The World Cashew Industry and U.S. Peanut-Cashew Demand Relationships

JUNE, 1963

RESEARCH REPORT NO. 72

AN ANALYSIS OF DEMAND AND PRICE RELATIONSHIPS BETWEEN PEANUTS AND CASHEW NUTS IN THE UNITED STATES, WITH EMPHASIS ON THE SALTED NUT TRADE

by

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Research Report No. 72

June, 1963

FOREWORD

The major findings and conclusions of the author's M.S. thesis are presented in this report because of their significance to members of the peanut industry.

Necessarily, much detail has been omitted with respect to the statistical analysis, in the interest of brevity. Those interested in pursuing further study of the problem are referred to the thesis for review of the 40 statistical models tested. The usual shortcomings of ordinary least squares regression analysis are believed to prevail, plus the handicap of using data from a short time period. During the brief time period studied, major changes in economic policy occurred. The impact of such changes is always difficult to measure statistically, and introduces certain hazards in interpretation of the results obtained.

While a considerable body of information about the world cashew industry was known to exist in the isolated files of numerous foreign and domestic agencies and organizations and importing firms, this is the first known attempt to prepare a comprehensive statement descriptive of all phases of the industry. The purpose served was to provide a basis for subjective analysis of the peanut-cashew competitive situation to supplement a statistical analysis which was expected to be fraught with shortcomings beyond the control of the researcher. Accordingly, the author's unabridged description of the cashew industry is included in the report. The reader may appraise the production, market structure, processing methods, quality, marketing margins, prices, export-import practices, world market, and institutional arrangements to form his own opinion as to the cashew industry potential for the benefit or detriment of the U. S. peanut industry, the consuming public, and the foreign trade relations of the United States.

A word about the author: Mr. Nuckols graduated from V.P.I. in 1953 and then served two years in the U. S. Army as a lieutenant. In 1956 and 1957, he pursued his graduate studies at V.P.I. as research assistant, and was then employed by the University of Maryland as Instructor in Agricultural Economics. He was awarded his M. S. Degree from V.P.I. in 1961. Currently he is employed as controller on the staff of an agricultural firm in Richmond, Virginia.

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ACKNOWLEDGEMENTS

The author wishes to express his sincere appreciation to many persons, without whose generous help this study could not have been accomplished. Special gratitude is due to Professor D. Upton Livermore, who directed the thesis, and to Professors R. Lee Chambliss, Jr., John T. Buck, Carl W. Allen, and David C. Hurst, members of the author's advisory and examining committee. Valuable encouragement and assistance were also received from the following: Professors Harry M. Love, Rudolf J. Freund, W. L. Gibson, Jr., and James B. Bell, of Virginia Polytechnic Institute; Professors Paul R. Poffenberger, Sidney Ishee, Harold D. Smith, and Clifford C. Taylor, of the University of Maryland; Messrs. Almon T. Mace, George W. Kromer, H. L. Crane, Stanley Mehr, and Wilbur F. Buck of the United States Department of Agriculture; Mr. Dana K. Law, of the United States Tariff Commission; Miss Catherine Curtin, of the United States Bureau of the Census; the staff of the Embassy of India in Washington, D. C.; various members of the nut trade in the United States; the typists, Mrs. Susan Carpenter, Mrs. Earlene Bliss, Mrs. Martha Cleaton, Mrs. Mary Rose Sifford; and others, too numerous to mention.

This research was conducted under auspices of the Virginia Agricultural Experiment Station and the United States Department of Agriculture as a portion of Southern Regional Marketing Project SM-14, Subproject 2, Peanuts.

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AN ANALYSIS OF DEMAND AND PRICE RELATIONSHIPS BETWEEN PEANUTS AND CASHEW NUTS IN THE UNITED STATES, WITH EMPHASIS ON THE SALTED NUT TRADE

Gray Norwood Nuckols, Jr.

Statement of the Problem

This study originated in 1955 from concern expressed in the peanut industry, and by interested government agencies, that peanuts were possibly over-priced in the salted nut market relative to certain other salted nuts believed to be competitive with them. Under the peanut price support and production control program sponsored by the Federal government, the price of peanuts had been supported above the equilibrium level since 1949. Peanut consumption was relatively stable, but cashew consumption was increasing. Peanut prices were increasing at a faster rate than cashew prices. These trends were believed to be largely associated with the price support and production control program for peanuts. Beginning in 1956, these trends were reversed, as a result of the transition to "modernized" parity over a period of 4 years, and the establishment of lower peanut price support levels during the period 1956 to 1959. These changes in price support policy decreased peanut prices, and were associated with small increases in per capita consumption of peanuts during the period 1956 to 1959. During the same period, per capita consumption of cashew nuts ceased its upward trend and tended to decline; similarly, cashew price declined slightly.

Objectives

This research was limited to the nature of demand and price relationships prevailing for salted peanuts, compared with their supposed major competitor in this usage: cashew kernels.

The primary objective of this study was to conduct a statistical analysis of demand and price relationships for salted peanuts and cashews. The statistical method used was ordinary least squares regression analysis to derive equations showing the net effect upon demand for peanuts and cashews, as measured by observed consumption data, of each of the following supposed associated factors: (1) price of peanuts, (2) price of cashews, and (3) disposable personal income.

Secondary objectives supporting the demand analysis were: (1) to prepare a description of the entire world cashew nut industry on as complete a basis as possible as a means of appraising potential supplies; and (2) to summarize the relevant information on the United States' patterns of peanut and tree nut production, consumption, and prices, with emphasis on the salted nut trade.

Summary of Results

Cashew nuts are produced mainly in South India and East Africa, with East Africa becoming more important in recent years after having been about equal to India as a producer of raw cashews. Total cashew production in India and East Africa grew from an average of about 160 million pounds in the period 1935-1939 to about 365 million pounds in 1960. The crop can be grown only in tropical areas, so none is produced in the United States. Cashews did not become commercially important in world trade, nor in the United States nut trade, until the late 1920's.

As primary supplier of shelled cashew kernels to the United States and the world, India shells and packs for export nearly all of the East African raw nut crop in addition to her domestic crop. Most of her production of cashew kernels moves into export trade, about 70 percent in recent years coming to the United States which is the world's main consumer of cashews.

United States cashew kernel imports (total supply and apparent consumption are also represented by these data) rose steadily from about ten million pounds in 1931, the first full year for which data are available, to about 64 million pounds in 1960. In most years, about 90 percent of our entire consumption of cashews has been in the form of salted nuts with the remainder being used in candy and baked goods. Total cashew consumption has grown much faster than population, so that average per capita consumption climbed from about .07 pound in 1932 to an all-time high of about .40 pound in 1955. Per capita consumption since 1955 has run slightly under this record, and was about .36 pound in 1960.

About 80 percent of all nuts produced in the United States in recent years have been peanuts. The remaining production, according to available data, has been divided among the four commercially important tree nuts, namely (in order of importance) pecans, English walnuts, almonds, and filberts (hazelnuts).

In addition to domestic nut production, the United States imports, as its entire supply, substantial quantities of these tree nuts: cashews, Brazil nuts, pistachios, pignolias, and chestnuts. Of these, cashews are by far the most important. Some supplemental imports of pecans, walnuts, almonds, and filberts usually occur.

The per capita consumption percentages for peanuts and tree nuts in the United States during 1955-1959 were (approximate percentages): peanuts, 74 percent; cashews, 6 percent; English walnuts, 6 percent; pecans, 6 percent; almonds, 4 percent; filberts, 1 percent; and other tree nuts, 3 percent.

The relative importance of the various kinds of nuts for salted use per capita was as follows during 1947-1959 (approximate percentages): peanuts, 71 percent; cashews, 22.2 percent; almonds, 2.5 percent; filberts, 1.5 percent; pecans, 1.3 percent; and other nuts, 1.5 percent.

Relative prices of peanuts and important tree nuts at wholesale during recent years have ranked as follows (in ascending order, to the higher priced nuts): Runner peanuts, Spanish peanuts, Virginia type peanuts, cashews, filberts, almonds, English walnuts, and pecans. No long-time series of official statistics is available on retail nut prices.

Because adequate retail price estimates were not available, the analysis was based on "wholesale" prices paid by nut salters and other nut processors for their supplies of peanuts and cashews for salting and other processing into final forms in which sold to consumers. Thus, the demand relationships obtained reflect processors' demand, not demand at the retail level.

The most useful estimates of demand and price relationships for peanuts and cashews, obtained in this study are as follows:

Time Period	Kind of Nut and Form in Which Used	Demand Elasticity with Respect to: Own Price	Price of Other Nut	Income
1947-1959	Salted Peanuts	-0.32	0.19	none
1932-1959	Salted Cashews	-0.43 to -0.50	none	none
1932-1959	All Cashews	-0.40 to -0.50	none	none

(Note: "None" indicates that the related coefficient obtained is not statistically significant.)

For purposes of this thesis, the form of certain relationships was explored, but the precise nature of such relationships was not determined because of the limited scope of the study. Also, certain unknowns regarding observed data must be considered. Therefore, pending further analysis, tentative conclusions drawn from this demand analysis are: (1) per capita consumer incomes have no statistically demonstrable effect on demand for

salted peanuts or cashews; (2) the existence of a competitive or complementary relationship between peanuts and cashews (as salted nuts) could not be established statistically; and (3) people tend to reduce their per capita consumption of salted peanuts as the price of peanuts rises, but consumption is reduced at a rate much smaller than the rate of price increase, so that rising price more than offsets falling consumption; thus, total receipts to the peanut industry are increased rather than decreased. Further, a similar set of statements may be made concerning demand and price relationships for salted cashews, and cashews in all forms. These statements may be said to apply only within moderate ranges of variation in prices and quantities demanded. They may not apply outside the limits of observed data on which this research is based.

