

Contrary to the situation in most European countries, sugarbeet and sugar production is not subject to Government control in Belgium. However, a production quota based on domestic sugar requirements is established each year by agreement between the beet processors and beet growers. The total quota is then divided among factories and the growers producing beets for each factory. Sugarbeet prices are also determined by negotiation between growers and processors.

Sugar imports and exports are controlled by Government license, except for shipments from Belgium to Luxembourg and the exemption from import duty of the importation of 6,000 tons of sugar a year from the Congo (Kinshasa).

The Netherlands

The Government does not directly control the production of sugarbeets and beet sugar, but it exerts a strong indirect influence through its price policy. Both a guaranteed and an actual ex-factory price is either paid into or made up from a Government equalization fund. Under this system, prices for beets and sugar in the Netherlands have remained relatively stable.

Sugar imports are licensed by the Government. Licenses for the import of raw sugar for reexport as refined sugar or in sugar containing products are granted freely. Imports for domestic consumption are subject to import duty. Any difference between the import price plus duty calculated on the price of white sugar and the domestic ex-factory price is equalized by a levy or a subsidy.

European Economic Community

Since 1957, the European Economic Community (EEC) countries of France, West Germany, Italy, Belgium-Luxembourg, and the Netherlands have been in the process of establishing common economic policies for all industries, including sugar. Great Britain joined the Community in 1971.

The common policy, based on a variable levy program of protection for various commodities, includes the establishment of target prices, intervention or support prices, threshold prices, and variable import levies (32). The target price for sugar is the price for refined sugar which the EEC considers desirable or in its best interests. This has been determined to be prices in eight departments in the north of France, the area with the largest surplus in the EEC. The arrangement for sugar is unusual, since target prices for most other commodities are fixed for the area with the largest deficit, rather than the largest surplus. The intervention or support price represents the price level, somewhat below the target price, at which the authorities would purchase sugar to prevent further price declines. The threshold price is the target price less the cost of transportation of sugar from the port

of importation to the principal deficit supply area where the target price applies. The variable import levy is used to raise the price of imported sugar to the target price or, in the form of a subsidy, to lower it when the world price is above the target price.

At one time, the plan called for a single target and other prices for sugar for the entire EEC area. Beet and sugar production would be subject to uniform regulation throughout the area. However, this plan was changed, and a much more complex scheme that provides quotas for individual EEC countries together with appropriate price variations among member countries was adopted. It is expected that the Common Market regulations concerning sugar will supersede the regulations of individual member countries whenever they conflict.

Soviet Union

Sugar policies in the USSR appear to have undergone considerable modification shortly after the death of Stalin in 1953. During Stalin's regime, some progress was made in restoring the war-damaged sugar industry. However, recovery was relatively slow, and per capita sugar consumption increased only slightly. Since 1954, production has increased much more rapidly. During 1950/51 through 1954/55 production of sugar in the USSR averaged 3,217,000 metric (3,546,000 short) tons. In crop years 1955/56 through 1959/60, output averaged 5,090,000 metric (5,611,000 short) tons, an increase of over 50 percent. Since that time, USSR production has continued to increase, reaching 11,500,000 short tons in 1967-68.

In addition to greatly increasing domestic production, the USSR imported substantial quantities of sugar, particularly from Cuba in 1955, 1956, and 1957. In these years, USSR imports of sugar were considerably larger than exports and apparently were largely consumed domestically.

Following the Castro revolution in Cuba, USSR purchases of Cuban sugar increased substantially, primarily for political reasons and as part of the development of new economic relations between the two countries. Exports of sugar from the USSR have also increased since 1960, indicating that a large part of their increased imports of sugar are, in effect, reexported. The Government controls sugar prices, production, and marketing within the USSR as well as imports and exports.

Japan

Before World War II, Japan was nearly self-sufficient in sugar, largely because of production in Formosa, which was then a part of the Japanese Empire. With changed boundaries since World War II, Japan has become a major sugar importing nation. In addition to importing large quantities of sugar, Japan has

encouraged the development of a beet sugar industry in the northern part of the country and of cane sugar in some of the southern islands. In 1967, domestic production equaled about 19 percent of consumption.

Japan has also encouraged the production of non-sugar sweeteners, both those derived from starch and also the noncaloric sweeteners, saccharin and cyclamate. The starch sweeteners, principally in the form of dextrose, have been manufactured largely from sweetpotatoes. Data regarding the relative importance of the starch and noncaloric sweeteners in total sweetener consumption in Japan are not available.

India

In 1954, the Indian Government began encouraging the increased production of centrifugal sugar (the ordinary commercial type). There was also some increase in the output of a noncentrifugal sugar called gur, a low-grade sugar used largely in the producing areas. The chief emphasis, however, was on the development of the centrifugal sugar industry (35).

The Government controls the prices paid growers for sugarcane. The distribution of sugar by mills, for domestic use and export, is controlled by a "release permit" system. Sugar for export is subsidized by exemption from certain taxes. Exports are arranged by a Government agency which has power to obtain sufficient sugar from mill owners to fill export commitments.

Cuba

Prior to 1960, about half of the sugar exported from Cuba was shipped to the United States, and Cuban sugar controls were designed mainly to synchronize with the import controls imposed by the United States. Since 1960, when all sugar properties in Cuba were nationalized and Cuba definitely joined the Soviet bloc of nations, the former administrative organizations have been abolished, and all phases of the industry have been operated under rigid Government control.

Shortly after achieving power in 1959, Castro and his associates announced their intention of diversifying the agricultural economy of Cuba and reducing the country's dependence on sugar. Since then, the policy appears to have been reversed, and plans were announced for increasing sugar production in Cuba to 10 million tons by 1970. This was not achieved. The largest amount of sugar produced in Cuba since 1960/61 was 6,600,000 tons in 1964/65.

Since 1960, the Soviet Union has replaced the United States as the largest importer of Cuban sugar. The Soviet Union appears to have paid somewhat above the world price for most of this sugar, although complicated systems of payment, including barter, make any exact comparison impossible.

Philippines

Practically all the sugar produced in the Philippines until 1975 was either consumed in that country or exported to the United States. When the United States operated under a quota system, an agency of the Philippine Government called the "Sugar Quota Administration" annually determined quotas for sugar destined for the United States and other users.

The national quotas were distributed among the sugar mills, and the allotments for each mill assigned among the sugarcane growers supplying cane to the mill. Sugar mills pay growers for their cane on the basis of a sharing system established by the Government. Sugar prices are not controlled, except in emergencies, by the Philippine Government. The export of sugar is handled by the mills, either individually or in voluntary groups.

Australia

Most of the sugar produced in Australia is exported; the largest quantities go to Britain, Canada, and Japan. The production and marketing of Australian sugar is closely regulated by the Government of the State of Queensland, where most of the sugar is produced. Outstanding features of the control system are the assignment of cane production to certain lands and the establishment of production peaks for individual mills and farms. A similar system is in effect in New South Wales where the rest of Australian sugar production is situated.

All raw sugar produced in Queensland becomes the property of the Government of Queensland. Sugar produced in New South Wales is sold to Queensland and marketed in the same manner as Queensland sugar. Refined sugar for consumption in Australia is handled by two refining companies which act as agents for the Queensland Government. All exports of Australian sugar are arranged by the Colonial Sugar Refining Company on behalf of the Government of Queensland.

Sugar mills receive average prices based on the net receipts from the sale of sugar in domestic and foreign markets. These prices apply for all sugar within the established production peaks for each mill and farm. Sugar in excess of the assigned peaks is paid for at lower prices, discouraging the production of such excess sugar. The Government also regulates the division of the net receipts between the mills and growers. The division varies according to the sucrose content of the cane.

Brazil

Sugar production, marketing, and prices in Brazil are regulated by the Sugar and Alcohol Institute, a Federal agency. To provide the Institute with funds to carry out its various functions, all sugar produced in

Brazil is subject to certain taxes. The Institute fixes the total quota or size of the crop each year, taking into account domestic consumption requirements, probable exports, and desirable inventory levels. The total quota is divided among individual factories. A mill is not allowed to grow more than one-half the cane it processes, and the mill operators contract with growers for specific quantities of cane for delivery to the mill.

The distribution of sugar for domestic consumption

is regulated by monthly delivery quotas assigned to refineries supplying the main consumption areas. All exports of sugar from Brazil are handled through the Sugar and Alcohol Institute. The institute guarantees a uniform price for all sugar exported within the authorized production quota. When the export price is lower than the guaranteed price, the deficit is made up from the Price Equalization Fund provided for the Institute. When the export price is higher, the excess is paid into the fund.

INTERNATIONAL SUGAR AGREEMENTS AFTER WORLD WAR II

As previously noted, the export quotas established under the International Sugar Agreement of 1937 became inoperative with the outbreak of war in 1939. Only the administrative structure established by the Agreement remained in force.

Shortly after the end of World War II, discussion began concerning a new International Agreement. Such an Agreement was reached in 1953 and became effective January 1, 1954. It was to remain in effect for 5 years, but the quota provisions were to be reviewed at the end of the first 3 years. This review resulted in the establishment of revised export quotas for 1957 and 1958. The 1953 Agreement ended December 31, 1958, and was replaced by the International Sugar Agreement of 1958. This Agreement also covered a 5-year period with provision for review in the third year of its operation. The Agreement actually operated in 1959, 1960, and 1961, but the quota provisions were suspended at the end of 1961 because of a failure to agree on quotas for 1962 and 1963. During 1962-68, only the administrative structure established by the Agreement remained in existence. In 1969, a new agreement became effective, which remained in force until the end of 1973, and was then extended by protocol.

Principal Features of the 1953 Agreement

The general form of the 1953 Agreement was similar to that of the 1937 Agreement which it superseded. Exporting countries were assigned basic quotas for sugar to be exported to the free market. Exports to the free market were defined as total net exports to all countries except for specific exemptions. The exempted trade consisted of all imports into the United States; USSR imports from Czechoslovakia, Hungary, and Poland; trade between member exporting countries and their overseas departments, territories, or associated States; and certain movements between adjoining territories or islands covered by the Commonwealth Sugar Agreement of 1951 (53).

