87	31.46	30.75	30.24	29.79	28.85
Crude oil, avg., spot	$/bbl	4.82	51.21	22.88	17.49	28.07	23.47	19.13	17.79	15.32	14.62
Natural gas, Europe	$/mmbtu	n.a.	4.72	2.55	2.06	3.84	3.99	2.96	2.67	2.34	2.12
Natural gas, U.S.	$/mmbtu	0.68	2.15	1.70	2.19	4.28	4.23	3.19	2.67	2.34	2.31
Non-energy commodities											
Agriculture											
Beverages											
Cocoa	c/kg	268.9	361.6	126.7	109.9	90.1	85.5	95.7	106.7	119.2	123.1
Coffee, other milds	c/kg	456.8	481.4	197.2	221.7	190.9	140.8	160.7	186.3	215.8	203.9
Coffee, robusta	c/kg	364.0	450.5	118.2	144.1	90.8	72.5	84.4	94.1	112.6	144.2
Tea, auctions (3) average	c/kg	332.7	230.5	205.8	178.0	186.4	180.3	174.9	171.6	166.0	161.6
Food											
Fats and oils											
Coconut oil	$/mt	1,582.4	935.9	336.5	713.5	447.4	347.4	410.0	462.5	510.7	500.1
Copra	$/mt	895.8	628.8	230.7	446.7	303.0	328.6	364.4	386.9	391.5	371.6
Groundnut oil	$/mt	1,508.2	1,192.7	963.7	762.4	709.6	694.8	706.1	711.5	697.9	654.0
Palm oil	$/mt	1,036.0	810.7	289.8	422.0	308.2	253.5	291.6	320.2	340.5	346.2
Soybean meal	$/mt	408.7	364.5	200.2	147.3	187.9	201.9	200.4	200.1	200.0	188.5
Soybean oil	$/mt	1,140.8	830.0	447.3	413.6	336.2	314.6	309.8	320.2	349.0	353.9
Soybeans	$/mt	465.8	411.4	246.8	195.2	210.6	211.3	209.6	213.5	217.0	207.7
Grains											
Maize	$/mt	232.7	174.0	109.3	87.3	88.0	101.4	102.0	103.2	106.4	100.0
Rice, Thai, 5%	$/mt	503.2	570.5	270.9	240.5	201.2	187.8	195.9	204.6	221.3	230.8
Sorghum	$/mt	206.4	179.0	103.9	81.7	87.5	99.5	100.2	101.4	102.1	96.2
Wheat, U.S., HRW	$/mt	218.7	239.9	135.5	108.5	113.4	122.1	125.7	129.0	136.2	130.8
Other food											
Bananas	$/mt	661.7	524.0	540.9	361.9	421.6	436.8	446.9	451.0	450.3	436.8
Beef, U.S.	c/kg	519.6	383.3	256.3	178.4	192.4	186.9	184.8	182.5	178.2	173.1
Oranges	$/mt	669.5	555.8	531.1	424.2	361.4	356.8	437.3	444.7	480.9	461.6
Shrimp, Mexican	c/kg	n.a.	1,600.0	1,069.0	1,414.0	1,504.0	1,427.0	1,394.0	1,370.0	1,319.0	1,223.0
Sugar, world	c/kg	32.8	87.7	27.7	13.4	17.9	18.6	18.0	17.6	17.0	18.5
Agricultural raw materials											
Timber											