The results of this research, in its present stage, do not suggest that salted peanut consumption is likely to be affected in a manner detrimental to the peanut industry, in the foreseeable future, by moderate price increases, or by competition from cashew nuts, as a result of the peanut price support and production control program. However, a substantial expansion of world cashew production has occurred in the recent past. Prospects for further expansion appear bright in view of the encouragement currently provided by India's plans for total economic growth. African production has also demonstrated capability of substantial expansion. Accordingly, a further increase in cashew imports by the United States might reasonably be expected.

DESCRIPTION OF THE WORLD CASHEW INDUSTRY[1/]

Physical Characteristics of the Cashew Tree and Nut
(1; 2, sections 1 and 2; 4, pp. 1-8)

The cashew tree, Anacardium Occidentale, belongs to the Anacardiacese family of plants with about 60 genera and 400 species. Several economically important plants such as the cashew, the pistachio nut, and the mango are members of the family, along with poison oak, poison ivy, and poison sumac. The cashew shows a strong kinship with these disreputable cousins, in that its nut shells contain cardol, a substance which produces an allergic skin reaction in some persons who handle the raw nuts. This reaction is similar to but more severe than the effect of poison oak.

A native of Brazil, the cashew tree is now distributed widely through the world's tropical regions. Portugese traders and colonizers, early in the 1600's, introduced it into Asia, Africa, and the Far East, to check soil erosion. It has proved so adaptable that many people in these areas think it is a native plant.

The cashew tree is an evergreen which grows from 20 to 40 feet tall, with a spread approaching 60 feet. It is subject to relatively easy damage by strong winds. It has an extensive root system and tolerates wide ranges in moisture, soil type, and soil fertility. It does well in regions where average annual rainfall ranges from 35 to 120 inches, and on soil types from sandy to lateritic. Although resistant to drought, it thrives best with an adequate water supply, and successful commercial cultivation depends on regular seasonal rains (such as the monsoon of India). It cannot withstand frost. It has few pest and disease problems, the main ones being caterpillars, "die-back" disease, and (in old trees) "bleeding" disease. Soil type and fertility requirements for the most efficient cashew production are not known in detail at present. No standard method of cultivation

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[1/] This section is a synthesis and summary of available material on production, processing, marketing, prices, and consumption of cashew nuts. It is basic background for an understanding of economics of the cashew industry. Citations to available source literature cannot be made for each sentence and paragraph, because of the process of synthesizing and interpreting material from several sources, which the author has followed throughout this section of the study. A general credit citation to the sources is made for each subsection of this section. References used in obtaining this information are listed in the Bibliography--Literature Cited section of this study, under the subheading "Description of the World Cashew Industry." Sources of statistics are credited in footnotes to tables.

is presently employed, and little research has been conducted on production problems. In a few instances where tried, trees have been observed to respond to cultivation and manuring.

The tree has oval or obovate leaves which are leathery, heavily veined, 4 to 8 inches long, and 2 to 3 inches wide. Flowers are borne at the terminals of the current season's shoots, in clusters 6 to 8 inches long. The cluster is composed of both unisexual (male) and bisexual flowers. The flowering period lasts 2 to 3 months, and the fruit matures about 2 months after bloom.

The cashew fruit consists of the nut (the true fruit) and the cashew apple (a swollen fruit stem, botanically). The nut is borne on the end of the cashew apple. At maturity, the nut is 1 to 1 1/2 inches long, weighs about one-fifth ounce and usually is kidney shaped. Its shell is about one-eighth inch thick, having a soft, leathery, and oily outer layer, and a thin, hard inner layer. Between these layers is a honeycombed layer with a resinous material which produces a cashew nut shell oil. This oil is of commercial value as a drying oil, in making soap, paint, and other non-food industrial products. On the inside of the shell's inner layer, there is a thin membrane which surrounds and tightly adheres to the kernel, or seed. Each nut has one kernel.

The kernel is the edible "cashew nut" of commercial food value. It is kidney-shaped, 3/4 to 7/8 inch long, white, and fine textured. Its flavor is pleasing, but delicate and mild compared to other nuts. Kernels are most frequently consumed as salted nuts. Most other consumption is in candy and baked goods. (See Table 1 for a comparative analysis of the nutritional composition of cashew kernels and peanuts.)

The cashew apple, at maturity, is 2 to 4 inches long, and its color varies from red to yellow to white. The mature fruit is juicy, soft, and pleasing in taste. It may be eaten as fresh fruit, but is more highly valued as a jam or preserve. In some producing areas, the natives make a potent wine of the apple. In several areas, natives value the apple far above the kernel as a food.

Methods of Producing Raw Cashew Nuts
(1; 2, section 2; 4, pp. 4-8, 21, 32-33)

No standard, systematic method is presently followed in cultivation of the cashew tree. It is planted in gardens and in house compounds, intermixed with mangoes, coconuts, and arecanuts. Also, it is planted in plantations, mostly in areas which are considered unsuitable for other crops.

The tree is usually propagated by seed, though this may also be done by asexual methods. When plantations are set out, the usual procedure is to dig small pits 25 to 30 feet apart, at the beginning of the monsoon season.

Then, one or two dry cashew nuts (in shell) are placed in each pit, and the pit is covered with soil. The seed germinates rapidly, usually within two weeks.

The crop receives no further attention from planting until harvest time, as a rule. There is seldom any fertilization, watering, or tilling. Sometimes, thinning of seedlings or filling in gaps, as appropriate, is practiced, the object being to have finally about 100 trees per acre. In some areas, seedlings are started, nursery-style, and transplanted to their permanent locations at six months of age.

Cashew planting and harvest seasons in the world's main commercially important producing areas are shown in Table 2.

Flowering occurs about three months prior to harvest. Light showers at this critical time are believed to aid in securing good crop yields. Extended cloudy weather at flowering time is thought to reduce yields.

The cashew tree generally begins to bear fruit at 3 or 4 years of age. Yield is relatively poor the first few bearing years, but reaches its maximum level between the 7th and 10th years of tree age. For about 20 years after this point, the tree yields a satisfactory crop. Yield declines sharply after about the 30th year of age, and estimated life of cashew trees in plantations is estimated to be from 35 to 40 years. Trees which no longer bear fruit are usually cut for fuel, charcoal making, and other purposes such as boat building and making packing material.

Cashew yields vary widely, depending upon factors such as condition of tree, weather, and crop handling methods. A fair annual average yield from a good mature tree is about 100 to 150 pounds of cashew apples and nuts together. This is composed of from 80 to 125 pounds of apples and from 20 to 25 pounds of cashew nuts (raw unshelled basis). These raw nuts yield from 6 to 8 pounds of cashew kernels after processing. The African crop is not gathered until it ripens and falls to the ground. Much of the Indian crop, however, is plucked from the trees before being fully ripe, resulting in the production of many immature, not fully formed kernels, and in a 10 to 15 percent weight loss from the subsequent drying. Indian cashew experts would like to discourage early plucking. This practice is caused by tapering off of movement of African nuts to the processing factories, before the Indian nuts are fully ripe, and the heavy demand of processors at this time. Reported yields per acre, even from the same locality, vary so widely as to have little meaning. One report from India, however, does suggest an average per acre yield of 1,120 pounds of raw nuts.

Production Estimates for Raw Nuts
(2, section 2: 4, pp. 2-12; 9; 10)

The cashew tree is grown commercially in greatest volume in South India and East Africa. Only in the last half-century, however, has it become commercially important. It is also grown in substantial amounts on the west coast of Africa, on Madagascar, and in tropical America from Mexico to Peru and Brazil, including the West Indies. Brazil and Haiti are the heaviest producers in tropical America.

Production of raw cashew nuts (unshelled basis) in India and East Africa is indicated in Table 3. Portuguese Mozambique is the most important producing area in East Africa. British Tanganyika, Zanzibar, and Kenya produce most of the remainder of the East African nuts. South India produces 80 to 85 percent of the Indian domestic crop, the remainder being produced in Bombay State and in the Portuguese colony of Goa (located on the Malabar, or southwest, coast of India)* Production in India by States is indicated approximately by Table 4, showing data for the 1951-1952 crop season.

India's total supply and disposition situation for cashew nuts (raw unshelled basis), for 1955 through 1960, is indicated in Table 6. India imports most of the East African crop in raw, unshelled form, processes it along with her own crop, and thus moves into trade channels most of the world's supply of cashew kernels.

Cashew nut production statistics for areas other than India and East Africa (and for regions within India and East Africa) are scarce. The same statement applies to domestic cashew consumption figures in producing countries. The reported total production figures for India and East Africa are considered to be reasonable estimates, however, a rough approximation of commercial cashew production in areas other than India and East Africa can be obtained from the data in Table 8, which shows United States imports of cashews by countries of origin (on the shelled, or kernel, basis). The United States consumes most of the world's supply of cashews, so these data are the best estimators available for cashew production outside of India and East Africa. These data show that in 1956, for example, the United States received the following quantities of shelled cashew kernels from areas other than India. Indian shipments represent most of the East African as well as Indian production of raw cashew nuts. Production of raw cashew nuts in these areas can be estimated by multiplying the quantities of shelled kernels by a conversion factor of 3.81, based on 2000 pounds of raw nuts equal to 525 pounds of kernels (9).

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* Goa became part of India in December, 1961.

United States Imports of Shelled Cashews (other than from India), 1956

Area	Pounds
Mozambique	1,490,918
Portuguese Asia	1,108,150
Brazil	384,991
British East Africa	324,350
Haiti	74,945
Other Countries	114,968

Processing of Cashew Kernels
(2, section 2; 4, pp. 21-30)

The most important area for commercial production of cashew kernels is South India, not only because of its large domestic raw nut production, but also because it processes and moves into world trade most of the world's supply of cashew kernels. In addition to handling the domestic crop, the Indian cashew processors import the major portion of the East African crop in the raw, unshelled form and process it. The Indian and East African crops, roughly equal in size, together account for most of the world's commercial supply of cashews. Thus, South India is, in effect, the world's major supplier of cashew kernels.