The net exports of the member nations in 1954 amounted to 84 percent of total free market exports that year. The basic export quotas for member nations

for 1954, 1955, and 1956, exclusive of countries which were members of the Commonwealth Sugar Agreement and certain other special cases, totaled 4,440,000 metric (4,894,000 short) tons. This was 22 percent more than the basic quotas in the 1937 Agreement. The largest single change consisted of the increase in Cuba's quota by 140 percent to 2,480,000 short tons. The quota for the Netherlands, including the Netherlands Indies, was reduced 1,157,000 tons to 44,000 short tons. The change in the Netherlands quota reflected the newly acquired independence of Indonesia and the fact that Indonesia was not originally a member of the 1953 Agreement. The increase for Cuba recognized its increased importance as an exporter during and immediately after World War II. The next largest change resulted from China (Taiwan) becoming a member with a quota of 661,000 short tons. Peru did not become a member of the 1953 Agreement until 1958. This had the effect of reducing the total basic quotas by 540,000 short tons, compared with later years. Other changes in basic quotas were relatively minor.

The free market demand for imported sugar in 1954 and 1955 was such that the International Sugar Council reduced actual quotas to 80 percent of the basic quotas specified in the Agreement. In mid-1956, the figure was raised to 100 percent. These changes were made primarily to keep world or free market sugar prices within a range of 3.25 to 4.35 cents per pound. The Council had authority to adjust quotas within these price limits.

The 1956 Protocol

The review of quotas in the third year of the 1953 Agreement resulted in the adoption of a protocol revising the quotas and the price provisions of the Agreement for 1957 and 1958. Basic quotas were raised about 9 percent for 1957 to 5,324,000 short tons. Cuba, China (Taiwan), the Dominican Republic, and the Philippines each received small increases in their quotas. The total basic quotas for 1958 were further increased, chiefly because Peru and Indonesia

became members with quotas of 504,000 and 386,000 short tons, respectively.

The price objective was redefined as 3.15 to 4 cents a pound. The Council's authority to adjust quotas was limited by certain provisions for automatic quota adjustments between these levels. Quotas were suspended whenever the price exceeded 4 cents per pound. Under this provision, quotas were automatically suspended in January 1957 and were reimposed in November when prices declined to below 4 cents. In 1958, the International Sugar Council established marketings at 100 percent of basic export tonnages.

The 1958 Agreement

The principal new feature in the 1958 Agreement was that the total basic export quotas were again adjusted upward, chiefly because Brazil became a member with a basic quota of 606,000 short tons. The price provisions of the Agreement were not changed significantly.

Declining sugar prices in 1959 caused the Council to reduce permitted marketings to 80 percent of basic quotas. In 1960, marketings were set at 85 percent of basic quotas. Prices in 1960 averaged somewhat above their 1959 level, but they were only slightly above the minimum price range specified in the Agreement. Prices remained relatively stable, despite the termination of U.S. imports from Cuba in mid-year and the purchase of a large quantity of Cuban sugar by the USSR.

Quotas for 1961 were provisionally set at 85 percent. Cuba was authorized, in addition to its 1961 quota, to export the quantity of sugar normally sold to the United States which might not be marketable there in 1961. This was estimated at approximately 3 million metric (3,307,000 short) tons. World sugar prices declined during most of 1961, partly because the European crop of sugarbeets harvested in the fall of 1960 was unusually large. A more important reason, however, was that Cuba exported to the free market a quantity of sugar greatly exceeding that permitted under the International Sugar Agreement.

This action of the Cuban Government (under the Castro regime all of Cuba's foreign trade is controlled by the Government), plus its insistence on a much larger quota for future years, were major factors causing the suspension of the quota provisions at the end of 1961.

The 1968 Agreement

The International Sugar Agreement was revised and reactivated on January 1, 1969, for a 5-year period. The price objectives specified in the Agreement range from 3.25 to 5.25 cents per pound, compared with 3.25 to 4.35 cents in previous postwar Agreements. Neither the United States nor the European

Economic Community became members of the new agreement.

In the 1968 Agreement, the annual quota for sugar from Cuba was 2,150,000 metric (2,370,000 short) tons, nearly twice that of any other country. Exports from Cuba to Communist countries were exempt from the Cuban quota. The USSR, which imported large quantities of sugar from Cuba, did not have an export quota but was permitted to export up to 1,100,000 metric (1,212,530 short) tons to the free market in 1969, with certain possible upward adjustments in 1970 and 1971. These exports were regarded as a "pass through" (reexport) of Cuban sugar. Similar export restrictions were placed on sugar exported from certain other Communist countries. These arrangements provided only an uncertain basis for limiting the quantity of Cuban sugar finally appearing in the free market in any year.

The failure of the EEC countries to join the Agreement left them free to export as much sugar as they wished. Such exports have largely been confined to years when beet yields were above average. Both the quota arrangements with Cuba and the Communist countries and the lack of membership of EEC countries and the United States appear to be weak points in the 1968 Agreement.

The original Agreement continued through 1973. It was extended by protocol for the years 1974 and 1975. During much of the time the 1968 Agreement was in effect, the world price of sugar was unusually high, making the price provisions relatively unimportant except for certain export commitments at prearranged prices. These prices, however, were raised somewhat during the period the Agreement blanketed.

The International Sugar Organization arranged a conference which met late in 1975 to consider further extension of the International Sugar Agreement. The United States had an observer at this conference, and a Committee was established to draft an Agreement for consideration by the conference.

Achievements of International Sugar Agreements Through 1973

The basic purpose of the International Sugar Agreements of 1937, 1953, 1958, and 1968 was to maintain prices for sugar exports to the free market at what was considered a reasonable level. This was to be done by controlling the volume of exports to the market and, if necessary, persuading exporting nations to keep production in their territories in line with reasonable export possibilities. Although price objectives were stated in cents per pound of sugar, the figures used were pragmatic, based entirely on what the negotiating parties thought could be achieved rather than on any underlying principle. Obviously the most desirable price for an importing

country was not necessarily the same as that for an exporter. However, exporting countries always had to weigh the danger of being undersold by exporters who were not members of the Agreement and thereby losing part of their market.

The size of the quota to be assigned individual exporting countries has been the most difficult item on which exporting countries needed to agree. Some compromise was always necessary if the aggregate of the quotas was to be small enough to permit meaningful market controls. Willingness to compromise to achieve Agreement was, of course, related to the benefits a country thought it might gain from an Agreement. In general, countries whose sugar industry was of major importance in their domestic economy and whose exports to the free market constituted a major outlet for their sugar appeared to have the most to gain from the International Sugar Agreement.

Throughout 1954-61, Cuba had by far the largest export quota of any country. Its exports to the free market during this period ranged from about 36 percent to 51 percent of all free market exports, exclusive of those under article 16, which were largely controlled by the Commonwealth Sugar Agreement and which were only loosely a part of the International

Sugar Agreement (table 25). The figures cited also exclude 1961 when Cuba's exports greatly exceeded its quota.

Cuba also had, until mid-1960, a large market in the United States which considerably lessened its dependence on the free market. However, sugar production was by far the largest industry in Cuba, and between one-third and one-half of the Cuban sugar crop was exported to the free market each year. Under these circumstances, a stable and remunerative price was highly important to the Cubans. Apparently these circumstances were major factors persuading the Cubans to accept a basic annual quota for the years 1954, 1955, and 1956 of 2,480,000 short tons, although their average exports to the free market during the 3 previous years had been 2,793,000 tons.

The situation and outcome for Mexico were very different. Prior to 1954, nearly all the sugar produced in Mexico was domestically consumed. Exports to the free market during 1951, 1952, and 1953 averaged only 20,000 short tons per year, less than 2.5 percent of production. There was no incentive for Mexico to join the International Sugar Agreement, unless its quota was large enough to insure its right to export as much sugar as it wished in any year. The basic quota

Table 25—Net exports of sugar to the free market under the 1953 and 1958 International Sugar Agreements

Exporting country	1953 Agreement			1956 Protocol		1958 Agreement		
	1954	1955	1956	1957	1958	1959	1960	1961
	--- 1,000 short tons, raw value ---							
Under Article 14								
Cuba	2,002	2,282	2,845	2,779	2,635	2,221	4,063	7,070
China (Taiwan)	582	646	808	942	865	730	998	545
Dominican Republic	552	628	742	802	663	635	743	495
Poland	213	170	45	77	248	247	59	344
Czechoslovakia	268	164	107	110	305	293	212	329
Belgium	37	62	83	15	57	46	0	115
Other	240	258	92	111	668 ¹	1,536 ²	1,412 ³	1,433 ⁴
Total	3,894	4,210	4,722	4,836	5,441	5,708	7,487	10,331
Under Article 16								
Australia	718	690	755	860	729	714	869	836
Fiji	158	166	143	197	202	202	241	164
Mauritius	538	537	583	638	573	559	353	565
South Africa	225	264	203	183	276	270	314	327
Caribbean Area ⁵	1,055	1,043	1,089	1,100	1,056	1,084	1,129	1,009
Total	2,694	2,700	2,773	2,978	2,836	2,829	2,906	2,901
Total participants	6,588	6,910	7,495	7,814	8,277	8,537	10,393	13,232
Nonparticipants	1,305	1,580	841	2,077	1,278	526	570	893
Total free market	7,893	8,490	8,336	9,891	9,555	9,555	10,963	14,215

¹ Of which Peru shipped 368,000 tons. ² Of which Brazil shipped 657,000 tons, Peru 451,000 tons, and Hungary 64,000 tons. ³ Of which, Brazil shipped 828,000 tons, Peru 252,000 tons, and Hungary 117,000 tons. ⁴ Of which France shipped 620,000 tons, Brazil 498,000 tons, India 144,000 tons, and Hungary 131,000 tons. ⁵ Includes British West Indies, British Guiana, and British Honduras.

Source: The World Sugar Economy: Structure and Policy. International Sugar Council, 1963. Metric tons have been converted to short tons.

for Mexico was 83,000 short tons, more than 4 times its average exports to the free market in 1951, 1952, and 1953.

Most member countries received quota treatment between that of Cuba and Mexico. In each case, however, the quota treatment resulted from bargaining and compromise.