Logs, Cameroon	$/cum	171.3	349.6	343.5	260.7	273.8	253.5	250.6	262.4	280.9	296.2
Logs, Malaysia	$/cum	171.8	271.6	177.2	181.1	188.9	164.3	174.9	186.8	204.3	223.1
Sawnwood, Malaysia	$/cum	697.2	550.0	533.0	581.6	593.0	544.6	537.5	560.3	612.8	692.5
Other raw materials											
Cotton	c/kg	269.4	286.4	181.9	113.4	129.5	128.3	128.6	129.4	135.1	139.1
Rubber, RSS1, Malaysia	c/kg	162.2	197.9	86.5	60.8	68.7	70.4	72.3	71.6	75.1	76.3
Tobacco	$/mt	4,287.0	3,161.0	3,392.0	2,944.0	2,967.0	2,817.0	2,824.0	2,801.0	2,766.0	2,539.0
Fertilizers											
DAP	$/mt	215.1	308.6	171.4	172.1	153.3	154.9	159.4	161.9	166.0	157.7
Phosphate rock	$/mt	43.8	64.9	40.5	42.6	43.5	40.4	40.1	39.1	37.5	35.4
Potassium chloride	$/mt	127.5	160.7	98.1	117.8	121.8	115.5	113.0	110.3	106.4	97.7
TSP	$/mt	171.3	250.4	131.8	149.5	136.9	126.8	129.4	130.7	136.2	130.8
Urea, E. Europe, bagged	$/mt	191.2	308.5	130.7	75.3	111.5	112.7	118.4	119.2	119.2	115.4
Metals and minerals											
Aluminum	$/mt	2,215.0	2,022.0	1,639.0	1,317.0	1,540.0	1,502.0	1,503.0	1,512.0	1,532.0	1,462.0
Copper	$/mt	5,640.0	3,031.0	2,661.0	1,522.0	1,803.0	1,808.0	1,822.0	1,868.0	1,873.0	1,693.0
Gold	$/toz	143.2	844.3	383.5	269.8	277.4	258.2	250.6	244.6	234.1	230.8
Iron ore	c/dmtu	39.2	39.0	32.5	26.7	28.6	27.7	27.6	27.6	27.2	25.4
Lead	c/kg	120.7	125.8	81.1	48.7	45.1	46.0	47.4	48.9	51.1	49.2
Nickel	$/mt	11,339.0	9,054.0	8,864.0	5,819.0	8,588.0	6,761.0	6,195.0	5,870.0	5,107.0	5,232.0
Silver	c/toz	705.2	2,866.1	482.0	508.1	497.0	469.5	464.7	458.0	446.9	423.2
Tin	c/kg	1,463.5	2,329.8	608.5	523.1	540.4	525.8	519.3	511.4	502.2	469.3
Zinc	c/kg	117.9	105.7	151.4	104.2	112.2	103.3	102.5	102.3	102.1	96.2

$/mt, dollars per metric ton; $/bbl, dollars per barrel; $/mmbtu, dollars per million British thermal units; c/kg, cents per kilogram; $/cum, dollars per cubic meter; $/toz, dollars per troy ounce; c/dmtu, cents per dry metric ton unit.
n.a. Not available.
Note: Projections as of January 30, 2001.
Source: World Bank, Development Economics, Development Prospects Group.