Following harvest of raw cashew nuts in India, a major part of the crop is sold by farmers to itinerant dealers who go from house to house during the marketing season. A small quantity is disposed of by farmers at the primary market centers, but most farmers feel that they have too little produce and too long a distance to go, to justify the trip. Farmers who make this trip sell their produce to itinerant dealers, also.

Wholesale merchants and agents of processors are set up for business in the primary markets, to obtain raw nut supplies for the factories to process. These agents provide keen competition among themselves. They contact the itinerant merchants who have acted as assembly firms, usually through brokers, and arrange for purchases. The itinerant merchants arrange to supply specific quantities, and they receive immediate payment. These deals are closed without the purchasing agents seeing a sample or otherwise checking the quality of the nuts. Buyers in the primary markets dry the nuts before sending them on to the processing factories.

The brokers and itinerant merchants in this market structure practically dictate the price, since competition between processing firms is so strong. Farmers who grow the nuts receive little benefit from this competition, however. Lack of market information and little competition between itinerant merchants when buying the farmers' produce place the farmers at the merchants' mercy in price determination.

The African raw cashew nut crop moves into the hands of Indian processors through a few importing firms located in Bombay. Competition is weak among these firms. In addition, the strong competition between processors and the lack of other market alternatives for East African growers (little processing industry being available to the growers other than that in India) give to the Bombay importers most of the bargaining power in determining prices of raw African cashew nuts. Processors' demand for African nuts varies somewhat from year to year, and it depends mainly on Indian domestic nut production and on the world export demand for cashew kernels.

Owners of processing factories place their orders for raw nuts with the import firms. These then arrange the required import amounts through their branches in East Africa. The transactions are settled on a forward delivery basis in August and September, before the African harvest season opens.

Most of the Indian cashew processing factories are located at Quilon, which has 150 of them. Most of the rest are at Calicut and Mangalore. These factories are operated by small firms, using mostly hand labor methods. They usually operate for only nine to ten months per year. Processing begins with the arrival of the first African nuts, usually in November or December. The African crop is finished by the time the Indian crop begins to move in March. The processing season ends about September. This seasonal processing pattern has caused a serious labor problem for the industry, since laborers desire to have year-around employment. One solution being proposed for the dilemna by the Indian Council of Agricultural Research and some members of the cashew trade calls for the growing of more cashew nuts in India, to help make possible a full year of operation. A fear exists that the time may come when a processing industry is developed in East Africa, and the African raw nut supply lost to the Indian processors (2, section 2; 9; 10).

Lack in East Africa of a large supply of cheap labor comparable to that in India has so far prevented the development of an African cashew processing industry. Cashew nuts, because of their kidney shape, have thus far resisted the perfection of a machine shelling process. Only hand shelling seems to yield unbroken kernels. Even so, there are produced many broken kernels which sell at heavy discount. Thus, a large supply of cheap hand labor remains an essential factor of production in the cashew nut processing industry, and keeps it centered in India. Most of the industry's laborers are women.

The steps in processing cashew nuts are as follows:

(1) Roasting. Roasting is done to remove cashew shell oil, save as much of it as possible, and make shelling easier to accomplish. Four methods of roasting are used: open pan, earthenwares, rotary cylinders, and oil baths. The first two methods are quite simple and are the most

widely adopted in processing factories. They are cheap and involve little capital outlay. They provide no satisfactory way to recover the nut shell oil, or to protect workers from the oil and fumes which escape during roasting. Some improvement results from using the rotary cylinder roasting method. It provides efficient roasting and hygenic working conditions, but loses most of the shell oil. It requires considerable investment of capital. The oil bath roasting method combines good roasting, sanitary working conditions, and maximum shell oil recovery. In spite of this efficiency, it is at present too costly to be widely adopted by processing firms. Its acceptance is retarded by the necessity for heavy capital investment in machinery, and by the abundant supply of cheap labor in India. The oil bath roasting method involves a bath of cashew shell oil, whose temperature is maintained at about 425° Fahrenheit. The raw cashew nuts being roasted are held in wire trays and passed through the hot oil bath for about one minute. During this time, the heat of the bath causes the oil cells of the raw nut shells to burst and release their oil into the oil already in the bath. As this occurs, the oil bath overflows and excess oil is collected for sale. About .015 ounce of oil is recovered from each nut, on the average. This represents slightly less than half the oil content of cashew nut shells. Simultaneously, the nut shells are roasted to a degree which aids in their removal from the kernels.

(2) Shelling. Shelling follows roasting, in the cashew processing sequence. It must, so far, be done by hand to minimize kernel breakage. Even by hand, it calls for special care and skill. The kernels, as removed from the shells, are covered with a thin, brownish skin (or pellicle) which must be removed before the kernels will be fit for human consumption.

(3) Blanching. Blanching is then performed, to loosen the pellicles. This is done by drying the kernels in either the sun or specially constructed hot air chambers.

(4) Pellicles are then easily removed. Yield of kernels, by weight, is roughly equivalent to 31.1 percent of the weight of raw, unshelled nuts.

(5) Grading of kernels is next. Kernels are now very dry and brittle, so they are treated with moisture to minimize breakage during grading. Grading is then done by hand. Kernels are sorted first as to whole kernels, broken pieces, and scorched (over-roasted) kernels. Subsorts are then made by size of wholes on a count per pound basis, largest kernels being considered top quality. Pieces are divided into fancy and small pieces, butts, and splits. Scorched nuts are sorted into wholes, butts, splits, and pieces. (See Table 5 for an indication of how yield typically runs, by grades. The percentages shown are based on the run of cashew kernels imported to the United States through New York in early 1950. Since the United States is the world's main consumer of cashew kernels, and New York is her main entry port for cashews, this is considered a fairly accurate indicator of cashew kernel grade yield in general.) The overall average breakdown by grades of cashew kernels may be roughly summarized as follows:

	Percent
All whole grades of kernels (except scorched)	60.9
All grades of pieces (except scorched)	26.4
All scorched kernels	12.7
320 - count wholes (the most numerous grade)	34.1
Fancy pieces (the second most numerous grade)	15.2

This grading system has been widely adopted and appears to be satisfactory.

(6) Packing. Kernels are now packed for the export trade (into which most of them move). They are packed in 25-pound tins (from which air is removed and replaced by carbon dioxide gas to prevent spoilage). Spoilage due to insect damage was a serious problem in the cashew trade until the middle 1920's. Moths and beetles were laying their eggs in the kernels, and these eggs were hatching while the kernels were being shipped, leading to worminess, spoilage, and poor acceptability to the trade and to consumers. Introduction of sealed tins with air replaced by carbon dioxide gas greatly eased the insect problem, and the cashew trade multiplied, with a product highly desirable to consumers. In spite of the improved packing method, however, buyers of cashew kernels still sometimes complain about worminess. Processors are being urged to remedy this situation by (1) improving factory sanitation, (2) more use of improved tin cans, (3) more use of the improved packing method, and (4) adopting uniform grade standards in all processing plants.

(7) The final step in cashew kernel processing is packing for shipment, into wooden boxes. Each box contains two 25-pound sealed tins. Kernels are shipped to the United States and other consuming countries in this form.

World Cashew Trade Patterns
(1; 2, sections 1 and 2; 4; 5; 7; 8; 9; 10; 11; 12)

The world's commerce in cashew kernels--production, processing, exporting, importing, and consumption--can be described with fair completeness by discussing the data in Tables 6, 7, and 8. India processes and exports the major share of the world's supply, and the United States is the world's main importer and consumer of cashew kernels.

Production of raw cashew nuts is concentrated mainly in India and East Africa (primarily Mozambique, with lesser quantities from Tanganyika, Zanzibar, and Kenya), as indicated above in Tables 2, 3, 4, and 6 and the accompanying text. East Africa does little processing of its cashew crop, but exports most of it to India for processing and distribution of kernels and nut shell oil. The Indian industry handles these functions for both Indian and East African raw cashew nut crops.

Small quantities produced and processed in certain other countries are believed to be indicated with fair accuracy by the data in Table 8, showing amounts of cashews imported by the United States from various

countries of origin of imports, since the United States is the main importer and consumer.

The world picture of cashew kernel imports and consumption, by countries, is indicated with a fair degree of completeness in Table 7, showing India's exports of cashews, by countries importing them, since India is the main processor and exporter of cashews in the world. The United States, the United Kingdom, Canada, Australia, the Soviet Union, and certain countries of the Communist Bloc are the main importers and consumers of cashews, with the United States using the largest portion. Cashew kernel import figures must be accepted as the measure of "apparent consumption," since no statistics are available, for the importing countries, on beginning and carryover stocks, and there is no domestic production in these countries receiving cashews from India. Thus, these "imports from India" data are the best (and only) available measure of cashew consumption in most countries which import their supply from India. The consumption-import picture for the United States is available in slightly more complete detail, since this country does receive a few cashews from countries other than India, and maintains statistics thereon (see Table 8). Data on internal consumption of cashews in producing countries are quite scarce. (See Table 6 for an indication of India's internal cashew consumption.)

India and United States Cashew Trade Channels and Procedures
(2, section 2; 4, pp. 30-32; 5; 9; 10; 12)

Marketing of Indian cashew kernels through export channels is carried out by the processing firms, as a general rule. Some of the larger processors have their own brokers in major importing ports, such as New York. Other processors combine for coordinated marketing arrangements on a similar basis. Still others use the services of export brokers in Bombay to market their kernels in the export trade.

Agents of processors contact (and are contacted by) agents of importers of the consuming countries, especially those of the United States, to negotiate orders. Processors' agents also keep their principals informed as to cashew kernel stocks, demand trends, and price trends. Typical brokerage fees paid by processors for their agents' services run from 1 1/2 to 2 1/2 percent of total value of sales made by the agents.

Importers' agents are of two types: (1) buyers for large salters and other final processors, who purchase a large portion of their cashews directly through Indian processors' brokers without dealing with any intermediate importing firms; and (2) importing firms which obtain entire supplies for smaller final processors and supplemental supplies for larger final processors.