Few problems were encountered by the member countries importing sugar, either in the negotiation of the Agreements or in their administration. The obligations they assumed were relatively minor. They undertook to limit their sugar imports from non-member countries, generally to the proportions of previous years. Member countries' subsidies that might nullify the purpose of the Agreement were subject to discussion and recommendation by member nations. The Agreement also provided for studies designed to assist in the promotion of sugar consumption.

However, importing nations were under no obligation to reduce or control sugar production within their borders, and no such actions were taken by

importing countries as a result of the International Sugar Agreement. Importing countries were free to buy sugar at the lowest price offered by sellers so long as they did not overimport from nonmember countries.

In general, it appears that the International Sugar Agreements through 1973 achieved limited success in reaching their goals except when the Government of Cuba, the largest exporter of sugar, was favorably inclined toward the Agreement and cooperated fully in helping it to function as intended. When the attitude of the Cuban Government changed, as it obviously had by 1961, and Cuba disregarded its obligations, the Agreement quickly became ineffective. However, achievements under the Agreement, even in the years when Cuba was cooperative, were relatively modest. It is doubtful that world sugar prices, except those of a temporary and seasonal nature, were increased much. Greater stability of prices does seem to have been maintained in certain years, particularly in 1954, 1955, 1972, and 1973.

WORLD SUGAR PRODUCTION AND TRADE

Sugar production appears to have continually increased in the world since the earliest available information. But the increase became much more rapid, particularly for supplies available to European countries, after the discovery of America. Comprehensive statistics on world sugar production, however, did not become available much before the 20th century. Production in 1900-1901 is estimated to have been about 13 million tons. By 1939, at the outbreak of World War II, it was about 35 million tons. Output declined to 28 million tons in 1947/48, the last year of wartime sugar controls by the United States.

During the 27-year period, 1948/49 through 1974/75, world sugar production increased more than 175 percent to a peak of 88 million tons in 1973/74 (table 26). The increase in output during this period was 3 to 4 times as great as the increase in the world's population, and per capita supplies for the world increased by 75 percent. This is in marked contrast to the per capita rise in world production of all foods: 3 percent in underdeveloped countries, and 10 percent or less in other countries.

World Sugar Production Since 1948

Since the end of World War II, sugar production has increased in every continent but at quite different rates (table 27). The rate for the world of 2,125,000 tons per year is equal to 3.47 percent of average world production during the 27-year period. In contrast, the annual rate of increase in North America was only 1.58 percent, and that for Asia was 5.74 percent. The increase in the USSR was much more

rapid after 1954/55, apparently because of a change in Government policy. Trends in production in other areas doubtless have been influenced by changes in government policy, but in all such cases more than one government was involved, and shifts in policy did not occur at the same time or have the same effect (57).

North America

To understand production trends in North America, it is helpful to divide the area into importing and exporting countries and to separate the principal exporting regions (table 28). Although Cuba was the largest sugar producer in North America during most of 1948/49 through 1974/75, Cuban production showed no tendency to increase but varied erratically throughout the period. Prior to 1960, the fluctuations of output were largely the result of Cuban efforts to regulate supplies in accord with the world demand for Cuban sugar. Early in the period, production was rising in response to continuing world shortages following World War II and the Korean emergency. The record 1951/52 crop of nearly 8 million tons, one-fifth of the world's total output, was followed by a sharp drop in world prices. In an effort to halt the price decline, the Cuban Government segregated part of the supply for sale over a 5-year period, and it imposed limitations on output that were well below production in the immediately preceding years.

After the Castro revolution in 1959, the policy of the Cuban Government with respect to sugar production appears to have been reversed one or more

Table 26—Production of sugar by continents, 1948/49 through 1974/75

Year	North America	South America	Western Europe	Eastern Europe	U.S.S.R.	Africa	Asia	Oceania	World total ¹
1948/49	12,152	3,319	4,683	2,881	2,183	1,603	3,373	1,171	31,375
1949/50	12,821	3,151	4,737	2,737	2,205	1,610	3,528	1,155	31,944
1950/51	13,744	3,587	6,412	3,260	2,400	1,821	3,634	1,131	35,989
1951/52	15,038	3,777	6,227	3,456	2,700	1,709	4,754	943	38,604
1952/53	13,052	4,181	5,956	2,503	3,400	1,930	5,279	1,198	37,499
1953/54	13,307	4,593	7,637	3,876	3,525	2,063	4,953	1,571	41,525
1954/55	13,301	4,993	7,109	3,431	3,025	2,238	5,851	1,592	41,540
1955/56	12,941	4,894	7,599	3,521	4,200	2,482	6,379	1,448	43,464
1956/57	14,451	5,243	7,118	3,025	5,000	2,448	6,894	1,452	45,631
1957/58	14,576	5,605	7,514	4,060	5,700	2,710	7,390	1,609	49,164
1958/59	15,596	6,829	8,852	4,199	6,800	2,794	7,710	1,762	54,542
1959/60	15,805	6,640	7,753	4,096	6,300	2,922	8,700	1,706	53,923
1960/61	17,280	6,894	10,607	5,073	6,600	2,520	9,497	1,669	60,050
1961/62	15,230	6,922	8,432	5,288	7,170	3,124	9,128	1,695	56,989
1962/63	14,603	6,826	7,805	4,626	6,600	3,365	8,791	2,279	54,895
1963/64	16,010	7,120	9,105	4,995	6,475	3,820	10,015	2,242	59,782
1964/65	18,621	7,871	10,635	5,696	11,270	3,917	11,520	2,462	71,992
1965/66	16,194	9,431	9,552	5,072	10,700	3,754	12,054	2,526	69,283
1966/67	18,059	8,789	9,786	5,594	10,304	4,824	10,863	2,956	71,175
1967/68	17,002	8,647	10,704	5,609	11,531	4,937	11,450	3,127	73,007
1968/69	17,482	8,789	11,005	5,065	10,922	4,860	13,047	3,500	74,671
1969/70	21,476	9,274	11,684	4,846	9,570	5,000	14,611	2,787	79,250
1970/71	18,872	10,044	11,382	4,439	9,904	4,868	15,108	3,123	77,739
1971/72	17,270	10,860	13,222	4,786	8,813	5,677	13,800	3,391	77,818
1972/73	18,976	11,735	12,579	5,413	8,984	6,002	16,129	3,428	83,247
1973/74	19,132	13,275	12,964	5,629	10,549	6,123	17,723	3,309	88,704
1974/75	18,981	13,844	11,712	5,295	8,521	6,296	18,340	3,649	86,637

¹ May not add due to rounding.

Source: Foreign Agriculture Circular, For. Agr. Serv., U.S. Dept. of Agr.

Table 27—Increases in sugar production by continents, annual average, 1948/49 through 1974/75

Continents	Average annual increase in production	
	1,000 tons	Percent ¹
North America	263	1.58
South America	405	5.34
West Europe	270	2.89
East Europe	93	2.04
USSR	244	3.42
Africa	181	4.93
Asia	576	5.75
Oceania	95	4.19
World	2,125	3.47

¹ Percentage of the arithmetic mean.

Source: Derived from Table 26.

Table 28—Sugar production in North America, 1948/49 through 1974/75

Year	Importing countries ¹	Exporting Countries				North America
		Cuba	Mexico	British and French West Indies ²	Other	
<i>1,000 tons, raw value</i>						
1948/49	4,184	5,763	754	748	703	12,152
1949/50	4,469	6,127	692	836	697	12,821
1950/51	4,967	6,349	778	869	781	13,744
1951/52	4,493	7,964	807	892	882	15,038
1952/53	4,559	5,687	911	981	914	13,052
1953/54	4,868	5,472	960	1,066	941	13,307
1954/55	5,097	5,066	1,041	1,149	948	13,301
1955/56	4,720	5,229	870	1,097	1,025	12,941
1956/57	4,751	6,252	1,190	1,134	1,124	14,451
1957/58	4,572	6,447	1,311	1,074	1,172	14,576
1958/59	5,040	6,574	1,460	1,192	1,330	15,596
1959/60	5,069	6,462	1,731	1,247	1,296	15,805
1960/61	5,461	7,459	1,603	1,328	1,429	17,280
1961/62	5,543	5,308	1,647	1,273	1,459	15,230
1962/63	5,706	4,211	1,870	1,405	1,411	14,603
1963/64	6,620	4,400	2,097	1,321	1,572	16,010
1964/65	6,728	6,600	2,280	1,445	1,568	18,621
1965/66	6,191	4,950	2,320	1,336	1,397	16,194
1966/67	6,247	6,200	2,679	1,275	1,658	18,059
1967/68	6,177	5,500	2,575	1,251	1,499	17,002
1968/69	6,516	5,207	2,826	1,162	1,771	17,482
1969/70	6,312	9,406	2,648	1,164	1,946	21,476
1970/71	6,288	6,530	2,729	1,125	2,200	18,872
1971/72	6,299	4,837	2,778	1,023	2,333	17,270
1972/73	6,828	5,787	3,053	964	2,344	18,976
1973/74	6,055	6,393	3,125	1,000	2,559	19,132
1974/75	6,068	6,063	3,197	953	2,700	18,981

¹ United States and Canada. ² Includes British Honduras.

Source: Foreign Agriculture Circular, For. Agr. Serv., U.S. Dept. of Agr.

times. The large crop produced in 1960/61 seems to have been the result of a determination to harvest all available cane in Cuba. At the same time, new plantings of cane were neglected, and some mills were dismantled. Some time before 1964, the Cuban Government changed its policy and announced plans for expanding sugar production in Cuba. Later, it announced a production goal of 10 million tons a year by 1970. This was not achieved.

Production in the French West Indies and in former British territories in the islands increased in mid-1967 and 1968. After 1967/68, it showed some tendency to decline irregularly. Production in Mexico multiplied about four times between 1948/49 and 1974/75. Production in other exporting countries in North America has risen almost as fast as in Mexico.

The other sugar exporting areas of North America consist of the Dominican Republic, Haiti, and the Central American countries, including Panama. Of these, the Dominican Republic is the largest producer, but overall production has been increasing most rapidly in Central America.

The importing areas in North America consist of Canada and the United States. Production increases, mostly in the United States from 1948/49 through 1972/73 averaged about 110,000 tons per year,

about 2.5 percent of the average output during the period. Much of this increase was in beet sugar. But in the exporting countries, it has all been in cane sugar.