Table A6.4 Weighted indexes of commodity prices and inflation

	Actual					Projections[a]				
Index	1970	1980	1990	1999	2000	2001	2002	2003	2005	2010
Current dollars										
Petroleum	5.3	161.2	100.0	79.0	123.4	109.3	91.8	87.4	78.7	83.0
Non-energy commodities[b]	43.8	125.5	100.0	88.0	86.9	86.6	91.3	96.4	105.0	115.1
Agriculture	45.8	138.1	100.0	92.8	87.7	86.8	92.5	98.8	109.5	122.6
Beverages	56.9	181.4	100.0	107.7	88.3	76.1	87.2	100.1	118.3	131.1
Food	46.7	139.3	100.0	87.6	84.5	88.6	93.2	97.1	103.4	111.7
Fats and oils	64.4	148.7	100.0	105.0	96.2	97.8	104.9	111.6	120.5	129.6
Grains	46.7	134.3	100.0	86.4	79.5	87.7	92.8	97.7	107.8	117.4
Other food	32.2	134.3	100.0	74.0	77.8	81.6	83.9	84.9	87.1	93.8
Raw materials	36.4	104.6	100.0	88.5	91.5	92.4	95.6	99.9	110.9	130.3
Timber	31.8	79.0	100.0	111.8	111.3	107.5	110.4	118.2	135.1	168.2
Other raw materials	39.6	122.0	100.0	72.7	78.0	82.1	85.6	87.4	94.3	104.4
Fertilizers	30.4	128.9	100.0	114.1	105.8	103.8	108.1	110.5	116.7	123.3
Metals and minerals	40.4	94.2	100.0	73.7	83.0	84.6	86.7	89.2	92.7	96.1
Constant 1990 dollars[c]										
Petroleum	21.1	223.8	100.0	76.5	122.7	102.6	83.6	77.7	67.0	63.9
Non-energy commodities	174.7	174.3	100.0	85.2	86.4	81.3	83.2	85.7	89.3	88.6
Agriculture	182.4	191.8	100.0	89.8	87.2	81.5	84.3	87.8	93.2	94.3
Beverages	226.6	252.0	100.0	104.2	87.8	71.4	79.4	89.1	100.7	100.8
Food	186.0	193.4	100.0	84.8	84.0	83.2	84.9	86.4	88.0	85.9
Fats and oils	256.4	206.5	100.0	101.7	95.6	91.9	95.5	99.2	102.5	99.7
Grains	186.1	186.5	100.0	83.6	79.0	82.3	84.5	86.9	91.7	90.4
Other food	128.4	186.6	100.0	71.6	77.3	76.6	76.5	75.5	74.1	72.2
Raw materials	145.1	145.2	100.0	85.7	91.0	86.7	87.1	88.8	94.4	100.2
Timber	126.6	109.7	100.0	108.2	110.6	100.9	100.6	105.1	115.0	129.4
Other raw materials	157.7	169.4	100.0	70.3	77.6	77.1	77.9	77.7	80.3	80.3
Fertilizers	121.1	179.0	100.0	110.4	105.2	97.5	98.5	98.2	99.3	94.9
Metals and minerals	160.8	130.8	100.0	71.3	82.5	79.4	79.0	79.4	78.9	73.9
Inflation indexes, 1990=100[d]										
MUV index[e]	25.10	72.00	100.00	103.31	100.58	106.50	109.76	112.44	117.49	129.97
% change per year		11.11	3.34	0.36	–2.64	5.88	3.06	2.44	2.22	2.04
U.S. GDP deflator	33.59	65.93	100.00	121.11	123.58	125.46	128.48	131.43	137.01	151.27
% change per year		6.98	4.25	2.15	2.04	2.40	2.40	2.30	2.10	2.00

a. Commodity price projections as of January 30, 2001.
b. The World Bank primary commodity price indexes are computed based on 1987–89 export values in U.S. dollars for low- and middle-income economies, rebased to 1990. Weights for the subgroup indexes expressed as ratios to the non-energy index are as follows in percent: agriculture 69.1, fertilizers 2.7, metals and minerals 28.2, beverages 16.9, food 29.4, raw materials 22.8, fats and oils 10.1, grains 6.9, other food 12.4, timber 9.3, and other raw materials 13.6.
c. Computed from unrounded data and deflated by the MUV index.
d. Inflation indexes for 2001–10 are projections as of January 8, 2001. MUV for 2000 is an estimate. Growth rates for years 1980, 1990, 1999, 2005, and 2010 refer to compound annual rate of change between adjacent endpoint years; all others are annual growth rates from the previous year.
e. Unit value index in U.S. dollar terms of manufactures exported from the G-5 countries (France, Germany, Japan, the United Kingdom, and the United States) weighted proportionally to the countries' exports to the developing countries.
Source: World Bank, Development Prospects Group. Historical U.S. GDP deflator: U.S. Department of Commerce. January 30, 2001.