The primary cashew export center is Cochin, on the Indian West Coast. The primary cashew kernel import center is New York City. Indian cashew processors and their brokers, working with the Government of India's advice and encouragement, and with Indian pepper interests, formed "The Cashew and Pepper Export Promotion Council," with headquarters at Cochin in 1955. The Council's purposes are to advertise its products better in world markets, increase export sales, and coordinate trade more efficiently.

When agents of Indian cashew processors and United States importers contact each other, they negotiate orders primarily on a "C.I.F. New York (or other importing port) Basis." This means that the prices agreed on by seller and buyer include cost of the processed kernels in India, plus insurance and freight charges for shipment from India to the importing port. These negotiations are most frequently carried on in the importing ports (especially New York), but some of them are settled in the exporting ports.

Importers usually place their cashew kernel orders several months in advance of desired delivery dates. For example, orders for March delivery may be placed during December, January, and February, at different price levels over time of order placement for each grade of cashews. Indian shippers (processors) usually process and pack cashew kernels only after receiving such orders. They do not usually prepare stocks in advance of receipt of definite orders.

As previously stated, the larger salters and other final processors of cashew kernels in the United States purchase much of their supply (about half) directly through brokers working as agents of Indian processors, without dealing through any intermediate United States importing firms. Such importing firms do, however, obtain supplemental cashew supplies for the larger end-users, and entire supplies for smaller and medium-sized salters and other end-users. These importers sell cashews directly to medium and large-sized end-users, and also use the services of domestic brokers in the United States to sell cashews to smaller-sized salters, candy makers, and bakers. Some sales to medium-sized end-users are also made in the latter way. Importers sell dock-side as many of their cashews as possible, placing the rest into cool storage until a buyer is found.

Most American cashew importers handle a number of other commodities also. Most of them handle all kinds of nuts (both shelled and in-shell), and many also handle dried fruits and other items. The importance of any single firm in the cashew import trade is difficult to judge. Percentage of the total cashew trade handled by each firm varies greatly from year to year. In some years, a single firm may bring in as much as 15 percent of the total cashew kernel imports of the United States. Most importers are referred to by the nut trade as "medium sized" firms. They finance their operations largely with borrowed capital.

Most cashew kernels imported to the United States are consumed as salted nuts. Nut salting firms obtain an average of about 90 percent of each year's supply of cashew kernels (through channels described above), process them, and move them into retail channels to consumers. The salting companies are quite varied in size. Their capitalizations range from a low of about $25,000 up to many millions.

Market channels from salters to retail consumers take several different paths. Some salting firms market cashews and other salted nuts by dealing directly with retail food chains and food wholesaling organizations. Other salters send their products into food stores via wagon jobbers. Still other salters market through drug stores, department stores, variety shops, "dime stores", and other types of outlets. Finally, several salters market through special nut and/or candy shops. Some salting firms make use of several of the various market channels described, instead of confining themselves to only one type of outlet. Consumer surveys indicate that grocery stores, delicatessens, and other food shops are the most widely patronized retail outlets for salted nuts.

Prices of Cashews at All Market Levels
(3; 5; 7; 8; 9; 10; 12)

Prices of cashew nuts at all levels of the market are indicated in Tables 9 through 16, and summarized in Table 17. Prices paid to Indian and African cashew growers by assembling agencies are not available.

Reported price quotations in India of domestic and African-grown raw nuts ranged from 4.5 to 12.2 cents per pound between 1952 and 1960 (Table 9). Basic price quotations in rupees per long ton are converted to cents per pound at the official exchange rate of 21 cents per rupee.

These quotations for raw nuts are equivalent to a range of 14.5 to 39.2 cents per pound of cashew kernels, when raw nut basis is converted to kernel basis at the approximate yield rate. One pound of raw nuts yields .311 pounds of kernels, or raw nut price multiplied by 3.2154 equals kernel basis price (See Table 10).

These are prices quoted to Indian cashew processors for raw nuts. Such quotations for Indian-grown nuts are made by itinerant dealers, who assemble the supply of nuts from farmers, to processors' agents and wholesale merchants in the primary markets. The quotations for African-grown nuts are made to processors' agents by importing firms located mainly in Bombay, on a C.I.F. (cost, insurance, and freight) to Indian ports basis.

Prices of processed cashew kernels have ranged from 32.6 to 45.9 cents per pound, from 1952 through 1960 (Table 11). These prices are on the basis F.O.B. (free on board) Cochin and other Indian exporting ports, and represent average values of all shipments during any given time period, from Indian processors to United States importers (shipments based on prior orders for future delivery at various time intervals and at various negotiated prices). The extreme range of these prices, from 1931 (the first year for which statistics are available) through 1959, is from a low of 12.8 cents (in the depression year of 1933) to a high of 67.0 cents (in 1945, during World War II). All grades of cashew kernels are averaged together in these prices. The variation by grades of prices on this basis during early 1950 is indicated in Table 15, as a sample of such variation.

Prices quoted to United States importers by Indian processors for cashew kernels are indicated in Table 12. These quotations are made on C.I.F. (cost, insurance, and freight) basis to New York (or other United States ports). This is the standard basis for negotiations between importers and processors. Actual prices at which deals are closed fluctuate in the general neighborhood of these quotations, being determined by bargaining between the parties. Orders are placed, on this basis, for forward delivery at various future time intervals.

The average prices F.O.B. Indian exporting ports, referred to above, are the result of these negotiations, and information about these prices is taken from import statistics compiled by the United States Bureau of the Census from import invoices.

Price quotations given in Table 12 are for the two most important grades of cashews brought into the United States. "320-count whole kernels" account for from 30 to 35 percent of the total United States cashew supply. This statement is based upon a Tariff Commission analysis of general imports invoices for early 1950, wherein the Commission estimated the percentages of cashews falling into each of the various grades (see Table 15). It is confirmed for validity over time by salted nut trade sources (5). "Fancy (Large) Pieces," the second most important grade, includes about 15 percent of all cashews imported, according to the Tariff Commission's analysis. Other important grades, and their percentages of total cashews according to the same study, are as follows:

	Percent
"240-count wholes"	7.5
"450-count wholes"	7.0
"Scorched Wholes"	8.0

According to the Tariff Commission's study, the more important cashew grades listed in this paragraph accounted for a total of about 72 percent of all cashew kernels imported to the United States during January, March,

and April of 1950. This research, although covering only one short time period, is the only indication available of how cashews break down into the various grades. There is extra evidence, however, on the importance of "320-count wholes." While the Tariff Commission says that 34 percent of the cashews imported in early 1950 were "320's," trade sources suggest that this grade takes in from 30 to 35 percent, over time. One trade source offers the opinion that, over time, cashew imports consist of about 35 percent "320's," 20 percent "450's," 10 percent other whole kernel grades, and the rest broken grades (butts, splits, and pieces).

It is generally believed that nearly all the whole kernels are salted, as well as many of the brokens, with the remaining brokens going to the candy and baking industries.

In Table 13, wholesale price quotations for the more important grades of cashew kernels are indicated. These quotations are made by cashew importers to nut salting firms and other nut processors, on basis F.O.B. (free on board) New York, at importers' warehouses, with all import duties and shipping charges paid, and including importers margins. Such quotations often remain unchanged for several months at a time, and do not necessarily reflect short-time changes in the market. Actual sales prices fluctuate in the general neighborhood of the quotations, however. Similar quotations are made F.O.B. other receiving ports, but New York is the primary receiving port and wholesale market (see Table 14). Therefore, quotations on New York basis are believed to be representative of wholesale prices charged throughout the cashew trade by importers to salters. For that portion of the cashew supply which is directly imported by salters, these price quotations do not directly apply. They do have an important meaning, however, in that they indicate (in an opportunity cost sense) the approximate value to salters of directly imported kernels, when landed at the primary receiving port with all charges, accruing up to this point, paid.

Wholesale prices for salted cashews charged by salters to retail outlets and their wholesale supply sources are not available.

Retail prices of salted cashews (and other salted nuts) are not available in any continuous series of representative statistics (over time and place) for the United States. As a rough approximation to the general level of retail prices for salted cashews in recent years, however, the author has made some random observations in various chain food stores and "dime stores" in Maryland and Virginia. These observations, covering the period from early 1956 to early 1961, are reported in detail (by typeand size of package and by type of store) in Table 16. They indicate that retail prices of salted cashews (as well as other salted nuts) have remained relatively stable during the period of the survey. Based on these observations, it appears that the overall average retail price of cashew kernels (equivalent per pound) for the period surveyed has fallen into the approximate range of $1.15 to $1.20. Cashew prices at various market levels are summarized in Table 17.

Prices at the wholesale (from importer to salter) level are discussed further in the demand analysis (for cashews and peanuts) section to this study. Because of the very sketchy price information available on salted cashews and salted peanuts at the retail level, it is necessary to make demand measurements based on New York wholesale prices, about which reasonably accurate and representative information is available.

Usage of Cashew Kernels in the United States - Forms and Quantities Consumed (12)

Of all cashews imported into the United States (the entire supply available, and the only measure of apparent consumption, since there is no domestic production), an average of about 90 percent goes to the salted nut trade each year (see Table 18). "Salted nuts" are defined as shelled nut kernels which have been "roasted in hot vegetable oil with salt added." Of the remaining 10 percent, about 6 percent are used in candy and about 4 percent in baked goods, on the average.

Of the cashews salted, about half are sold in mixtures with other salted nuts (including domestic tree nuts, imported tree nuts, and peanuts). The remainder are sold as salted cashews alone. Cashews constitute about 75 percent of all tree nuts used in the salting trade. They usually sell at lower prices than other tree nuts, but at higher prices than peanuts.

Figures showing quantities of cashews imported to the United States must also represent the apparent total consumption of these nuts. This is because there is no domestic production, and no statistics are collected to show retail sales, stocks on hand, and carryover from one season to the next (to aid in making a closer estimate of consumption).