South America

In recent years, Brazil has accounted for more than half the sugar produced in South America. In 1967/68, only three countries in the world, the United States, Cuba, and the USSR, produced more sugar than Brazil's crop of 5 million tons. Brazilian sugar production has been increasing since 1948/49 at a rate considerably more rapid than the average for South America, but it has been less than the growth rate in Columbia, Venezuela, Ecuador, and Bolivia.

The production of beet sugar in Chile, which began in 1953/54, reached 178,000 tons in 1967/68. Chile and Uruguay are the only countries in South America that produce beet sugar.

Europe

Since 1953, more sugar has been produced in Europe, including the USSR, than on any other continent. All of this production is beet sugar, except for a small quantity of cane sugar produced in Spain. Most

of the USSR sugar crop is produced in Europe. In most years, Europe has supplied 80 percent or more of the world's beet sugar.

The most rapid increase in European production until 1975 was in the USSR, followed by the EEC countries. Production in EEC countries increased about 180 percent from 1948/49 to 1971/72. Production trends in Britain have been similar to those in the original EEC countries, except that the rate of increase has been considerably slower.

The largest sugar producer in Eastern Europe is Poland, followed by Czechoslovakia and East Germany. Sugar output throughout Eastern Europe has been increasing, although more slowly in Czechoslovakia than in other countries in the region. In most countries in Eastern Europe, production has continued to increase since 1960, in contrast to output in Western Europe where growth has been negligible since 1960.

Asia

India, where sugar production originated, is the largest producer of both centrifugal and noncentrifugal sugar in Asia. From 1948/49 to 1960/61, production of centrifugal sugar in India tripled, a slightly more rapid rate of increase than that for the rest of the continent. There have been further increases in output in India since 1968. India produces more than half the world's supply of noncentrifugal sugar. Production of this sugar, called gur, increased about 50 percent in the 20 years following World War II, but this is only about one-fourth the rate for centrifugal sugar.

Production of sugar in the Philippines, the second largest producer in Asia, was reduced to zero during World War II. Since the war, production has recovered rapidly and reached a peak of 2,914,000 tons in 1973/74. This is nearly 1 million tons above the 1966/67-1970/71 average.

Other Asian countries where sugar production has increased rapidly since 1948/49 include Pakistan, Japan, Turkey, Iran, and Thailand. All of the sugar produced in Asia is cane sugar, except in Turkey where only beet sugar is produced and in Iran and Japan where both cane and beets are grown. Changes in political boundaries appear to have been a major factor inducing increased production in Pakistan and Japan.

Production in Taiwan increased immediately following World War II, but there has been no upward trend since 1952/53. Somewhat the same situation has prevailed in Indonesia where production reached a peak in 1955/56.

Africa

Sugar producing countries in Africa may be divided into two groups. One consists of the older producing countries which had sizable sugar industries prior to

World War II: South Africa, the United Arab Republic (Egypt), Mauritius, and Reunion. South Africa is the largest producer in this group, and Reunion is the smallest. These four countries provided more than four-fifths of the sugar produced in Africa in 1948/49 and more than half in 1975/76. South Africa alone has provided about one-third of the sugar produced in Africa since 1948/49.

Sugar output in the newer producing countries in Africa has increased annually at about 10.5 percent of average output during the 27-year period, compared with 4.0 percent for the four older producing countries. Most of this increase has taken place in former colonial territories which have achieved independence since World War II. In recent years, the largest producers in the group have included Mozambique, Uganda, Rhodesia, Swaziland, Malagasy Republic, Tanzania, and Kenya. Changes in political status and boundaries make it difficult to determine accurately the production of individual countries since 1948/49. But countries where production has increased the most rapidly in recent years include Tanzania, Uganda, Malagasy Republic, Rhodesia, and Swaziland.

Oceania

Australia and Fiji are the only sugar producers in Oceania. About 87 percent of the total is produced in Australia. In both areas, the increase in production has been considerably more rapid since 1958/59 than in preceding years.

International Trade in Sugar

Sugar has been an important article of international trade ever since the earliest establishment of the cane sugar industry in the Americas. So long as sugarcane was the only important source of sugar in the world, trade, at least between colonies and their mother countries, was inescapable. Sugarcane grows only in tropical and subtropical regions, and the principal commercial demand for sugar was in Europe where sugarcane, except to a slight extent in the extreme southern part, does not grow.

The development of the beet sugar industry in Europe in the 19th century considerably altered the directions of trade in sugar. The share of cane sugar in the total world exports was reduced from 100 percent to about two-thirds. Cane sugar production declined even more in relative importance from 1880 to 1910 and was generally less than one-half the world's total output of sugar.

World sugar exports during 1909-13, prior to the outbreak of World War I, amounted to about 7.5 million tons per year, approximately 40 percent of world production. During 1935-39, world exports averaged about 12.5 million tons per year, or only 36 percent of world production.

Sugar exports were slightly below the 1935-39 level during the first few years following World War II, but they maintained about the same prewar proportion of world production. Exports more than doubled from 1948 through 1974 (table 29), or nearly 3 percent per year. Exports of sugar from Eastern Hemisphere countries (table 30) increased at a considerably more rapid rate than those from Western Hemisphere countries, rising from 38 percent of the world total during 1948 to 49 percent in 1974.

Exports from Western Hemisphere countries, except Cuba, increased 5.0 percent a year in 1948-74, compared with 3.7 percent for Eastern Hemisphere countries. Nearly all Cuban sugar is exported. The failure of Cuban exports to increase during this period is attributable to Government price and production policies.

Neither Brazil nor Mexico was an important exporter of sugar before World War II. Since then, both countries have expanded production faster than their domestic consumption has risen, making increased exports possible. Much of this increase has come since 1960, when the United States ceased to import sugar from Cuba and increased its imports of Mexican and Brazilian sugar.

All major sugar exporting countries in the Eastern Hemisphere increased their exports from 1948 through 1974, although in the Philippines, Taiwan, and Mauritius the increases were largely confined to the beginning of the period when these areas were

recovering from wartime difficulties. Increased exports in certain years from the USSR have been largely reexports of sugar imported from Cuba since 1960. The largest increase in exports has occurred in Australia where the volume has grown far beyond the quantity formerly taken by Britain on a price preferential basis. Sugar exports from South Africa, although on a considerably smaller scale than for Australia, have undergone a similar development.

The United States has been the largest importer of sugar since World War II, but its proportion of total world imports has declined (table 31). Import trends in Britain, the second largest importer in most years, have been somewhat similar to those in the United States. In 1948-52, these two countries took 51 percent of the world's sugar imports; in 1969-73 they accounted for only 33 percent.

Prior to World War II, Japan imported very little sugar. The loss of Taiwan, where the Japanese had developed a sizable sugar industry, made imports necessary after the war. However, in recent years Japanese imports of sugar have grown well beyond the supplies formerly obtained from Taiwan or their imports from that country in recent years.

The largest growth in imports for any country has been that for the USSR, beginning in 1960. Most of these have come from Cuba and reflect the changed political status of that country, together with the cessation of U.S. imports from Cuba. Also a considerable proportion of these imports have been reexported.

Table 29—Trends in sugar exports from principal exporting countries in the Western Hemisphere, 1948-74

Year	Cuba	Mexico	Dominican Republic	Brazil	Peru	Other	Total	World
<i>1,000 tons, raw value</i>								
1948	6,521	52	482	398	387	107	7,923	12,192
1949	5,391	33	487	43	314	280	6,548	11,266
1950	5,636	25	484	28	273	1,254	7,700	12,386
1951	5,981	0	532	23	393	1,136	8,065	12,298
1952	5,514	9	604	52	317	1,255	7,751	12,740
1953	5,978	65	610	285	454	1,278	8,670	14,890
1954	4,613	78	561	166	470	1,299	7,187	13,730
1955	5,133	89	639	642	538	1,441	8,482	15,491
1956	5,998	35	767	21	476	1,569	8,866	15,342
1957	5,999	109	848	472	551	1,586	9,565	16,978
1958	6,120	195	738	844	456	1,346	9,699	17,067
1959	5,458	169	731	688	530	1,436	9,012	16,293
1960	6,211	520	1,208	852	583	1,643	11,017	19,103
1961	7,064	631	825	863	661	1,968	12,012	21,754
1962	5,656	394	890	491	528	1,854	9,813	20,129
1963	3,881	438	719	581	547	2,344	8,510	19,138
1964	4,603	578	717	279	468	1,853	8,498	19,304
1965	5,859	581	591	841	403	2,082	10,357	21,167
1966	4,889	524	604	1,108	467	2,034	9,626	20,968
1967	6,264	606	713	1,103	524	2,126	11,336	22,314
1968	5,085	707	672	1,131	515	2,506	10,516	22,610
1969	5,290	666	681	1,211	295	1,994	10,137	21,408
1970	7,613	637	874	1,241	480	2,042	12,887	24,321
1971	6,075	602	1,114	1,313	476	2,013	11,593	23,650
1972	4,564	636	1,211	2,264	530	2,346	11,551	23,936
1973	5,288	669	1,136	2,595	449	2,228	12,365	24,305
1974	6,053	547	1,103	2,539	509	2,619	13,370	25,416

Source: Foreign Agriculture Circular, For. Agr. Serv., U.S. Dept. of Agr.

Table 30—Trends in sugar exports from principal exporting countries in the Eastern Hemisphere, 1948-74

Year	Australia	Philippines	USSR	Taiwan	South Africa	Mauritius	Other	Total
<i>1,000 tons, raw value</i>								
1948	466	237	---	220	8	425	2,913	4,269
1949	535	457	---	340	82	479	2,825	4,718
1950	421	484	---	711	75	396	2,599	4,686
1951	326	679	100	327	73	557	2,171	4,233
1952	271	944	85	518	11	518	2,642	4,989
1953	817	926	135	1,020	109	531	2,682	6,220
1954	718	1,018	254	583	244	553	3,173	6,543
1955	700	977	255	649	271	539	3,618	7,009
1956	828	1,014	214	707	201	585	2,927	6,476
1957	884	942	233	881	164	639	3,670	7,413
1958	770	1,011	245	931	265	574	3,572	7,368
1959	717	1,124	242	815	273	560	3,550	7,281
1960	869	1,164	291	1,012	288	353	4,109	8,086
1961	906	1,153	1,048	720	326	565	5,024	9,742
1962	1,287	1,226	986	673	475	567	5,102	10,316
1963	1,263	1,195	1,014	762	646	633	5,115	10,628
1964	1,384	1,279	477	984	644	635	5,403	10,806
1965	1,317	1,195	805	920	413	638	5,528	10,810
1966	1,896	1,232	1,282	939	582	629	4,782	11,342
1967	1,836	1,220	1,324	628	899	569	4,502	10,978
1968	1,790	1,086	1,610	739	1,401	657	4,811	12,094
1969	2,275	1,124	1,530	585	786	657	4,314	11,271
1970	1,531	1,364	1,672	452	871	634	4,910	11,434
1971	1,942	1,567	1,544	577	913	539	4,975	12,057
1972	2,216	1,367	71	539	1,287	739	6,166	12,385
1973	2,272	1,625	51	537	983	815	5,657	11,940
1974	1,970	1,700	129	610	912	800	5,925	12,046

Source: Foreign Agriculture Circular, For. Agr. Serv., U.S. Dept. of Agr.

Table 31—Trends in sugar imports by principal importing countries, 1948-74

Year	United States ¹	United Kingdom	USSR	Japan	Canada	France	Morocco	Other	World
<i>1,000 tons, raw value</i>									
1948	3,225	2,095	---	621	623	351	151	3,761	10,827
1949	3,753	2,449	---	285	623	325	190	3,406	11,031
1950	3,707	2,351	---	447	640	376	228	4,638	12,387
1951	3,666	2,552	---	559	547	139	247	4,188	11,898
1952	3,872	2,288	---	809	611	397	284	4,284	12,543
1953	3,828	3,393	11	1,168	582	449	309	4,728	14,468
1954	3,795	2,710	196	1,038	657	368	325	4,674	13,763
1955	4,011	2,504	718	1,130	680	361	396	5,406	15,206
1956	4,173	2,614	386	1,326	719	379	375	5,247	15,219
1957	4,166	3,218	747	1,281	692	607	386	5,456	16,553
1958	4,765	2,987	440	1,348	735	504	367	5,760	16,960
1959	4,571	2,851	390	1,341	762	594	377	5,289	16,175
1960	4,717	2,560	1,893	1,379	680	860	305	5,908	18,302
1961	4,226	2,582	3,965	1,508	760	432	281	7,525	21,279
1962	4,671	2,414	2,740	1,651	832	474	454	7,535	20,771
1963	4,486	2,817	1,255	1,628	830	425	411	7,261	19,113
1964	3,596	2,547	2,082	1,701	845	566	447	6,993	18,777
1965	3,856	2,398	2,528	1,902	924	480	411	7,676	10,175
1966	4,239	2,455	2,032	1,917	862	561	375	8,506	20,947
1967	4,687	2,357	2,737	2,003	984	539	332	8,341	21,980
1968	5,130	2,286	1,935	2,264	951	416	310	8,323	21,615
1969	4,885	2,369	1,472	2,456	1,043	117	279	7,848	20,469
1970	5,193	2,027	3,312	2,866	1,046	66	301	8,748	23,559
1971	5,314	2,352	1,693	2,675	991	119	271	9,412	22,827
1972	5,201	2,384	2,121	3,061	1,001	141	245	8,974	23,128
1973	5,270	2,260	2,900	2,615	1,062	110	306	9,298	23,821
1974	5,774	2,087	2,046	3,055	941	171	308	8,889	23,271

¹ These figures differ from the quota charges for imported sugar reported by USDA. They are used in order to have data which, when added to the imports of other countries, equal the world total.

Source: Foreign Agriculture Circular, For. Agr. Serv., U.S. Dept. of Agr.

For many years, the reexport of part of the country's sugar imports has been a common practice, particularly by certain European countries. Mostly, it has involved importing raw cane sugar and exporting all or part of it in refined form. The practice started soon after the development of sugar colonies in North and South America in the 16th century. Trade controls channeled the raw sugar exports of these colonies to the mother country, except for smuggling. European countries with no sugar producing colonies provided a market for sugar refined in such countries as Spain, Portugal, France, and Britain.

The reexport of sugar has increased considerably in volume since World War II. During 1948-60, the largest volume of reexports came from Britain and France. Since 1960, however, the USSR has reexported more sugar than any other nation. The volume of reexports of sugar from Mainland China, East Germany, and Czechoslovakia also increased during this period. All these increases, as well as those of the USSR, are related to the change in Cuba's political status.

The trend of imports by the United States and Britain, both of which have been large-scale importers for many years, illustrates some of the effects of protective systems on international trade. U.S. sugar imports during 1948-52 equaled 10.4 percent of world sugar production; in 1963-67, only 5.7 percent; in 1974, 6 percent. Net imports of Britain declined from 4.4 percent of world production in 1948-52 to 2.9 percent in 1963-67.

Brazil's production has increased rapidly enough to provide for increased domestic consumption and increased exports. Average annual production during 1963-67 was 2,821,000 tons above that for 1948-52, although exports rose only 633,000 tons. There have been similar trends, although on smaller scales, in Colombia, Venezuela, Mexico, and some Central American countries. Countries in Asia where sugar production has increased more rapidly than exports include Pakistan, Iran, Turkey, and Thailand. In Africa, several newer nations have increased their production substantially without any significant increase in exports. These include Kenya, the Malagasy Republic, Mozambique, Uganda, and others, although reliable statistics are frequently not available because of recent changes in boundaries and political status.

World Sugar Trade Pattern

Nearly all of the more important sugar-importing nations grant price preferentials of some sort to sugar imported from certain countries. Usually the preference is limited to certain quantities of sugar imported each year. Exporting countries naturally ship as much sugar as they can to markets where they obtain the highest price. Arrangements of this sort are a major factor determining the pattern of world trade in sugar. They are often more political than economic in nature (table 32).

The United States accounted for about a fifth of world sugar trade in 1967; four-fifths of this trade was with the Philippines and countries in the Western Hemisphere, exclusive of British and French possessions or former possessions in America. The United States received almost four-fifths of all the sugar exported by these countries.

Somewhat the same arrangement applies to other major importing countries. For instance, about 78 percent of the sugar imported into Britain came from its former territories, most of it from Australia, Mauritius, and the British Caribbean. The next largest source was South Africa, which until recently was considered a part of the British Commonwealth. Canadian sugar imports were distributed in much the same manner as those of Britain. Together, Britain and Canada took about 57 percent of the exports from British sources and 42 percent of those from South Africa.

The other principal purchaser of sugar from British sources was Japan, which imported almost as much Australian sugar as Britain and Canada together. Cuba and South Africa were the other important sources of Japanese imports. The three countries supplied more than four-fifths of Japanese sugar imports in 1967.

Imports of EEC countries came mostly from French possessions and from countries in Eastern Europe. They were based either on political connections with France or proximity to EEC countries.

Nearly all imports by the USSR and Mainland China came from Cuba, and the imports appear to have been intended as a means of assisting Cuba economically. A large part of these imports were offset by exports.

Although the group of importing countries discussed in detail earlier accounted for nearly two-thirds of world imports in 1967, there were 7,600,000 tons taken by many other countries. None of them imported as much as 400,000 tons. In some cases, the sources of supply are largely determined by political connections; New Zealand imports sugar primarily from Australia, and the former French possessions in North Africa continue to obtain their sugar from France. In other cases, an importer merely buys sugar wherever it can be obtained for the least cost that year.

The countries shown in table 32 provided over four-fifths of world exports in 1967. Most of the remaining 3,743,000 tons came from the principal reexporting countries of the world, the most important of which are listed in the table as importing countries. The USSR was the largest of these with exports of 1,324,000 tons, followed by Mainland China with 551,000 tons, France with 519,000 tons, and Britain with 391,000 tons. Most of the exports from the USSR and Mainland China represent either sugar imported from Cuba or domestically produced sugar exported in place of supplies imported from Cuba. Cuba also exported more than 2 million tons of sugar to other countries. Much of the sugar exported from

Table 32—International trade in sugar, 1967

Exporting countries	United States	United Kingdom	Importing countries					Other	Total
			Canada	Japan	Common Market	USSR	Mainland China		
<i>1,000 short tons</i>									
U.S. sources:									
Philippines	1,122	---	---	---	---	---	---	98	1,220
Mexico	520	---	5	---	---	---	---	100	625
Central America	174	---	---	13	15	---	---	23	225
Dominican Republic	629	11	---	---	---	---	---	4	644
Brazil	651	20	---	14	47	---	---	370	1,102
Peru	372	---	---	---	15	---	---	87	474
Other W. Hemisphere ..	245	13	8	25	29	---	---	112	432
Total	3,713	44	13	52	106	---	---	794	4,722
British sources:									
Australia	195	486	173	658	---	---	---	324	1,836
Fiji	43	162	85	45	---	---	---	16	351
Mauritius	19	414	55	---	12	---	---	118	618
India	76	86	---	---	---	---	---	34	196
British Caribbean ¹	199	727	215	---	---	---	---	91	1,232
Total	532	1,875	528	703	12	---	---	583	4,233
Common Market sources:									
French Caribbean	58	---	---	---	111	---	---	12	181
Reunion	---	---	---	---	216	---	---	4	220
Malagasy Republic	9	---	---	---	2	---	---	77	88
Total	67	---	---	---	329	---	---	93	489
Japanese sources:									
Taiwan	80	---	---	87	---	---	---	461	628
South Africa	66	133	238	375	24	---	---	44	880
Total	146	133	238	462	24	---	---	505	1,508
Sino-Soviet sources:									
Cuba	---	89	77	597	82	2,734	613	2,072	6,264
Eastern Europe ²	8	68	---	---	249	3	---	841	1,169
Total	8	157	77	597	331	2,737	613	2,913	7,433
All other countries	112	208	128	187	378	---	---	2,730	3,743
World	4,578	2,417	984	2,001	1,180	2,737	613	7,618	22,128

¹ Guyana, British Honduras, and British West Indies. ² Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, and Yugoslavia.

Source: Reports of the For. Agr. Serv., U.S. Dept. of Agr., and International Sugar Council Sugar Yearbook, 1967.