Figures representing quantities of cashews salted in the United States are based upon estimated percentages of the total imports, believed to be used by the nut salting industry. Percentages used in obtaining annual estimates of salted cashews are based on percentages periodically determined in surveys of the nut industry by the United States Tariff Commission. The Commission has made surveys and determined percentages for periods as follows: 1935 to 1937, 85 percent of all cashews estimated to be salted; 1946 to 1949 (average of years beginning October 1), 91.667 percent; 1950 to 1952 (average of years beginning October 1), 89.583 percent. As of June 1960, no further information of this type had been collected on cashews by the Tariff Commission (to cover periods since September 1953). However, the Commission's staff informed the author in June 1960 that it believes the average percentage of cashews being salted has undergone little change since 1953. Based upon percentages found in the surveys, the following percentages have been used in this study to estimate the number of cashews being salted, by years:

1932 to 1941, 85 percent; 1942 to 1946, 90.625 percent; 1947 to 1950, 91.667 percent; 1951 to 1953, 89.583 percent; and 1954 to 1960, 90.625 percent.

Figures showing quantities of cashews estimated to be salted must also represent the apparent consumption of salted cashews in the United States. No statistics are available for retail sales, stocks on hand, and carryover, to aid in making a closer estimate of consumption.

Quantities of cashews imported to the United States (apparent total cashew consumption figures) are given in Table 18. Estimated quantities of cashews used by the salted nut industry (apparent consumption of salted cashews) are also shown. Both series of data are given on total and per capita bases.

Until the early 1920's cashew kernels were of little commercial importance in the United States and around the world. They were consumed primarily in areas where they grew. Commercial development on an extensive scale began in the early 1920's after a modern packing method was developed. This method (described in detail previously, along with other steps in cashew processing) provided a solution to the serious problem of insect damage to kernels. The introduction of sealed tin cans (with air evacuated and replaced by carbon dioxide gas) greatly eased this problem. After this innovation, the cashew trade grew rapidly, with a product highly desirable to consumers.

Statistics presented earlier indicate that the main development of cashew growing has taken place in India and in East Africa, with nearly all processing of the crops from both areas taking place in India. Minor commercial cashew production has developed in other areas.

Consumption of cashew kernels has had its major development in the United States, which takes about three-fourths of the world's supply (according to available figures). Consumption in the rest of the world has grown at a faster rate, although on a smaller scale, than consumption in the United States. Growth in this country is shown in Table 18. This growth was rapid and steady from the early 1920's until World War II. It assumed large enough importance to become the subject of separately published statistics in the early 1930's, reaching a prewar peak of 35.6 million pounds in 1941.

American cashew consumption suffered a severe, but temporary, setback during World War II. This arose from the shortage of shipping space for non-strategic materials during the war. This shortage, accompanied by a Federal Government order which restricted cashew imports (except as linked with shipments of strategic cashew-shell oil) first came into being in late 1941. As a result, imports (and resulting consumption) for 1942 were less than half of what they had been in 1941. In 1943, they hit an all-time low (since separate cashew statistics were first kept) of about 3.5 million pounds. The situation

began to ease in 1944. By the middle of that year, cashew-shell oil had ceased to be classified as a strategic commodity, and the shipping space situation had eased considerably. In 1945, all cashew import restrictions were lifted.

The war-caused inability of the United States to import cashews depressed the Indian and African cashew industry. Shipping space shortages and restrictions, coupled with limited domestic consumption, caused a large portion of India's 1942 and 1943 crops to remain unsold. This led, in April 1943, to an Indian ban on imports of raw cashew nuts from Africa, so that maximum amounts of Indian nuts could be sold. As a result, no appreciable commercial cashew harvest took place in East Africa while the ban was in effect, since the African growers depend on India for processing and further marketing of cashews. The Indian ban was lifted in middle 1945, and both Indian and African segments of the industry began to return to normal.

United States cashew imports (and consumption) returned to fairly normal quantities in 1946, the first full year free of import restrictions. Prices did not fully drop from their artificially high wartime level to a more normal range until 1947, however, (See Table 13). Quantities imported (and consumed) did not surpass the prewar peak of 35.6 million pounds (established in 1941), until 1949. They grew, rapidly but somewhat erratically, until 1955, when the comparatively huge record of 66.4 million pounds was established. Since 1955, cashew imports (and consumption) have shown a fairly stable trend, with no clear tendency toward a longer-run, rise or fall. The all-time record level of 66.8 million pounds was achieved in 1958.

Per capita imports (and consumption) of cashew kernels in the United States grew steadily in each prewar year (except 1936, 1938, and 1940, when only slight relapses were suffered). Years of largest growth were 1935, 1939, and 1941. The prewar record of 0.267 pounds of kernels per person was set in 1941. World War II caused a setback, as indicated previously. Substantial quantity recovery came in 1946, but the prewar record was not broken until 1950, when the figure reached 0.320 pounds per capita. After relapses in 1952 and 1953, an all-time record of 0.402 pounds per capita was imported (and consumed) in 1955. Per capita quantities have run somewhat under this record in the years since it was set, but they are holding up well.

Research and Future Prospects in the Cashew Industry
(1; 2, sections 3 and 4; 4, pp. 34-38; 6)

Research aimed at improving the cashew industry in India was begun in 1931, following the beginning of rapid commercial growth (which was set off by development of the improved method for export packing of cashew kernels, as previously described). Such research has been generally conducted on a limited basis, due to lack of adequate financial support.

A new emphasis has come in recent years, however, following the establishment of India's independence in 1947 and the adoption of her present constitution in 1949 and 1950. The vehicles for guiding economic progress are the "Five Year Plans," adopted in 1951, 1956, and 1961, and covering the periods 1951-1956, 1956-1961, and 1961-1966, respectively. Each Plan had placed considerable emphasis on growth and development of the Indian cashew industry, as a prominent factor in India's export trade and her capacity to earn foreign dollar exchange (which is a critical factor in her foreign trade). For example, the preliminary draft of the Third Five Year Plan (June 1960) calls for a cashew production target of 336 million pounds by 1965-1966. This goal, if achieved, will represent a 133 percent increase over India's 1960 cashew production of 144 million pounds (figures are in-shell basis).

Cashew research in India before World War II covered the following topics: (1) Improvement of the cashew tree (vigor, breeding, selection, and beaning capacity); (2) morphological studies (of variations in botanical forms of different parts of the tree to provide better adaptability to different soil and climate conditions); (3) improvement in size and quality of the cashew nut; and (4) work on the few pests and diseases to which the cashew is subject (primarily caterpillars, "die-back" disease, and "bleeding" disease). This prewar research, however, was conducted on a very limited scale, due to lack of adequate financial support, and it merely scratched the surface in comparison to the research work needed to develop a truly efficient commercial cashew industry.

Research since the adoption of India's first Five Year Plan in 1951 has been covering (or planning the future coverage of) the following topics concerning the production of raw cashew nuts: (1) survey of existing cashew plantations in South India, classification and description of different types of cashew operations; (2) selection of promising cashew varieties, both Indian and foreign; (3) standardization of propagation methods; (4) study of factors influencing flowering, fruit setting, and bearing; and (5) study of effects of soil type, soil moisture, and plant nutrients on flowering and fruit setting. More emphasis than in prior years is being placed on cashew research since India's independence and embarkation on economic planning.

In addition to the research efforts described, India's government and members of the cashew industry are also working in efforts to develop new and larger markets, improve processing efficiency, improve working conditions for laborers, establish more equitable and efficient pricing and marketing of domestic and African raw nuts, and make the Indian processing industry less dependent on the East African raw nut crop (by growing more domestic nuts).

"The Cashew and Pepper Export Promotion Council" was set up in 1955 under joint auspices of government and industry, with headquarters at Cochin, to enlarge existing export markets, open up new ones, and settle complaints arising in the trade.

Indian experts believe that programs to advertise the food value of the cashew kernel will help to increase demand for the product in both export and domestic markets. They also think that further efforts to standardize and improve quality of cashew kernels should be made in order to encourage additional trade and consumer acceptance. Some kernels are still processed, packed, and marketed in ways which fall short of the best accepted technology, leading to an inferior product which does unfair damage to the cashew industry as a whole.

The industry is being urged toward greater adoption of the oil bath processing method, which gives greater yields and higher quality of kernels, and provides for greater recovery of cashew shell oil (as a valuable byproduct), than other processing methods do. Initial investment in the equipment required, however, is quite expensive compared to financial resources of most of the small cashew processing plant owners. To overcome this obstacle, the small processors are being urged to combine themselves into associations to secure government loans of the necessary capital. In addition, the Indian "Council of Scientific and Industrial Research" has been urged by the "Council of Agricultural Research" to investigate possibilities for developing cheaper, efficient processing methods.

Little information is available regarding research and future prospects in the East African cashew industry. This industry, concentrated in Portuguese Mozambique and British Tanganyika, Zanzibar, and Kenya, is predominantly a raw nut producer. No extensive development of processing has been made in this area, because of lack of a large supply of cheap hand labor, such as exists in India. (Shelling cashew nuts has so far resisted mechanization, due to the kidney shape of the nuts and poison effects of the shell oil. Thus, a large supply of cheap hand labor is, for the present, a necessary basis for the cashew processing business.) For this reason, East Africa has developed a large scale of production of raw nuts to supply the demand arising from the Indian processing industry and export trade (in excess of India's domestic raw nut supply). Only a few cashew kernels are processed and moved toward consumers from East Africa, or other producing areas besides India. The Portuguese government has been reportedly trying to develop a cashew processing industry in Mozambique.

Summarizing future prospects for the cashew industry, it is most likely that its expansionary trend will continue indefinitely into a bright future. Demand for cashew kernels has been growing in the United States. As other countries of the world make progress in economic growth, and satisfy their more basic needs and desires, they may be expected to present an ever-growing demand for cashew kernels. Such growth in demand will probably be met always by an ample supply, as India, East Africa, Brazil, and other producers develop their cashew industries to greater size and efficiency. This development may also be expected to produce the byproducts - cashew nut shell oil and cashew apples - in an ever-increasing supply for ever-increasing uses.