France and Britain went to their former possessions.

Most of the world's international trade in sugar is conducted under various special arrangements, and the direction of the trade is determined by these arrangements. Reasonably free competition among buyers and sellers of different nations is restricted by these arrangements to only a fraction of the sugar moving in international trade. The complicated nature of the preferentials offered or received by various

nations and the widely varying amount of the preference makes it impracticable to determine the exact extent of nonpreferential trade in sugar. The termination of the sugar quota system by the United States at the end of 1974 and Britain's entry into the Common Market at about the same time may result in considerable changes in the volume and direction of world trade movements, but the extent of these changes is not yet known.

POSTWAR TRENDS IN THE U.S. SUGAR INDUSTRY

The World War II period of U.S. Government sugar controls ended in 1947 with the purchase of the 1946 and 1947 crops of Cuban sugar and the removal of internal wartime price and distribution controls over sugar during 1947. Also, Congress passed a new sugar quota law in 1947, known as the Sugar Act of 1948, which became effective on January 1, 1948. Thus, the United States in 1948 returned to its prewar system, although somewhat modified, of regulating the production, importation, and marketing of sugar.

Trends in U.S. Sugar Supply by Sources Since 1948

The large 1947 Cuban sugar crop made possible increased shipments of sugar to the United States and provided this country with relatively large stocks beginning in 1948. As a result, sugar marketings in 1948 were smaller than in 1947, although larger than in years of wartime controls. After 1948, sugar marketings in the United States increased at a fairly regular rate, and in 1968 they were about 55 percent larger than in 1948 (table 33).

The quantity of sugar marketed in the United States coming from most of its major supplying areas has increased since 1948. The major exceptions are Puerto Rico, where production has declined, and

Cuba, from which the United States has not imported any sugar since 1960. Also, the small sugar industry in the Virgin Islands has ceased operations. About 58 percent of the average annual increase in sugar marketings since 1948 has come from domestic areas, and 42 percent has come from imports (table 34). The largest increase in tonnage has been supplied by the domestic beet sugar industry, but the largest percentage increase has come from the mainland sugar-cane area.

Most of the increase in the mainland cane area has been in Florida. The size of the increase in supplies from the Philippines is partly the result of wartime destruction in that country. As a result, U.S. receipts of sugar from the Philippines were comparatively low during the first few years of the postwar period.

The volume of U.S. imports from countries other than the Philippines, although fluctuating considerably from year to year, has shown an average annual increase of 17,000 tons. During 1948-68, the net effect of numerous amendments to the sugar quota laws was to assign most of the increase in U.S. sugar consumption to domestic areas. The decline in Puerto Rican sugar production produced rather large deficits in quota supplies from that area, especially since

Table 33—Sources of sugar for the United States, 1948-74

Year	Beet	Cane	Hawaii	Puerto Rico	Virgin Islands	Philippines	Cuba	Other foreign countries	Total
	<i>1,000 tons, raw value</i>								
1948	1,656	456	714	1,013	4	252	2,927	62	7,084
1949	1,487	557	769	1,091	4	525	3,103	52	7,588
1950	1,749	522	1,145	1,053	11	474	3,264	61	8,279
1951	1,730	457	941	959	6	706	2,946	13	7,758
1952	1,560	579	972	983	6	860	2,980	51	7,991
1953	1,749	513	1,087	1,118	12	932	2,760	111	8,282
1954	1,802	501	1,040	1,082	10	974	2,718	113	8,240
1955	1,797	500	1,052	1,080	10	977	2,862	118	8,396
1956	1,955	601	1,091	1,135	13	982	3,089	126	8,992
1957	2,066	636	1,037	912	15	906	3,127	217	8,916
1958	2,240	680	630	823	6	980	3,438	279	9,076
1959	2,241	578	977	958	12	980	3,215	279	9,240
1960	2,165	619	845	896	7	1,155	2,390	1,445	9,522
1961	2,607	784	1,045	980	16	1,355	0	2,945	9,732
1962	2,415	787	1,084	904	11	1,256	0	3,340	9,797
1963	2,965	1,072	1,033	875	15	1,195	0	3,360	10,515
1964	2,699	905	1,110	793	16	1,217	0	2,369	9,109
1965	3,025	1,099	1,137	830	4	1,178	0	2,647	9,920
1966	3,024	1,100	1,200	711	5	1,186	0	3,129	10,355
1967	2,824	1,169	1,253	705	0	1,123	0	3,310	10,384
1968	3,085	1,204	1,192	504	0	1,124	0	3,842	10,951
1969	3,216	1,169	1,160	341	0	1,124	0	3,725	10,735
1970	3,569	1,308	1,145	352	0	1,298	0	3,879	11,551
1971	3,438	1,255	1,087	143	0	1,592	0	3,779	11,294
1972	3,511	1,630	1,113	148	0	1,432	0	4,006	11,840
1973	3,512	1,614	1,142	79	0	1,454	0	3,875	11,676
1974	3,024	1,272	993	157	0	1,472	0	4,298	11,216

Source: Sugar Statistics and Related Data, Vol. 1, Bul. 293, Agr. Stabil. and Conserv. Serv., and various issues of Sugar Reports since 1974, U.S. Dept. of Agr.

Table 34—Postwar average annual changes in quantity of sugar marketed in the United States, by sources of supply, 1948-75

Source of supply	Amount of increase	Average annual increase ¹
	1,000 tons	Percent
Domestic beet	83	3.0
Mainland cane	43	4.2
Hawaii	10	0.8
Puerto Rico ²	-38	-4.2
All domestic	98	1.6
Philippines	35	2.8
Other imports ³	35	1.7
All imports	70	1.9
Total	168	1.5

¹Percentage of arithmetic mean. ²Includes Virgin Islands. ³Includes receipts from Cuba.

Source: Reports of Agr. Stabil. and Conserv. Serv., U.S. Dept. of Agr.

1962. Since 1962, all of these deficits have been assigned to foreign countries, including the Philippines. Except for the assignment of these deficits, the growth in U.S. sugar imports might have been smaller than the amount recorded.

The production of sugar involves the growing of sugarbeets or sugarcane, the processing of these plant materials into raw or refined sugar, and the further processing of raw sugar in separate plants into refined sugar (15). These functions may all be combined in a single company or entrepreneur, but they are frequently divided in various ways among three separate individuals or organizations. The characteristic arrangements vary considerably among the sugar producing areas, and gradual changes have occurred in each area.

Beet Sugar

Nearly all sugarbeets produced in the United States are grown by farmers for sale to a processor. Sugarbeet processors grow an insignificant acreage of beets, usually for experimental purposes. Until the seventies, farmers did not collectively own any processing plants. Since 1948, the number of farms growing sugarbeets has declined. But the average acreage of beets per farm has increased more rapidly. Thus, production has risen substantially (table 35).

The mechanization of sugarbeet growing, the development of varieties producing monogerm seed, and the increasing use of chemicals to control weeds and diseases have been major factors which have helped decrease by 45 percent the number of man-hours of labor required to produce enough beets to yield 1 ton of sugar. The increased use of machinery has contributed greatly to the lower unit costs of producing beets. The most economical use of the machines requires a larger acreage than most farmers could manage before the newer machines became available (40).

The U.S. sugarbeet industry has grown at very different rates in various parts of the country since 1948, as shown by trends in acreage planted to sugarbeets in various areas (table 36). Although U.S. acreage in 1968 was about 57 percent above the 1948-52 average, it increased 155 percent in the Red River Valley and 132 percent in the Pacific Northwest. In California, acreage increased rapidly through 1964, when it was 110 percent above the 1948-52 average; then, acreage declined for 3 years and has since fluctuated irregularly. Acreage also reached a peak in 1964 in the Rocky Mountain States, but the peak was

Table 35—Trends in the U.S. beet sugar industry, averages for 1948-52, 1953-57, 1958-62, and years, 1963-74

Period or year	Farms growing sugar beets	Average harvested area per farm	Average yield of beets	Total sugar produced raw value	Grower receipts per farm	Share of receipts from Government	Man-hours per ton of sugar produced
	Number	Acres	Tons	1,000 tons	Dollars	Percent	Number
1948-52	30,239	24.2	14.7	1,559	4,892	18.1	34.1 ¹
1953-57	25,412	31.8	16.6	1,957	7,258	17.3	30.6
1958-62	24,397	40.6	17.2	2,404	9,794	16.7	21.6
1963	22,807	54.7	18.7	3,086	14,712	15.6	19.5
1964	23,968	58.1	17.0	3,332	13,848	16.2	20.1
1965	22,608	54.9	16.5	2,816	12,869	16.1	19.9
1966	19,542	59.4	17.6	2,853	15,816	14.7	18.7
1967	17,775	63.9	17.3	2,694	17,508	14.1	18.6
1968	18,452	78.1	17.8	3,490	22,135	13.9	16.7
1969	18,431	84.8	18.4	3,472	23,321	14.0	18.1
1970	16,442	83.1	18.5	3,322	26,270	12.5	16.5
1971	15,044	88.1	20.3	3,512	31,199	12.0	15.3
1972	14,542	91.8	21.3	3,632	35,634	11.2	15.0
1973	12,438	97.7	20.2	3,200	66,588	6.1	15.0
1974	11,964	102.5	18.2	2,916	90,515	4.4	N.A.

¹1950-52 only.

N.A. Not available.

Source: Sugar Statistics and Related Data, Vol. II, Bul. 244, Agr. Stabil. and Conserv. Serv., U.S. Dept. of Agr.

Table 36--Trends in acreage planted to sugar beets, by areas in the United States, averages, 1948-52, 1953-57, 1958-62, and years, 1963-74

Period	California	Pacific Northwest ¹	Red River Valley ²	Rocky Mountain ³	Michigan-Ohio	Other	United States
	<i>1,000 acres</i>						
1948-52	172	117	83	307	101	31	811
1953-57	192	137	107	312	87	28	863
1958-62	229	172	133	373	100	31	1,038
1963	320	229	172	421	114	44	1,300
1964	362	268	175	452	125	74	1,456
1965	313	236	191	379	112	77	1,308
1966	279	216	192	363	112	78	1,240
1967	230	228	209	344	106	93	1,210
1968	289	280	252	418	128	142	1,509
1969	344	299	262	470	132	163	1,670
1970	291	264	250	395	134	97	1,431
1971	338	273	191	377	133	77	1,389
1972	341	301	190	370	138	84	1,424
1973	280	271	212	323	120	74	1,280
1974	234	170	333	328	116	71	1,252

¹ Idaho, Oregon, and Washington. ² Minnesota and North Dakota. ³ Colorado, Montana, Utah, Whoming, and Nebraska.

Source: Prospective Plantings, Stat. Rpt. Serv., U.S. Dept. of Agr.

only 47 percent above the base period. The 1973 acreage, although above those for the 2 previous years, was 29 percent below 1964. Beet acreage in Michigan and Ohio has shown no consistent trend since 1948, although fluctuating considerably from year to year.

The sharp increase in acreage in the "other" States through 1969 was largely the result of the construction of new beet sugar mills and the consequent increase in acreage in Texas, Arizona, Kansas, New York, and Maine. In 1948, no beets were produced in some of these States, and the acreage was very small in the others. No beets have been grown in Wisconsin since 1961, although one-third of the acreage in "other" States during 1948-52 was recorded by Wisconsin.

Sugarbeets were processed by a maximum of 72 factories in 1950 to a low minimum of 52 factories in 1973. During that period, a number of new factories, mostly of much larger than average size, were built, and the capacity of a number of existing factories was increased. With rare exception (Empire State and Maine Sugar plants were new) nearly all of the factories which closed were old and small plants. As a result, total factory capacity increased considerably. In 1974, factories operated in 16 States. However, more than one-third of the total factory capacity was located in California and Colorado, and only about 9 percent was in States east of the Mississippi River.

The 54 or more plants processing sugarbeets in 1974 were operated by 13 companies. Some of them were subsidiaries of larger companies engaged in businesses other than the processing of sugarbeets. Since 1970, four new beet cooperations have started operations.

The six largest processing companies generally produce nearly nine-tenths of the total output of U.S. beet sugar. In some respects, the degree of concentration is even greater than that indicated by the overall figure. For instance, two companies own all the mills in Utah, Idaho, Oregon, and Washington; and one company owns the mills in northeastern Colorado plus all the mills in adjacent areas in Nebraska and Kansas. One effect of this is that few sugarbeet growers have more than one buyer or potential buyer for their beets. However, this lack of competition for their product is offset to a large extent by the beet growers' associations that bargain with processors concerning prices and other terms of sale.

U.S. sugarbeets are all produced under annual contracts between growers and processors. Although varying in detail, these contracts possess certain common characteristics. They are signed before the beets are planted; the acreage to be grown by each farmer is specified; the growers are required to use seed supplied by the processor; various cultural practices relating to such items as rotation practices, the use of fertilizer, and times of harvest are specified; and the prices to be received by the growers are stated in terms of a formula related to the price the processor receives for sugar.

Because of this method of determining the price of beets, the grower-processor contracts are commonly referred to as participation contracts. These contracts commonly provide for the determination of grower prices from the net returns (price minus marketing costs) received by the processor from the sale of sugar and the sucrose content of the beets. In a few cases, the returns processors receive for byproducts are also included in the formula. The price variations

usually are specified in a table showing prices per ton of beets for various net returns from the sale of sugar and for various percentages of sucrose in the beets.

No two processors use exactly the same form of contract, and some of the larger companies use somewhat different contracts for different areas where they have mills. The contract terms from 1934 through 1974 were reviewed by Government officials responsible for the administration of the Sugar Act. This law gave the Secretary of Agriculture power to specify minimum prices to be paid growers for their beets. The Secretary usually approved existing or proposed contracts as meeting minimum requirements, although frequently this was preceded by consultation with the parties concerned.

Mainland Sugarcane

Louisiana and Florida were the only mainland States where sugarcane was grown for the commercial production of sugar until 1973 when a mill in Texas began operating, although small quantities of cane are grown for the production of sirup in a few other Southern States. As in the sugarbeet area, the number of farms on which sugarcane is grown has decreased since 1948, and the average acreage per farm has increased substantially (table 37). Much of the increased acreage per farm is the result of expanding production in Florida, especially since 1960. In 1966, the 169 farms growing sugarcane in Florida produced 16 percent more sugar than the 2,080 farms in Louisiana. Some of the increase in average yield of cane per acre is also due to the increasingly large proportion of the total crop which is now grown in Florida where yields are higher than in Louisiana.

Much of the U.S. sugarcane is produced by companies which also own and operate processing mills. About half of the cane in Florida and Louisiana is grown in this manner. Independent growers with no ownership relation to a sugar mill sell their cane to one or more sugar mills on annual contracts. These are likely to be less formal than those used for sugarbeets. Many of them are oral and relate mainly to the price to be paid for cane. Certain specifications regarding the size of daily deliveries to the mill may be included, but generally nothing is included that relates to varieties, fertilization, or cultural practice.

Until 1975, the price commonly paid was a formula price, with a minimum price determined annually by the Secretary of Agriculture. This minimum price was specified in a formula which took into account the quality of the cane—sucrose content and purity—and the price of raw sugar in New York City over a specified period of time. The formulas for Louisiana and Florida sugarcane differed in details but were generally the same.

Hawaii

The sugar industry in Hawaii is considerably more integrated than are those in other areas in the United States. Most sugarcane is grown by companies which operate sugar mills, and the number of farms growing sugarcane is comparatively small (table 38). Total sugar production has remained relatively stable since 1948, compared with output in mainland areas.

Most of the raw sugar produced in Hawaii is shipped to a mainland refinery owned by Hawaiian sugar producers and operated as a cooperative. Thus, the principal product sold by producers of sugarcane

Table 37—Trends in the U.S. mainland cane sugar industry, averages, 1948-52, 1953-57, 1958-62, and years, 1963-74

Period	Farms growing sugarcane	Average harvested area per farm	Average yield of cane	Total sugar produced raw value	Grower receipts per farm Government	Share of receipts from produced	Man-hours per ton of sugar
	<i>Number</i>	<i>Acres</i>	<i>Tons</i>	<i>1,000 tons</i>	<i>Dollars</i>	<i>Percent</i>	<i>Number</i>
1948-52	5,192	64.7	20.5	516	9,541	14.7	70.1 ¹
1953-57	3,785	77.3	24.4	580	14,556	14.0	47.5
1958-62	2,854	126.6	24.7	707	25,842	13.3	37.7
1963	2,419	192.3	29.9	1,182	61,574	10.2	29.3
1964	2,483	228.7	25.3	1,142	43,990	13.5	32.2
1965	2,396	209.9	25.3	1,102	44,956	12.7	28.6
1966	2,249	226.6	26.2	1,212	55,440	11.4	23.4
1967	2,062	247.7	30.2	1,457	75,187	11.0	19.0
1968	1,937	251.4	27.4	1,209	69,045	11.1	20.8
1969	1,821	228.7	27.9	1,071	66,588	10.6	19.6
1970	1,724	269.1	28.9	1,252	85,151	10.1	17.8
1971	1,648	319.1	25.3	1,204	92,883	9.6	19.2
1972	1,578	370.1	31.0	1,616	141,598	8.1	17.7
1973	1,426	425.5	25.4	1,372	230,203	5.0	19.8
1974	1,315	459.6	24.8	1,379	533,382	2.3	N.A.

¹ 1950-52 only.

Table 38—Trends in the Hawaiian cane sugar industry, averages 1948-52, 1953-57, 1958-62, and years, 1963-74

Period	Farms harvesting sugarcane	Average harvested area per farm	Average yield of cane	Total sugar produced, raw value	Man-hours per ton of sugar produced
	<i>Number</i>	<i>Acres</i>	<i>Tons</i>	<i>1,000 tons</i>	<i>Number</i>
1948-52	362	296.1	76.4	954	24.3 ¹
1953-57	846	120.6	89.0	1,100	19.1
1958-62	871	153.5	87.5	978	15.8
1963	612	175.5	93.4	1,101	13.6
1964	535	207.1	94.7	1,179	11.8
1965	578	189.6	98.0	1,218	10.8
1966	529	209.8	98.8	1,234	10.5
1967	569	196.5	98.8	1,191	10.6
1968	518	219.1	99.4	1,232	10.0
1969	528	214.4	95.7	1,182	9.4
1970	504	225.8	91.9	1,162	9.5
1971	511	226.6	92.3	1,230	9.0
1972	410	264.6	91.5	1,119	9.2
1973	393	275.3	89.2	1,129	9.2
1974	339	282.7	95.8	1,043	N.A.

¹ 1950-52 only.

N.A. - Not available.

Source: Sugar Statistics and Related Data, Vol. II Bul.244, Agr. Stabil and Conserv. Serv., U.S. Dept. of Agr.

and sugar in Hawaii is refined sugar sold in the continental United States.

The production of sugarcane in Hawaii is highly mechanized as is indicated by the smaller number of man-hours of labor used to produce a ton of sugar compared with other regions of the United States. Also, the productivity of labor in Hawaii has increased greatly since 1948. Higher yields of cane than those obtained in other areas is an important factor accounting for the higher productivity of labor in the Hawaiian sugar industry.

Puerto Rico

The Puerto Rican sugar industry is characterized by a large, although declining, number of independent growers who sell their sugarcane to a processor operating one or more sugar mills (table 39). The average number of acres of sugarcane harvested per farm each year is much smaller than in other sugarcane areas and somewhat below the average for sugarbeet growers. However, the average harvested acreage per farm in Puerto Rico has doubled since 1953-57.