APPENDIX

Table 1. Nutritional Analysis of Cashew Kernels as Compared with Peanuts

Element	Units	Amount	
		Cashew	Peanuts
Protein	grams	18.5	26.9
Fat	grams	48.2	44.2
Food Energy	calories	578.0	559.0
Total Carbohydrates	grams	27.0	23.6
Fiber Carbohydrates	grams	1.3	2.4
Calcium	milligrams	46.0	74.0
Phosphorus	milligrams	428.0	393.0
Iron	milligrams	5.0	1.9
Ash	grams	2.7	2.7
Thiamine	milligrams	6.3	0.30
Riboflavin	milligrams	0.19	0.13
Niacin	milligrams	2.1	16.2
Water	percent	3.6	2.6

Source: U.S.D.A. Handbook 8, "Composition of Foods--Raw, Processed, Prepared," 1950, Bureau of Home Economics and Human Nutrition, Department of Agriculture.

Table 2. Cashew Planting and Harvesting Seasons

Area	Planting Season	Harvesting Season
India	June and July	February to May
East Africa:		
Mozambique	September to December	September to March
Tanganyika	December to March	October to January

Sources: Foreign Agricultural Service, U. S. Department of Agriculture; U. S. Consulate, Madras, India.

Table 3. Production of Raw Cashew Nuts (Unshelled Basis) in India[1/] and East Africa. Calendar Years, 1935-1960.

Year	India 2/ (1000 lbs.)	East Africa 3/ (1000 lbs.)
1935-39 Average	98,800	65,900
1945-49 Average	100,400	83,800
1950	112,000	151,700
1951	134,000	70,000
1952	126,000	118,000
1953	120,000	164,000
1954	130,000	156,000
1955	154,000	117,600
1956	156,000	155,400
1957	154,000	214,800
1958	146,000	269,600
1959	146,000	202,400
1960	144,000	223,000

1/ 1965-1966 production goal of India's thrid Five Year Plan: 336 million pounds.

2/ Includes Portugese colony of Goa (on Indian West Coast).

3/ Indian imports as raw nuts from East Africa.

Source: Foreign Agricultural Service, U. S. Department of Agriculture (9; 10).

Table 4. Production of Raw Cashew Nuts (Unshelled Basis) in India, by States. Crop Year, 1951-1952.

State	Production (1000 lbs.)
Madras 1/	66,000
Kerala 2/	40,000
Bombay	9,000
Others	5,200
Total	120,200

1/ Madras State divided in 1956 into Andkra and Madras States. Under this division, most cashew production is located in what is now Andkra State.

2/ Kerala State was known as Travancore-Cochin before 1956.

Source: Report of Indian Council of Agricultural Research, New Delhi (2).

Table 5. Cashew Nuts (Kernels): Percentage of Total Quantity Imported Falling into Each Grade; New York, Average of January, March, and April, 1950.

Grade	Percentage of total quantity
Wholes (approximate maximum count per pound):	
210	1.9
240	4.7
280	1.9
320	20.4
400	3.4
450	4.2
Butts	2.7
Splits	3.2
Fancy Pieces	9.1
Small Pieces	0.8
Scorched	
Wholes	4.8
Butts	0.2
Splits	0.4
Pieces	2.2
Undetermined as unselected[1/]	40.0
Total	100.0

1/ It can be assumed that this group consists largely of grades of nuts in the proportion of grades shown.

Source: U. S. Tariff Commission, "Edible Tree Nuts" reports.

Table 6. Cashew Nuts (Unshelled Basis): Indian Supply and Disposition, 1955-1960 Calendar Years.

Year	Opening Stocks Jan. 1	Indian Production[1/]	Imports (from Africa)	Total Supply	Exports	Internal Consumption	Ending Stocks December 31
	- - - - - - - - - Thousands of Pounds - - - - - - - - -						
1955	54,000	154,000	117,600	325,600	296,800	13,200	15,600
1956	15,600	156,000	155,400	327,000	311,000	14,000	2,000
1957	2,000	154,000	214,800	370,800	325,200	21,600	24,000
1958	24,000	146,000	269,600	439,600	372,969	11,200	55,431
1959	55,431	146,000	202,400	403,831	358,871	11,200	33,760
1960	33,760	144,000	223,000	400,760	341,152	11,200	48,408

1/ Includes Goa.

Source: Foreign Agricultural Service, U. S. Department of Agriculture (9; 10).

Table 7. Cashew Kernels[1/]: Exports from India, by Countries of Destination, 1937-1959
(Quantities in thousands of pounds.)

Year[2/]	Total Exports	Exports to: U.S.	U.S. as % of Total	U.K.	U.K. as % of Total	Canada	Canada as % of Total	Australia	Australia as % of Total	U.S.S.R.	U.S.S.R. as % of Total	Other countries[3/]	Other Countries as % of Total
1937-39[4/]	28,868	23,962	83.0	1,472	5.1	713	2.5	169	0.6	5/	5/	2,552	8.8
1946-47	33,367	28,978	86.8	1,162	3.5	1,474	4.4	931	2.8	5/	5/	823	2.5
1947-48	36,608	24,114	65.9	10,523	28.7	319	0.9	719	2.0	5/	5/	933	2.5
1948-49	40,227	36,201	90.0	2,143	5.3	627	1.6	5/	3/	5/	5/	1,256	3.1
1949-50	41,741	33,299	79.8	5,309	12.7	1,247	3.0	5/	3/	5/	5/	1,885	4.5
1950-51	55,865	45,133	80.8	8,510	15.2	746	1.3	598	1.1	5/	5/	878	1.6
1951-52	46,776	32,120	68.6	11,777	25.2	979	2.1	770	1.6	5/	5/	1,131	2.4
1952-53	61,373	43,072	70.2	15,462	25.2	2,189	3.6	108	0.2	5/	5/	543	0.9
1953-54	58,586	42,218	72.0	12,005	20.5	2,361	4.0	909	1.6	5/	5/	1,093	1.9
1954-55	76,186	60,884	79.9	9,592	12.6	2,125	2.8	1,056	1.4	5/	5/	2,529	3.3
1955-56	69,133	54,673	79.1	6,836	9.9	2,493	3.6	1,241	1.8	5/	5/	3,890	5.6
1956	56,056	39,073	69.7	6,446	11.5	5/	5/	5/	5/	5/	5/	10,538	18.8
1957	76,227	56,773	74.4	6,142	8.1	5/	5/	5/	5/	4,636	6.1	8,677	11.4
1958	87,461	61,234	70.0	5,990	6.8	5/	5/	5/	5/	11,232	12.8	9,005	10.3
1959	84,155	57,956	68.9	4,847	5.8	5/	5/	5/	5/	9,824	11.7	11,527	13.7

1/ These figures must be accepted as representing (for countries other than the United States) total cashew kernel import and consumption data (since India is the world's primary processor and exporter). Import figures are the best available measure of "apparent consumption."

2/ Indian fiscal years, April 1 to March 31, through March 31, 1956. 1956 figures are for March 31 to December 31, 1957 through 1959 figures are for calendar years.

3/ "Other Countries" include (especially) East Germany and certain other Communist Bloc countries; also, for certain years where separate breakdown is not available. Canada, Australia, and U.S.S.R.

4/ Average of fiscal years 1937-38 and 1938-39. No earlier statistics are available.

5/ Figures not available.

Sources: United States Bureau of Foreign Commerce (11); Letter to author from the "Cashew and Pepper Export Promotion Council," Cochin, India, 1957.

Table 8. Cashew Kernels[1]: United States Imports[2] (and Apparent Consumption)[3], by Countries of Origin of Shipment[4]. 1931-1960. (Quantities in Thousands of Pounds).

Year	U.S. Total Imports	United States Imports by Countries of Origin of Shipment: India	India as % of Total	Portuguese Asia	Portuguese Asia as % of Total	Mozambique	Mozambique as % of Total
1931	10,524	10,398	98.8	7	0.1	--	---
1932	9,799	9,722	99.2	---	---	34	0.3
1933	11,691	11,408	97.6	176	1.5	17	0.1
1934	14,899	14,611	98.1	151	1.0	--	---
1935	22,376	22,225	99.3	42	0.2	--	---
1936	22,102	21,804	98.7	---	---	4	---
1937	26,848	26,748	99.6	13	---	--	---
1938	26,069	26,002	99.7	6	---	2	---
1939	29,466	29,440	99.9	---	---	--	---
1940	28,940	28,717	99.2	6	---	--	---
1941	35,592	35,322	99.2	74	0.2	--	---
1942	17,721	17,662	99.7	---	---	--	---
1943	3,542	3,116	88.0	347	9.8	--	---
1944	15,779	14,736	93.4	492	3.1	--	---
1945	24,502	23,151	94.5	153	0.6	11	---
1946	29,898	28,514	95.4	620	2.1	16	0.1
1947	29,902	29,939	94.3	742	2.3	--	---
1948	34,712	33,268	95.8	994	2.2	7	---
1949	36,650	35,723	97.5	799	2.2	--	---
1950	48,482	46,776	96.5	1,443	3.0	--	---
1951	50,504	48,171	95.4	1,712	3.4	478	0.9
1952	42,071	40,365	95.9	925	2.2	727	1.7
1953	47,709	45,715	95.8	830	1.7	1,072	2.2
1954	56,551	53,579	94.7	877	1.6	1,772	3.1
1955	66,396	62,751	94.5	1,470	2.2	1,535	2.3
1956	56,279	52,780	93.8	1,108	2.0	1,491	2.6
1957	58,396	55,142	94.4	387	0.7	2,588	4.4
1958	66,771	62,855	94.2	987	1.5	1,846	2.8
1959	63,351	60,331	95.3	279	0.4	1,940	3.1
1960	64,339	59,085	91.8	1,592	2.5	1,897	2.9

(continued)

Table 8. (continued)