Table 39—Trends in the Puerto Rican cane sugar industry, averages 1948-52, 1953-57, 1958-62, and years, 1963-74

Period	Farms growing sugarcane	Average harvested area per farm	Average yield of cane	Total sugar produced 96 basis	Grower receipts per farm	Share of receipts from Government	Man-hours per ton of sugar produced
	<i>Number</i>	<i>Acres</i>	<i>Tons</i>	<i>1,000 tons</i>	<i>Dollars</i>	<i>Percent</i>	<i>Number</i>
1948-52	17,021	23.6	29.4	1,276	6,356	16.4	109.9 ¹
1953-57	18,268	21.2	27.0	1,089	5,133	16.4	98.7
1958-62	14,131	25.6	31.5	1,043	6,997	14.3	88.4
1963	12,317	24.6	33.4	978	9,473	11.2	89.9
1964	11,608	26.1	32.3	978	8,484	13.3	88.0
1965	10,770	26.7	30.6	887	7,929	14.4	80.5
1966	9,826	27.8	34.7	808	8,829	13.7	78.1
1967	8,795	29.9	31.0	637	9,683	13.0	70.1
1968	7,753	30.6	27.8	478	8,922	13.8	71.1
1969	6,531	27.6	32.7	455	7,956	13.1	59.8
1970	5,565	33.9	31.2	321	9,365	12.2	63.1
1971	4,202	36.5	29.9	295	9,062	11.9	60.1
1972	3,535	43.1	28.8	252	10,477	10.9	63.0
1973	2,954	44.7	27.4	287	13,191	9.0	62.1
1974	2,551	47.7	29.5	N.A.	44,307	3.0	N.A.

¹ 1950-52 only.

N.A. - Not available.

Source: Sugar Statistics and Related Data, Vol. II Bul. 244, Agr. Stabil and Conserv. Serv., U.S. Dept. of Agr.

The number of man-hours required to produce a ton of sugar in Puerto Rico also is much higher than in any other domestic area. Although man-hour requirements in Puerto Rico have been reduced nearly one-half, this is smaller than the reductions which have occurred in other domestic sugar producing areas. Sugarcane production in Puerto Rico is less mechanized than in other regions. More machinery is used than at the end of World War II, but the introduction of labor-saving devices in the Puerto Rican sugar industry has been slower than in other areas.

The production of sugar in Puerto Rico in 1973 was only about one-fourth the 1948-52 average. Puerto Rico is the only major domestic sugar producing area in which production has declined since World War II. Production in the Virgin Islands, which usually ranged from 5,000 to 15,000 tons per year, ceased in 1966.

The prices Puerto Rican growers receive are determined in about the same way as in Florida and Louisiana, although the details vary from mainland practices. For instance, the period of time used in determining the average price to be used in the sugarcane price formula differs from that for either Florida or Louisiana, because the marketing period for Puerto Rican raw sugar differs from those for the mainland States. Also, because of the cost of shipping raw sugar to the mainland, the ratio of the price of cane to the price of sugar is somewhat lower than for the mainland States.

Raw Sugar Prices in the U.S. and World Sugar Markets

Under the U.S. sugar quota system, sugar prices in the United States and in the world market have remained effectively separated. Prices have frequently moved in opposite directions. Since 1948, the trend in U.S. sugar prices has been generally upward, and in the world market it has been downward (table 40). As a result, the margin between U.S. prices and those in the world market widened substantially. If the figures are disregarded for 1951, 1957, 1963, and 1964 when the sugar markets generally were disrupted, first by the outbreak of war in Korea, second by the Suez Crisis, and finally by a worldwide shortage of sugar early in the sixties, then the average yearly margin between U.S. and world sugar prices has increased since 1948 at an average rate of about 0.24 cent per year. Approximately a third of this has been accounted for by the increase in U.S. prices and two-thirds by price declines in the world market.

These price trends are largely the result of U.S. policies which have restricted domestic supplies sufficiently to cause sugar prices to rise about as much as the increase in average prices for other U.S. farm products. These sugar prices have been highly profitable to most foreign exporters, as is shown by their willingness to supply the U.S. market in much of 1963 and 1964 when world prices were even higher than

Table 40—Trends in raw sugar prices in the United States and "world" sugar markets, 1948-75

Year	Price per pound in New York ¹	Adjusted price per pound in "world" market ²	Difference
--- Cents ---			
1948	5.54	5.13	+0.41
1949	5.81	5.03	+0.78
1950	5.93	5.82	+0.11
1951	6.06	6.66	-0.60
1952	6.26	5.08	+1.18
1953	6.29	4.27	+2.02
1954	6.09	4.14	+1.95
1955	5.95	4.19	+1.76
1956	6.09	4.47	+1.62
1957	6.24	6.10	+0.14
1958	6.27	4.36	+1.91
1959	6.24	3.86	+2.38
1960	6.30	4.09	+2.21
1961	6.30	3.85	+2.45
1962	6.45	3.87	+2.58
1963	8.18	9.41	-1.23
1964	6.90	6.79	+0.11
1965	6.75	3.07	+3.68
1966	6.99	2.82	+4.17
1967	7.28	2.95	+4.33
1968	7.52	2.96	+4.56
1969	7.75	4.37	+3.38
1970	8.07	4.88	+3.19
1971	8.52	5.65	+2.87
1972	9.09	8.54	+0.55
1973	10.29	10.99	-0.70
1974	29.50	31.62	-2.12
1975	22.47	21.92	+0.55

¹ Spot prices in New York. ² Spot prices in Cuba or, since 1961, greater Caribbean ports adjusted to New York delivery basis.

Source: Sugar Statistics and Related Data Vol. I Bul. 293, Agr. Stabil. and Conserv. Serv., U.S. Dept. of Agr. through 1973; Sugar Reports, Agr. Stabil. and Conserv. Serv., U.S. Dept. of Agr. 1/75 through 7/75; Sugar Market News, Agr. Mkt. Serv., U.S. Dept. of Agr. 8/75 through 1/76; Sugar & Sweetener Reports, Agr. Mkt. Serv., U.S. Dept. of Agr. beginning 2/76.

those in the United States (1). It is also obvious from their prompt actions increasing production whenever there appeared to be an opportunity to export more sugar, even at less than the prevailing U.S. price.

Since all sugar exported to the United States was sold at U.S. prices, adjusted for transportation costs and import duty, quotas in the U.S. market were highly prized. Many exporting countries, however, produced much more sugar for export than they were permitted to sell in the United States or other preferential markets, such as Britain, France, and the USSR. Most of these countries were, in effect, selling their sugar at a blended price consisting of the weighted average of the prices obtained for sugar sold to the United States, to some other preferential market if available, and to the world market. The United States imports more sugar than any other nation, almost all of it until 1975 on a preferential basis. Prior to 1975 the only markets available to some exporting countries were the U.S. and world markets.

Some countries, such as the Philippines, sent nearly all of their sugar exports to the United States. Under the quota system others, Taiwan for example, had only small U.S. quotas and sold most of their sugar on the world market. Both countries export most of the sugar they produce, but the average prices they received for exports prior to 1975 were very different.

Australian production and export of sugar has increased rapidly since World War II. Much of the increase in exports went to the world market, and more than half the quantity of sugar produced was exported. All exports of sugar are in effect, pooled, so that all producers receive the same price each year, which is a blend of prices received in all foreign and domestic markets. The ability of producers in Australia to supply sugar to the world market was greatly increased by the size of its preferential markets, particularly in Britain. Significant quantities of Australian sugar were also sold in Canada and the United States.

Prices and Distribution of Refined Sugar in the United States

Sugar intended for consumption without further refining is distributed to users by four classes of producers or dealers (40). In 1974, the quantities handled by each were:

	<i>1,000 tons</i>	<i>Percent</i>
Cane sugar refiners	6,671	66.2
Beet sugar processors	3,254	32.2
Importers of direct-consumption sugar	89	.9
Mainland cane sugar mills	67	.7
Total	10,081	100.0

The sugar distributed by cane sugar refiners nearly all originated in plants located in or near five Atlantic coast cities, two on the Gulf coast, and one on the Pacific coast. Small amounts came from plants located in Hawaii, Puerto Rico, and at interior points. Imported refined sugar comes from a number of foreign countries and arrives mostly at various east coast ports. The mainland cane mills distributing refined sugar are located mostly in Louisiana. Refined beet sugar is produced at all plants that process sugarbeets. Except for five comparatively small mills in Michigan and three in Ohio, all are located west of the Mississippi; the greatest concentration is in California, Colorado, Idaho, and the Red River Valley in Minnesota and North Dakota.

The plants refining cane sugar are all located in or near large metropolitan areas where a portion of their output is consumed. The remainder is distributed in whatever territory is most advantageous competitively. In this manner, some refined cane sugar is distributed

in each of the mainland States, as well as in Hawaii and Puerto Rico.

Plants processing sugarbeets are all located where sugarbeets are grown, since beets are perishable and bulky and cannot be transported economically for long distances. Since most beets are grown west of the Mississippi in areas having very low population densities, local or nearby sales of sugar are not important for most mills. Consequently, transportation costs generally are more important for U.S. beet sugar than for refined cane sugar.

Refined sugar is commonly sold on a basing-point price system. The quoted prices, or offers by sellers, do not necessarily represent the cost of the sugar delivered to the buyer. The delivered cost may be equal to, greater than, or less than the quotations. Under the basing-point system, the sellers pay the cost of moving sugar to the point of delivery, but they add a charge, called a prepay, to the price. The prepay, when initiated, was supposed to equal the lowest cost of shipping sugar from a point of origin to a particular destination. For example, the prepay charged by sellers on sugar shipped from Colorado to Chicago was set so as to make the cost to buyers in Chicago equal to that of sugar from other origins.

In this example, the prepay for Colorado sugar shipped to Chicago ordinarily would be less than the transportation cost, and the sellers' net returns would be less than the quoted price. However, for nearby destinations, such as Denver, the prepay would exceed transportation charges, and the seller would realize what is termed a freight gain rather than a freight loss. In other instances, such as deliveries in major port cities where cane sugar refineries are located, no freight gain or loss ordinarily accrues to the seller. Minor producing areas, such as those in Michigan and Ohio, sell their beet sugar locally and are not involved in the calculation of prepaids to such areas as Chicago.

In practice, basing-point prices do not work so neatly as described. Competitive conditions frequently cause one or another group of sellers to offer concessions which result in lower prices than indicated by the current quotation. Prices in Chicago are often cited as an example of this type of market. The probable cause is that Chicago is the largest market for sugar in the interior of the country and uses large quantities of both cane and beet sugar. The proportions available from various points of origin vary considerably from year to year, although the share of the market supplied by beet sugar has tended to increase. In part, this increase has been achieved by the beet sugar industry through offering various sorts of price concessions, especially in years when beet sugar supplies have been large.

The relative quantities of sugar delivered in various areas of the country since the close of World War II have varied considerably, largely because of popu-