Year	United States Imports by Countries of Origin of Shipment: Brazil	Brazil as % of Total	British East Africa5/	British E. Africa as % of Total	Haiti	Haiti as % of Total	Other Countries	Other Countries as % of Total
1931	2	---	---	---	43	0.4	75	0.7
1932	14	0.1	---	---	3	---	25	0.3
1933	---	---	---	---	32	0.3	58	0.5
1934	---	---	11	0.1	106	0.7	20	0.1
1935	18	0.8	35	0.2	56	0.3	---	---
1936	153	0.7	33	0.2	65	0.3	42	0.2
1937	37	0.1	14	0.1	22	0.1	16	0.1
1938	1	---	4	---	45	0.2	3	---
1939	---	---	14	---	13	---	---	---
1940	203	0.7	---	---	14	---	---	---
1941	---	---	18	---	177	0.5	---	---
1942	47	0.3	11	0.1	---	---	---	---
1943	---	---	---	---	79	2.2	---	---
1944	462	2.9	23	0.1	65	0.4	---	---
1945	926	3.8	66	0.3	195	0.8	---	---
1946	490	1.6	99	0.3	159	0.5	---	---
1947	1,005	3.2	26	0.1	26	0.1	---	---
1948	377	1.1	4	---	32	0.1	30	0.1
1949	83	0.2	---	---	40	o.1	5	---
1950	82	0.2	---	---	172	0.4	9	---
1951	20	---	---	---	123	0.2	---	---
1952	23	0.1	---	---	30	0.1	1	---
1953	26	0.1	40	0.1	7	---	20	---
1954	25	---	292	0.5	7	---	---	---
1955	50	0.1	585	0.9	5	---	---	---
1956	385	0.7	324	0.6	75	0.1	115	0.2
1957	8	---	272	0.5	---	---	---	---
1958	7	---	404	0.6	100	0.1	572	0.9
1959	149	0.2	393	0.6	1	---	257	0.4
1960	1,203	1.9	334	0.5	140	0.2	86	0.1

1/ All world trade in cashews is handled in the kernel form, according to available statistics, except for Indian imports of raw East African nuts for processing and reentry into world trade as kernels. Primary producing countries in East Africa are Mozambique and Tanganyika.

2/ Import figures are based on "general imports" data for 1931, 1932, 1933, and 1947, and on "imports for consumption" data for all other years. "General imports" are merchandise entered for immediate consumption on arrival, plus merchandise entered for storage in bonded warehouses. "Imports for consumption" are merchandise entered for immediate consumption, plus withdrawals from bonded warehouses for consumption. "Imports

(continued)

Table 8. (continued)

for consumption" differ from "general imports" to the extent that merchandise entered for storage differs from warehouse withdrawals for consumption in any given period of time. This difference is usually small in the case of cashew kernels, and the differences from one year to another tend to offset each other.

3/ Cashew kernel import figures are accepted in the United States as the measure of "apparent consumption." No statistics are available on beginning and carryover stocks, there is no domestic cashew production, and any re-exports of imported kernels are removed from these data. Thus, they are the best (and only) available measure of American cashew consumption.

4/ "Countries of origin of shipment" import data serve as approximate indicators of production and processing of cashews in countries other than India, since the United States is the main consuming country for cashew kernels. Data on imports by U. S. from India indicate the largest share of cashews processed in India (see Table 7 for U. S. share of all cashew exports from India). Indian processing of cashew kernels is based about equally on domestic crop production and on the East African crop (which is imported to India for processing). Thus, Tables 7 and 8 together approximately indicate the world pattern of production and processing of cashews.

5/ Figures on "British East Africa" include imports from Tanganyika, Zanzibar, and Kenya.

Source: United States Bureau of the Census (7; 8).

Table 9. Prices[1/] of Raw Cashew Nuts, Paid by Processors, India, 1952-1960.

Year	African Nuts [2/] C.I.F. Indian Ports		India-grown Nuts	
	Rupees[3/]/long ton[4/]	Cents/lb.	Rupees[3/]/long ton[4/]	Cents/lb.
1952	860	8.1	[5/]	[5/]
1953	666	6.2	[5/]	[5/]
1954	478	4.5	533	5.0
1955	777	7.3	[5/]	[5/]
1956	855	8.0	[5/]	[5/]
1957	747	7.0	779	7.3
1958	1,248	11.7	1,301	12.2
1959	683	6.4	704	6.6
1960	843	7.9	[5/]	[5/]

1/ These are price quotations, not actual sales prices. Sales prices fluctuate in the general neighborhood of the quotations.
2/ Mostly from Mozambique.
3/ One rupee = 21 U. S. cents.
4/ One long ton = 2,240 lb.
5/ Price quotations not available.
6/ Price quotations not available for years before 1952.
Source: Reports of Foreign Agricultural Service, U. S. Department of Agriculture (9; 10).

Table 10. Prices of Raw Cashew Nuts (in-shell), Paid by Processors in India, Converted to Kernel Basis, 1952-1960[1/ 2/].

Year	African Nuts, C.I.F. Indian Ports		Indian-grown Nuts	
	Raw Nut Basis cents/lb.	Kernel Basis cents/lb.	Raw Nut Basis cents/lb.	Kernel Basis cents/lb.
1952	8.1	26.0	[3/]	[3/]
1953	6.2	19.9	[3/]	[3/]
1954	4.5	14.5	5.0	16.1
1955	7.3	23.5	[3/]	[3/]
1956	8.0	25.7	[3/]	[3/]
1957	7.0	22.5	7.3	23.5
1958	11.7	37.6	12.2	39.2
1959	6.4	20.6	6.6	2.12
1960	7.9	25.4	[3/]	[3/]

1/ Conversion made on basis of typical kernel outturn from raw nuts ratio. One pound of raw nuts yields approximately .311 pound of kernels. Price conversion formula is: Raw Nut Basis Price x 3.2154 = Kernel Basis Price.
2/ Price quotations, not actual sales prices.
3/ Price quotations not available.
Source: Data in Table 9.

Table 11. Cashew Kernel Prices F.O.B. Cochin, India (and Other Indian Exporting Points); 1931-1960.

Year	cents/lb.	Year	cents/lb.	Year	cents/lb.
1931	20.0	1941	16.5	1951	39.6
1932	16.2	1942	22.0	1952	45.9
1933	12.8	1943	31.5	1953	42.2
1934	15.8	1944	57.6	1954	32.6
1935	16.4	1945	67.0	1955	35.2
1936	16.8	1946	55.4	1956	42.7
1937	15.3	1947	39.6	1957	41.7
1938	13.5	1948	37.9	1958	38.1
1939	13.7	1949	38.1	1959	38.9
1940	14.1	1950	32.2	1960	43.6

Source: Import statistics, U. S. Bureau of the Census (7; 8).

Table 12. Cashew Kernel Price Quotations by Indian Processors to U. S. Importers, Selected Grades[1/], C.I.F. Basis, New York, 1947-1960.

Year	320-Count Whole Kernels cents/lb.	Fancy Pieces of Kernels cents/lb.	Average of All Grades cents/lb.
1947	43.0	28.0	2/
1948	45.0	26.0	2/
1949	42.0	20.0	2/
1950	38.0	29.0	36.1
1951	47.0	37.0	45.1
1952	34.0	38.0	48.9
1953	45.0	34.0	2/
1954	37.0	25.0	38.6
1955	48.0	34.0	38.9
1956	50.0	44.0	46.7
1957	2/	2/	48.0
1958	2/	2/	46.0
1959	2/	2/	47.5
1960	2/	2/	54.8

1/ "320-Count Wholes" and "Fancy (Large) Pieces" grades account for about 30 to 35 percent and 15 percent, respectively, of the total cashew kernel supply of the United States.

2/ Not available.

Source: Foreign Agricultural Service, U. S. Department of Agriculture (9; 10).

Table 13. Cashew Kernel Prices, Selected Grades,[1] Wholesale Quotations by J. S. Importers to Nut Salters and Other Processors, F.O.B. New York, 1932-1960.

Year	Standard Whole Kernels cents/lb.	Standard Pieces of Kernels cents/lb.	320-Count[2] Whole Kernels cents/lb.	Fancy Pieces of Kernels cents/lb.	240-Count[3] Whole Kernels cents/lb.	450-Count[3] Whole Kernels cents/lb.	Scorched[5] Whole Kernels cents/lb.
1932	28.8	14.0	[6]	[7]	---	---	---
1933	23.7	16.0	[6]	[7]	---	---	---
1934	28.1	16.9	[6]	[7]	---	---	---
1935	27.0	18.4	[6]	[7]	---	---	---
1936	26.5	19.5	[6]	[7]	---	---	---
1937	23.7	19.2	[6]	[7]	---	---	---
1938	24.2	14.9	[6]	[7]	---	---	---
1939	23.1	14.7	[6]	15.4	---	---	---
1940	22.0	17.6	[6]	19.0	---	---	---
1941	29.4	[5]	[6]	25.7	---	---	---
1942	53.5	[5]	[6]	33.5	---	---	---
1943	[4]	[5]	99.6	72.0	100.4	98.1	---
1944	[4]	[5]	94.4	69.0	95.7	97.0	96.0
1945	[4]	[5]	96.3	60.0	98.4	---	---
1946	[4]	[5]	72.7	44.1	75.7	58.3	---
1947	[4]	[5]	53.9	37.4	64.0	46.8	---
1948	[4]	[5]	54.9	32.4	62.1	50.9	---
1949	[4]	[5]	54.9	27.0	58.4	50.2	---
1950	[4]	[5]	46.3	35.6	51.6	40.1	---
1951	[4]	[5]	54.8	41.8	58.7	51.4	---
1952	[4]	[5]	63.2	41.8	67.1	60.2	---
1953	[4]	[5]	53.3	41.8	57.8	50.4	---
1954	[4]	[5]	44.3	33.0	47.9	40.6	---
1955	[4]	[5]	52.9	38.7	55.4	49.6	---
1956	[4]	[5]	55.6	50.6	56.9	54.4	---
1957	[4]	[5]	57.7	43.7	---	---	---
1958	[4]	[5]	52.0	33.3	---	---	---
1959	[4]	[5]	51.9	36.3	---	---	---
1960	[4]	[5]	59.8	42.8	---	---	---

Table 13. (continued) Footnotes

1/ "320-Count Wholes" grade (the most common grade) accounts for about 30 to 35 percent of the total cashew kernel supply of the United States. "Fancy Pieces," "240-Count Wholes," "450-Count Wholes," and "Scorched Wholes" grades accounted for about 15 percent, 7.5 percent, 7 percent and 8 percent, respectively, of total cashew supply, in early 1950, according to the United States Tariff Commission.

2/ "320-Count Wholes" are the primary single grade of cashew kernels used in salting. Nearly all whole kernels are salted, as well as many broken kernels. All whole kernels (including scorched) account for about 69 percent of the cashew supply, according to the U. S. Tariff Commission.

3/ Quotations on these grades not available prior to 1943, and not secured for this study after 1956. Quotation on "Scorched Wholes" available only in 1944.

4/ Quotations on this grade not available after 1942.

5/ Quotations on this grade not available after 1940.

6/ Quotations on this grade not available before 1943.

7/ Quotations on this grade not available before 1939.

8/ Estimates of percentages of cashew kernels falling into each grade specified in footnotes 6 and 7 are based on U. S. Tariff Commission analyses of general imports invoices for January, March, and April, 1950. (See Table 14). The estimate on "320-Count Wholes" is confirmed over time by trade sources. For most grades, a considerable variability in percentage distribution by grades arises from kernel size variation resulting from differences in growing season weather from one season to another.

Source: "Journal of Commerce," New York, N. Y. (as compiled in unpublished tabulations by Agricultural Marketing Service, U. S. Department of Agriculture).

Table 14. Cashew Kernels: United States Total Imports, Imports Through New York Customs District[1/], Percentage of Total Imports Entering Through New York, and Tariff Rate. 1931-1960.

Year	Total Imports (1000 lb.)	Imports through New York (1000 lb.)	Percentage of Total Imports through New York[1/] (%)	Tariff Rate (cents/lb.)[2/]
1931	10,524	8,596	81.7	2.0
1932	9,799	8,086	82.5	"
1933	11,691	9,747	83.4	"
1934	14,899	12,627	84.7	"
1935	22,376	20,015	89.4	"
1936	22,102	19,213	86.9	"
1937	26,848	22,185	82.6	"
1938	26,069	22,390	85.9	"
1939	29,466	25,127	85.3	"
1940	28,940	24,318	84.0	"
1941	35,592	30,053	84.4	"
1942	17,721	16,596	93.7	"
1943	3,542	3,504	98.9	"
1944	15,779	15,159	96.1	"
1945	24,502	23,407	95.5	"
1946	29,898	28,803	96.3	"
1947	29,902	29,243	97.8	"
1948	34,712	33,682	97.0	2.0[2/]
1949	36,650	36,236	98.9	1.5
1950	48,482	47,641	98.3	"
1951	50,504	49,447	97.9	"
1952	42,071	40,232	95.6	"
1953	47,709	45,664	95.7	"
1954	56,551	51,613	91.3	"
1955	66,396	61,556	92.7	"
1956	56,279	50,437	89.6	"
1957	58,396	48,778	83.5	"
1958	66,771	55,654	83.4	"
1959	63,351	53,595	84.6	"
1960	64,339	54,282	84.4	"

1/ New York Customs District includes these ports: New York, New York (headquarters port); Albany, New York; Newark, New Jersey; and Perth Amboy, New Jersey. Data herein clearly indicate predominance of New York, as the main cashew import center (and wholesale market). Other cashew receiving ports (customs districts) include San Francisco, Massachusetts, Chicago, Los Angeles, Philadelphia, Virginia, Maryland, Oregon, New Orleans, and several others of lesser importance.

2/ Basic tariff rate on cashews is 2¢ per pound, under the Tariff Act of 1930. It was applied without exception until July 9, 1948, when a reduction to 1.5¢ per pound (made under provisions of the General Agreement on Tariffs and Trade) went into effect.

Source: U. S. Bureau of Census import statistics (7;8).

Table 15. Cashew Kernels: Proportionate Quantities and Unit Value of Imports, by Grades, New York; Average of January, March, and April, 1950.

Grade	Percentage of total Quantity	Price per lb. F.O.B. Cochin, India
Whole (approximate maximum count per lb.):		
210	1.9	40.2
240	4.7	39.2
280	1.9	36.5
320	20.4	36.4
400	3.4	32.8
450	4.2	30.6
Butts	2.7	27.0
Splits	3.2	25.1
Fancy Pieces	9.1	20.0
Small Pieces	0.8	19.5
Scorched:		
Wholes	4.8	30.1
Butts	0.2	21.5
Splits	0.4	20.5
Pieces	2.2	18.6
Undetermined or Unselected1/	40.1	--
Total or Average	100.0	31.1

1/ It can be assumed that this group consists largely of graded nuts in the same proportion as those shown.

Source: U. S. Tariff Commission - invoice analyses of general imports (12).

Table 16. Salted Cashew Kernels: Retail Prices in Selected Chain Food Stores and "Dime Stores," Eastern United States; 1956-1961 Average.

Type and Size of Package:	Price per Package:	Equivalent Price per Pound
In Chain Food Stores - Prepackaged:		
Bag - 3 1/8 oz.	29¢	$1.48
Can - 4 3/4 oz.	39¢	1.31
Bag - 5 1/2 oz.	49¢	1.43
Can - 5 1/2 oz.	45¢	1.31
Can - 6 3/4 oz.	45¢ & 49¢	1.07 & 1.16
Bag - 7 oz.	49¢	1.12
Bag - 9 oz.	69¢	1.23
Can - 13 oz.	89¢	1.10
Can - 14 oz.	66¢ & 89¢	.75 & 1.02
In Chain "Dime Stores" - Salted on Premises, Held and Displayed in Bulk, and Sold in Bag or Box:		
Bag - 4 1/2 oz.	39¢	1.39
Box - 8 oz.	69¢	1.38
Approximate Overall Average Retail Price[1] per Pound, from 1956 to 1961 = $1.21[2]		

1/ Simple average of package prices reported above.

2/ Observations indicate that retail prices of salted cashews have remained relatively stable during the period of the observations.

Source: Random observations in various stores in Maryland and Virginia, by the author, from Spring 1956 to Winter 1961.

Table 17. Cashew Price Ranges at Various Market Levels - Summary Table

Time Period	Market Level	Price Range	1960 Average Price
(Prices Paid to Growers for Raw Nuts by Assembly Agencies-Not Available)			
1952-1960 (Raw Nut and Kernel Basis)	Raw Nuts Being Sold to Indian Processors	4.5 to 12.2 cents/lb. (Raw Nut Basis) 14.5 to 39.2 cents/lb. (Kernel Basis)	7.9 cents/lb. (Raw) 25.4 cents/lb. (Kernel)
1952-1960 (Kernel Basis)	Processed Kernels (Basis F.O.B. Indian Exporting Ports) - Average Prices between Indian Processors and U.S. Importers	32.6 to 45.9 cents/lb.	43.6 cents/lb.
1952-1960 (Kernel Basis)	Average of All Grades of Processed Kernels (Basis C.I.F. New York) - Quotations of Indian Processors to U.S. Importers, and Basis of Negotiations Between Them.	38.6 to 54.8 cents/lb.	54.8 cents/lb.
1952-1960 (Kernel Basis)	"320-Count Wholes" - Wholesale Quotations by U.S. Importers to Nut Salters, F.O.B. New York	44.3 to 63.2 cents/lb.	59.8 cents/lb.
(Wholesale Prices from Salters to Retail Outlets-Not Obtained)			
1956-1961 (Kernel Basis)	Retail Prices of Salted Cashews, Eastern U.S.	75¢ to $1.48/lb.	$1.21/lb.

Source: Data of Tables 9 through 16.

Table 18. Cashew Kernels: Quantities Used in the United States: Total and Per Capita Imports (Apparent Total Consumption); Total and Per Capita Estimates of Quantities Salted (Apparent Salted Cashew Consumption). 1932-1960

Year	Total Imports and Consumption (1000 lb.)	Per Capita Imports and Consumption (lb.)	Total Salted Cashews (1000 lb.)	Per Capita Salted Cashews (lb.)
1932	8,623	0.069	7,330	0.059
1933	12,526	0.100	10,647	0.085
1934	14,899	0.118	12,664	0.100
1935	22,376	0.176	19,020	0.149
1936	22,102	0.172	18,787	0.147
1937	26,848	0.177	19,421	0.151
1938	26,069	0.170	18,759	0.144
1939	29,466	0.225	25,046	0.191
1940	28,940	0.219	24,599	0.186
1941	35,592	0.267	30,253	0.227
1942	17,721	0.131	16,244	0.120
1943	3,542	0.026	3,247	0.024
1944	15,779	0.114	14,467	0.105
1945	24,502	0.175	22,460	0.161
1946	29,898	0.211	27,407	0.194
1947	29,902	0.208	27,410	0.190
1948	34,712	0.237	31,819	0.217
1949	36,650	0.246	33,596	0.225
1950	48,482	0.320	44,442	0.293
1951	50,504	0.327	45,243	0.293
1952	42,071	0.268	37,688	0.240
1953	47,709	0.299	42,739	0.268
1954	56,551	0.348	50,660	0.312
1955	66,396	0.402	59,480	0.360
1956	56,279	0.335	50,416	0.300
1957	58,396	0.341	52,313	0.306
1958	66,771	0.384	59,815	0.344
1959	63,351	0.358	56,752	0.320
1960	64,339	0.356	58,307	0.323

Source: For imports (and total consumption data)- U. S. Bureau of the Census import statistics; for salted quantities - calculations by the author based on estimated percentages salted (as periodically determined by U. S. Tariff Commission surveys of the nut salting industry). Per capita data are calculations based on U. S. Census Bureau population estimates.

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